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# Dissociative experiences, subclinical anxiety and perceived level of psychological distress in a nonclinical population

Denise L. Lucia

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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

DISSOCIATIVE EXPERIENCES, SUBCLINICAL ANXIETY AND  
PERCEIVED LEVEL OF PSYCHOLOGICAL DISTRESS  
IN A NONCLINICAL POPULATION

A Dissertation Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Philosophy

Denise L. Lucia

College of Education and Behavioral Sciences  
Department of Counseling Psychology

August, 2012

This Dissertation by: Denise L. Lucia

Entitled: *Dissociative Experiences, Subclinical Anxiety and Perceived Level of Psychological Distress in a Nonclinical Population*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in  
College of Education and Behavioral Sciences, Department of Counseling Psychology

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## ABSTRACT

Lucia, Denise L. *Dissociative Experiences, Subclinical Anxiety and Perceived Level of Psychological Distress in a Nonclinical Population*. Published Doctor of Philosophy dissertation, University of Northern Colorado, 2012.

The purpose of this quantitative study was to investigate to what extent the variance in less severe forms of dissociation is explained by subclinical anxiety and perceived level of psychological distress in a nonclinical population. The demographic variable age was also examined in relationship to dissociative behavior. Outcomes were measured using a self-report survey, comprised of three existing measures which included a modified version of the Curious Experiences Survey (CES; Goldberg, 1999), the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988), and the Brief Symptom Inventory (BSI; Derogatis, 1975). Data were collected from 154 participants in a nonclinical population. Multiple linear regressions were conducted and results indicated that 44% of the variance, which represents a large effect size, in less severe forms of dissociation can be explained collectively by subclinical anxiety and perceived level of psychological distress [ $F(2, 151) = 58.07, p < .05$ ]. Results also indicated that 2.7% of the variance in less severe forms of dissociation can be explained by age; with outcome data indicating that as age increases, dissociation decreases. Contributions to the current body of literature and implications for clinical practice are discussed, along with limitations of this study and recommendations for future research.

## ACKNOWLEDGEMENTS

I am proud to present this dissertation as meeting the requirement for the degree of Doctor of Philosophy in Counseling Psychology from the University of Northern Colorado. Completion of this dissertation was in no way a solitary effort, for many individuals helped me throughout the process. I owe many thanks to all of the participants who contributed their time in an effort to add to an existing body of research. I would also like to thank my committee members for holding me to a high standard, and for offering me guidance and consistent encouragement. Thank you to Dr. Gonzalez, Dr. Hutchinson, Dr. Wright, and Dr. Black. I would like to express my gratitude to Dr. Hutchinson, who provided invaluable assistance and feedback on my statistical analyses. I would also like to express my heartfelt appreciation to Dr. Gonzalez. I feel privileged to have had you as my advisor, as well as my committee Chair throughout my professional training. Thank you for believing in my abilities; I greatly valued your dedication to developing my professional knowledge and advancing my growth toward becoming a counseling psychologist. Your expertise, professionalism, and compassionate nature make you an unforgettable role model and professional mentor.

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## CHAPTER I

### INTRODUCTION

The term dissociation speaks to the brilliance of the human mind, in that it has the capacity to protect the self from psychologically distressful events by altering consciousness or awareness. Dissociation should not always be viewed as pathological, for it is a form of coping that the individual has adopted in order to remain a viable, functioning being. Dissociative experiences are viewed by many scholars in the field of dissociation as an everyday cognitive process (Ray, 1996). Many contemporary theorists would agree that dissociation is more than a defense mechanism; it is a subjectively experienced self-state or state of being (Simeon & Abugel, 2006, p. 58). The mind is in a constant process of being either connected or disconnected, with every aspect of human life involving a normal, dissociative process.

Dissociative disorders and the wide spectrum of dissociative experiences have largely been unrecognized as a component of clinical training, and have lacked acknowledgement within mainstream psychology, and in the professional literature, as a legitimate and prevalent diagnostic presentation since its inception in the late 1800s (Bernstein Carlson & Putnam, 1993; Howell, 2005; Ross, 1996; Ross, Joshi, & Currie, 1990; Ross, Ryan, Voigt, & Eide, 1991; Trueman, 1984a). During the late 19<sup>th</sup> century there was widespread clinical and scientific interest in the paranormal, dissociation, hypnosis, and childhood sexual abuse (Ross, 1996). In the mid 1890s, Janet, Bruer, and Freud were among an esteemed group of scholars that recognized a relationship between

childhood sexual trauma and dissociation. This relationship was described as pathological, resulting from either a deficit in ego-strength or consisting of paranormal phenomena such as demonic possession (Ross, 1996). For approximately two decades, from 1890 to 1910, these topics dominated the field of psychology; yet by 1910 these areas were actively excluded, making it no longer possible to maintain a serious clinical and theoretical curiosity about topics that were now considered to be unsound and illogical (Ross, 1996).

As a result of various factors, a decline in interest and scientific inquiry of dissociation occurred, causing dissociation to be “wiped off the map” around 1910. One of the contributing factors has been attributed to a rise in psychoanalysis in clinical practice (Ray & Faith, 1995). Despite Freud’s initial alignment with Janet, Freud shifted from a dissociation to a repression model of psychopathology, at which point in time the treatment and diagnosis of dissociative symptoms within a trauma model became irrelevant and unacknowledged within mainstream clinical practice (Ross, 1996, p.5). Sigmund Freud (as cited in Howell, 2005, p.194) stated, “The theory of repression is the cornerstone on which the whole structure of psychoanalysis rests.” The fundamental issue was not so much centered on a scientific rebuke against dissociative disorders, but rather society’s need to reject the reality that horrific atrocities such as childhood sexual abuse was a prevalent occurrence in mainstream culture (Ross, 1996); nor did society want to face the reality that ordinary, normal individuals were capable of evil acts (Howell, 2005). Therefore, Freud talked about repressed sexual fantasies of childhood, as opposed to Janet’s assertion that dissociated parts of the self existed in a second conscious or subsystem of one’s conscious awareness as a result of real sexual and physical abuse.

A second factor that contributed to the decline in interest and scientific inquiry of dissociation was the development of the term schizophrenia by Bleuler in 1924. At this time in history, schizophrenia, meaning split mind in Greek, was described as distinct personalities that coexisted within one individual (Ross, 1996). Much of Bleuler's clinical description of schizophrenia was similar to the clinical description of dissociative identity disorder (DID) in the fourth edition of the diagnostic statistical manual (DSM-IV; Ross, 1996). However, the difference was in Bleuler's explanation, stating schizophrenia, or unexplainable distinct personalities within one individual, were a result of organic brain dysfunction, as opposed to a result of enduring chronic childhood trauma. From this point on, individuals previously diagnosed as having a dissociative disorder with treatment focused on childhood sexual trauma, would now be categorized in one of two ways: labeled a hysteric and referred to psychoanalysis for treatment focused on repressed childhood sexual fantasies, or categorized as suffering from an organic brain disorder known as schizophrenia, with treatment focused on the medical model (Ross, 1996).

The final factor that played a large role toward the decline in interest and scientific inquiry of dissociation was the growth and expansion of behaviorism (Ray & Faith, 1995; Ross, 1996). Internal states of consciousness, or second consciousness as referred to by Janet (van der Hart & Horst, 1989), was no longer given clinical consideration in a field now dominated by demand for objective truth. Nevertheless, despite clinical departure from the area of dissociation, empirical studies on various forms of dissociation, primarily DID in relation to trauma, were scattered throughout the 20<sup>th</sup> century (Bliss & Jeppsen, 1985; Chu & Dill, 1990; Modestin, Ebner, Junghan, &

Erni, 1996; Putnam, 1989a; Ross, 1991; Ross, 1989; Ross, Anderson, Fleisher, & Norton, 1991), with published literature gaining numbers in the 1960s as research was expanded to consider alternate forms of dissociation, such as depersonalization and derealization (Aderibigbe, Bloch, & Walker, 2001; Cassano et al., 1989; Dixon, 1963; Miller, Brown, DiNardo, & Barlow, 1994; Roberts, 1960; Sedman, 1966; Simeon & Abugel, 2006; Trueman, 1984a, 1984b).

The active exclusion of dissociation in the field of psychology resulted in a lack of academic interest and clinical training, as well as a decline in the advancement of clinical research on this construct. Ross (1996) stated, “No other disorder has been the subject to this kind of exclusion from mainstream psychological and medical study” (p. 6). Despite decades of overt rejection of dissociation, there were several factors that contributed to the reestablishment of interest in dissociation, which began in the 1970s and 1980s. The rise in diagnosis of DID was in part prompted by the women’s movement, which involved courageous survivors who shared their stories of childhood physical and sexual abuse. Another factor that played a role in dissociation regaining ground in mainstream psychology was the Vietnam War. Ross discussed that society realized severe trauma from the war, such as posttraumatic stress, could have long-term consequences on veterans and families, even long after they returned home; therefore, it was a short leap to the conclusion that severe childhood trauma could also have severe and long-term consequences (p. 7). Awareness of dissociation also increased with the publication of the memorable books *Three Faces of Eve* and *Sybil*, which increased public awareness and mainstream consciousness of dissociative disorders.

It was not until the early 1980s however, with the inclusion of dissociative disorders in the DSM-III, that pathological forms of dissociation began to regain recognition as a legitimate clinical presentation. As such, the new publication of the DSM-III was groundbreaking, as it recognized dissociative disorders by awarding it a separate diagnostic section, communicating to clinicians that dissociation was a valid diagnosis within the field of mental health. This resulted in a rise in diagnosis of DID, formerly called multiple personality disorder (MPD), as well as a rise in diagnosis of posttraumatic stress disorder (PTSD; Ray & Faith, 1995; Ross et al., 1990). During this time in history, 200 cases of MPD had been documented in the scientific literature (Ross et al., 1989), rapidly expanding awareness of more severe forms of dissociative symptomology. Today, the study of DID continues to be the major focus of research when examining dissociation. DID is the most extreme form of dissociation, having a causal relationship with exposure to severe trauma, most notably researched in the field as deriving from chronic emotional, physical, and sexual abuse.

Although research in the area of dissociation is growing, the vast arena of dissociation remains an area of fertile ground, and continues to be viewed with skepticism as clinicians await further empirical studies to validate the wide spectrum of dissociative symptomology (Johnson, Cohen, Kasen, & Brook, 2006; Maaranen et al., 2005; Ray & Faith, 1995; Vanderlinden, VanDyck, Vandereycken, & Vertommen, 1991). At the beginning of the 21<sup>st</sup> century, Johnson et al. (2006) criticized empirical research for failing to include dissociative disorders and the broad spectrum of dissociative experiences in major epidemiological studies; thus, systematic data are not readily available regarding prevalence, impairment, or psychiatric comorbidity.

Studies that have examined the broad spectrum of dissociative experiences are limited in size, with clinicians still lacking mutual collaboration and awareness in detecting, diagnosing, treating, and even acknowledging these diverse clinical symptoms. For example, depersonalization has been documented in the medical literature for more than 100 years, and is the third most prevalent psychiatric symptom, after depression and anxiety (Simeon & Abugel, 2006, p. 3). However, just because less severe forms of dissociation have been documented, it does not mean they have been documented under the diagnostic label of dissociation. Simeon and Abugel (2006) discussed how depersonalization remains one of the most frequently misdiagnosed and underdiagnosed conditions, due to lack of training and confidence among clinicians regarding diagnostics for dissociation, and due to rigid adherence to empirically validated diagnoses such as anxiety and depression which encompass dissociative symptomology.

As a result of the breadth of research that has focused on more severe forms of dissociation and trauma, the data gathered on dissociation are more heavily normed on clinical as opposed to nonclinical populations, thereby lacking acknowledgement of these symptoms in the general population (Ross, 1996). Ross (1989) (as cited in Ray & Faith, 1995) stated that contemporary psychology has underestimated the prevalence of dissociation in the normal population (p. 228). Simeon (2004) reported short-lived experiences of depersonalization are common among the general population, estimating an annual prevalence of 23%. It is when symptoms become chronic and cause significant impairment in everyday functioning that a diagnosis of depersonalization disorder is warranted. In a community-based longitudinal study, Johnson et al. (2006) found that dissociative disorders affected approximately 5-10% of the general population. This high

prevalence rate suggests that less severe forms of dissociative experiences are more common than has been previously recognized, yet the data still lack sufficient breadth; thus, more research is clearly needed.

### **Dissociation**

A substantial portion of the literature on dissociation has examined and found a positive relationship between dissociative phenomena, predominantly DID, and traumatic experiences (Bruer & Freud, 1986/1895 (as cited in Ross, 1996); Chu & Dill, 1990; Modestin et al., 1996; Naring & Nijenhuis, 2004; Putnam, 1989a; Ross, 1989; Ross, Ryan, Voigt, & Eide, 1991; Simeon, Greenberg, Nelson, Schmeidler, & Hollander, 2005). This relationship is noteworthy, and intuitively, is clinically sound. Ross (1996) stated that it is not possible to understand dissociative disorders, nor the professional resistance against them, without a prior understanding of childhood sexual abuse. However, the less extreme forms of dissociation, such as depersonalization, derealization, and everyday normative dissociative experiences, often go unnoticed in the scientific literature and consequently, the greater majority of dissociative experiences all too often go undiagnosed and untreated.

The broad spectrum of dissociative experiences is best understood in terms of a continuum model where dissociative experiences lie on a continuum from adaptive, normative dissociation, to more maladaptive, pathological dissociation (Howell, 2005). Howell (2005) asserted that at the healthy end of the continuum are dissociative experiences that are normative, where the presence of dissociation is not necessarily evidence of a history of trauma or other forms of psychopathology. In fact, Howell purported that dissociation can be life-enhancing. For example, absorption is a normative



dissociative experience, which occurs when an individual disconnects (dissociates) other contents from the phenomenal field resulting in intense, focused concentration, as well as a loss of reflective self-consciousness and a distorted time sense (Butler, 2004). This may occur when an individual becomes engrossed in a story while reading a book or watching a movie, as well as getting lost in thoughts while driving (Howell, 2005). In automatic tasks such as driving, the dissociative experience is under voluntary control, whereby an individual can return immediate attention back to the road if needed (Howell, 2005).

Absorption can be used to enhance experience, or when used as a form of self-protection it serves as an adaptive response to avoid experience. However, absorption can become pathological when the individual cannot willingly return to present functioning without difficulty. Continuously avoiding painful or distressing experiences via absorption can result in experiences lacking full integration; thus, the individual does not process or make meaning of the experience as a whole. This can have long-term effects such as intrusive memories where the individual does not feel like he or she has volitional control (Howell, 2005).

At best, clinicians primarily learn about and view dissociation as a precursor and/or marker of severe pathology, although predominantly dissociation is not a focus of clinical training and it is viewed as an invalid hunch of *other* clinicians. Once more, when dissociation is discussed in the literature authors often discount the prevalence and legitimacy of dissociated memories and/or dissociated experiences, once again attributing fault or poor intentions on the therapist, or worse, on the client. In an effort to expose clinicians' lack of awareness and failure to endorse dissociative phenomena when present in clients, Leonard, Brann, and Tiller (2004) conducted a study which surveyed 250

clinicians and found that only 55% of clinicians regarded dissociative disorders as valid diagnoses, 35% dubiously valid, and 10% invalid. This lack of awareness and failure to detect and acknowledge dissociative phenomena speaks to the still widely held belief in the field of psychology that dissociative experiences are not a legitimate presentation, and if present, they are often speculated to be of an iatrogenic nature. Although dissociative disorders may be relatively rare within a nonclinical population when compared to a clinical population, dissociative experiences are rather common in everyday life (Kihlstrom, Glisky, & Angiulo, 1994; Modestin et al., 1996), and they can serve to either impede or enhance functioning.

### **Subclinical Anxiety**

Dissociation is often comorbid with psychiatric conditions such as anxiety, depression, borderline personality disorder, posttraumatic stress disorder, and schizophrenia (Cassano et al., 1989; Maaranen et al., 2005; Mula et al., 2008a, 2008b; Ross et al., 1990; Simeon et al., 2005; Trueman, 1984a, 1984b). Dissociative disorders and personality disorders frequently co-occur, and are often associated with a history of childhood trauma; therefore, they are theorized to share a common etiology (Johnson et al., 2006, p. 132). It has been theorized by many scholars that dissociative experiences are closely allied with psychic defenses such as anxiety, although dissociative experiences have been found in subclinical and normal populations (Trueman, 1984b, p. 108). Ross et al. (1990) stated that like anxiety or depressive symptoms, dissociative phenomena become symptoms of a more serious psychiatric disorder when they cause marked distress and interfere or impair functioning (p. 1547). Additionally, dissociative

symptoms can also occur in a wide range of psychiatric disorders, just as anxiety and depression can occur in various diagnostic entities (Ross et al., 1990, p. 1552).

A clinician will typically have extensive training in recognizing and diagnosing anxiety and depression, but minimal, if any, training in detecting when a client is experiencing dissociative phenomena. Thus, clinicians will tend to stick within domains where they are comfortable, failing to detect, diagnose, and treat dissociation when present. This will occur despite client reports that anxiety is a transient symptom and not as predominant or pervasive as is their dissociative symptomology (Simeon & Abugel, 2006). The field of psychology has endured a long tradition of dismissing dissociative experiences, reporting that dissociative phenomena are not a separate entity in itself, but rather born from, or a manifestation of, other psychiatric conditions such as depression and anxiety. Studies by Simeon et al. (2003) and Baker et al. (2003) (as cited in Simeon & Abugel, 2006) have found this to be erroneous, instead reporting that even symptoms of depression and anxiety can exacerbate dissociative experiences, and often when a depressive episode or a panic attack remits, the dissociation is still present. Therefore, dissociation has been found to be a primary phenomenon, rather than one that accompanies many other disorders (Simeon & Abugel, 2006, p.100).

The prevalence rate of dissociative disorders among individuals in a nonclinical population with a co-occurring psychiatric condition such as anxiety, a mood disturbance, and a personality disorder is 33.3%, 33.3%, and 36.5%, respectively (Johnson et al., 2006). De Wachter, Lange, Vanderlinden, Pouw, and Strubbe (2006) stated that it was not until recently that subclinical levels of anxiety and stress, such as normative stressful events (i.e., loss of job or financial strain), began to be empirically studied in connection

with dissociative experiences. For example, acute severe stress has been found to be associated with transient dissociation (Oathes & Ray, 2008), and in less severe cases, dissociation occurred in response to artificially stimulated hyperarousal (Nixon & Bryant, 2006).

Although small in size, literature on dissociative experiences is increasing as researchers recognize how less severe forms of trauma, such as subclinical anxiety and perceived level of psychological distress, are related to less severe forms of dissociative experiences.

### **Perceived Level of Psychological Distress**

An individual who is experiencing psychological distress may show changes in his or her overall level of functioning, yet still not meet criteria for a mental health diagnosis. Therefore, it should not be surprising to a clinician that an individual does not need to meet diagnostic criteria for a dissociative disorder in order to have experienced dissociative phenomena. The prevalence of psychological distress in the general population is frequently gathered from epidemiological surveys that identify people who have subclinical symptoms substantial enough to precipitate dysfunction in everyday life, and who therefore are highly likely to utilize mental health services more frequently (Poulin, Lemoine, Poirier, & Lambert, 2005). Therefore, psychological distress is a very pertinent construct in relation to dissociation, for less severe forms of dissociation have been found to be related to daily distress in one's life, rather than solely correlated with extreme levels of stress such as complex trauma or a one time, isolated traumatic event (De Wachter et al., 2006).

Simeon and Abugel (2006) reported that daily prolonged stress, such as an unhappy marriage, the process of divorce, major life transitions such as leaving home for college, or demanding work conditions that lead to burnout, can all trigger dissociative phenomena. Naring and Nijenhuis (2004) found that perceived lack of support from others during what may be considered by an individual as a stressful event to be associated with dissociative phenomena. De Wachter et al. (2006) found that a decrease in perceived stress leads to a decrease in dissociative phenomena. A very salient factor here is the level to which an individual perceives a particular event or situation to cause psychological distress. This perception is based on self-report; thus, subjective differences may occur between one or more individuals as to what constitutes psychological distress. For example, Leonard et al. (2004) found that there is considerable comorbidity, approximately 70%, between people who perceive to be experiencing interpersonal distress and who also report dissociative experiences.

### **Rationale for Conducting Study**

The current study contributed to the existing body of research on dissociation because I used a sample derived from a nonclinical population to specifically examine the relationship between subclinical anxiety, perceived level of psychological distress, and less severe forms of dissociation. Using a sample derived from a nonclinical population, in addition to examining the constructs as noted above, was in marked contrast to the majority of prior research which has historically used samples derived from clinical populations when examining the relationship between severe forms of dissociation, such as DID, and psychiatric disorders that are typically comorbid with moderate to severe levels of trauma, such as borderline personality disorder and posttraumatic stress

disorder. Additionally, it has only been within the last decade that research has systematically examined the relationship between current psychological distress and dissociative phenomena. This is startling since there has been ample research that has examined the relationship between current psychological distress and mental health diagnoses such as depression, anxiety, and schizophrenia (De Wachter et al., 2006). By making the methodological adjustments noted above, in addition to including demographic variables such as sex, age, and race/ethnicity, the current study contributed to the literature on dissociative experiences in a nonclinical population.

It was paramount that further research on dissociative processes was conducted to increase awareness among clinicians that normative dissociation exists, thereby aiding clinicians toward accurate detection and diagnosis of dissociative symptomology. It is an insult to the brilliance of the human mind that clinicians in training are primarily introduced to dissociated memories and dissociative experiences as a marker of severe pathology, primarily associated with DID as a result of severe trauma, or even worse, as fictitious. Unfortunately, a great majority of novice and seasoned scholars do not share this same contention. As such, it is my hope that the data gathered from the current study will work toward absolving present skepticism that exists for normative dissociative processes.

Once more, continued research in this area will increase awareness of dissociative experiences as a legitimate clinical and normative presentation, thereby aiding toward application of appropriate clinical interventions. In their survey of 250 clinicians, Leonard et al. (2004) not only found that a mere 55% of clinicians regarded dissociative disorders as valid diagnoses, but that 76% of the 55 clients surveyed in this same study

reported delays in diagnosis of dissociative symptomology, suboptimal treatment, and skeptical or antagonistic attitudes from clinicians that were rated as destructive. Nixon and Bryant (2006) found that a clinician can do more harm to a client when implementing interventions if the clinician fails to detect comorbid dissociative symptomology. For example, extreme arousal and dissociative symptomology can impede exposure-based techniques that are recommended in the treatment of posttraumatic stress disorder (Nixon & Bryant, 2006). It is crucial that a clinician acknowledge and be able to accurately detect dissociative symptomology in cases whereby the presence of dissociation interferes with healing and recovery of posttraumatic stress. This is because dissociation may play a role in blocking the processing of trauma memories and associated affect (Simeon et al., 2005).

Increasing awareness among clinicians of the comorbidity of subclinical anxiety, perceived level of psychological distress, and dissociative phenomena will not only aid clinicians toward accurate detection and diagnosis of dissociative phenomena, it will also result in expeditious and effective treatment for those suffering from dissociative symptomology. The broad spectrum of dissociation is by and large an untapped area worthy of further examination in empirical research. Prior studies that have examined the relationships of interest are dated and lack sufficient breadth, suggesting a need for additional and current research in this area. The results from the current study began to fill this gap in the literature because it offered clinicians an empirical study that supported the prevalence of the above stated relationship. Additionally, the outcome data contributed to advancing contemporary knowledge within mainstream psychology, as supported by empirical evidence, of the existence of the relationship between normative,

less severe forms of dissociative experiences, subclinical anxiety, and perceived level of psychological distress within a nonclinical population.

### **Statement of Purpose**

There were two purposes for conducting the current study. The first purpose was to examine less severe forms of dissociation and its relationship to subclinical anxiety and perceived level of psychological distress in a nonclinical population. The second purpose was to examine the relationship between less severe forms of dissociation and the demographic variable age in a nonclinical population, as well as report the point in time prevalence rate of age, sex, and race/ethnicity of participants who endorsed dissociative symptomology.

### **Research Questions**

- Q1     To what extent is the variance in less severe forms of dissociation explained by subclinical anxiety in a nonclinical population?
  
- Q2     To what extent is the variance in less severe forms of dissociation explained by perceived level of psychological distress in a nonclinical population?
  
- Q 3     Do demographic characteristics, such as sex, age, and race/ethnicity, explain the variance in less severe forms of dissociation in a nonclinical population?

### **Definition of Terms**

#### **Absorption**

Ability to be “carried away” in a narrowed, concentrated focus of attention; to become so immersed in a central experience that context loses its frame (Howell, 2005). Attention is completely absorbed in the present action that results in the loss of reflective self-consciousness and distorted time sense (Butler, 2004).



## **Anxiety**

The apprehensive anticipation of future danger or misfortune accompanied by a feeling of dysphoria or somatic symptoms of tension; focus of anticipated danger may be internal or external (DSM-IV-TR, 2000).

## **Depersonalization**

A feeling of detachment from oneself, in which the individual experiences either his/her feelings, thoughts, memories, or bodily sensations as not belonging to himself/herself (DSM-IV-TR, 2000). The body of literature concurs that a depersonalization experience can be described as the following: looking in the mirror and feeling detached from one's own image, feeling detached from one's body parts or the whole body, and/or feeling as though one part of the self is acting/participating while the other part is observing (Simeon, 2004).

## **Derealization**

An alteration in the perception or experience of the external world so that it seems strange or unreal (DSM-IV-TR, 2000). A feeling of detachment from one's environment; sense of reality of the outside world is lost, appearing hazy or foggy.

## **Dissociation**

Dissociative experiences exist along a continuum of adaptive and maladaptive dissociation. Dissociation can be life-enhancing and it can serve as a normative response to acute stressors in the environment. A dissociative experience involves a separation of parts of experience, including somatic, affective, and perceptual experience, potentially resulting in a separation of identity and memory (Howell, 2005) via Janet's theory of a second (or subsystem) state of consciousness (van der Hart & Horst, 1989).

## **Dissociative Disorders**

A group of conditions involving disruptions in a person's normally integrated functions of consciousness, memory, identity, and perception. Dissociative experiences may be sudden, gradual, transient, or chronic. Diagnostically, the following are recognized as dissociative disorders: Dissociative Amnesia, Dissociative Fugue, Dissociative Identity Disorder, Depersonalization Disorder, and Dissociative Disorder Not Otherwise Specified (DSM-IV-TR, 2000).

### **Dissociative Identity Disorder**

Essential feature is the presence of two or more distinct identities or personality states that recurrently take control of behavior; each personality state may be experienced as if it has a distinct personal history, self-image, and identity, including a separate name (DSM-IV-TR, 2000).

### **Less Severe Forms of Dissociation**

In the current study, this term was conceptualized as a continuous variable that was interpreted within a range of endorsed responses, with lower scores on the Curious Experiences Survey (CES; Goldberg, 1999) reflecting a lower frequency and lower intensity of dissociative symptomology.

### **Perceived Level of Psychological Distress**

The overall psychological symptom pattern which is based on the degree to which an individual appraises experiences or situations in daily life as causing physical, cognitive, behavioral, and emotional distress (Derogatis, 1993; Poulin et al., 2005). Symptoms of psychological distress may reflect normal fluctuations in mood and may not meet criteria for any particular mental health diagnosis. The current study measured the

construct perceived level of psychological distress by a global index of current distress on the Brief Symptom Inventory (BSI; Derogatis, 1975), known as the General Severity Index (GSI), a single best indicator of current distress as perceived by the individual. In the current study, the term perceived level of psychological distress was conceptualized as a continuous variable within a range of endorsed responses, with a lower GSI score reflecting a lower frequency and lower intensity of perceived psychological distress.

### **Subclinical Anxiety**

In the current study, this term was conceptualized as a continuous variable that was interpreted within a range of endorsed responses, with lower scores on the Beck Anxiety Inventory (BAI; Beck et al., 1988) reflecting a lower frequency and lower intensity of anxiety symptomology.

### **Summary**

A brief overview of the variables dissociation, subclinical anxiety, and perceived level of psychological distress were presented in Chapter I. The reader was presented with the rationale for conducting the present study, statement of purpose, as well as research questions when examining the variables of interest in a nonclinical population. Definitions of terms were also reviewed.

Chapter II introduces the reader to the theoretical framework that provides the structure and support for the construct of dissociation, and each variable of interest in the current study is examined in conjunction with relevant literature.

## CHAPTER II

### REVIEW OF THE LITERATURE

A review of prior research pertaining to the construct of dissociation and its relation to subclinical anxiety and perceived level of psychological distress in a nonclinical population is examined in this chapter. Prior research examining less severe forms of dissociation within a nonclinical population is not exhaustive and is still an emergent area within the broader domain of dissociation. First, a theoretical framework of dissociation by Pierre Janet is reviewed to lay the foundation for the conceptualization of this multifaceted construct. Second, literature on less severe forms of dissociation is examined to expand awareness as to the prevalence and legitimacy of normative dissociative phenomena. Third, literature that has examined the comorbidity of dissociation with other psychiatric disorders such as anxiety is reviewed, specifically highlighting studies that have demonstrated a relationship between subclinical anxiety and dissociative experiences in which dissociation is a primary phenomenon, as opposed to a manifestation of other disorders. Lastly, literature is reviewed that further underscores research that has found a direct relationship between a change in perceived level of psychological distress and a respective change in less severe forms of dissociative phenomena.

#### **Theoretical Framework**

It was in the mid 17<sup>th</sup> century that Rene Descartes began the dialogue on the mind/body problem, asserting a dualist philosophy; the mind and body are two distinct

entities, where only the mind can affect the body. This discourse was later challenged by many theorists, one of whom was Pierre Janet, a prominent contributor to the field of human behavior, who in the latter half of the 19<sup>th</sup> century laid the foundation toward a greater breadth of understanding of dissociative symptomology. Janet proposed that dissociation affected both the psychological (mind) and somatoform (body) components of experience (Simeon, Smith, Knutelska, & Smith, 2008). At this time in history, Janet was among a group of clinicians who studied and treated patients suffering from hysteria, a term often used in the latter half of the 19<sup>th</sup> century to describe a broad class of mental disorders such as dissociative disorders, somatization disorder, conversion disorder, borderline personality disorder, and posttraumatic stress disorder (Lowenstein, 1990 [as cited in Howell, 2005]; van der Hart & Horst, 1989). Janet is known for studying the concept of dissociation in patients suffering from hysteria, where traumatic reactions to stressful life events often resulted in unresolved, dissociated traumatic memories (van der Hart & Horst, 1989). Janet became engrossed in observing dissociative experiences in his patients who were diagnosed with hysteria, as he noted they would seem to predictably lose consciousness and become unresponsive to external stimuli when triggered by a traumatic memory (Janet, 1907 [as cited in Nijenhuis, 2004]).

The concept of dissociation can be traced back in the literature, first being described in 1812 by Benjamin Rush, an American physician who reserved the term for individuals suffering from manic attacks or schizophrenic excitement (van der Hart & Horst, 1989). However, it was Janet who identified one of his predecessors, a French psychiatrist named Jacques-Joseph Moreau de Tours of France, who in 1845 was likely the first clinician to recognize the role dissociation played in pathology as a result of

traumatic grief and overwhelming emotion (van der Hart & Horst, 1989). It was in the late 19<sup>th</sup> century that the concept of dissociation was infused into mainstream clinical practice as a result of additional scholars, such as Frederic Myers of England, as well as Gilles de la Tourette and Pierre Janet of France, both students of Jean-Martin Charcot who is known for his work on hysteria and hypnosis; all of whom concurred that dissociation was a psychological defense mechanism used against overwhelming traumatic experiences (van der Hart & Horst, 1989).

As previously mentioned in Chapter I, Janet, Bruer, and Freud were among an esteemed group of scholars that recognized a relationship between childhood sexual trauma and dissociation. It was not until around 1895 that Breuer and Freud, after noticing similar amnesiac states in their patients, agreed with Janet that dissociation was induced by sexual trauma in childhood (Simeon et al., 2008), and they agreed that dissociative phenomena served as a defense mechanism to thwart painful emotions and unprocessed stimuli. However, a few years later Freud disregarded the Janetian view, shifting from his early trauma theory which incorporated dissociation, to a repression model of psychopathology. This shift was due in part to the resistance Freud encountered from the Vienna Psychoanalytic Society of which he was a member, in addition to society's resistance to recognize the prevalent occurrence in mainstream culture of horrific atrocities such as childhood sexual abuse (Howell, 2005). Now split from Janet, Freud attributed dissociative phenomena to the ability of the human mind to repress distressful traumatic fantasies from coming into conscious awareness; favoring what he termed the unconscious, where distressful sexual fantasies of childhood were repressed (Ross, 1996). This was in clear opposition to Janet, who asserted that it was dissociated

parts of the self that existed in a second conscious or subsystem of one's conscious awareness as a result of real childhood sexual trauma (Ross, 1996).

Unknown to most contemporary clinicians, dissociation has a rich clinical history and it rests on a foundation built from revered ancestors within the field of psychology. However, it was Janet's fervent passion and steadfast curiosity for this complex construct that pushed him to pursue his research on dissociation. Janet's perseverance soon led to the development of his theory of dissociation; a theory that proved to be a seminal contribution toward the understanding of dissociation and trauma (Putnam, 1989b), thereby aiding Janet's contemporaries, as well as modern-day clinicians, in conceptualizing this unique clinical presentation.

In 1886, Janet proclaimed his theoretical *states of consciousness model*, in which he disagreed with his predecessors who asserted that some stimuli are processed at an unconscious level (van der Hart & Horst, 1989). Janet fervently argued against there being an absence of consciousness, but rather, the existence of two or more states of consciousness (van der Hart & Horst, 1989, p. 401). Janet, who was the paramount frontrunner of advancing the term dissociation, derived this term from the previously well-established concept of association. "If memories were thought to be brought to consciousness by way of the association of ideas, then those memories that are not available to association must be dissociated" (Janet, year unknown [as cited in Hilgard, 1986, p. 5]). Janet asserted that all activity has a conscious component, yet an individual's level of awareness is dependent on a term he referred to as "field of consciousness." In 1909, Janet described the narrowing of the field of consciousness as the reduction of the amount of psychological phenomena that can be simultaneously

integrated in one's personal consciousness, where the capacity for integration and the extent of consciousness varies from one individual to another (van der Hart & Horst, 1989). Janet further proposed that an individual can sometimes be guided by two or more discrete states of consciousness, also referred to as a subconscious or subsystem of consciousness, which are separated by an interruption of amnesia and can take control in capricious succession (Putnam, 1989b; van der Hart & Horst, 1989). Each dissociative state may have a distinct affect, cognitive style, as well as a state-dependent set of memories and sense of self (Putnam, 1989b). Once more, as a result of elevated anxiety and/or trauma, vehement emotions can impair the ability to synthesize and integrate new information, causing dissociative experiences (van der Hart & Horst, 1989). With vigor, Janet emphasized the role that emotions played in inducing dissociative phenomena when an individual perceives his or her experience to be stressful (van der Hart & Horst, 1989).

In Janet's early theoretical assertions of dissociation, he identified dissociation as a pathological phenomenon found to be present in individuals suffering from persistent amnesia as a result of prolonged experiences of extreme emotion after exposure to severe trauma (Oathes & Ray, 2008). Janet asserted that when an individual is presented with an acute situational or complex trauma, dissociative reactions may occur as an adaptive process which allows the individual to continue functioning, although he or she may be functioning in a dissociative amnesiac state (Putnam, 1989b). Taking into context the time period of Janet's work, in the late 19<sup>th</sup> century dissociative symptomology was most notably linked to traumatic events, such as early and enduring childhood sexual abuse. Therefore, it is logical that in his early work, Janet emphasized the pathogenic role of



trauma and thereby focused on more pathological forms of dissociation when working with his patients who were diagnosed with hysteria (van der Hart & Horst, 1989).

Despite Janet's initial focus on more pathological forms of dissociation, he later expanded this conceptualization to include more normative dissociative symptoms experienced within the general population as a result of acute stressors. In Janet's later writings on his theory of dissociation, he acknowledged that dissociative experiences occur along a continuum, stating in 1925 (as cited in Putnam, 1989b, p. 415), "Pathological phenomena are only exaggerations of normal phenomena..." In 1926, Janet discussed how everyday acute stressors, such as relational or financial problems, could also induce dissociative phenomena (van der Hart & Horst, 1989). Even in his research dating back to 1907, Janet discovered a lack of connection between aspects of memory or conscious awareness during and after periods perceived as stressful by an individual (Foa & Hearst-Ikeda, 1996, p. 208).

Thus, as Janet's work evolved, he conceptualized dissociation as a defense or coping mechanism that exists along a continuum, where normative, less severe forms of dissociative experiences can occur when an individual faces everyday stressful events or subclinical anxiety, and/or perceives the level of stress in his or her life to be elevated. The general conceptualization of dissociation in the current study, as supported by Janet and other scholars examined in this literature review, maintains that when a dissociative experience occurs, the level of distress decreases; in so doing, the dissociative experience has served as either life-enhancing or as a self-protective function in order to cope or feel more in control in the present moment. From this point of view, dissociative disorders, as conceptualized along a continuum, are not characterized by any single symptom or set of

symptoms that would differentiate normal from pathological dissociation; rather, it is the frequency and intensity of dissociative experiences along a continuum that quantitatively differentiate normal from pathological dissociation (Kihlstrom et al., 1994, p. 118).

Conceptualizing dissociative experiences as occurring along a continuum from normative to pathological forms of dissociative phenomena is widely accepted among many clinicians who acknowledge and treat dissociative disorders (Bloch, 1991). As Ross (1996, p. 12) explained, at the left side of the continuum are normal dissociative processes of everyday life; these dissociative phenomena are often termed absorption, as represented by daydreaming, trancing out while driving a car, being engrossed in a book or movie, and engaging in normal childhood imaginative play. In pathological or maladaptive forms of dissociation, an individual's sense of self or identity will become altered, with diagnosable dissociative disorders such as dissociative amnesia, followed by more chronic forms of dissociative fugue, dissociative disorder not otherwise specified (DDNOS), and DID at the far right side of the continuum (Ross, 1996, p. 12).

As dissociation has evolved within the clinical realm, there have been numerous theoretical models that have been used in the conceptualization and treatment of this broad class of unique phenomena. These models include, but are not limited to: ego state; Janetian; attachment; and psychoanalytic (Courtois & Ford, 2009). Despite the various perspectives, all of which pull insights and foundational concepts of trauma from one another, the theoretical framework of Pierre Janet provides the best fit for the current study in understanding normative dissociative experiences in conjunction with subclinical anxiety and perceived level of psychological distress within a nonclinical population.

## **Dissociation**

The term dissociation comprises a broad class of experiences, some of which may involve a disruption in a person's normally integrated functions of consciousness, memory, identity, and/or perception; and which may be sudden, gradual, transient, or chronic (DSM-IV-TR, 2000). Following Janet's dissociation theory of a second (or subsystem) state of consciousness (van der Hart & Horst, 1989), a dissociative experience involves a separation of parts of experience, including somatic, affective, and perceptual experience, potentially resulting in a separation of identity and memory (Howell, 2005). Empirical research has identified several factors within the construct of dissociation that involve an alteration in consciousness. These factors are identified as the following: depersonalization and derealization; amnesia of either a transient or long-term nature; and absorption (Ray, 1996). In the current study, the term less severe forms of dissociation was conceptualized as a continuous variable that was interpreted within a range of endorsed responses, with lower scores on the Curious Experiences Survey (CES; Goldberg, 1999) reflecting a lower frequency and lower intensity of dissociative symptomology. Higher, more elevated scores on the CES indicated a more severe level of dissociation.

Using Janet's theory of dissociation, dissociative experiences exist along a continuum of adaptive and maladaptive dissociation, whereby a dissociative experience can be life-enhancing or it can serve as a normative response to acute stressors in the environment. Normative dissociative experiences may include mild, everyday occurrences such as absorption, momentary confusion, memory lapses, and blank spells, to more pronounced and maladaptive dissociative experiences such as fugue states and

alter personalities (Thomas, 2005). An example of a normative dissociative experience is absorption, which can be used to enhance experience for pleasure, such as becoming engrossed in a good book or movie, or to avoid experience for defense (Howell, 2005). When serving as an adaptive response to an acute stressor, one function of dissociation is analgesia (Putnam, 1989b), the inability to feel pain while still conscious, such as imagining a positive event to avoid feeling the pain of long-distance running (Kruesi, Borckardt, Younger, Nash, & Shaw, 2004). Dissociated affects, memories, impulses, cognitions, and behavioral repertoires seek to compartmentalize threatening, destructive, or affectively negative material and prevent it from contaminating nonthreatening material (Bloch, 1991, p. 1). Although dissociative tendencies can be adaptive, Janet cautioned that long-term consequences were likely if dissociated memories and affects were not assimilated into awareness (Putnam, 1989b), for nonintegration of memories risked unpredictable intrusions of dissociated memories into the psyche (Howell, 2005). Thus, over-reliance of any coping mechanism, especially if utilized in early psychological development, could result in rigid coping styles, and in the case of dissociation, it can lead to a level of pathology that is maladaptive and interferes with functioning (Bloch, 1991; Kruesi et al., 2004).

Severe, pathological forms of dissociation and their deleterious effects have long been studied by scholars, such as the construction of alter personality states as a form of coping, with less severe and more normative forms of dissociation lacking acknowledgment. However, less severe forms of dissociative experiences in a clinical and nonclinical setting are far more prevalent than what may be expected (Johnson et al., 2006; Ray & Faith, 1995; Simeon, 2004). Language used in Western culture reveals an

implicit observation of a divided self with expressions like “falling apart,” “being beside oneself,” or “pull yourself together” (Howell, 2005, p. vii). Although dissociative processes are a normal part of everyday life, under-diagnosis in clinical settings of this broad range of dissociative symptomology may be due in large part to clinician skepticism, and lack of training in detecting and managing these diverse phenomena (Leonard et al., 2004). Clinician skepticism of dissociative phenomena in a clinical setting has been found to contribute to poor experiences in therapy, delays in diagnosis, and inappropriate application of interventions (Leonard et al., 2004). Vanderlinden, VanDyck, Vandereycken, and Vertommen (1991) strongly argued that the prevalence of dissociative phenomena has been egregiously under-diagnosed by mental health professionals. An overwhelming number of present-day clinicians believe that dissociative disorders, and the broad spectrum of dissociative experiences, are artifacts of therapy as a result of recovering false trauma memories, or are attributed to a therapist’s misguided use of hypnosis (Leonard et al., 2004). Unfortunately, this skepticism and ignorance can result in clients receiving inaccurate diagnostic labels, and harmful treatments.

Scholars and practicing clinicians are slowly gaining awareness to the fact that dissociation is not restricted to clinical populations, nor is dissociation restricted to only pathological forms of dissociative phenomena; with some researchers stating the current field of psychology continues to underestimate the prevalence of dissociation in the general population (Kruesi et al., 2004; Leonard et al., 2004; Simeon, 2004). For example, empirical studies on dissociation have found that dissociative disorders and the broad spectrum of dissociative phenomena are relatively common, affecting

approximately 5-10% of the general population (Johnson et al., 2006; Ross, 1991; Ross, Joshi, & Currie, 1990). When aggregating research on dissociation throughout the last century, one quickly discovers that dissociative phenomena are often experienced by members of the general population, and are thereby not solely restricted to pathological, clinical populations. For example, Sedman (1966), in his study of dissociative phenomena among college students, found that individuals within the general population experienced transient depersonalization phenomena. Additionally, Sedman reported that personality variables, such as introversion/extraversion, were not significantly related to less severe dissociative symptomology. Thus, despite limitations inherent in every study, Sedman did not identify variables that would have moderated dissociative occurrences, demonstrating that dissociative phenomena were not segregated to, and born solely within, pathological individuals. Putnam (2009) stated that in every large scale population studied, irrespective of ethnicity or culture, there is a wide range of dissociation, with most “normal” people scoring at the low end of a dissociation measure, and a much smaller number scoring at the higher end (Putnam, 2009, p. 234).

Empirical studies that focused on less severe forms of dissociation in the early 20<sup>th</sup> century were sparse at best. It was not until 1960 that Roberts conducted the first empirical study to report depersonalization in a nonclinical, college population. Roberts’ measure of dissociation was a brief questionnaire, asking for subjective accounts of a typical episode when an individual experienced depersonalization. Roberts then made his own subjective evaluation, deciding whether an individual met the criteria for depersonalization. Roberts recognized the potential for measurement error in his study due to the subjective nature and inconsistent assessment across different evaluators.

Despite Roberts' methodological errors, his study was instrumental in opening a new door for future studies that would examine the wide spectrum of dissociative phenomena in a nonclinical population (Aderibigbe et al., 2001; Cassano et al., 1989; Dixon, 1963; Miller et al., 1994; Sedman, 1966; Simeon & Abugel, 2006; Trueman, 1984a, 1984b).

Dixon (1963) extended Roberts' (1960) work, studying depersonalization in a sample of college students. Dixon added additional variables by examining depersonalization in relation to sex, anxiety, and personality variables: extroversion-introversion. Dixon developed his own 12 item questionnaire to assess for depersonalization, and he used two separate scales supported by prior use in the literature to measure anxiety and the above mentioned personality variables. Psychometric data were not reported on scores from Dixon's questionnaire on depersonalization. Dixon found elevated levels of dissociation in college students, with anxiety being the only significant factor related to depersonalization. Dixon, like Roberts, contributed to laying the foundation for future studies to examine less severe forms of dissociative experiences in relation to psychiatric disorders such as anxiety, a relationship that, up until this time, was largely ignored and not given much consideration in the vast majority of research on dissociation (Bernstein Carlson & Putnam, 1993).

Fortunately, research within the area of dissociation has continued to expand since the mid 1900s. Unfortunately, this area still lacks the same breadth as compared to many other psychological topics in mainstream psychology. However, it was promising that in the latter half of the 20<sup>th</sup> century, after more than a century of marginalization within the clinical realm, dissociation, and the broad spectrum of dissociative experiences, began to regain ground. One of several factors that played an important role in the resurgence of

this unique construct was the advent of sound psychometric assessment tools of dissociation, which served to decrease skepticism and increase awareness among clinicians that dissociation was a legitimate diagnostic presentation. In 1986 Eve Bernstein and Frank Putnam developed a screening instrument to assess for dissociative traits in an individual. Clinicians in the field of dissociation are intimately familiar with this instrument, termed the Dissociative Experiences Scale (DES), revised in 1993 and it continues to be the most frequently used assessment tool within the field of dissociation (Cardena & Weiner, 2004).

Numerous studies, as referenced throughout this literature review, have utilized the DES as a measure of dissociation for both clinical and nonclinical populations. The DES has demonstrated sound psychometric properties, in regards to test-retest and internal reliability coefficients, pertinent to the set of scores under investigation (Bernstein Carlson & Putnam, 1993). Total scores on the DES do not necessarily denote pathology, as several of the items ask about normative forms of dissociation (Bernstein Carlson & Putnam, 1993). Researchers utilizing this scale in empirical studies began to realize that many of the members of the control groups and of the general population endorsed dissociative phenomena, thus demonstrating a fertile area of untapped and unexplored knowledge.

Murphy (1994), as well as Ray and Faith (1995), both conducted studies in which they used the DES, of which Ray and Faith also used the Questionnaire of Experiences of Dissociation (QED), to measure dissociative experiences in nonclinical college populations. The authors of both studies agreed that modern-day psychology has underestimated the prevalence of dissociation in the general population, and both studies



found a significant relationship between less severe forms of dissociation, such as absorption and derealization, in a nonclinical population. Ray and Faith concurred that research on dissociation really began to flourish with the development of objective instruments for the identification of dissociative phenomena, allowing clinical and nonclinical samples to be assessed accurately.

Although acknowledging efforts made in the last century on the examination of less severe dissociative phenomena in the general population, far more research still needs to be conducted in order to gain a greater understanding of the relationship between dissociation and demographic variables among individuals in a nonclinical population. Demographic variables of interest to the current study include racial and ethnic differences, age, and sex. Upon examination of the current review of literature on normative, less severe forms of dissociation in the general population, a common occurrence was a lack of inclusion or mention of demographic variables. Therefore, consistently examining these variables across all studies was not possible. Although there are exceptions, as discussed below, the majority of literature concurs that these demographic variables do not play a significant role in moderating the explained variance of less severe forms of dissociative experiences in a nonclinical population (Dixon, 1963; Johnson et al., 2006; Ross et al., 1990; Ross et al., 1991; Sedman, 1966; Simeon et al., 2008; Spitzer et al., 2003; Trueman, 1984a, 1984b). Once more, the majority of literature has reported these demographic variables to not be significant moderators when looking at the comorbid relationship among less severe forms of dissociative experiences, subclinical anxiety, and/or perceived level of psychological distress in a nonclinical population (Johnson et al., 2006; Trueman, 1984a, 1984b).

In their initial study after the development of the DES, Bernstein and Putnam (1986) found no significant relationship between DES scores and socioeconomic status or sex. Trueman (1984a), who examined anxiety in relation to depersonalization and derealization experiences, found that regardless of sex, individuals reported higher levels of anxiety in relation to dissociative experiences. Ross et al. (1990) found similar findings, with no significant differences in DES scores across sex, income level, employment status, education, or religious affiliation in a nonclinical sample. Once more, Baker et al. (2003) who used the Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), and the second revision of the DES (DES-II), found depersonalization to have significant comorbidity with anxiety and depression in a clinical population. Baker et al. did not find sex differences to be a significant factor in relation to depersonalization and other psychiatric disorders. However, Baker et al., in contrast to previous studies, did find the demographic variable age to be significantly related to depersonalization. The mean age for depersonalization reported in his study was 22.8 years, similar to Sedman's (1966) study, although in Sedman's study these data did not reach statistical significance.

In a study on gender differences in dissociation, conducted by Spitzer et al. (2003), a sample of 2,153 clinical and nonclinical participants volunteered to complete the Symptom Checklist-90 (SCL-90) and the DES, which measured current levels of psychopathology and dissociation respectively. Spitzer et al. found sex differences were not significant in relation to scores on absorption, depersonalization, or derealization. However, results indicated men scored significantly higher than women on the amnesia factor. Spitzer et al.'s study represents a small portion of literature that has reported

gender differences among various factors that have been theorized to make up the construct of dissociation. Spitzer et al. cautioned that the factor structure of the DES scale is still a matter of debate, and future research should continue to examine this factor structure in relationship to gender differences.

Research that has examined the relationship between chronic childhood abuse and severe forms of dissociative phenomena have found age to be a significant variable, such that individuals will continue to dissociate into adulthood if subjected to early, chronic childhood trauma, as opposed to individuals who will show a decline in dissociative phenomena with increasing age if they did not endure similar trauma (Howell, 2005; Thomas, 2005). However, empirical studies within nonclinical populations have not all come to the same conclusions. Despite the fact that Ross, Ryan, Anderson, Ross, and Lesley (1989), Ross et al. (1990), and Vanderlinden et al. (1991) found evidence to suggest that dissociation within the general population may become less pronounced during adulthood as a result of maturation and development, the majority of research data have found less severe forms of dissociative experiences to be a relatively common occurrence throughout the lifespan (Bloch, 1991; De Wachter et al., 2006; Dixon, 1963; Johnson et al., 2006; Maaranen et al., 2005). This debate appears to have mixed results, although the literature makes a clear case that severe and pathological forms of dissociation are far more prevalent throughout the lifespan than less severe forms of dissociation. Mean age range for the studies within this literature review is between 16-80 years.

As previously stated, the large majority of prior research, that investigated less severe forms of dissociation within a nonclinical population, did not find racial and ethnic

differences to be significant in relationship to the construct dissociation. However, the vast majority of studies that have examined dissociation have done so within a sampling frame made up of predominately Caucasian individuals. As such, literature reviewed for the current study consisted of samples that were predominately Caucasian individuals, with the large majority of studies failing to even mention racial and ethnic differences as potentially extraneous variables.

Nevertheless, despite this absence of data, there are a handful of researchers who have found racial and ethnic differences when examining dissociation, further validating that racial and ethnic differences are applicable variables in relation to the construct of dissociation (Douglas, 2009; Maaranen et al., 2005). For example, Douglas (2009) found differences in dissociative experiences as a function of race in his study of 317 undergraduate students. Douglas stated that culture, race, and ethnicity likely influenced the manifestation of dissociative phenomena (p. 25). Douglas used the DES, the same measure as used in previous studies that did not report racial and ethnic differences on predominately Caucasian samples, and found that African and Asian Americans had significantly higher rates of dissociation as compared to Whites. However, race may not be the only factor affecting endorsement of dissociative behavior; rather, exploring culture may provide insight as to whether endorsement of dissociative behavior is a reaction to felt prejudice, privilege, and oppression in society. Douglas also measured extraneous variables such as sex, education level, and marital status, reporting these variables were not significant in relation to dissociation. Douglas argued that the majority of prior research in the field of dissociation has focused on Caucasian samples, and when differences of race or ethnicity were observed, researchers attributed higher levels of

dissociation to higher levels of psychological distress and comorbid pathology in ethnic minorities. In his study of racially and ethnically diverse undergraduate students, Douglas also found the construct of psychological distress to be significant in relation to dissociation as measured by the DES, BDI, and the Stress Reactions Questionnaire for Disorders of Extreme Stress. However, he did not find psychological adjustment or distress to be significantly related to race or ethnicity. Douglas reported that he agreed with other scholars in that the findings which document racial or ethnic differences in dissociation are mixed, further stating that the majority of studies within the field of dissociation have primarily focused on clinical samples, which make it more difficult to generalize findings to normative groups.

Vanderlinden et al. (1991) conducted the first European study which investigated dissociative experiences in a nonclinical population in Belgium and the Netherlands. Using the Dissociation Questionnaire (DIS-Q), Vanderlinden et al. found dissociative symptomology were not culture-specific, nor was dissociation limited to populations suffering from more severe pathology. Vanderlinden et al. reported that dissociative experiences were very common in the general population, with 3% of the population reporting more severe dissociative phenomena, and 1% endorsing symptoms similar to clients with multiple personality disorder. Vanderlinden et al. found that dissociation, and the broad spectrum of dissociative phenomena, was seriously under-diagnosed by mental health professionals. However, Vanderlinden et al. found age to be a significant variable, reporting that the frequency of dissociative experiences declines with age (p. 180). It was postulated that older age may play a role in reducing dissociative experiences, for older individuals may be mastering their lives better than younger generations, displaying more

control over their behavior, thoughts, and emotions (Vanderlinden et al., 1991). In order to further examine this hypothesis, Vanderlinden et al. suggested that different age norms should be employed when interpreting scores on dissociative instruments.

In a similar cross-cultural study, Maaranen et al. (2005) expanded their research when they administered the DES Finnish version to individuals in a nonclinical population in Finland. DES scores from this study revealed the same prevalence of pathological dissociation in Finland as in prior studies in North America. Additionally, in accordance with previous studies, DES scores did not reach statistical significance in relation to sex or age of respondent. Maaranen et al. also examined the relationship between dissociation and other socio-demographic variables, such as marital status, place of residence, and whether the respondent was a current smoker; dissociation was not found to be significant in relation to the socio-demographic variables of interest.

Nevertheless, despite research that has found race and ethnic differences to not be related to the construct of dissociation, Cardena and Weiner (2004) urged clinicians to determine whether dissociative symptomology is a normal expression within one's cultural group. Furthermore, Cardena and Weiner noted the importance of determining if individual symptoms, regardless of cultural norms, are a source of significant dysfunction or distress. Due to conflicting data in regards to the presence of a significant relationship between sex and dissociative experiences, as well as between race/ethnicity and dissociative experiences, several researchers recommended that future studies should include these demographic variables in order to further examine their relationship to dissociation (Cardena & Weiner, 2004; De Wachter et al., 2006; Douglas, 2009; Johnson et al., 2006; Maaranen et al., 2005; Vanderlinden et al., 1991). Therefore, due to

conflicting data and lack of recent empirical studies that have included the above mentioned demographic characteristics in relationship to dissociation, it was prudent that participants reported their sex, age, and race/ethnicity in the current study. Inclusion of these demographic variables contributed to the literature by generating more data and hopefully a greater understanding of the role these demographic variables play in relationship to dissociation.

Epidemiological studies in the current literature review have thus far demonstrated that normative, less severe forms of dissociative phenomena are a common occurrence within clinical, as well as nonclinical, populations. Chapter III includes a more in-depth review of psychometrically sound measures of dissociation.

### **Subclinical Anxiety**

Anxiety is the apprehensive anticipation of future danger or misfortune accompanied by a feeling of dysphoria or somatic symptoms of tension; focus of anticipated danger may be internal or external (DSM-IV-TR, 2000). In the current study, the term subclinical anxiety was conceptualized as a continuous variable that was interpreted within a range of endorsed responses, with lower scores on the Beck Anxiety Inventory (BAI; Beck et al., 1988) reflecting a lower frequency and lower intensity of anxiety symptomology. As noted in Chapter I, the broad spectrum of dissociative phenomena is often comorbid with psychiatric conditions such as generalized anxiety disorder, acute stress disorder, depression, borderline personality disorder, posttraumatic stress disorder, and schizophrenia (Cann & Harris, 2003; Cassano et al., 1989; Dixon, 1963; Lipsanen et al., 2004; Maaranen et al., 2005; Modestin et al., 1996; Mula et al., 2008a, 2008b; Oathes & Ray, 2008; Ross, Joshi et al., 1990; Ross et al., 1991; Sierra,

Baker, Medford, & David, 2005; Simeon et al., 2005; Trueman, 1984a, 1984b). Research on more normative forms of dissociation are expanding; demonstrating dissociation is prevalent in nonclinical populations. Just as anxiety and depression can be components of many diagnostic entities, so too can dissociation (Ross et al., 1990). In Finland, Lipsanen et al. (2004) found that 4% of their nonclinical sample met criteria for a dissociative disorder using the DES-II. Lipsanen et al. also found a very high level of comorbidity in their clinical sample, reporting that more severe forms of dissociation, such as DID, correlated positively with borderline symptoms.

Although more severe forms of dissociation have been found to be significantly correlated with anxiety, such as posttraumatic stress disorder and acute stress disorder, an individual does not need to meet criteria for an anxiety diagnosis in order to experience dissociative phenomena. Acute stress, which can lead to anxiety symptomology but not result in an individual meeting the threshold for a diagnosable anxiety disorder, has been found to be associated with transient dissociation, such as altered time perception or looking as if through a fog, even in nonpathological populations (Oathes & Ray, 2008, p. 653). Yet when a comorbid anxiety diagnosis is made, the level of comorbidity with dissociation is often high. For example, in a study that utilized the Cambridge Depersonalization Scale (CDS), DES, BDI, and the BAI, individuals diagnosed with depersonalization disorder were also diagnosed with a comorbid anxiety disorder in as much as 33% of participants in the sample (Sierra et al., 2005).

Although dissociation is a common component of many diagnostic entities, there is a misconception among clinicians that dissociation is not a primary phenomenon, but rather restricted as a manifestation of other disorders (Baker et al., 2003; Simeon, 2004).



A great majority of the studies examined in this literature review have reported findings where dissociative symptomology is the primary phenomenon (Baker et al., 2003; Simeon, 2004), with comorbid manifestations of anxiety, depression, obsessive-compulsive traits, and more. In his empirical review of the history and contemporary perspectives of dissociative experiences such as depersonalization disorder, Simeon (2004) discussed a trend within the clinical community in which depersonalization is diagnosed as simply a variant of depression or anxiety (p. 344), repeatedly ignoring dissociative phenomena as a distinct condition. Simeon attributes under-diagnosis of dissociative symptomology to clinician skepticism, limited familiarity in detecting a dissociative presentation, as well as “tunnel vision,” whereby the clinician only observes symptoms that are similar to the age-old familiar clinical entities that he or she has been trained to detect and diagnose.

In a similar study of depersonalization disorder, Baker et al. (2003) found symptoms of depersonalization to be significantly correlated with anxiety and depression, as measured by the BAI, BDI, and the DES-II. Baker et al. asserted that depersonalization disorder is a recognizable and distinct clinical entity, which often has a high comorbidity with anxiety and depression. Baker et al. further stated that an individual can display symptoms of depersonalization without first having symptoms of anxiety and depression. Comorbidity may arise thereafter in an attempt to cope, such as obsessive checking of symptom change, or cognitive and behavioral avoidance of perceived distressful factors, thereby leading to hopelessness and depressive symptomology (p. 432).

Empirical studies have also made an effort to differentiate between high and low dissociators in relation to comorbid pathology. In order to examine high and low

dissociators and the comorbidity of psychiatric disorders in a nonclinical population, Ross et al. (1991) conducted a study on a sample of 365 college students using the following measures: Dissociative Disorders Interview Schedule (DDIS); Millon Multiaxial Clinical Inventory (MCMI); and the Symptom Checklist (SCL-90). Ross et al. (1991) found that 70% of the high dissociators endorsed symptoms substantial enough to meet criteria for a dissociative disorder, while 55% of the high dissociators also displayed a comorbid relationship with borderline personality disorder. As compared to low dissociators, high dissociators endorsed more symptoms of depression and dissociative experiences, such as depersonalization, psychogenic amnesia, and psychogenic fugue; and zero of the low dissociators met criteria for a dissociative disorder or other psychiatric diagnosis, despite endorsing dissociative symptoms (Ross et al., 1991). Once more, similar to previous studies, high and low dissociators did not differ on any demographic variables. Not only did Ross et al. increase awareness that dissociative phenomena are relatively common in the general population, estimating that 11% of college students have or have had a dissociative disorder, but they also contributed more data that dissociative phenomena are comorbid with other psychiatric disorders.

Examining the comorbidity of dissociation with other psychiatric disorders is a fruitful endeavor. Dating all the way back to the late 19<sup>th</sup> century, Janet repeatedly emphasized the major role that emotions played in impairing the ability to synthesize and integrate new information, thereby inducing dissociative phenomena when an individual perceives his or her experience to be stressful (van der Hart & Horst, 1989). Present-day clinicians are aware that several of the anxiety and mood disorders involve a constriction in experiencing emotions and communicating feelings in an adaptive way. Therefore, it

should come as no surprise that when an individual is experiencing acute stress, such as elevated anxiety or a panic attack, dissociative phenomena will most likely be part of the clinical presentation. In a 1994 study, Miller et al. found that 60% of adult subjects in a nonclinical group endorsed subclinical levels of anxiety and panic along with depersonalization and derealization experiences. Similarly, in a community-based longitudinal study, Johnson et al. (2006) found significant comorbidity (33.3%;  $p < .05$ ) when they assessed dissociative symptomology and anxiety, such as symptoms of generalized anxiety disorder and social anxiety disorder. These correlations remained significant after controlling for sex, age, and any co-occurring disorders.

Trueman (1984b) examined depersonalization in a nonclinical population, combining and modifying methodologies used by Dixon (1963) and Sedman (1966) in order to measure dissociation. Trueman found 83% of his sample that reported depersonalization also reported a psychological stressor such as anxiety, stress, or interpersonal difficulties. However, psychometric data were not reported on scores from Trueman's newly developed questionnaire. Truman also reported use of the IPAT Anxiety Scale to measure anxiety, although he did not report psychometrics for scores from this scale, nor did he state what the acronym IPAT stands for in his report. In a separate study by Trueman (1984a), anxiety was examined in relation to depersonalization and derealization experiences. Higher levels of anxiety were found to be significantly related to an increase in dissociative experiences (Trueman, 1984a). However, the variables sex and age were not significant factors in relation to anxiety and dissociation. Once again, the only reference to psychometric data that Trueman (1984a) reported in his second study was, "The present study employed a combination of the

methodologies used by both Dixon and Sedman.” (p. 109). Unfortunately, researchers’ failing to report the psychometric data of scores from measures used in their study is a very common occurrence throughout this literature review. The large majority of studies reviewed gave only brief mention to measures administered, mainly due in part to some studies predating psychometrically sound measures such as the DES, which as stated previously, was not published until 1986. Prior to this time, many researchers, like Trueman (1984a, 1984b), were developing their own questionnaires, and failing to report psychometric data or examples of the questions used. Thus, replication and extrapolation of prior methodology from previous studies is difficult at best.

Being able to detect dissociative phenomena, as well as differentiate dissociation from other comorbid disorders, is important to ensure that clinical interventions are not ineffectual, or worse, harmful. Nixon and Bryant (2006) supported this viewpoint when they examined the relationship between hyperarousal and dissociation in a sample of clients with and without acute stress disorder (ASD). Using the BAI and the DES, Nixon and Bryant found that subjects who experienced hyperarousal and therefore elevated levels of anxiety, particularly those diagnosed with ASD, displayed elevated levels of dissociation. Although the nonclinical group did not experience as high of scores on the anxiety and dissociative measures as the clinical group, there was still a positive relationship between scores on the BAI and scores on the DES for the nonclinical group. These findings generated concern that dissociative symptomology can interfere with the effectiveness of exposure-based techniques, which are recommended in the treatment of various anxiety disorders, particularly posttraumatic stress disorder. As previously discussed in Chapter I, Nixon and Bryant presented a caveat to using exposure-based

techniques with clients who display dissociative phenomena; for exposure-based techniques aim to increase levels of arousal, while at the same time, dissociation plays a role in blocking the processing of trauma memories and associated affect (Simeon et al., 2005). Thus, Nixon and Bryant presented valid concerns as to the complexity of the construct of dissociation, the high level of comorbidity with other psychiatric disorders, and the importance of applying appropriate interventions that would not impose harm on the client.

### **Perceived Level of Psychological Distress**

Perceived level of psychological distress was defined in the current study as the overall psychological symptom pattern which is based on the degree to which an individual appraises experiences or situations in daily life as causing physical, cognitive, behavioral, and emotional distress (Derogatis, 1993; Poulin et al., 2005). The current study measured the construct perceived level of psychological distress by a global index of current distress on the Brief Symptom Inventory (BSI; Derogatis, 1975), known as the General Severity Index (GSI), a single best indicator of current distress as perceived by the individual. In the current study, the term perceived level of psychological distress was conceptualized as a continuous variable within a range of endorsed responses, with a lower GSI score reflecting a lower frequency and lower intensity of perceived psychological distress.

Symptoms of psychological distress may reflect normal fluctuations in mood and may not meet criteria for any particular mental health diagnosis. Less severe forms of dissociation have been found to be related to daily distress in one's life, rather than solely correlated with extreme levels of stress such as complex trauma or a one time, isolated

traumatic event (De Wachter et al., 2006). Clients who utilize mental health services more frequently will likely endorse subclinical symptoms of distress that are substantial enough to precipitate dysfunction in everyday life (Poulin et al., 2005, p.1019).

Therefore, it is imperative that clinicians routinely screen an individual's level of psychological distress, as this may identify clients who are displaying dissociative symptomology, and it will aid toward effective and relevant treatment and intervention.

The terms anxiety and distress have been used interchangeably in prior research studies, with both constructs conceptualized as being a stimulus, a response, and an internal state of the individual (Brantley, Waggoner, Jones, & Rappaport, 1985, p. 68). It is important to distinguish these two domains as separate constructs within the current study, whereby subclinical anxiety and perceived level of psychological distress are both stimuli that can precipitate dissociative experiences. However, an individual actively interacts with his or her world, appraising events as stressful. Due to an individual's subjective perception, each construct in and of itself plays a minimal or large role in precipitating dissociative phenomena. Yet, as described earlier, dissociation is not restricted as a clinical manifestation of other disorders; it is a distinct, primary phenomenon. Thus, the current study conceptualized the constructs of interest to have a bidirectional role, whereby dissociation, subclinical anxiety, and perceived level of psychological distress can all interact with and affect one another; each potentially serving as a stimulus, response, and/or internal state of an individual.

As early as 1889, Janet asserted that dissociation occurred in response to an individual who feels he or she is experiencing personal distress (Kihlstrom et al., 1994). In his later research in 1907, Janet discovered a lack of connection between aspects of

memory or conscious awareness during and after periods perceived as stressful by an individual (Ross, 1996, p. 208). In 1926, Janet further discussed how experiences that were perceived as stressful, such as financial strain, and marital or family problems, invoked dissociative phenomena (De Wachter et al., 2006). As stated previously in Chapter I, a salient factor is the level to which an individual perceives a particular event or situation to cause psychological distress. This perception is based on self-report; thus, subjective differences may occur between one or more individuals as to what constitutes psychological distress.

Research has found a direct relationship between a change in perceived level of psychological distress and a respective change in less severe forms of dissociative phenomena (De Wachter et al., 2006; Leonard et al., 2004; Mula et al., 2008a; Naring & Nijenhuis, 2004; Simeon & Abugel, 2006; Vanderlinden et al., 1991). Empirical studies that have examined the relationship between traumatic experiences, which caused high levels of psychological distress, and pathological forms of dissociative phenomena have been plentiful (Bruer & Freud, 1986/1895 [as cited in Ross, 1996]; Chu & Dill, 1990; Modestin et al., 1996; Naring & Nijenhuis, 2004; Putnam, 1989a; Ross, 1989; Ross et al., 1991; Simeon et al., 2005). However, as is reviewed below, there have been few studies that have examined subclinical levels of psychological distress, such as everyday current stress as perceived by the individual, and less severe forms of dissociative phenomena. Richard Lazarus, well known in the latter half of the 20<sup>th</sup> century for his examination of stress as it related to the appraisal made by the person, asserted that the subjective appraisal assesses the extent to which an individual feels he or she may experience some form of distress, harm, or a challenge that is perceived to exceed his or her abilities

(Watson, 1990). Thus, the broad range of literature that has examined the relationship between current psychological distress and mental health diagnoses such as depression, anxiety, and schizophrenia (De Wachter et al., 2006) is fruitful, yet unfortunately, research is still only skimming the surface as to the extent to which subclinical levels of psychological distress, such as everyday current stress as perceived by an individual, are related to less severe forms of dissociative experiences within a nonclinical population.

In their community-based longitudinal study, Johnson et al. (2006) reported that dissociative disorders were associated with clinically significant impairment among adults, as measured by the Global Assessment of Functioning (GAF) Scale and questions taken from several different measures of dissociation. Johnson et al. used the GAF, a simple and routinely used diagnostic scale, to measure psychological distress. For diagnostic purposes, clinicians in the field of psychology will often measure a client's level of functioning by use of the GAF, which comprises the fifth axis of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, 2000). The GAF assesses a client's psychological, social, and occupational functioning on a hypothetical continuum of adaptive and maladaptive mental health (DSM-IV-TR, 2000). Ideally, the GAF score is reflective of the client's self-reported level of functioning, which the clinician then indicates the level of impairment a client may be experiencing. Therefore, Johnson et al. found that individuals, who perceived their psychological, social, and occupational world to be more distressful, also showed impairment in functioning, which resulted in the individual's experiencing dissociative phenomena.

Research on perceived level of psychological distress and less severe forms of dissociation is also supported by a study conducted by De Wachter et al. (2006). De



Wachter et al. found that subjects experienced elevated levels of dissociation, with scores falling in the nonpathological range, when they reported to experience high levels of current distress. Likewise, De Wachter et al. also found that a decrease in perceived distress was associated with a significant decrease in dissociative symptoms. Measures employed were the Everyday Problem Checklist to assess for perceived level of psychological distress, the Dissociation Questionnaire (DIS-Q), and the General Health Questionnaire (GHQ). However, a stated limitation in the study by De Wachter et al., and a suggestion for future research, was that prior trauma histories were not assessed, which could have been an additional source of variance that may have affected the data. Nevertheless, the study by De Wachter et al. was another testament to the direct relationship between current distress, as perceived by an individual, and less severe forms of dissociative phenomena.

An interesting addition to the current literature review is a study conducted by Soffer-Dudek and Shahar (2009), which highlighted another facet of dissociation, in that dissociation can play a role in aggravating sleep experiences, in part due to an increase in perceived level of psychological distress. Soffer-Dudek and Shahar sampled 273 Israeli undergraduate students in their administration of the Dissociative Experiences Scale (DES) and the Brief Symptom Inventory (BSI), the latter of which is an overall measure of psychological distress. Soffer-Dudek and Shahar examined the relationship between altered sleep-related experiences, such as nightmares, vivid dreams, and dreams confused with reality, to name a few, as a result of dissociative phenomena induced by psychological distress. Soffer-Dudek and Shahar found that psychological distress and an increase in life stress predicted an increase in sleep-related experiences over a three

month interval. Although not significant, Soffer-Dudek and Shahar found that individuals who reported dissociative phenomena, referred to by the authors as general altered consciousness, also reported psychological distress.

Perceived level of psychological distress can also be conceptualized in relation to perceived level of social support. Judith Herman, a widely recognized scholar of the late 20<sup>th</sup> and early 21<sup>st</sup> century, is well known for her research on the effects of trauma and recovery. Herman (1997) asserted that all humans are relational beings, for it is through relationships that experiences are validated, and it is through relationships that people feel empowered and heal. Like many distinguished scholars before Herman, such as Bowlby, Piaget, Rogers, and Mahoney, to name a few, Alfred Adler (1956) asserted that the degree of social connectedness of an individual can be used as a measure of overall mental health. Herman has written at length on the powerful role of social support in ameliorating the effects of psychological distress. Perceived level of social support, especially in the aftermath of a traumatic event, is one of the fundamental factors in predicting an individual's ability to cope effectively and begin the healing process (Herman, 1997). Therefore, Herman's research has found that as an individual's level of perceived social support decreases, his or her level of psychological distress may increase, resulting in dissociation or numbing, and a sense of disconnection in order to endure intolerable feeling states (Herman, 1997).

### **Summary**

The current review of the literature has served to strengthen a clinical perspective which asserts that the broad spectrum of dissociative experiences is a legitimate and prevalent presentation that can serve as a normative response and/or psychological

coping mechanism in response to subclinical anxiety and perceived level of psychological distress in nonclinical populations. Once more, using the theoretical framework of Janet from the late 19<sup>th</sup> century, the current review of the literature has supported the conceptualization that dissociation exists along a continuum, where normative dissociative experiences can occur when an individual faces normative stressful events or subclinical anxiety, and/or perceives the level of stress in his or her life to be elevated.

Chapter III introduces the methodology employed in the current study, which includes a discussion on recruitment of participants, instrumentation, as well as design and procedures. Research questions and research hypotheses relevant to the review of literature are reviewed, as well as data analyses employed.

### CHAPTER III

#### METHODOLOGY

A description of the recruitment of the participant sample, instrumentation, design and procedures, research questions and research hypotheses, as well as data analyses employed, are discussed in this chapter. The section on instrumentation provides a detailed account of three existing measures that were combined to create one survey. This survey was the primary method of instrumentation that was disseminated to participants for the current study.

An application for exemption was submitted to the Institutional Review Board (IRB) on October 26<sup>th</sup>, 2010. The present chapter expands on the information that was included in the IRB application. Approval to conduct the current study was received by the IRB on November 18<sup>th</sup>, 2010 (See Appendix F).

#### **Recruitment of Participants**

The participant sample for the current study was an accessible population comprised of male and female undergraduate and graduate students at a midsized university in the Rocky Mountain region, as well as male and female members from urban communities in the Rocky Mountain region. The target population for the current study was the general population, specifically, males and females 18 years of age or older across all levels of race/ethnicity, education, and socio-economic status. See Chapter IV, *Description of the Sample*, for specific detail on the participant sample used for the current study.

In order to recruit participants for the current study, I used a script (see Appendix A) when introducing the present study to undergraduate and graduate classes at a midsized university, and when introducing the present study to individuals from the urban communities. In order to recruit undergraduate and graduate students at a midsized university, I first contacted faculty members via email within the departments of Applied Psychology and Counselor Education (APCE), Psychology (PSY), and Applied Statistics and Research Methods (ASRM), as well as the program of Higher Education and Student Affairs Leadership (HESAL), and asked faculty members for permission to disseminate a survey at the end of their scheduled class period. I accessed the university scheduled course list for Spring of 2011 and contacted professors whom I knew through previous personal engagement in the university academic setting. Departments were selected in an effort to obtain both undergraduate and graduate students, as well as individuals from various disciplines. I was granted permission to access, and derived my student sample from, three APCE graduate courses, one PSY undergraduate course, and one ASRM graduate course. Permission was denied for access to two undergraduate HESAL classes, due to the current professors' stating they did not have time for dissemination of a survey during their class period. Survey dissemination occurred at the end of the scheduled class period so that students would have the option to leave class if they chose not to participate. Once permission was granted to enter a classroom, undergraduate and graduate students were invited by myself during a classroom presentation at the end of a scheduled class period. The presentation consisted of my reading aloud a script (see Appendix A) and then reading aloud the informed consent document (see Appendix B). Further detail on design and procedures used is discussed at the end of this chapter.

In order to recruit members from urban communities in the Rocky Mountain region, I invited individuals to participate in the current study by first verbally requesting permission from acquaintances and/or managerial staff members to gain access to a variety of groups that were comprised of individuals I did not know. Once permission was granted to attend a group at a predetermined time as set by members of the group, individuals within the urban communities were invited by myself after I read aloud a script (see Appendix A) and then read aloud the informed consent document (see Appendix B). I attended each of the various groups on one occasion in an effort to recruit participants: permission granted by managerial staff to access a weekly meeting comprised of chefs and sommelier's (wine bistro); permission granted by family member to access a monthly book club (family member's home); permission granted by managerial staff to access a weekly staff meeting comprised of mental health professionals (community mental health center); permission granted by acquaintance to access a weekly meeting comprised of nurse practitioners (private office); permission granted by acquaintance to access a bi-weekly bunco club (private room of restaurant); permission granted by family member to access a reunion celebration comprised of artists, managerial staff, and their respective partners (family member's home); permission granted by owner of private business to access a weekly meeting comprised of realtors (private office/home of realtor); and permission granted by acquaintance to access a barbeque comprised of professionals and their respective partners in the field of finance (local park).

All survey dissemination for the current study occurred in either a university classroom, or in the location of the preestablished group. I remained present while

participants completed the survey. Professors, managerial staff, and members I was affiliated with in order to recruit participants did not participate in the current study.

### **Sample Size**

The target  $N$  for the current study was  $N = 159$  participants based on the estimated sample size needed to run a multiple linear regression analysis for the current study (Green, 1991). This estimation was calculated according to Green's (1991) general guidelines for regression analyses, which were developed based on Cohen's (1992) statistical power analytic approach used to determine appropriate sample size for a desired level of statistical power based on a magnitude of a medium effect size ( $R^2 = .13$ ). This sample size estimation was calculated as a result of using 7 predictor variables within one model. These predictor variables included: two primary explanatory variables, termed subclinical anxiety and perceived level of psychological distress; three explanatory demographic variables, termed sex, age, and race/ethnicity; three factors that comprise the CES, termed depersonalization, amnesia, and absorption; four factors that comprise the BAI, termed neurophysiological, subjective, panic, and autonomic; and nine factors and one additional variable that comprises the BSI, termed somatization, interpersonal-sensitivity, depression, anxiety, phobic anxiety, obsessive-compulsive, hostility, paranoid ideation, psychoticism, and the global severity index (GSI). A significance level based on alpha of .05 was used for all tests. Desired statistical power was set at .80, a value suggested by Cohen in 1988 when conducting research in the behavioral sciences (as cited in Green, 1991). This level of power indicates that a 1 in 5 (20%) chance of a Type II error will be tolerated. Lastly, as stated above, a medium effect size ( $R^2 = .13$ ) was used as the basis for estimating the sample size needed for the

current study. It was anticipated that the independent variables of interest would have a medium effect in regards to the amount of explained variance on the dependent variable of interest (De Wachter et al., 2006; Johnson et al., 2006).

### **Instrumentation**

A six-page, 105 item paper/pencil survey was used as the primary data collection tool to measure self-reported experiences of dissociation, subclinical anxiety, and perceived level of psychological distress in a nonclinical population. I created a survey which had three sections comprised of three existing measures and a demographic section. The first portion of the survey was a modification of the 31 item, Curious Experiences Survey (CES; Goldberg, 1999), a self-reported measure of dissociative experiences. The second portion of the survey was a 21 item, Beck Anxiety Inventory (BAI; Beck et al., 1988), a self-reported measure of anxiety. The third portion of the survey was a 53 item, Brief Symptom Inventory (BSI; Derogatis, 1975), a self-reported, point-in-time measure of the overall psychological symptom pattern of an individual. The overall psychological symptom pattern is based on the degree to which an individual appraises experiences or situations in daily life as causing physical, cognitive, behavioral, and emotional distress. The last portion of the survey consisted of the following nine demographic questions: age; gender; race/ethnicity; student classification (undergraduate or graduate); specification of year of study if undergraduate student or degree program if graduate student; level of education if nonstudent; occupation; and whether the participant was currently engaged in mental health counseling services.

The author of the CES (Goldberg, 1999) has reported that his survey measure is open to the public domain, and it may be reproduced and used without his permission.



The BAI (Beck et al., 1988) and BSI (Derogatis, 1975) can only be used for research and/or clinical purposes with permission from and payment to Pearson Assessments, Psychological Corporation. I purchased the desired quantity of BAI and BSI record forms from Pearson Assessments for survey dissemination. See Appendix E for information on copywrited instruments.

### **Dissociation**

The first instrument that was used in the current study was a modification of the Curious Experiences Survey (CES; Goldberg, 1999), a self-reported measure of dissociative experiences. Cardena and Weiner (2004) wrote an extensive article that critically evaluated the different methodologies for assessing dissociative symptomology. Cardena and Weiner discussed the important difference between interviews and questionnaires when used in assessing a wide spectrum of dissociative phenomena. Interviews, such as the Structured Clinical Interview for the Dissociative Disorders (SCID-D), are used for diagnostic purposes in differentiating and diagnosing dissociative disorders. Conversely, questionnaires are intended to serve as a screening instrument. Questionnaires are not designed to diagnose dissociative disorders, but rather to serve as a general indicator of dissociative traits of an individual (Cardena & Weiner, 2004). The most frequently used questionnaire within the field of dissociation is the Dissociative Experiences Scale (DES), originally developed by Bernstein and Putnam (1986), and later revised to the DES-II by Bernstein Carlson (formally Bernstein) and Putnam (1993). The DES-II was revised one final time by Goldberg (1999) in an effort to further modify content of items and response format. Goldberg titled this new instrument the Curious

Experiences Survey (CES), which was the measure used to assess the construct of dissociation in the current study.

The original DES is a brief 28 item self-report, trait measure, which evaluates the frequency of dissociative experiences in the daily lives of individuals (Bernstein Carlson & Putnam, 1993). The DES was normed on both clinical and nonclinical samples, with subgroups that included anxiety disorders, eating disorders, schizophrenia, borderline personality disorder, post traumatic stress disorder, and dissociative disorders. A visual analogue scale requires respondents to mark an “X” along a numerically anchored line ranging from 0%, “This never happens to you,” to 100%, “This always happens to you” (Waller, 2004). The scale is scored by measuring the location of the “X” to the nearest 5 millimeters for each item that can range from 0 to 100 as stated above, and can be any multiple of five (0, 5, 10, 20, etc...) (Bernstein Carlson & Putnam, 1993). A total score for the entire scale is determined by calculating the average score for all 28 items, using a cutoff score of 30 to indicate a more severe level of dissociation (Bernstein Carlson & Putnam, 1993, p. 18). Conversely, in Steinberg, Rounsaville, and Cicchetti’s study (as cited in Michelson & Ray, 1996), they recommended the use of a DES cutoff score of 15 to 20 when screening individuals for a possible dissociative disorder, and recommended a follow-up with a confirmatory diagnostic tool such as the SCID-D.

The DES-II, a revision of the original DES, used the same items as the DES, but Bernstein Carlson and Putnam (1993) wanted to change the response format to an 11-point Likert-type scale, numerically ordered from 0% to 100% where the respondent circles one of the 11 points (0%, 10%, 20%, etc.) as opposed to arbitrarily marking an “X” on a line. This new response format allowed for greater ease in scoring. The authors

discussed how the original intent of the DES and DES-II was to identify individuals with dissociative pathology and assess the regularity of their dissociative experiences, as opposed to using this instrument as a diagnostic tool. Factor analyses have confirmed that scores from the DES have resulted in three factors: depersonalization and derealization; amnesia; and absorption and imaginative involvement. Juni and Waller (2004), among several other researchers within this field, have reported that scores from the DES and DES-II questionnaires are psychometrically sound for the clinical and nonclinical samples to which they were administered.

In 1999, Goldberg developed the CES, a revised version of the DES-II. The CES includes 31 items, and of the original 28 DES items, 21 were included in the revised form, but were changed to first-person format (Goldberg, 1999). The other seven items were shortened and revised for clarity purposes. The last three items are new, reflecting experiences from the wide spectrum of dissociative phenomena. Goldberg stated the previous version of the DES and DES-II is redundant in wording of the items which could lead to monotony and fatigue. For example, every item begins with the phrase “Some people...” Once more, Goldberg stated each of the previous 28 DES items is followed by the statement, “Circle a number to show what percentage of the time this happens to you.” This redundancy, Goldberg stated, adds to the burden of completing the scale. Lastly, response format was changed to a 5-point Likert-type scale from 1 to 5, where 1 indicates, this never happens to me; 2 indicates, this occasionally happens to me; 3 indicates, this sometimes happens to me; 4 indicates, this frequently happens to me; and 5 indicates, this is almost always happening to me.

An individual's total score is determined by calculating the sum for all 31 items, each ranging from 1 to 5. The total score can range from 31 to 155 (Goldberg, 1999). While an exact cutoff score is not reported in Goldberg's (1999) study, it is stated that a higher, more elevated score reflects a more severe level of dissociation and therefore a need for further diagnostic measures to assess for a potential dissociative disorder. After completing a factor analysis, Goldberg determined that the CES is comprised of three factors: depersonalization (separation from one's self); absorption (retreating to a fantasy world); and amnesia (reporting memory disturbances). Although Goldberg used an overall total score to assess the level of severity of dissociative symptomology, he used the three factors as identified above to aid in the identification of types of dissociative behavior that were endorsed by an individual with the hope of targeting symptom areas so to employ relevant treatment interventions.

Goldberg (1999) also made one very large modification in his instrument by norming it on a nonclinical population. This nonclinical population consisted of 755 community members, of whom 435 were women and 320 were men. The sample consisted of predominately Caucasian individuals, and it ranged in age from 22 to 90 years. Goldberg reported that all levels of educational attainment were represented in the sample, and age, gender, educational level, and vocational interest were not significantly correlated with dissociation. In Goldberg's research on scale development of the CES, he found scores from the CES to be psychometrically sound for his nonclinical, community sample, with the coefficient alpha reliability estimate reported at .90. Additionally, coefficient alpha reliability estimates for each of the three subscales were reported by Goldberg to be .81, .88, and .66, respectively.

A later study by Cann and Harris (2003) found that scores from the CES demonstrated internal consistency with their nonclinical sample of 194 male and female undergraduate students. Once more, the factor structure found in their study supported the factor structure by Goldberg (1999). Cann and Harris reported a coefficient alpha reliability estimate of .90 based on a single factor. Men and women did not differ significantly on overall dissociation scores in regards to gender or age. Cann and Harris suggested further replication in future studies by administering the CES to a nonclinical sample of undergraduate students before any further conclusions can be drawn regarding psychometrics and factor loadings of the three subscales.

The CES was used in the current study to measure the construct of dissociation. Goldberg (1999) reported that the CES will take a respondent between 5 and 10 minutes to complete when self-administered. I modified the CES for the current study, first by altering the wording of some items in an effort to clarify the meaning of the statement so it would be more easily understood by the respondent. In 2004, Groves et al. discussed guidelines for writing good questions, and encouraged scholars who use survey measures in their research to consider the wording of questions. Groves et al. stated that rewording statements of items is appropriate to do to ensure respondents understand the content of items, and they stated that making the questions as specific as possible reduces the chances for differences in interpretation across respondents (p. 228). For example, item 1 in the original CES is stated as, "Drove or rode somewhere without remembering later what happened during all or part of the trip." I altered the wording in this item for the current study, and it is now stated as, "Drove or rode somewhere and later realized I did not remember what happened during all or part of the trip." Second, I altered the original

5-point Likert-type scale by changing the scoring of response options from 1 to 5 to 0 to 4. This was in an effort to maintain consistency of range of options across all measures so to facilitate future data entry. Lastly, I altered the original Likert-type scale by changing the words within each response option (see below). This was in an effort to clarify and differentiate response options. For example, when altering the response options, I omitted response option “occasionally” from the original CES, and it is now stated as, “once or twice.” The response options for the original CES were described above. Groves et al. encouraged scholars to not use vague response options such as “usually,” nor to use multiple response options that are closely related or that could be confusing for respondents, as was the case with the response options in the original CES.

Thus, the modified version of the CES that was used in the current study has a response option format on a 5-point Likert-type scale from 0 to 4, where zero indicates, never; 1 indicates, once or twice; 2 indicates, sometimes; 3 indicates, frequently; and 4 indicates, almost all the time. An individual’s total score was determined by calculating the sum for all 31 items. The total score could range from 0 to 124. A cutoff score to indicate less severe forms of dissociation was not used for the current study, as there is not enough research on the CES in nonclinical populations to concretely establish a definitive cutoff score. Furthermore, in following with the theoretical conceptualization of dissociation as described in Chapter II, dissociative experiences exist along a continuum. The construct of dissociation is a continuous variable; therefore, there is not a cutoff score that will differentiate normal from pathological dissociation; rather, it is the frequency and intensity of dissociative experiences along a continuum that quantitatively differentiate normal from pathological dissociation (Kihlstrom et al., 1994, p. 118). Thus,

in order to conceptually interpret a respondent's score on the CES in the current study, I followed Goldberg's (1999) practice, in that a higher, more elevated score reflected endorsement of increased frequency and intensity of symptoms, and resulted in a more severe level of dissociation. Correspondingly, because dissociation was conceptualized for the current study as a continuous variable that was interpreted within a range of endorsed responses, lower scores on the CES reflected a lower frequency and lower intensity of dissociative symptomology.

### **Subclinical Anxiety**

The instrument that was used to measure the construct of subclinical anxiety in the current study was the Beck Anxiety Inventory (BAI; Beck et al., 1988). The BAI was originally developed to measure the severity of self-reported anxiety in both adults and adolescents in a clinical population. The BAI has frequently been used with dissociative measures, such as the DES, in an effort to examine the relationship between levels of anxiety and levels of dissociation in clinical and nonclinical populations. The authors of the BAI reported that it will take a respondent between 5 and 10 minutes to complete the BAI when self-administered (Beck et al., 1988).

The BAI is a 21 item self-report questionnaire, with a response option format on a 4-point Likert-type scale from 0 to 3, where 0 indicates, not at all; 1 indicates, mildly (it did not bother me much); 2 indicates, moderately (it was very unpleasant but I could stand it); and 3 indicates, severely (I could barely stand it). A total score is determined by calculating the sum for all 21 items, each ranging from 0 to 3. The maximum score is 63 points. A score of 0-7 is defined as "minimal anxiety," 8-15 as "mild anxiety," 16-25 as "moderate anxiety," and 26-63 as "severe anxiety" (Beck & Steer, 1993). However, for

the current study, a cutoff score was not used to interpret the level of anxiety endorsed by respondents; rather, subclinical anxiety was conceptualized as a continuous variable that was interpreted within a range of endorsed responses, with lower scores on the BAI reflecting a lower frequency and lower intensity of anxiety symptomology.

The BAI contains four symptom clusters (or factors), which can assist the clinician in making differential diagnoses (Beck & Steer, 1993). These symptom clusters are identified as neurophysiological, subjective, panic, and autonomic symptoms of self-reported anxiety. These symptom clusters were reported on a sample of 393 outpatients diagnosed with anxiety disorders for the purposes of scale development by Beck et al. (1988).

The BAI was normed on adult psychiatric outpatients, who were diagnosed with mood and anxiety disorders (Beck et al., 1988). During scale development, the initial sample began with 810 adult psychiatric outpatients identifying an initial pool of 86 symptoms of anxiety. The sample was later reduced to 160 adult outpatients for the final administration of the 21 item measure. Cronbach's alpha for scores on the 21-item BAI was .92, and test-retest reliability with a one week interval was .75 ( $p < .001$ ) (Beck et al., 1988). Although the BAI was normed on a clinical population, there have been some studies, although few in number, which have utilized this instrument with nonclinical populations. Dent and Salkovskis (1986) were the first to measure anxiety using the BAI on a nonclinical population; however, Dent and Salkovskis failed to report reliability estimates for their sample. Dent and Salkovskis stated the BAI's potential for detecting anxiety in an adult, nonclinical population requires further study. As previously discussed in Chapter II, there have been several studies since the development of the BAI that have



administered this measure on a nonclinical population (Nixon & Bryant, 2006), and it has been reported that scores from the BAI are psychometrically sound for the nonclinical samples in which they were administered.

### **Perceived Level of Psychological Distress**

The instrument that was used to measure the construct of perceived level of psychological distress in the current study was the Brief Symptom Inventory (BSI; Derogatis, 1975). The BSI is a self-reported, point-in-time measure of the overall psychological symptom pattern of an individual. The overall psychological symptom pattern is based on the degree to which an individual appraises experiences or situations in daily life as causing physical, cognitive, behavioral, and emotional distress. Not only can the BSI be used as a point-in-time measure, it can also be used to document trends over time in pre and post evaluations within a clinical setting (Derogatis, 1993). Derogatis (1993) reported that the administration time of the BSI requires 8 to 10 minutes to complete when self-administered.

The BSI is a 53 item self-report symptom inventory, with a response option format on a 5-point Likert-type scale from 0 to 4, where 0 indicates, not at all; 1 indicates, a little bit; 2 indicates, moderately; 3 indicates, quite a bit; and 4 indicates, extremely. An individual's responses are scored and profiled using BSI scoring templates and a scoring worksheet. A computerized scoring system is also available through Pearson Assessments, Psychological Corporation. Responses are scored in terms of nine primary symptom dimensions and three global indices of distress (Derogatis, 1993). Raw scores are derived by first summing the values 0-4 for the items in each of the nine symptom dimensions and the four additional items that facilitate calculation of the three

global indices, then the sum for each symptom dimension is divided by the number of endorsed items in that dimension (Derogatis, 1993, p. 11). Please refer to the scoring worksheet in the BSI manual (Derogatis, 1993) for a more detailed explanation for scoring the three global indices. Raw scores are then converted to standardized T scores ( $M = 50$ ,  $SD = 10$ ) and T scores are interpreted in comparison to gender norms, as well as the appropriate norm group.

The three global indices of the BSI are: Global Severity Index (GSI), a general index, and single best indicator, of current distress as perceived by the individual; Positive Symptom Total (PST), number of items endorsed with a positive (nonzero) response; and Positive Symptom Distress Index (PSDI), functions as a measure of response style, communicating whether respondent is augmenting or attenuating distress in his or her manner of reporting (Derogatis & Melisaratos, 1983, p. 597). Derogatis and Melisaratos (1983) and Derogatis (1993) recommended that interpretation should focus on the three global indices, specifically the GSI, in order to gain an understanding of the degree of overall distress that an individual is experiencing. Once more, Derogatis and Melisaratos recommended that interpretation of the nine primary symptom dimensions should focus on any concerning data that the respondent is communicating to the administrator, in regards to the nature and intensity of his or her distress. The nine primary symptom dimensions of the BSI are: Somatization (SOM), which reflects distress arising from perceptions of bodily dysfunction and somatic equivalents of anxiety; Obsessive-Compulsive (O-C), which focuses on thoughts, impulses, and actions that are perceived as unrelenting and of an ego-alien nature; Interpersonal Sensitivity (I-S), which centers on feelings of personal inadequacy, self-deprecation, self-doubt, and

marked discomfort in interpersonal interactions; Depression (DEP), which reflects a representative range of the clinical symptoms of depression, such as dysphoric mood, lack of motivation and interest in life; Anxiety (ANX), which reflects general signs of nervousness, tension, cognitive worry, panic attacks, and feelings of terror; Hostility (HOS), which reflects thoughts, feelings, or actions that are characteristic of the negative affect state of anger; Phobic Anxiety (PHOB), which reflects the perception an individual has, which is one of a persistent fear response to the outside world, leading to avoidance or escape behaviors, and it is also termed “phobic anxiety depersonalization syndrome” by Roth (1959) (as cited in Derogatis, 1993); Paranoid Ideation (PAR), which reflects a disordered thinking, such as suspiciousness, grandiosity, fear of loss of autonomy, and delusions; and Psychoticism (PSY), a construct represented as a continuous dimension of human experience, providing a continuum from mild interpersonal alienation to dramatic psychosis (Derogatis, 1993, p. 7-9).

For the current study, the construct of perceived level of psychological distress was measured by calculating the GSI, a single best indicator of current distress as perceived by the individual. When interpreting data, the GSI raw score was converted to a standardized T score using the adult nonpatient norm group for male and female respondents. The term perceived level of psychological distress was conceptualized in the current study as a continuous variable within a range of endorsed responses, with a lower GSI score reflecting a lower frequency and lower intensity of perceived psychological distress. Additionally, five of the nine symptom dimensions (SOM; I-S; DEP; ANX; PHOB) were examined in greater detail when conducting data analyses, in order to determine what percent of the variance in dissociation can be explained by these five

symptom dimensions. I chose these five symptom dimensions (SOM; I-S; DEP; ANX; PHOB) because prior research studies have identified a relationship between dissociation and the respective symptom dimension: somatization (SOM) (Kruesi, Borckardt, Younger, Nash, & Shaw, 2004; Mula et al., 2008a; Simeon et al., 2008); interpersonal sensitivity (I-S) (Dixon, 1963; Mula et al., 2008b; Thomas, 2005); depression (DEP) (Johnson et al., 2006; Maaranen et al., 2005; Mula et al., 2008a); anxiety (ANX) (Johnson et al., 2006; Miller et al., 1994; Mula et al., 2008a); and phobic anxiety (PHOB), also termed phobic anxiety depersonalization syndrome (Johnson et al., 2006; Mula et al., 2008a; Sierra et al., 2005; Trueman, 1984b).

The BSI was developed in response to a need in mental health settings for a brief measure of overall psychological distress, as perceived by the individual. The measure that was widely used prior to the development of the BSI was the Symptom Checklist 90 revised (SCL-90-R) by Derogatis in 1975. The BSI is a brief form of the SCL-90-R, with all 53 items taken directly from the SCL-90-R. Since the development of the BSI by Derogatis in 1975, the BSI has become a widely used measure in clinical and research settings (Derogatis, 1993). The BSI was originally normed on four groups: adult psychiatric outpatients; adult nonpatients; psychiatric inpatients; and adolescent outpatients, ages 13-19 (Derogatis, 1993). Separate gender norms are available. During scale development of the BSI, the adult nonpatient normative sample consisted of 974 individuals, of which 480 were female and 494 were male (Derogatis, 1993). Mean age for this normative sample was 46 years old ( $M = 46.0$ ,  $SD = 14.7$ ); over 85% of the sample identified as Caucasian, 11.4% identified as Black, and the remaining portion of the sample identified as Other; and 60.1% of the sample was married (Derogatis, 1993).

Internal consistency and test-retest reliability estimates for the BSI during scale development (Derogatis, 1993) are broken down into the nine primary symptom dimensions and the three global indices. Cronbach's alpha for all nine dimensions of the BSI ranged from a low .71 on psychoticism (PSY), to a high of .85 on depression (DEP) (Derogatis, 1993). For test-retest reliability, across a two-week interval, reliability coefficients ranged from a low .68 on somatization (SOM), to a high of .91 on phobic anxiety (PHOB) (Derogatis, 1993). In regards to the three global indices, test-retest reliability was .87 on the Positive Symptom Distress Index (PSDI); .80 on the Positive Symptom Total (PST); and .90 on the Global Severity Index (GSI) (Derogatis, 1993). Derogatis (1993) asserted that because scores on the GSI, a general index of current distress as perceived by the individual, had such a strong reliability coefficient of .90, the psychometrics provide sound evidence that the BSI was a consistent measurement across time (p. 16) for his sample. In an effort to demonstrate convergent validity, Derogatis correlated the BSI and the SCL-90-R across the nine primary symptom dimensions and reported correlations that ranged from a low .92 on psychoticism, to a high .99 on hostility. Furthermore, Derogatis cited several prior studies, including his own (Derogatis et al., 1976 [as cited in Derogatis, 1993]), which reported good convergent validity for the BSI with the MMPI.

## **Design and Procedures**

### **Pilot Studies**

Two previous pilot studies conducted in preparation for the current study are briefly discussed. Between the time period of Spring 2009 and Spring 2010, I conducted two separate pilot studies at a mid-sized university in the Rocky Mountain region. The

current study mirrored these two pilot studies in regard to the participant sample, in that for each pilot study I recruited participants from a convenient and accessible nonclinical population, comprised of male and female undergraduate and graduate students at a midsized university, as well as male and female members from urban communities in the Rocky Mountain region. Additionally, the current study also mirrored these two pilot studies, in that for the current study I employed similar procedures for survey dissemination, and utilized two similar measures for data collection.

In the first pilot study of 2009, I examined the relationship between less severe forms of dissociation and anxiety in the general population. For this pilot study I created and disseminated a 52 item, paper/pencil, self-reported survey that was comprised of two existing measures. These measures included the Curious Experiences Survey (CES) and Beck Anxiety Inventory (BAI). For the first pilot study of 2009, I modified the CES by altering the wording of some items in an effort to clarify the meaning of the statements so they would be more easily understood by the respondents, and also by changing the response option format. Please see previous section on *Instrumentation* for specific alterations made to the CES. Sample size for the first pilot study consisted of 49 participants ( $N = 49$ ). The response rate for the pilot study was 98%. Incentives were not used in an effort to improve response rate. This high response rate can be attributed to using a convenient and accessible sample, in part comprised of my friends and acquaintances. This high response rate can also be attributed to disseminating the survey measure at a time that was convenient for participants; such as at the end of a scheduled class period when participants did not have to sacrifice their own time outside of class to participate in the study. Reliability analyses used to determine the consistency in

responses across items reported Cronbach's alpha for scores on all 31 items of the CES at .88, and Cronbach's alpha for scores on all 21 items of the BAI at .93. Statistical analyses from the first pilot study indicated there was a statistically significant relationship between anxiety and less severe forms of dissociation in a nonclinical population. Pearson product moment correlations were conducted between subscales constituting the four different factors on the BAI and the three different factors on the modified version of the CES; which found statistically significant relationships between  $r = .29$  to  $r = .42$ .

In the second pilot study of 2010, I examined the relationship between less severe forms of dissociation and anxiety, perceived level of stress, and psychological distress in the general population. For the second pilot study I created and disseminated an 89 item, paper/pencil, self-reported survey measure that was comprised of four existing measures. These measures included: Curious Experiences Survey (CES), a modified version retained from the first pilot study of 2009; Beck Anxiety Inventory (BAI); Perceived Stress Scale (PSS), a modified version of a self-reported measure of the degree to which situations in one's life are appraised as stressful; and Psychological Distress Manifestation Measure Scale (PDMMS), a self-reported measure of how people manifest their distress in daily life. Sample size for the second pilot study consisted of 99 participants ( $N = 99$ ). The response rate for the pilot study was 86%. Incentives were not used in an effort to improve response rate. Similar to the first pilot study, this high response rate can be attributed to using a convenient and accessible sample, in part comprised of my friends and acquaintances. This high response rate can also be attributed to disseminating the survey measure at a time that was convenient for participants; such as at the end of a scheduled class period when they did not have to sacrifice their own

time outside of class to participate in the study. Reliability analyses used to determine the consistency in responses across items reported Cronbach's alpha as .93 for scores on the 31 item CES; .90 for scores on the 21 item BAI; .43 for scores on the 14 item PSS; and .95 for scores on the 23 item PDMMS. Overall, the PSS measure did not possess as strong of psychometric properties for the scores from the sample on which it was administered, as compared to other measures that could be used in future studies. Additionally, the PSS and PDMMS both lacked a manual and clear direction as to how to interpret scores. Nevertheless, inclusion of these two separate variables, perceived level of stress and psychological distress, along with their corresponding measures, provided good insight into variables and instruments that were used in the current study.

The survey measure that was disseminated for each pilot study requested participant feedback on the last page of the survey. Participants were asked to report feedback on survey response format, wording of questions, readability, and length of survey. Feedback gathered from participants during these two pilot studies resulted in the current study retaining the modified version of the CES to measure dissociation (dependent variable), as well as the BAI to measure anxiety (independent variable). Additionally, in an effort to not only incorporate a different measure for the current study that more clearly captured the overall nature of psychological distress as perceived by the individual, but also a measure that had been used in prior research studies and had demonstrated strong psychometric properties for the scores from the samples on which they had been administered, I chose to incorporate the Brief Symptom Inventory (BSI) to measure perceived level of psychological distress (independent variable) for the current study. Based on the high response rate that was obtained in each pilot study, I decided to



retain a similar survey measure and dissemination procedures for the current study. Thus, even though I made a modification to the sample for the current study by excluding individuals who were my friends and acquaintances, I desired to again administer a paper/pencil, self-reported survey, following similar dissemination procedures that were almost identical to what was employed in each pilot study. Specific information on procedures employed for the current study is discussed below.

### **Current Study**

The participant sample for the current study was an accessible population comprised of male and female undergraduate and graduate students from a midsized university in the Rocky Mountain region, as well as male and female members from urban communities in the Rocky Mountain region. Data were collected between February and April of 2011 using a six-page, 105 item paper/pencil survey (see Appendix C) to measure self-reported experiences of dissociation, subclinical anxiety, and perceived level of psychological distress in a nonclinical population. All survey dissemination for the current study occurred in either a university classroom, or in the location of a preestablished group. See beginning of Chapter III for a detailed discussion on participant recruitment, types of preestablished groups chosen, and locations of survey dissemination.

Procedures employed for survey dissemination for the current study were similar for undergraduate and graduate students from a midsized university, as well as for members from urban communities. Once permission was granted to enter a classroom and/or a preestablished group, individuals were invited by myself during a presentation that consisted of my reading aloud a script (see Appendix A) and then reading aloud the

informed consent document (see Appendix B). When reading the informed consent document aloud to ensure all individuals were aware of the information contained in the document, I informed individuals that participation was entirely voluntary, and I invited them to participate in the current study by completing a paper/pencil survey (see Appendix C). Participants were not offered any type of incentive in an effort to improve response rate. I discussed examples of items that were on the survey measure, and I informed participants of the foreseeable risks that were associated with participation in this study; such as, the possibility that they may experience discomfort or adverse effects during and/or after completion of the survey. I then informed participants that their name would not be written on the survey, that the survey would take approximately 15-20 minutes to complete, and that they would be contributing knowledge to an existing body of scientific literature so clinicians can gain a better understanding, as well as an increased awareness, of common human experiences in the general population. I again reiterated to individuals that participation in the current study was entirely voluntary, and at any time during the completion of the survey they would be free to stop and discontinue their participation. I specifically stated to undergraduate and graduate students that refusal to participate or desire to stop prematurely would in no way result in adverse consequences to their academic standing, nor would participation be connected to a student's grade in the course.

After I finished reading the informed consent document, individuals were given the opportunity to ask questions before proceeding. I then disseminated the survey measure to every student and/or member of the preestablished group. All individuals who chose to not participate were free to leave their survey on the table and exit the room. For

individuals who chose to participate in the current study, they were given as much time as needed to complete the survey. I remained present during and post completion of the survey measure. All participants were able to directly ask me any questions regarding the nature of the study, and they also had the opportunity to express any concerns they may have had. After completing the survey, participants were asked to place their survey in a manila envelope that I provided. I thanked each participant for their time and participation, and then gave each participant a consulting referral form (see Appendix D). The consulting referral form highlighted counseling services available in the area in the event a participant felt distress and/or discomfort by questions raised in the research.

Participants took on average between 8-15 minutes to complete the survey measure. Data were collected on one occasion with each participant. While complete anonymity could not be ensured, absence of participants' names on the survey, as well as the data handling procedure, was in an effort to maintain confidentiality between self-reported data and source of respondent. Numerical identifiers were later recorded on each survey for purposes of data entry. Self-reported data on the survey measure will most likely not be able to be traced back to source of respondent based on numerical identifiers that were used in record keeping. All surveys are stored in a locked file cabinet to which only I have access.

### **Research Questions and Hypotheses**

- Q1     To what extent is the variance in less severe forms of dissociation explained by subclinical anxiety in a nonclinical population?
- H 1     Anxiety, as measured by the BAI, will be significantly correlated with dissociation, as measured by the CES.
- H2     Depersonalization and absorption, two subscales as measured by the CES, will be significantly correlated with anxiety, as measured by the BAI.

- Q2 To what extent is the variance in less severe forms of dissociation explained by perceived level of psychological distress in a nonclinical population?
- H3 Perceived level of psychological distress, as measured by a global index of current distress on the BSI, known as the General Severity Index (GSI), will be significantly correlated with dissociation, as measured by the CES.
- H4 Depersonalization and absorption, two subscales as measured by the CES, will be significantly correlated with perceived level of psychological distress, as measured by a global index of current distress on the BSI, known as the General Severity Index (GSI).
- H5 Somatization (SOM), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.
- H6 Interpersonal Sensitivity (I-S), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.
- H7 Depression (DEP), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.
- H8 Anxiety (ANX), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.
- H9 Phobic Anxiety (PHOB), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.
- Q 3 Do demographic characteristics, such as sex, age, and race/ethnicity, explain the variance in less severe forms of dissociation in a nonclinical population?
- H10 Age, as measured by self-report on the demographic section of the survey, will be negatively correlated with dissociation, as measured by the CES; such that, as age increases, dissociation decreases.

Due to conflicting data in the literature, I did not have enough data to generate research hypotheses for sex and race/ethnicity.

### **Data Analysis**

Data were analyzed for the current study by using Statistical Package for the Social Sciences (SPSS), version 19. First, a spreadsheet format in Microsoft Office Excel was used for data entry, after which data were exported to SPSS for analysis. All missing data in the demographic section were coded as a 9. The only demographic data that some participants omitted were reporting occupation. When missing data on survey items occurred, such as omission of one item, I filled in what I believed would be the mean substitution based on participant responses on the rest of the survey. I only used this practice on two surveys in which each survey had one item omitted on the BAI. For the first survey that had one item omission, the participant endorsed “not at all” for all items on the BAI. For the one item omission, I filled in “not at all,” which is what I thought would be the mean substitution. For the second survey that had one item omission, the participant endorsed a patterned response of “not at all,” “mildly,” “not at all,” “mildly,” etc. for all items on the BAI. For the one item omission I filled in “not at all”, which is what I thought would be the mean substitution. If endorsement of more than one item on a section of the survey was omitted, or numerous items in a row were omitted, it was my intention to code all missing data as a 9. However, these forms of data omission did not occur in the current study.

After all data were exported to SPSS, preliminary descriptive analyses were conducted to generate descriptive statistics on the data collected. Preliminary descriptive analyses included frequency analyses and examination of skewness and kurtosis, which allowed me to examine the data for outliers, as well as make any corrections in data entry in the event that data were entered incorrectly. For example, all three of the measures

used in the current study use a Likert-type rating scale with a response format between 0-3 or 0-4. I checked to ensure that responses were not coded outside the possible range, and that data entry error did not occur before running further analyses. In regards to skewness and kurtosis, I examined the data to see if they departed from the symmetry of the distribution, whether the data were distributed around the mean, and whether the data were peaked or flat relative to the normal distribution. In order to determine if the data were relatively normal, the value of kurtosis used was -1 to 2 (Gorsuch, 1983). Overall, in most cases, the data appeared normal, for the data were distributed around the mean relative to the normal distribution. However, in only a few cases, data for some items appeared leptokurtic, resulting in a higher value of kurtosis; such as 1.16 for the outcome data from the Curious Experiences Survey (CES) that measured the construct of dissociation. This means that the data for some items were peaked relative to the normal distribution, and therefore the data were more homogeneous than desired with little variance, thus making it difficult to detect differences. Because the current study sampled a nonclinical population, it makes sense that these peaks in the distribution of data occurred when the majority of respondents did not endorse an item that referenced more pathological forms of behavior. Nevertheless, overall the distributions of the data appeared to represent mesokurtic distributions, meaning the majority of distributions had zero excess of kurtosis and thus represented relatively normal data. In regards to skewness, responses were relatively symmetric. Additionally, I computed the percentages, mean, and standard deviation for the continuous demographic variable age. I also computed the percentages for the following nominal demographic variables: gender;

race/ethnicity; student classification; undergraduate year of study; graduate degree program; and nonstudent level of education.

The next step of preliminary data analyses included conducting descriptive analyses on the seven surveys that were excluded from the current study due to current engagement in mental health counseling services. I desired to sample a nonclinical population; therefore, surveys that were retained were only those in which participants endorsed no current engagement in counseling services. The seven surveys that were excluded would have been outliers if they would have been entered into the analyses with the other 154 participants who endorsed no current engagement in mental health counseling services.

The next step in the data analysis included running a separate exploratory factor analysis (EFA) for each of the three measures. Despite the fact that prior research on scale development for the Beck Anxiety Inventory (BAI), Curious Experiences Survey (CES), and the Brief Symptom Inventory (BSI) had demonstrated a clear factor structure that makes up each respective construct, I nevertheless conducted another EFA for each measure to see if the set of scores from the measures used in the current sample generated the same number of factors, and if they were comprised of the same items. A confirmatory factor analysis (CFA) was not run because the current study had a less than ideal sample size ( $N = 154$ ) to run a CFA (Grimm & Yarnold, 1995). When running an EFA for each of the three measures, I began by selecting a maximum likelihood extraction procedure. This allowed SPSS to decide how many factors to retain. An oblique rotation, specifically the promax rotation method, was employed because the factors within each measure are conceptually and empirically related and prior studies

have supported and confirmed the factor structure of each construct. As part of the initial exploratory factor analysis, I first used the Kaiser-Guttman criterion as an initial screening device to determine the maximum number of factors that seemed to adequately explain the items. The Kaiser-Guttman criterion is based on the number of factors that have eigenvalues greater than one, with large eigenvalues indicating more shared variance on the items.

The EFA for the Beck Anxiety Inventory (BAI) extracted four meaningful factors, with four eigenvalues greater than one. I referred to the pattern matrix to make sure that factor loadings for each item were not low; a salient cutoff of .30 was used (Gorsuch, 1983). The items loaded onto each of the four factors as to what would be expected per the literature. These factors are termed neurophysiological, subjective, panic, and autonomic (Beck et al., 1988). However, there were two exceptions. Item 7 which stated, “Heart pounding or racing,” loaded on a different factor than expected per the literature, and it had a low item loading of .359. Item 18 which stated, “Indigestion or discomfort in abdomen,” did not load on any factor, and conceptually, this item did not fit as well with the other items. Taking into consideration the results from this EFA, as well reliability analyses that were conducted after the EFA, it was justified to drop items 7 and 18 from the analyses. Therefore, this EFA was run a second time, excluding items 7 and 18. The variance explained by retaining four factors on the BAI increased from 62% with items 7 and 18 retained, to 64% with items 7 and 18 excluded.

Separate EFAs for the CES and BSI were conducted in a similar manner to the BAI. Like the BAI, I began by selecting a maximum likelihood extraction procedure and promax rotation method. This allowed SPSS to decide how many factors to retain.



However, for the CES and BSI measures, the results were not ideal. The EFA did not extract three meaningful factors, with three eigenvalues greater than one for the CES; nor did the EFA extract nine meaningful factors, with nine eigenvalues greater than one for the BSI. When referring to the pattern matrix, the factor structure was unclear for both the CES and BSI, producing several more factors than what would be expected per the literature. Even when I tried to name the factors it was not close to what I expected based on the literature. Based on the factor structure as reported in the literature for the CES and BSI, I then forced SPSS to retain three factors for the CES, and to retain nine factors for the BSI. However, once again, the results were not ideal. The pattern matrix was unclear even if I tried to name the factors. Therefore, because I was unable to run all of the items at once when conducting a separate EFA for the CES and BSI, I then conducted another EFA for the CES and the BAI measure in which I selected a principal components analysis extraction procedure, without a rotation method. I forced items into one factor, or extracted one component, for each of the three factors of the CES, and each of the nine factors of the BSI, in order to check the unique dimensionality of each individual factor. When analyzing each separate EFA for the CES and BSI, I referred to the component matrix to make sure that factor loadings for each item were not low; a salient cutoff of .30 was used (Gorsuch, 1983). Meaning, if an item loading was lower than .30, that item likely did not fit very well conceptually on that factor and the factor explained a low portion of the variability for that specific item. In regards to the CES, all of the items appeared to be good items; with the exception of item 3 on the factor termed depersonalization. Item 3 which stated, "Found myself in a place and had no idea how I had gotten there," had a low item loading of .309, and conceptually, this item did not fit

as well with the other items on this factor. Taking into consideration the results from the EFA on the CES, as well as reliability analyses that were conducted after the EFA, it was justified to drop item 3 from the analyses. Results from the reliability analyses are discussed in the next section. Therefore, the EFA for the CES was conducted one more time, excluding item 3, and the variance explained by retaining one factor termed depersonalization on the CES increased from 44% with item 3 retained, to 48% with item 3 excluded. In regards to the BSI, I referred to the component matrix to make sure that factor loadings for each item were not low; a salient cutoff of .30 was used (Gorsuch, 1983). All of the items appeared to be good items, with all nine factors displaying high communalities; thus, no items were dropped from the analyses.

Even though the EFA resulted in psychometrics for the set of scores from the CES and the BSI that were not ideal, when analyzing the separate factors by themselves, while ignoring other items, each separate factor seemed to be consistent within itself. For example, when referring to the component matrix, item loadings on the three factors of the CES ranged between .411 to .822, and item loadings on the nine factors of the BSI ranged between .436 to .887. These factor loadings suggest that items represent unidimensional subdomains within the CES and BSI.

The next step in the data analysis was to run reliability and item analyses based on Cronbach's alpha. I ran separate reliability analyses for each subscale within each measure, as determined by the exploratory factor analyses, and I also ran reliability analyses for each overall scale. I desired to run reliability analyses not only for each subscale, but also for each overall scale because I was only planning on using the overall scale score, as opposed to subscale scores, for the Beck Anxiety Inventory (BAI) in later

analyses. Based on the reliability and item analyses, I determined if poor items needed to be dropped in an effort to improve reliability. Good reliability estimates should be .7 for research purposes (Ary, Jacobs, Razavieh, & Sorensen, 2006), but preferably they should be .8 or higher. When conducting the item analyses, I did not focus on a specific number by which the reliability of the subscale and/or overall scale would need to improve in order to justify dropping an item. Instead, I took into consideration whether the item-total correlation was low, with .20 and below being considered a poor item (Gall, Gall, & Borg, 2007). I also determined whether the item under consideration fit well conceptually with the subscale and/or factor, and I referred back to the results from the respective EFA to determine if the EFA also supported dropping the item.

The reliability analysis for the factor termed depersonalization on the CES resulted in a low corrected item-total correlation for item 3 at .249. I determined that item 3 did not conceptually fit the construct of this factor, and the EFA supported dropping this item. In an effort to improve reliability for this factor, Cronbach's alpha would increase from .864 with item 3 retained to .872 after dropping item 3. Therefore, I felt it was justified to drop item 3 from the analysis.

The item analysis for the factor termed panic on the BAI resulted in a low corrected item-total correlation for item 7 at .295. I determined that item 7 did not conceptually fit as well with the other items on this factor, and the EFA supported dropping this item. In an effort to improve reliability for this factor, Cronbach's alpha would increase from .582 with item 7 retained to .665 after dropping item 7. Therefore, I felt it was justified to drop item 7 from the analysis. Lastly, the item analysis for the factor termed autonomic symptoms on the BAI resulted in a corrected item-total

correlation for item 18 at .376. This correlation is not considered very low, but the other three items on this factor were .619 and higher. Additionally, I determined that item 18 did not conceptually fit with the other items on this factor, and the EFA supported dropping this item. In an effort to improve reliability for this factor, Cronbach's alpha would increase from .781 with item 18 retained to .835 after dropping item 18. Therefore, I felt it was justified to drop item 18 from the analysis. No items were dropped from the Brief Symptom Inventory (BSI) in an effort to improve reliability.

The final step of the preliminary data analyses was to conduct transformations, such as summing items to obtain total and/or subscale scores, as well as mean composite scores. This included computing the means, standard deviations, skewness, and kurtosis of composite scores. Item 3 from the CES and items 7 and 18 from the BAI were dropped from all preliminary analyses, as well as future analyses to answer the three research questions in the current study. I did not need to recode any data because the three measures used in the current study do not have reverse worded items. After computing a frequency analysis on the composite scores for each of the three measures used in the current study, the value of kurtosis for each measure fell within the range of -1 and 2 (Gorsuch, 1983), and the histograms displayed a slight positive skew for all measures; with a slightly increased positive skew value of 1.16 for the outcome data from the Curious Experiences Survey (CES) that measured the construct of dissociation. This means that for each of the three measures used to collect data in the current study, the bulk of the values were located to the left of the mean, with participants tending to not endorse items, specifically items that were more pathological in content. However, when comparing the value of skewness and the standard error of skewness, the degree of

skewness was not significantly skewed; thus, I did not need to conduct nonparametric tests, nor did I need to transform the data, in order to obtain a normal distribution.

After I conducted preliminary analyses, I conducted additional statistical analyses in order to answer my research questions. Determination of statistical significance for all tests was based on an alpha level of .05. For research question one, which subsumes hypothesis one, and for research question two, which subsumes hypothesis three, a multiple linear regression analysis was conducted to determine to what extent the variance in less severe forms of dissociation (dependent variable; DV) is explained by subclinical anxiety (independent variable; IV) and perceived level of psychological distress (IV) in a nonclinical population. When conducting this analysis, I entered both independent variables into the model at once. This allowed me to determine whether each independent variable, when entered into the model simultaneously, would independently explain a significant portion of the variance in the dependent variable. This allowed me to assess potential multicollinearity among the two independent variables. The absence of multicollinearity was later confirmed when I ran diagnostics, as discussed below.

For research question two, which subsumes hypotheses five through nine, a multiple regression analysis was conducted to determine to what extent the variance in less severe forms of dissociation (DV) is explained by each of the following factors that comprise the construct of perceived level of psychological distress (IV): somatization; interpersonal sensitivity; depression; anxiety; and phobic anxiety. Thus, for research question two, I ran a simultaneous entry multiple regression analysis, which allowed me to examine the unique contributions of each factor that comprised the construct of perceived level of psychological distress (IV). Although the other independent variable in

the current study, subclinical anxiety, is not being analyzed in research question two, I first ran this simultaneous entry multiple regression analysis with subclinical anxiety (IV) entered into the model, so that I could take into account the shared variance of this variable. This also allowed me to see if multicollinearity was present between subclinical anxiety (IV) and the five factors that comprised the construct of perceived level of psychological distress (IV). As reported below in the discussion on assumptions, entering subclinical anxiety (IV) into the model created a multicollinearity problem; thus, this regression analysis was run a second time with subclinical anxiety (IV) taken out of the model, thereby addressing the problem of multicollinearity. I also computed a correlation matrix to produce Pearson product moment correlation statistics to examine the magnitude of the relationship between less severe forms of dissociation and each of the following factors that comprise the construct of perceived level of psychological distress: somatization; interpersonal sensitivity; depression; anxiety; and phobic anxiety.

For research question one, which subsumes hypothesis two, and for research question two, which subsumes hypothesis four, I ran two separate multivariate canonical regression analyses to determine whether subclinical anxiety (IV) and perceived level of psychological distress (IV) significantly contributed to explaining the variance in depersonalization and absorption, two factors that comprise the construct of dissociation (DV).

Lastly, for research question three, which subsumes hypothesis 10, I ran a simple linear regression analysis to determine to what extent the variance in less severe forms of dissociation (DV) is explained by the demographic variables sex, race/ethnicity, as well

as age, and whether age is negatively correlated with dissociation in a nonclinical population.

Before proceeding further to interpret the results, I ran diagnostics for each separate regression analysis to ensure that I did not violate any of the tests' assumptions. Violation of statistical assumptions will increase the chance of making a Type I or Type II error. The assumptions for the above statistical tests state that the relationship between less severe forms of dissociation (DV), subclinical anxiety (IV) and perceived level of psychological distress (IV) is characterized by: homoscedasticity (equal variance); independence of observations; linearity; absence of measurement error; and normality of residuals. The assumption of homoscedasticity (equal variance) was examined for each analysis by generating a residual scatter plot to ensure that the data did not demonstrate a pattern, but rather a random display of data (Pedhazur, 1982). The residual scatter plots did not display distinct patterns, such as a line. Overall, I am confident that I did not violate this assumption.

I also wanted to ensure that I did not violate the assumption of independence of observations for any of the analyses in the current study since a large portion of the sample was not random; rather, a large portion of the sample came from intact classrooms. Meeting the assumption of independence of observations was important because violation of this assumption tends to inflate the risk of committing a Type I error. Residual scatterplots were examined, which displayed a lack of any discernable pattern, suggesting the assumption of independence of observations has likely been satisfied (Pedhazur, 1982). However, when checking this assumption on the analysis used for research question two, which subsumes hypotheses five through nine, the data were

slightly more concentrated in one area. Although this could suggest violation of the independence assumption, this was not notable, and a distinct pattern was not present. Overall, I am confident that I did not violate this assumption.

The assumption of linearity, which states that the relationship between the dependent variable and independent variables is linear, was also examined by generating a residual scatter plot for each analysis (Pedhazur, 1982). The residual scatter plots did not display distinct patterns, such as a curved line. Overall, I am confident that I did not violate this assumption.

Normality of residuals was assessed for each analysis by generating a residual histogram (Pedhazur, 1982). For research question one, which subsumes hypothesis one, and for research question two, which subsumes hypothesis three, the data for some items were peaked relative to the normal distribution, and therefore the residuals were more homogeneous than desired with little variance, thus making it difficult to detect differences. However, overall, the distributions of the residuals appeared to represent mesokurtic distributions, meaning the majority of distributions had zero excess of kurtosis and thus represented relatively normal data. In regards to skewness, responses were relatively symmetric. In most cases the  $F$  test is robust to normality, meaning that despite a minor departure from normality the tests will still perform well. Overall, I am confident that I did not violate this assumption.

The assumption of the absence of measurement error was examined for each analysis by way of Cronbach's alpha. While it is extremely rare to state with certainty that all variables were perfectly measured, reliability coefficients were in most cases



moderate to high, with many reliability coefficients, .8 and higher. Overall, I am confident that I did not violate this assumption.

Lastly, in addition to checking the data for outliers, the data were also checked to ensure that multicollinearity was not present among the independent variables subclinical anxiety and perceived level of psychological distress. When running diagnostics on the multiple regression analysis for research question two, it was determined that multicollinearity was present between subclinical anxiety (IV) and some of the factors that comprise the construct of perceived level of psychological distress (IV). This means that the explanatory variables (independent variables) in the regression model were highly correlated, with correlations ranging as high as  $r = .80$ , making it difficult to determine how much variance each variable independently explained in the dependent variable. The first time I ran a multiple regression analysis on this model only subclinical anxiety (IV) significantly contributed to the model, and the factors that comprise the construct of perceived level of psychological distress (IV), such as somatization, interpersonal sensitivity, depression, anxiety, and phobic anxiety, did not significantly contribute to the model. Based on the literature, these factors should be related to the dependent variable of interest; thus, it was determined that subclinical anxiety (IV) and the factors of interest in this model were closely related and/or highly correlated with each other. Therefore, subclinical anxiety (IV) was taken out of the model which resulted in removing the problem of multicollinearity. I felt it was justified to take subclinical anxiety (IV) out of the model because one of the factors that comprise the construct of perceived level of psychological distress (IV) is anxiety; therefore, I was still able to account for any significance in the model as being potentially attributed to symptoms of

anxiety. After subclinical anxiety (IV) was taken out of the model, I ran the multiple regression analysis again. Variance inflation factor (VIF) values for the five factors that comprise the construct of perceived level of psychological distress (IV) were all under 3, which indicated that multicollinearity was likely not present, and that the variance in the dependent variable could be explained by the five factors that comprise the construct of perceived level of psychological distress (IV). Thus, with multicollinearity no longer present, I was able to determine how much variance perceived level of psychological distress (IV) independently explained in the dependent variable.

Overall, after running diagnostics for each separate analysis, all of the assumptions were satisfied. Scatter plots and residual plots were all within a reasonable range, and the problem of multicollinearity was addressed. Therefore, I was confident in the analyses that I conducted in order to answer the research questions for the current study, and I am confident in moving forward to report and interpret results.

### **Summary**

A description of the recruitment of the participant sample, as well as a discussion on instrumentation, design and procedures, research questions and research hypotheses, data analyses employed, as well as diagnostics conducted in order to satisfy assumptions, were provided in Chapter III.

Chapter IV presents a description of the participant sample, descriptive statistics of instrumentation employed, as well as the results of the 10 hypotheses that were addressed in an effort to answer the three research questions in the current study.

## CHAPTER IV

### RESULTS

There were two purposes for conducting the current study. The first purpose was to examine less severe forms of dissociation and its relationship to subclinical anxiety and perceived level of psychological distress in a nonclinical population. The second purpose was to examine the relationship between less severe forms of dissociation and the demographic variable age in a nonclinical population, as well as report the point in time prevalence rate of age, sex, and race/ethnicity of participants who endorsed dissociative symptomology.

The present chapter presents a description of the participant sample, descriptive statistics of instrumentation employed, as well as the results of the 10 hypotheses that were addressed in an effort to answer the three research questions in the current study.

#### **Description of the Sample**

For the current study, 191 surveys were disseminated, of which 161 surveys were completed and returned; resulting in a response rate of 84%. However, as stated in Chapter III, because I desired to sample a nonclinical population, surveys that were retained were only those in which participants endorsed no current engagement in counseling services. Seven of the 161 survey respondents reported they were currently engaged in mental health counseling services; therefore, only 154 surveys were retained for the present study ( $N = 154$ ). Hence, all 154 participants, 100% of the sample, reported that they were not currently engaged in mental health counseling services.

Demographic information collected included age, gender, race/ethnicity, student classification, undergraduate year of study, graduate degree program, nonstudent level of education, and occupation. Demographic information for the participant sample is presented in Table 1. The sample for the current study consisted of 69.5% of respondents who were either an undergraduate or graduate student enrolled at a midsized university in the Rocky Mountain region, and 30.5% of respondents who were members from urban communities in the Rocky Mountain region. Mean age was 32 years of age ( $M = 32.18$ ,  $SD = 12.9$ ). The sample was predominately White/Caucasian, making up 86% of the sample, and 67.5% of the sample was female. The sample reflected a high level of educational attainment, with only 3.9% reporting their level of education as a high school diploma, and the remaining 96.1% reporting a bachelor's degree or higher and/or current enrollment in an undergraduate or postgraduate program. Reported occupations ranged from homemaker to attorney, with the majority of occupations reported as being in the field of human services (i.e., cashier, server, teacher, counselor, etc.) and financial services.

I conducted descriptive analyses on seven surveys that were excluded from the current study due to participant endorsement of current engagement in mental health counseling services. Results from the descriptive analyses indicated a mean score for the CES ( $M = 40$ ,  $SD = 10.3$ ), BAI ( $M = 22$ ,  $SD = 7.1$ ), and BSI ( $M = 54$ ,  $SD = 6.8$ ) that would have made these seven surveys outliers if they would have been entered into the analyses with the 154 participants who did not endorse current engagement in mental health counseling services. Mean age was 25 years of age ( $M = 25.14$ ,  $SD = 5$ ). These

seven participants consisted of one White/Caucasian male, one Hispanic male, and five White/Caucasian females.

### **Descriptive Statistics of Measures**

Chapter III presented information on instrumentation used in the current study for data collection. A six-page, 105 item paper/pencil survey was used as the primary data collection tool comprised of three existing measures: Curious Experiences Survey (CES; Goldberg, 1999), a measure of dissociative experiences; Beck Anxiety Inventory (BAI; Beck et al., 1988), a measure of anxiety; and Brief Symptom Inventory (BSI; Derogatis, 1975), a measure of the overall psychological symptom pattern of an individual. Descriptive statistics for responses to these three measures that were used to collect data are reported in Table 2, as are psychometrics, such as total scale and subscale reliability coefficients. As discussed in Chapter III in the *Data Analysis* section, item 3 from the CES, and items 7 and 18 from the BAI were dropped from preliminary and main analyses.

Table 1

*Demographic Information of Participant Sample*

Variable	N	%	<i>M</i>	<i>SD</i>
Age			32.18	12.90
18-29	90	58.4		
30-39	30	19.5		
40-49	8	5.2		
50-59	19	12.4		
60-62	7	4.5		
Gender				
Female	104	67.5		
Male	50	32.5		
Race/Ethnicity				
Black/African American	3	1.9		
Hispanic/Latino(a)	10	6.5		
Asian/Pacific Islander	4	2.6		
White/Caucasian	133	86.4		
Other	4	2.6		
Student Classification				
Undergraduate	43	27.9		
Graduate	64	41.6		
Non-Student	47	30.5		
Undergraduate Year of Study				
Freshman	11	7.1		
Sophomore	12	7.8		
Junior	17	11.0		
Senior	3	1.9		
Graduate Degree Program				
MA/MS	35	22.7		
Ed.D	3	1.9		
Ph.D	26	16.9		
Non-Student Education				
High School	6	3.9		
BA/BS	27	17.5		
MA/MS	13	8.4		
J.D.	1	.6		

Table 2

*Descriptive Statistics and Total Scale and Subscale Reliability Coefficients for Measures used with a Nonclinical Sample*

Variable	<i>M</i>	<i>SD</i>	Range	Number of Items	Reliability ( $\alpha$ )
Curious Experiences Survey (CES)	21.8	12.8	2-71	30	.92
Depersonalization				10	.87
Absorption				12	.85
Amnesia				8	.66
Beck Anxiety Inventory (BAI)	9.5	8.5	0-42	19	.91
Neurophysiological				7	.88
Subjective				6	.85
Panic				3	.67
Autonomic Symptoms				3	.84
Brief Symptom Inventory (BSI)	43.06	7.4	30-62	53	.97
Somatization				7	.84
Interpersonal Sensitivity				4	.88
Depression				6	.90
Anxiety				6	.87
Phobic Anxiety				5	.78
Obsessive Compulsive				6	.85
Hostility				5	.78
Paranoid Ideation				5	.81
Psychoticism				5	.77

### Research Questions and Hypotheses

Chapter III, section *Data Analysis*, provided a detailed discussion on preliminary analyses conducted, which included exploratory factor analyses and reliability analyses; a detailed discussion on diagnostic testing was also provided for each separate analysis conducted in order to ensure that tests' assumptions were not violated. Having confidence that the tests' assumptions were satisfied, the results of the 10 hypotheses that were addressed in an effort to answer the three research questions of the current study are discussed below.

A simple linear regression, multiple linear regressions, a multivariate canonical regression, as well as Pearson product moment correlation statistics were conducted to answer the three research questions in the current study in an effort to understand and explain the nature of dissociative phenomena. Determination of statistical significance for all tests was based on an alpha level of .05 unless otherwise noted.

- Q1     To what extent is the variance in less severe forms of dissociation explained by subclinical anxiety in a nonclinical population?
- H1     Anxiety, as measured by the BAI, will be significantly correlated with dissociation, as measured by the CES.
- Q2     To what extent is the variance in less severe forms of dissociation explained by perceived level of psychological distress in a nonclinical population?
- H3     Perceived level of psychological distress, as measured by a global index of current distress on the BSI, known as the General Severity Index (GSI), will be significantly correlated with dissociation, as measured by the CES.

Hypotheses 1 and 3 were supported. For research question one, which subsumes hypothesis one, a multiple linear regression analysis was conducted to determine to what extent the variance in less severe forms of dissociation (dependent variable; DV) is explained by subclinical anxiety (independent variable; IV) in a nonclinical population. Likewise, for research question two, which subsumes hypothesis three, a multiple linear regression analysis was conducted to determine to what extent the variance in less severe forms of dissociation (DV) is explained by perceived level of psychological distress (IV) in a nonclinical population. In order to address the two research hypotheses above, one multiple linear regression analysis was conducted, in which both independent variables were entered into the model at the same time in order to determine whether each independent variable would independently explain a significant portion of the variance in



the dependent variable. This regression model was significant. Results indicated that 44% of the variance, which represents a large effect size, in less severe forms of dissociation can be explained collectively by subclinical anxiety and perceived level of psychological distress [ $F(2, 151) = 58.07, p < .05, p = .0001$ ]. The independent variables, collectively, had a strong effect in regards to the amount of explained variance on dissociation. This was based on a medium effect size ( $R^2 = .13$ ) (Cohen, 1992). In addition, each independent variable explained a unique proportion of the variance in less severe forms of dissociation as indicated by a statistically significant Beta coefficient. Subclinical anxiety independently explained a significant proportion of the variance, with the squared part correlation indicating that 9% of the variance in less severe forms of dissociation is uniquely explained by subclinical anxiety,  $\beta = .304, p < .05, p = .001$ . Perceived level of psychological distress independently explained a significant proportion of the variance, with the squared part correlation indicating that 16% of the variance in less severe forms of dissociation is uniquely explained by perceived level of psychological distress,  $\beta = .399, p < .05, p = .0001$ . A positive Beta coefficient indicated that both subclinical anxiety and perceived level of psychological distress were positively correlated with less severe forms of dissociation. Results are presented in Table 3.

Q1 To what extent is the variance in less severe forms of dissociation explained by subclinical anxiety in a nonclinical population?

H2 Depersonalization and absorption, two subscales as measured by the CES, will be significantly correlated with anxiety, as measured by the BAI.

Hypothesis 2 was supported. For research question one, which subsumes hypothesis two, a multivariate canonical regression analysis was conducted to determine whether subclinical anxiety (IV) significantly contributed to explaining the variance in

depersonalization and absorption, two factors of the construct of dissociation (DV). The regression model revealed a significant multivariate effect. Results indicated that 42% of the variance, which represents a large effect size, in depersonalization and absorption was explained by subclinical anxiety [Wilk's  $\lambda = .650$ ,  $F(2, 151) = 40.65$ ,  $p < .05$ ,  $p = .0001$ ]. This means that the Wilks' lambda statistic indicated a strong relationship between subclinical anxiety (IV) and two factors of the construct dissociation (DV), termed depersonalization and absorption. This was based on a medium effect size ( $R^2 = .13$ ) (Cohen, 1992).

Table 3

*Multiple Regression Analysis for Variables Less Severe Forms of Dissociation, Subclinical Anxiety, and Perceived Level of Psychological Distress*

Variable	$R^2$	df	$B$	Less Severe forms of Dissociation			
				$SE$	$\beta$	$F$ value	$p$ value
Regression Model	.435**	2	-	-	-	58.07	.0001
Subclinical Anxiety	-	-	.456	.141	.304*	-	.001
Perceived Level of Psychological Distress	-	-	.691	.162	.399**	-	.0001

\*\*Correlation is significant at the .0001 level

\*Indicates significance level of .05 or less

Q2 To what extent is the variance in less severe forms of dissociation explained by perceived level of psychological distress in a nonclinical population?

H4 Depersonalization and absorption, two subscales as measured by the CES, will be significantly correlated with perceived level of psychological distress, as measured by a global index of current distress on the BSI, known as the General Severity Index (GSI).

Hypothesis 4 was supported. For research question two, which subsumes hypothesis four, a multivariate canonical regression analysis was conducted to determine whether perceived level of psychological distress (IV) significantly contributed to explaining the variance in depersonalization and absorption, two factors of the construct of dissociation (DV). The regression model revealed a significant multivariate effect. Results indicated that 38% of the variance, which represents a large effect size, in depersonalization and absorption was explained by perceived level of psychological distress [Wilks'  $\lambda = .618$ ,  $F(2, 151) = 46.60$ ,  $p < .05$ ,  $p = .0001$ ]. This means that the Wilks' lambda statistic indicated a strong relationship between perceived level of psychological distress (IV) and two factors of the construct dissociation (DV), termed depersonalization and absorption. This was based on a medium effect size ( $R^2 = .13$ ) (Cohen, 1992).

- Q2    To what extent is the variance in less severe forms of dissociation explained by perceived level of psychological distress in a nonclinical population?
- H5    Somatization (SOM), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.
- H6    Interpersonal Sensitivity (I-S), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.
- H7    Depression (DEP), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.
- H8    Anxiety (ANX), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.

- H9      Phobic Anxiety (PHOB), one of nine symptom dimensions as measured by the BSI, will be significantly correlated with dissociation, as measured by the CES.

Hypotheses 5 through 9 were supported. For research question two, which subsumes hypotheses five through nine, a simultaneous entry multiple linear regression analysis was conducted to determine to what extent the variance in less severe forms of dissociation (DV) is explained by each of the following factors that comprise the construct of perceived level of psychological distress (IV): somatization; interpersonal sensitivity; depression; anxiety; and phobic anxiety. A simultaneous entry multiple regression analysis allowed me to examine the unique contributions of each subscale that comprises the construct of perceived level of psychological distress. As a whole, the regression model was statistically significant. Results indicated that 36% of the variance in less severe forms of dissociation can be explained collectively by the five factors that comprise the construct of perceived level of psychological distress: somatization; interpersonal sensitivity; depression; anxiety; and phobic anxiety [ $F(5, 148) = 16.83, p < .05, p = .0001$ ]. Results indicated that these five factors demonstrated a large effect size in regards to the amount of explained variance on dissociation. This was based on a medium effect size ( $R^2 = .13$ ) (Cohen, 1992). However, only one factor, phobic anxiety, explained a significant unique proportion, 4%, of the variance in less severe forms of dissociation as indicated by a significant Beta coefficient,  $\beta = .193, p < .05, p = .044$ . A positive Beta coefficient indicated that phobic anxiety was positively correlated with less severe forms of dissociation. This means that as the level of phobic anxiety increases, dissociation increases. The other four factors of perceived level of psychological distress

did not explain a unique proportion of the variance in less severe forms of dissociation. Results are presented in Table 4.

Although only one factor, phobic anxiety, explained a unique proportion of the variance in the context of the regression as indicated above, the bivariate correlations between each factor and the dependent variable indicated that all five factors were significantly correlated with less severe forms of dissociation when treated as independent of one another. Results indicated statistically significant,  $p < .05$ , moderate relationships between less severe forms of dissociation and each of the five factors comprising perceived level of psychological distress (IV): somatization; interpersonal sensitivity; depression; anxiety; and phobic anxiety. Pearson correlations ranged from  $r = .505$  to  $r = .522$  and are presented in Table 5.

Table 4

*Multiple Regression Analysis for Variables Less Severe Forms of Dissociation and Factors of Perceived Level of Psychological Distress*

Variable	$R^2$	df	$B$	Less Severe forms of Dissociation			
				$SE$	$\beta$	$F$ value	$p$ value
Regression Model	.362**	5	-	-	-	16.83	.0001
Somatization	-	-	3.71	2.44	.153	-	.131
Interpersonal Sensitivity	-	-	2.67	1.55	.178	-	.088
Depression	-	-	1.33	1.97	.076	-	.501
Anxiety	-	-	1.95	2.01	.105	-	.332
Phobic Anxiety	-	-	5.26	2.59	.193*	-	.044

\*\*Correlation is significant at the .0001 level

\*Indicates significance level of .05 or less

Table 5

*Pearson Correlations: The Relationship between Less Severe Forms of Dissociation and Independent Variables*

Variable	Less Severe Forms of Dissociation	Subclinical Anxiety	Perceived Level of Psychological Distress
Less Severe Forms of Dissociation	-	.606*	.629*
Subclinical Anxiety	.606*	-	.757*
Perceived Level of Psych Distress	.629*	.757*	-
SOM	.509*	.798*	-
I-S	.522*	.664*	-
DEP	.511*	.703*	-
ANX	.505*	.751*	-
PHOB	.514*	.624*	-

\*Indicates significance level of .05 or less

Q 3 Do demographic characteristics, such as sex, age, and race/ethnicity, explain the variance in less severe forms of dissociation in a nonclinical population?

H10 Age, as measured by self-report on the demographic section of the survey, will be negatively correlated with dissociation, as measured by the CES; such that, as age increases, dissociation decreases.

Hypothesis 10 was supported. Due to conflicting data in the literature, I did not have enough data to generate research hypotheses for sex and race/ethnicity. For research question three, which subsumes hypothesis 10, a simple linear regression analysis was conducted to determine to what extent the variance in less severe forms of dissociation (DV) is explained by age (demographic variable) in a nonclinical population. Results

indicated that 2.7% of the variance in less severe forms of dissociation can be explained by age [ $F(1, 152) = 4.19, p < .05, p = .042$ ] which was a statistically significant, albeit weak relationship. Moreover, the negative relationship between these two variables indicates that as age increases, dissociation decreases. Additionally, results indicated that .3% of the variance in less severe forms of dissociation can be explained by sex [ $F(1, 152) = .490$ ], which this was not statistically significant. Lastly, results indicated that 1.4% of the variance in less severe forms of dissociation can be explained by race/ethnicity [ $F(1, 152) = 2.09$ ], which this was not statistically significant. Results are presented in Table 6. Prevalence rates of these demographic variables were discussed at the beginning of this chapter and are presented in Table 1.

Table 6

*Simple Linear Regression Analysis for Variables Less Severe Forms of Dissociation and Demographic Variables*

Variable	$R^2$	df	Less Severe Forms of Dissociation				
			$B$	$SE$	$\beta$	$F$ value	$p$ value
Age	.027*	1	-.163	.080	-.164	4.19	.042
Sex	.003	1	1.55	2.21	.057	.490	
Race/Ethnicity	.014	1	4.35	3.01	.116	2.09	

\*Indicates significance level of .05 or less

### Summary

The results of the 10 hypotheses were examined and supported. One multiple linear regression analysis was conducted in order to examine hypotheses 1 and 3. Results indicated that subclinical anxiety and perceived level of psychological distress each explained a unique proportion of the variance in less severe forms of dissociation. Results

from the overall regression model were statistically significant, indicating that 44% of the variance in less severe forms of dissociation can be explained by subclinical anxiety and perceived level of psychological distress. The independent variables, collectively, had a strong effect in regards to the amount of explained variance on dissociation.

Two separate multivariate canonical regression analyses were conducted in order to examine hypotheses 2 and 4. Results for hypothesis 2 indicated that subclinical anxiety explained a statistically significant proportion of the variance in depersonalization and absorption, two factors that comprise the construct of dissociation. Results for hypothesis 4 indicated that perceived level of psychological distress explained a statistically significant proportion of the variance in depersonalization and absorption, two factors that comprise the construct of dissociation. Overall, each independent variable had a strong effect in regards to the amount of explained variance on two factors of the construct dissociation, termed depersonalization and absorption.

A simultaneous entry multiple regression analysis was conducted in order to examine hypotheses 5 through 9. Results indicated that 36% of the variance in less severe forms of dissociation can be explained cumulatively by the following factors that comprise the construct of perceived level of psychological distress: somatization; interpersonal sensitivity; depression; anxiety; and phobic anxiety. Results indicated that these five factors demonstrated a large effect size in regards to the amount of explained variance on dissociation. Out of these five factors, only phobic anxiety explained a statistically significant unique proportion of the variance in less severe forms of dissociation. However, statistically significant bivariate correlations on each factor with



the dependent variable suggested these five factors may be largely redundant with one another.

A simple linear regression analysis was conducted in order to examine hypothesis 10. Results indicated that 2.7% of the variance in less severe forms of dissociation can be explained by age, which represented a statistically significant, negative, weak relationship. This means that as age increases, dissociation decreases. However, this weak relationship indicated that age is not a strong explanatory factor for the variable dissociation. Sex and race/ethnicity did not explain a statistically significant proportion of the variance in less severe forms of dissociation.

Chapter V provides a discussion on the findings, in addition to the implications these findings present for clinicians. Limitations of the current study, as well as recommendations for future research are also discussed.

## CHAPTER V

### DISCUSSION

There were two purposes for conducting the current study. The first purpose was to examine less severe forms of dissociation and its relationship to subclinical anxiety and perceived level of psychological distress in a nonclinical population. The second purpose was to examine the relationship between less severe forms of dissociation and the demographic variable age in a nonclinical population, as well as report the point in time prevalence rate of age, sex, and race/ethnicity of participants who endorsed dissociative symptomology.

The present chapter presents a discussion on the psychometrics of instrumentation employed, as well as a discussion on the findings of the three research questions, and 10 corresponding hypotheses, that were investigated in the current study. Given that all 10 hypotheses were supported, the implications these findings present for clinicians and for clinical practice are also discussed, along with limitations of this study and recommendations for future research.

As discussed in Chapter II, the general conceptualization of dissociation in the current study, as supported by Pierre Janet and other scholars examined in the literature review, is best understood in terms of a continuum model where dissociative experiences lie on a continuum from adaptive, normative dissociation, to more maladaptive, pathological dissociation (Howell, 2005). Dissociative disorders, as conceptualized along a continuum, are not characterized by any single symptom or set of symptoms that would

differentiate normal from pathological dissociation; rather, it is the frequency and intensity of dissociative experiences along a continuum that quantitatively differentiate normal from pathological dissociation (Kihlstrom et al., 1994, p. 118). As was previously discussed in Chapters I and II, the dependent variable and two independent variables in the current study were not interpreted based on cutoff scores; therefore, no statements were made as to whether participant scores reached clinically significant cutoff points. Rather, in the current study, variables were conceptualized as follows: less severe forms of dissociation (dependent variable) were conceptualized as a continuous variable that was interpreted within a range of endorsed responses, with lower scores on the Curious Experiences Survey (CES; Goldberg, 1999) reflecting a lower frequency and lower intensity of dissociative symptomology; subclinical anxiety (independent variable) was conceptualized as a continuous variable within a range of endorsed responses, with lower scores on the Beck Anxiety Inventory (BAI; Beck et al., 1988) reflecting a lower frequency and lower intensity of anxiety symptomology; and perceived level of psychological distress (independent variable) was conceptualized as a continuous variable within a range of endorsed responses, with a lower GSI score on the Brief Symptom Inventory (BSI; Derogatis, 1975) reflecting a lower frequency and lower intensity of perceived psychological distress.

Results from the current study lend support to other scholars' findings (Butler, 2004; Howell, 2005; Maaranen et al., 2005; Simeon & Abugel, 2006) that the continuum model represents an accurate depiction of how dissociation can present among members in a nonclinical population. Results from the current study also lend support to prior research and further advocate that endorsement of dissociative experiences is not solely

isolated to clinical populations, nor does endorsement of dissociative experiences demand evidence of a history of trauma or other forms of psychopathology. Once more, results from the current study lend support to scholars such as Simeon (2004), as well as Johnson et al. (2006), who asserted that less severe forms of dissociative experiences are more common in the general population than clinicians have previously recognized. Johnson et al. estimated that dissociative disorders affect approximately 5-10% of the general population.

The results from the three research questions in the current study draw attention to the fact that dissociation is a valid clinical entity. Symptoms of dissociative behavior were endorsed by all 154 participants in the current study. Although some participants endorsed very low levels of dissociative behavior; nevertheless, the results indicated that normative forms of dissociative behavior were endorsed by participants who were not currently engaged in mental health counseling services. Overall, participant endorsement of dissociation reflected a lower frequency and lower intensity of self-reported dissociative experiences, with a mean score on the CES equivalent to  $M = 21.8$  ( $SD = 12.8$ ). This mean score on the CES suggests that the majority of participants endorsed less severe forms of dissociative behavior that do not warrant additional assessment nor a formal diagnosis of a dissociative disorder. Given that participants in the current study were from a nonclinical population, and they all endorsed dissociative behavior in relationship to subclinical anxiety and perceived level of psychological distress, then it is not much of a leap to think that clients who are being seen by mental health clinicians in a clinical population are more than likely endorsing dissociative behavior to a similar if not exacerbated degree than individuals from a nonclinical population. However, the

grand majority of clinicians in mental health settings are unaware of how to screen for dissociative behavior, and clinicians often disregard dissociative behavior as being a valid clinical entity (Leonard et al., 2004; Simeon & Abugel, 2006). Contribution of additional data from the current study will provide added support to prior research and hopefully give mental health clinicians the added reassurance they desire in order for them to consider dissociation a legitimate presentation. It is also my hope that results from the current study will heighten clinicians' awareness as to the importance and clinical necessity to screen for and properly treat dissociative behavior.

### **Psychometrics of Measures**

Chapter III, section *Data Analysis*, provided a detailed discussion on preliminary descriptive analyses, such as exploratory factor analyses (EFA) and reliability analyses, that were conducted on instrumentation employed in the current study. A separate EFA was run for the Beck Anxiety Inventory (BAI), Curious Experiences Survey (CES), and Brief Symptom Inventory (BSI). Results indicated that the BAI has good psychometrics for the set of scores from the sample used in the current study, as it extracted four dominant and meaningful factors that were each comprised of the same items as the EFA from the BAI used on the normative sample (Beck et al., 1988) in scale development.

Separate EFAs for the CES and BSI were conducted in a similar manner to the BAI; however, the psychometrics for each respective measure, as derived from the set of scores from the sample used in the current study, were not ideal. The EFA did not extract three meaningful factors for the CES, nor did the EFA extract nine meaningful factors for the BSI. These results were not what would be expected per the literature, and even when I tried to name the factors, they were not close to what I expected based on the literature.

It is my assumption that the methodological design of the current study may have introduced just enough variance in comparison to the normative samples that were used for scale development for the CES (Goldberg, 1999) and BSI (Derogatis, 1975), that EFA results for the CES and BSI used in the current study did not extract similar psychometrics as would be expected per the normative data. For example, during initial scale development, the CES and BSI were each normed on adult community members. Although the CES has been used in subsequent studies on samples comprised of undergraduate and graduate students, such as the study conducted by Cann and Harris (2003), the current study sampled a mix of both students and community members, as opposed to only community members as in the normative sample for the CES and BSI, or only students as in subsequent studies. The variation in the sample composition that was used for the current study may be introducing differences that are not consistent with participant endorsements from prior samples that used the CES and BSI in a community population. Therefore, the set of scores for the sample used in the current study are not comparable to prior studies that only used the CES and BSI with a community sample. Other factors could have influenced how the constructs of interest in the current study were endorsed. For example, I sampled a more affluent population, of which the majority of the sample was students and 96.1% of the sample reported having a bachelor's degree or higher and/or current enrollment in an undergraduate or postgraduate program.

To discuss this further, when analyzing the frequency analysis for the amnesia factor of the CES, five of the eight items that comprise the factor amnesia were skewed, indicating that the majority of participants did not endorse these items. While the other two factors of dissociation, termed depersonalization and absorption, are far more

common in a nonclinical population than endorsement of amnesia symptomology, lack of endorsement of amnesiac items resulted in the data being more homogeneous than desired with little variance, thus making it difficult to detect differences, and it also presented difficulty when running subsequent analyses such as EFAs and reliability analyses. As reported in Chapter IV, the reliability coefficient for the factor amnesia on the CES was .66, by far the lowest reliability coefficient out of all the factors that comprise each of the three measures used in the current study. This means that the internal consistency of psychometric scores for these specific items on the factor amnesia was not high, suggesting these items may not be useful for a nonclinical population. Refer back to Chapter IV, Table 2 for descriptive statistics, such as total scale and subscale reliabilities for the measures used in the current study. Examples of statements that were not endorsed that represent the factor amnesia include, “Found myself dressed in clothes I didn’t remember putting on” and “Found that I had no memory for some important event in my life.”

Similar to the CES, when analyzing the frequency analysis for the nine factors/subscales of the BSI, results indicated that some of the items that comprise the factors psychoticism and paranoid ideation were skewed, indicating that the majority of participants did not endorse these items. Other factors that comprise the BSI, such as anxiety, depression, and obsessive-compulsive, include items that represent symptoms that are far more common in a nonclinical population compared to items that represent more severe forms of pathology. Lack of endorsement of items that comprise the factors psychoticism and paranoid ideation resulted in the data being more homogeneous than desired with little variance; thus, making it difficult to detect differences, and also

presenting difficulty when running subsequent analyses such as an EFA. Examples of statements that were not endorsed that represent the factor psychoticism and the factor paranoid ideation include, “The idea that someone else can control your thoughts” and “Feeling that you are watched or talked about by others.”

Therefore, in regard to various items that make up the factor amnesia of the CES, as well as various items that make up the factors psychoticism and paranoid ideation of the BSI, it can be stated that lack of endorsement of some of these items resulted in inadequate variance. This suggests that for the sample in the current study, these factors may not be as sensitive to picking up differences among participants in a nonclinical population that was primarily composed of students, in addition to some community members. Hence, in subsequent analyses, such as in an EFA or regression analyses, it was difficult to detect variance. Perhaps nonclinical community populations, as were the normative samples used in scale development of the CES and BSI, present a more diverse age range and also more of a diversification of symptoms, thereby attributing to greater variance and greater ability to detect differences.

Reliability analyses were also conducted on the instrumentation employed in the current study. Reliability analyses for each overall scale of the BAI, CES, and BSI, resulted in a reliability coefficient of .91 or higher. See Chapter IV, Table 2 for total scale and subscale reliability coefficients of scores for the three measures used in the current study. A reliability coefficient of .90 or higher is considered very good in the social sciences (Ary, Jacobs, Razavieh, & Sorensen, 2006) and indicates that the internal consistency of scores from each measure for the sample used in the current study is likely to be stable.



Overall, the instrumentation employed in the current study demonstrated good psychometric properties for the set of scores from the sample used in the current study.

### **Research Question One**

Research question one examined to what extent the variance in less severe forms of dissociation can be explained by subclinical anxiety in a nonclinical population. Prior research studies have found that dissociation is often comorbid with psychiatric conditions such as anxiety (De Wachter et al., 2006; Simeon & Abugel, 2006). As discussed in Chapter II, Johnson et al. (2006) reported the prevalence rate of dissociative disorders among individuals in a nonclinical population with a co-occurring psychiatric condition such as anxiety to be 33.3%. However, De Wachter et al. (2006) and several other scholars (Nixon & Bryant, 2006; Oathes & Ray, 2008) found that subclinical levels of anxiety have a relationship with dissociation, and asserted that subclinical levels of anxiety and stress can exacerbate dissociative experiences. Results from the current study lend support to the scholars as previously cited, for outcome data from the current study indicated that an individual does not need to meet criteria for an anxiety diagnosis in order to experience dissociative phenomena. Overall, in the current study, participant endorsement of anxiety symptomology reflected a lower frequency and lower intensity of self-reported anxiety, with a mean score on the BAI equivalent to  $M = 9.5$  ( $SD = 8.5$ ). This mean score on the BAI suggests that the majority of participants endorsed subclinical levels of anxiety; levels that do not warrant a formal diagnosis of an anxiety disorder.

A multiple linear regression analysis was conducted in an effort to answer research question one, which subsumes hypothesis one. Hypothesis 1 was supported.

Results indicated that 44% of the variance, which represents a large effect size, in less severe forms of dissociation can be explained collectively by subclinical anxiety and perceived level of psychological distress. A large effect size means that the independent variables, collectively, had a strong effect in regards to the amount of explained variance on dissociation. Results from the current study lend support to prior scholars as previously cited, with outcome data from the current study indicating that the independent variable, subclinical anxiety, independently explained a significant proportion of the variance in less severe forms of dissociation. Results indicated that as an individual endorsed increased levels of anxiety, while still at a subclinical level, he or she also endorsed increased levels of less severe forms of dissociation. These results lend support to Oathes and Ray (2008) who also found less severe forms of dissociative experiences to be significantly related to subclinical anxiety among members in a nonclinical population.

A multivariate canonical regression analysis was conducted in an effort to answer research question one, which subsumes hypothesis two. Hypothesis 2 was supported. Results indicated that 42% of the variance, which represents a large effect size, in depersonalization and absorption, two factors of the construct of dissociation, was explained by subclinical anxiety. Results from this statistical analysis lend support to prior scholars, such as Miller et al. (1994), as well as Oathes and Ray (2008), who also found that subclinical levels of anxiety were associated with transient forms of dissociation, such as depersonalization and derealization in nonclinical populations. Results from the current study also lend support to scholars such as Murphy (1994), as well as Ray and Faith (1995), who examined the factor absorption in their studies on

dissociative behavior and concluded that modern-day psychology has underestimated the prevalence of absorption and derealization in the general population.

Although the results from this multivariate canonical regression analysis indicated a large effect size in one relationship between subclinical anxiety and depersonalization and derealization, it is still warranted to acknowledge that symptoms of depersonalization (i.e., looking in the mirror and not recognizing yourself) and derealization (i.e., finding that you sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time) not only have a relationship with subclinical anxiety, but these symptoms are also present in a nonclinical population. Hence, when an individual experiences elevated levels of anxiety, while still at a subclinical level, he or she may tend to “check out” from the present moment by engaging in absorption, which may result in a decrease in functioning until the individual is able to reconnect with present conscious awareness. This information would be beneficial to a clinician who is treating an individual that has a pattern of disconnecting from the present moment when he or she experiences elevated levels of anxiety.

### **Research Question Two**

Research question two examined to what extent the variance in less severe forms of dissociation can be explained by perceived level of psychological distress in a nonclinical population. Outcome data from the current study found that self-reported levels of perceived psychological distress are comorbid with self-reported dissociative experiences. These results are similar to prior scholars who have found that less severe forms of dissociation are related to distress that an individual may perceive to experience in his or her daily life (De Wachter et al., 2006). The results from the current study are

also similar to a study conducted by Leonard et al. (2004), who found perceived level of psychological distress to be comorbid with dissociative behavior in approximately 70% of their participant sample. Overall, in the current study, participant endorsement of perceived level of psychological distress reflected a lower frequency and lower intensity of self-reported psychological distress, with a mean score on the GSI, a global index of current distress on the BSI, known as the General Severity Index (GSI), equivalent to  $M = 43.06$  ( $SD = 7.4$ ). This mean score on the BSI suggests that the majority of participants endorsed levels of perceived psychological distress that do not warrant a formal diagnosis of a psychiatric disorder.

A multiple linear regression analysis was conducted in an effort to answer research question two, which subsumes hypothesis three. Hypothesis 3 was supported. Results indicated that 44% of the variance, which represents a large effect size, in less severe forms of dissociation can be explained collectively by subclinical anxiety and perceived level of psychological distress. A large effect size means that the independent variables, collectively, had a strong effect in regards to the amount of explained variance on dissociation. Results from the current study lend support to prior scholars as previously cited, with outcome data from the current study indicating that the independent variable, perceived level of psychological distress, independently explained a significant proportion of the variance in less severe forms of dissociation. Results indicated that as an individual appraised experiences or situations in daily life as causing increasingly higher levels of physical, cognitive, behavioral, and/or emotional distress, he or she also endorsed increased levels of less severe forms of dissociation. Results from the current study are similar to studies conducted by Mula et al., (2008a), Naring and

Nijenhuis (2004), as well as Vanderlinden et al. (1991), that all found a direct relationship between a change in perceived level of psychological distress and a respective change in less severe forms of dissociative phenomena.

Results from the current multiple linear regression analysis are also similar to a study conducted by Simeon and Abugel (2006), who found a significant relationship between perceived level of psychological distress and less severe forms of dissociation. Simeon and Abugel reported that daily prolonged stress, such as demanding work conditions, can trigger dissociative phenomena. Results from the current study lend support to prior scholars as previously cited; for outcome data from the current study indicated that an individual does not need to meet criteria for a psychiatric disorder in order to experience dissociative phenomena. This is important information on which to reflect, for many clinicians will only pause to consider further evaluation of a client if his or her endorsed symptoms meet a threshold that is of a high severity and frequency to impair functioning, and only if the client meets criteria for a mental health diagnosis. Hence, less severe forms of dissociative behavior and perceived distress that may impact daily functioning will “fly under the radar.” What we know from prior research (Johnson et al., 2006) is that an individual can endorse symptoms that do in fact impair functioning, and at the same time, exhibit symptoms that do not meet a threshold that is of a high severity and frequency; hence, these individuals do not meet criteria for a mental health diagnosis.

Recall back to Chapter II, in which a discussion was provided on the study conducted by Johnson et al. (2006), who used the Global Assessment of Functioning (GAF) Scale, a diagnostic measure to assess individuals who perceived their

psychological, social, and occupational world to be distressful. Johnson et al. found that individuals who did not meet criteria for a specific mental health diagnosis, but who perceived their psychological, social, and occupational world to be more distressful, also showed impairment in functioning, which resulted in the individual's experiencing dissociative phenomena. Therefore, data from the current study, in addition to data in the literature (De Wachter et al., 2006; Poulin et al., 2005), speak to the importance of properly training clinicians to routinely screen clients for varying degrees of dissociative behavior and perceived psychological distress; attending to the fact that although a client may not meet criteria for a specific mental health diagnosis, it is a possibility that the clinician will identify individuals who are experiencing impairment in functioning as well as individuals who may benefit from therapeutic interventions.

A multivariate canonical regression analysis was conducted in an effort to answer research question two, which subsumes hypothesis four. Hypothesis 4 was supported. Results indicated that 38% of the variance, which represents a large effect size, in depersonalization and absorption was explained by perceived level of psychological distress. These results from the current study lend support to studies dating all the way back to 1889, whereby Pierre Janet found that dissociative responses, such as symptoms of depersonalization and/or derealization, occurred in response to an individual who feels he or she is experiencing personal distress (Kihlstrom et al., 1994). In his later studies in 1907, and then again in 1926, Janet asserted that during and after periods of perceived stress, such as financial strain or marital problems, an individual would report a lack of integration within his or her memory, also known as an dissociative amnesiac response (De Wachter et al., 2006; Ross, 1996). It is evident, as supported by data from the current

study and prior studies as previously cited, that less severe forms of dissociation, such as depersonalization and absorption, are commonly experienced by individuals in a nonclinical population who are also reporting varying degrees of psychological distress.

A simultaneous entry multiple linear regression analysis was conducted in an effort to answer research question two, which subsumes hypotheses five through nine. Hypotheses 5 through 9 were supported. Results indicated that 36% of the variance, which represents a large effect size, in less severe forms of dissociation can be explained collectively by the five factors that comprise the construct of perceived level of psychological distress: somatization; interpersonal sensitivity; depression; anxiety; and phobic anxiety. However, only one factor, phobic anxiety, independently explained a significant unique proportion of the variance in less severe forms of dissociation as indicated by a significant Beta coefficient. Results indicated that as an individual endorsed increased levels of phobic anxiety, he or she also endorsed increased levels of less severe forms of dissociation. Perhaps the reason that phobic anxiety was the only factor in the regression model that explained a significant unique proportion of the variance in less severe forms of dissociation was because the items that comprise the factor phobic anxiety focus on irrational fear responses, which are disproportionate to the stimulus, and which lead to avoidance or escape behavior. Thus, phobic anxiety has a similar relationship to dissociation, in that when an individual perceives his or her level of distress to increase and exceed his or her abilities, the individual may engage in dissociative-like behavior, such as avoiding or escaping certain situations physically or emotionally, as is the case when engaging in emotional numbing and other forms of dissociative avoidance behavior. Once more, it is possible that multicollinearity was

present and that the factor phobic anxiety in this regression model overshadowed the other factors, as it was assumed that each factor would share a unique proportion of the variance in less severe forms of dissociation.

However, for this simultaneous entry multiple linear regression analysis, as discussed in Chapter IV, bivariate correlations between each factor and the dependent variable indicated that all five factors were significantly correlated with less severe forms of dissociation when treated as independent of one another. This suggests that these five factors may be largely redundant with one another. Pearson correlations indicated moderate relationships between less severe forms of dissociation and each of the five factors comprising perceived level of psychological distress. Results from the current study are similar to those of Johnson et al. (2006), who found that individuals who perceived their psychological, social, and occupational world to be more distressful, which could include endorsement of inter or intra personal difficulties and/or depressive or somatic symptoms, also showed impairment in functioning that resulted in the individual experiencing less severe forms of dissociative phenomena.

Overall, the outcomes from research question one, which subsumes hypotheses one and two, as well as research question two, which subsumes hypotheses three through nine, serves as an urgent message to clinicians in the field of mental health that endorsement of dissociative behavior, specifically symptoms of depersonalization and absorption as examined in the current study, are not only a valid and legitimate presentation among individuals in a nonclinical population, but dissociative behavior can also be comorbid with subclinical anxiety and when an individual perceives the level of psychological distress in his or her world to be elevated.



### **Research Question Three**

Research question three examined to what extent the variance in less severe forms of dissociation is explained by age in a nonclinical population. The participant sample in the current study ranged from 18 to 62 years of age, with 58.4% of the sample falling within the range of 18 to 29 years of age. As discussed in Chapter II, there are mixed results in the literature as to whether dissociative experiences are a relatively common occurrence throughout the lifespan (De Wachter et al., 2006; Johnson et al., 2006; Maaranen et al., 2005), or if dissociative experiences become less pronounced during adulthood as a result of maturation and development (Ross et al., 1990; Vanderlinden et al., 1991).

A simple linear regression analysis was conducted in an effort to answer research question three, which subsumes hypothesis 10. Hypothesis 10 was supported. Results indicated that 2.7% of the variance in less severe forms of dissociation can be explained by age, and age is negatively correlated with dissociation. This means that as an individual increases in age, endorsement of dissociative behavior decreases. However, although this statistical analysis was statistically significant, caution should be exercised when making statements about this relationship, as results indicated a weak relationship between age and dissociation, and therefore age is not a strong explanatory factor for the variable dissociation. Nevertheless, this outcome contributed to an existing body of research by lending support to other scholars' findings (Baker et al., 2003; Howell, 2005; Ross, Ryan, Anderson, Ross, & Lesley, 1989; Thomas, 2005), and it will hopefully increase awareness among clinicians and future scholars that age is a noteworthy and relevant demographic variable to examine in relation to less severe forms of dissociation.

A simple linear regression analysis also indicated that the variance in less severe forms of dissociation was not explained by gender. Like the demographic variable age, the current study examined the point in time prevalence rate of sex of participants who endorsed less severe forms of dissociative symptomology. Outcome data from the current study indicated that the participant sample, which was predominantly female, endorsed dissociative symptomology in relation to subclinical anxiety and perceived level of psychological distress. Whether gender played a role in moderating the effects in endorsement of dissociative symptomology is unknown and cannot be speculated from the analyses run in the current study. What these data tell future scholars is that it would be useful to include the variable sex in subsequent studies so to further examine its relationship to less severe forms of dissociation.

Lastly, a simple linear regression analysis indicated that the variance in less severe forms of dissociation was not explained by race/ethnicity. Like the demographic variable sex, the current study also examined the point in time prevalence rate of race/ethnicity of participants who endorsed less severe forms of dissociative symptomology. There are only a handful of studies that have found racial and ethnic differences when examining the construct of dissociation, further validating that racial and ethnic differences are applicable variables in relation to the construct of dissociation (Douglas, 2009; Maaranen et al., 2005). Douglas (2009) found that African and Asian American participants in his predominately Caucasian sample endorsed higher rates of dissociation. However, future studies could explore whether higher endorsement of dissociative behavior was due to felt oppression. Therefore, race may not be the only factor affecting endorsement of dissociative behavior; rather, exploring culture may

provide insight as to whether endorsement of dissociative behavior is a reaction to felt prejudice, privilege, and oppression in society. However, most of the studies that have examined dissociation have done so within a sampling frame made up of predominately Caucasian individuals; unfortunately, the current study was no different. The participant sample for the current study was predominately White/Caucasian, making up 86% of the sample; and 6.5% of the participant sample identified as Hispanic/Latino(a), with the remaining sample identifying as Asian/Pacific Islander, Black/African American, or Other (See Table 1, Chapter IV). These prevalence rates of race/ethnicity for the sample in the current study demonstrate that various racial/ethnic backgrounds do in fact endorse dissociative symptomology. Whether race/ethnicity played a role in moderating the effects in endorsement of dissociative symptomology is unknown and cannot be speculated from the analyses run in the current study. Like the variable sex, what these data tell future scholars is that it would be useful to include the demographic variable race/ethnicity and culture in subsequent studies so to further examine its relationship to less severe forms of dissociation.

As discussed in Chapter II, although there is ample published research on the demographic variable age in relation to more pathological forms of dissociation, the literature lacks data and guidance as to what role the demographic variables sex and race/ethnicity play in relation to the construct of less severe forms of dissociation. Therefore, due to conflicting data in the literature, I did not feel there was enough substantial data in order to generate research hypotheses for sex and race/ethnicity. Nevertheless, recording the point in time prevalence rate of sex and race/ethnicity of participants who endorsed less severe forms of dissociative symptomology will begin to

add more data to the current body of literature so that future studies may be able to generate hypotheses in regard to these demographic variables of interest.

### **Implications of the Study**

The findings from the current study present several implications for clinicians and for clinical practice. Outcome data from the current study strengthen prior scholars' findings, as previously cited throughout Chapters I through V, indicating that dissociation is not an artifact of therapy, nor is dissociation restricted to clinical populations or to only pathological forms of dissociative phenomena. Rather, the current study adds additional support to the literature that dissociation can be a normative presentation that has a relationship with subclinical anxiety and perceived level of psychological distress in a nonclinical population. Given that all 154 participants in the current study endorsed some form of dissociative behavior, even if at low levels, and all 154 participants were not currently engaged in mental health counseling services, speaks to the fact that contemporary psychology has underestimated the prevalence of dissociation in the general population. It is possible that the participants in the current study will seek counseling services at some point in the future. Therefore, it may be helpful for clinicians to work at outreach programs in the community to serve individuals who are not currently seeking mental health services, but who are endorsing elevated levels of dissociation, anxiety, and perceived distress, although at subclinical levels. Early intervention is essential in order to avoid exacerbation of symptoms.

Chapter I included a discussion on how dissociative disorders and the wide spectrum of dissociative experiences have suffered active exclusion in the field of psychology which has resulted in a lack of academic interest in this construct and hence

the broad spectrum of dissociation has become an unrecognized component of clinical training. Results from the current study provide additional confirmation that is currently demanded by mainstream psychology, indicating that dissociation is a legitimate and prevalent diagnostic presentation. This added knowledge to the current body of literature presents implications for clinical training that can no longer be ignored.

To begin, clinicians should be educated about the broad spectrum of dissociation, in addition to the comorbidity that can exist between dissociation and other mental health symptoms. This increased awareness on the construct of dissociation will aid clinicians toward being more responsive and effective practitioners. Due to the complexity of the construct of dissociation, as well as the potential for comorbidity with other psychiatric disorders, clinicians should be cognizant to assess for dissociative behavior using the continuum model, as well as assess for dissociative symptomology that can occur in a wide range of psychiatric disorders. Once more, if a client does not meet criteria for a mental health diagnosis, clinicians should be well informed of the comorbidity that can still exist between dissociative behavior and subclinical levels of symptomology. Consequently, if clinicians solely screen for anxiety, depression, or other psychiatric disorders, dissociation excluded, and further evaluation only occurs if symptoms meet a certain threshold, then clinicians not only risk delays in diagnosis and application of inaccurate diagnostic labels, but they also risk implementation of ineffectual and potentially harmful treatments (Leonard et al., 2004; Nixon & Bryant, 2006; Vanderlinden et al., 1991). Being able to detect dissociative phenomena, as well as differentiate dissociation from other comorbid disorders, is important so to ensure that

clinical interventions are relevant, appropriate, and above all, to ensure that clinical interventions promote recovery.

Clinical interventions can be ineffectual and harmful if a clinician is treating for the wrong diagnosis, and/or implementing interventions that would exacerbate dissociative behavior. For example, dissociative behavior is often misdiagnosed as an anxiety disorder (Simeon, 2004). Interventions commonly used to treat anxiety disorders, such as guided meditations and imageries, can be contraindicated with a client who consistently uses absorption, such as retreating into a fantasy world, as a maladaptive way to cope with distressful life circumstances. Once more, trauma focused interventions, such as eye movement desensitization and reprocessing (EMDR), can be contraindicated with a client who consistently engages in emotional numbing or symptoms of depersonalization and derealization as avoidance responses to painful trauma memories. Examples of these dissociative responses include a lack of affective response or feeling detachment, and feeling as if an outside observer from one's mental processes or body. The maladaptive dissociative responses will block any well-intentioned interventions, and it can result in dissociative behavior becoming more pronounced, potentially impairing functioning to an even greater degree. Thus, clinical training on dissociative behavior will increase clinicians' awareness as to the critical need to treat maladaptive dissociative responses first so to prevent further harm.

The results from the current study also present implications for clinicians during the initial intake and assessment period, a time when a client is being screened for specific mental health symptoms that will inform a specific treatment regime. Scholars of dissociative research, such as Simeon and Abugel (2006), asserted that clinicians will

tend to stick within domains with which they are comfortable, failing to detect, diagnose, and treat dissociation when present. Putnam (2009) urged clinicians to routinely screen for dissociative symptomology, as dissociation has repeatedly been demonstrated to be a powerful phenomenon that impacts mind, body, and behavior. If dissociative behavior is present, it will typically have a clinical course that is characterized as chronic and recurrent (DSM-IV-TR, 2000); therefore, expeditious and effective treatment for those suffering from dissociative symptomology is essential. As discussed in Chapter II, clinician skepticism of dissociative phenomena in a clinical setting has been found to contribute to poor experiences in therapy, delays in diagnosis, and inappropriate application of interventions (Leonard et al., 2004). Thus, it would be prudent for a dissociation measure to be integrated as a part of the standard intake and/or assessment battery in clinical settings. Screening for dissociative behavior will not only inform clinicians as to whether a client possesses a high dissociative capacity, which presents huge implications for future recovery, but it will also facilitate accurate detection and diagnosis of dissociative symptomology that will aid toward application of relevant treatment goals and interventions during therapy.

### **Limitations of the Study**

A known limitation that existed for the current study was the sampling design. The sampling procedure for the current study was a nonprobability convenience sampling design. Participants were not selected by chance; therefore, every member of the general population did not have an equal chance of selection into the current study. This sampling procedure impacted the demographic variability, as the majority of participants in the current study were White/Caucasian. This sampling procedure may also impact the

external validity of this study by limiting the extent to which the results are generalizable to other samples. Additionally, because I desired to sample a nonclinical population, surveys that were retained were those in which participants endorsed no current engagement in counseling services. Earlier I discussed several implications that exist for clinical populations; implications I made based off the current sample from a nonclinical population. It must be stated that the findings from the current study are largely restricted to the nonclinical sample in the current study, and caution should be exercised when making inferences from the current sample to other populations of interest.

Although the sample for the current study was intended to be representative of the general population, coverage error did exist. The sample for the current study was comprised of an accessible and convenient population of male and female members from urban communities in the Rocky Mountain region, who were either students at a midsized university, or who were members of a preestablished group. Groups that were chosen from which to recruit participants were chosen because of convenience and accessibility to members. However, members from the sample in the current study may differ from members in the general population because every member of the general population is not an undergraduate and/or graduate student at a midsized university in the Rocky Mountain region, every member of the general population does not live and work in urban communities in the Rocky Mountain region, nor does every member of the general population share characteristics that members of the various different groups in the current study may share.

As stated above, the sample for the current study may not be representative of the general population, and therefore may lack generalizability, because all members of the



general population did not have a known and nonzero chance of selection into the sample. As a result, survey statistics may be biased because members of the sample in the current study may differ on variables of interest when compared to members of the general population who were excluded from the current study. These variables of interest may include race/ethnicity, level of education, and age. For example, the majority of participants in the sample were White/Caucasian, which is not representative of all members in the general population. Also, student respondents may differ from nonstudents in the general population in that student respondents may reflect a more affluent and educated population; consequently, responses may be biased. Similarly, nonstudent respondents from urban communities in the Rocky Mountain region may be, on average, of an older age than the student respondents; therefore, nonstudent respondents may differ from student respondents on variables of interest, such as lower endorsement of dissociative experiences throughout the lifespan, and they may endorse less anxiety and a lower level of perceived psychological distress due to increased social support and coping strategies (Brantley et al., 1985).

Another known limitation that existed for the current study was the inability to control for all potentially extraneous variables, for it was impossible to know all relevant variables on which participants may have differed with respect to the primary variables of interest in the current study. However, by adding a demographic section on the survey measure, I was able to determine the point in time prevalence rate of age, sex, and race/ethnicity for the sample in the current study. Asking participants to report these potentially extraneous demographic variables was an effort toward minimizing this

threat, and more specifically, it was also an attempt to increase awareness of the relationship between these demographic variables and the construct of dissociation.

Another known limitation that existed for the current study was that the measures employed are based on participant self-report. Therefore, an individual's self-reported dissociative experiences, subclinical anxiety, and perceived level of psychological distress were based on his or her own level of subjective reality. This means that each participant may have interpreted items differently, as well as interpreted the severity and/or intensity of items differently. For example, there may be moderating variables which can include characteristics of each participant, such as coping strategies or personality variables; and environmental factors, such as social supports and uncontrollability, which could have augmented or moderated the endorsement of participant self-report on the constructs of interest in the current study (Brantley et al., 1985).

As discussed in Chapter IV, 191 surveys were disseminated for the current study, of which 161 surveys were completed and returned, and only 154 surveys were retained ( $N = 154$ ). This resulted in a response rate of 84%. This high response rate can be attributed to using a convenient and accessible sample. Students made up the majority of the sample at 67.5%, as compared to nonstudent members from urban communities at 30.5%. Student participants were able to complete the survey during class time and were therefore more likely to fill out the survey because they did not have to sacrifice their own time outside of class; hence, likely contributing to their high response rate. A high response rate from members from the urban communities can be attributed to participants' opportunity to complete the survey during a time that was convenient for

them and a time in which they were already scheduled to be present at a meeting and/or social gathering. Nevertheless, this high response rate may present limitations for the current study, for the majority of graduate students knew me as a fellow peer, and members from the urban communities who chose to participate in the current study knew that I was affiliated with another individual in the preestablished group. These factors may have contributed toward participants' greater likelihood to participate by completing a survey, and it also may have influenced endorsement of items because respondents may have been concerned that I would be able to connect responses to source of respondent.

Lastly, a known limitation for the current study was that I modified the CES measure, and I dropped item 3 on the CES and items 7 and 18 on the BAI. I do not know the true effect of modifying these scales due to dropping these items. Modifying these measures may impact the validity and reliability of test scores, and it may impact the extent to which the results from the current study are generalizable to other samples.

Overall, due to the above mentioned limitations, the strength and nature of all relationships that were found between the constructs of interest are largely restricted to the sample of respondents who chose to participate in the current study. Recommendations for future research are discussed below. Additional studies are needed in order to further support the findings of the current study, and also to provide a firmer ground from which inferences can be made to other nonclinical and clinical populations.

### **Recommendations**

The broad spectrum of dissociation is by and large an untapped area worthy of further examination in empirical research. As previously stated, continued research in this area will increase awareness among clinicians that dissociative experiences are a

normative and legitimate clinical presentation. Once more, continued research on the comorbidity of subclinical anxiety, perceived level of psychological distress, and less severe forms of dissociation will aid clinicians toward accurate detection and diagnosis of dissociative phenomena, and it will result in the expeditious application of appropriate clinical interventions that are effective in the treatment of individuals suffering from dissociative symptomology.

Future research could include the demographic variables sex and race/ethnicity in subsequent studies, so to further examine the relationship these variables have with less severe forms of dissociation. For example, hierarchical regressions could be conducted in which these demographic variables are controlled for, creating and testing product variables, thereafter examining whether each of these variables independently moderate the effects of endorsement of less severe forms of dissociation. Additionally, Cardena and Weiner (2004) urged future scholars to consistently record data on race/ethnicity in order to determine whether dissociative symptomology is a normal expression within one's cultural group, as well examine if individual dissociative experiences, regardless of cultural norms, are a source of significant dysfunction or distress. For example, Douglas (2009) found that African and Asian American participants in his predominately Caucasian sample endorsed higher rates of dissociation. However, future studies could explore whether higher endorsement of dissociative behavior was due to felt oppression. Therefore, race may not be the only factor affecting endorsement of dissociative behavior; rather, exploring culture may provide insight as to whether endorsement of dissociative behavior is a reaction to felt prejudice, privilege, and oppression in society.

Vanderlinden et al. (1991), among other scholars, found age to be a significant variable with dissociation and reported that the frequency of normative dissociative experiences declines with age. Future research could examine the role age plays, specifically whether increased age plays a significant and meaningful role in ameliorating the effects of less severe forms of dissociative experiences; thereafter age norms could be employed when interpreting scores on dissociative instruments. Additionally, future research could examine potentially extraneous and moderating variables that could be examined in relation to increased age; such as social supports, resources, coping skills, or low grade chronic anxiety due to felt oppression, and whether these extraneous variables have a significant relationship to less severe forms of dissociation.

Herman (2005), as well as Simeon et al. (2005), suggested that social support has a powerful ameliorating influence on decreasing the current level of dissociative symptomology. Therefore, future research could examine additional data gathered on an individual's social network and/or current status of relationships, in an effort to determine whether these various forms of social support have a causal influence on dissociative experiences.

Future research could focus on the development of dissociative measures that include reverse-keyed items, in an attempt to avoid response bias. Once more, future research could focus on the development of measures that are more sensitive to measuring dissociative behavior in nonclinical samples that are comprised of both student respondents in addition to community respondents. The CES measure as used in the current study includes many items that may not be endorsed within a nonclinical population. Therefore, development of measures that are more sensitive to assessing the

extent of engagement in more normative types of dissociation, also including how this may impact current level of functioning, would serve as a preventative tool for clinicians so they can intervene earlier and educate clients on more adaptive coping responses before dissociative behavior becomes a chronic and recurrent response to life events. This includes conducting future studies that use the CES, with item 3 dropped, and the BAI, with items 7 and 18 dropped, in order to establish additional psychometric data in an effort to address the scale limitations of the current study.

Future research could include further examination of less severe forms of dissociative behavior and its relationship to subclinical anxiety and perceived level of psychological distress in both a nonclinical, as well as a clinical population. Teasing out specific differences in regard to endorsement of dissociative behavior in a nonclinical population compared to a clinical population will add to the current literature as to what types of characteristics or symptom patterns play a role in various forms of dissociative behavior. For example, research could examine the comorbid relationship between normative types of dissociative experiences and a specific personality trait that is associated with a personality disorder. This knowledge will inform treatment regimes, as well as future research studies thereafter.

Lastly, future research could examine normative dissociation as a form of coping behavior in response to daily stress. Nixon and Bryant (2006) reported a need for continued research in order to increase clinicians understanding of the role dissociation plays as a coping skill in response to stress and anxiety, and also during the healing and recovery period after situations of elevated distress.

### Summary

The current study investigated to what extent the variance in less severe forms of dissociation can be explained by subclinical anxiety and perceived level of psychological distress in a nonclinical population. The current study also examined the relationship between less severe forms of dissociation and the demographic variable age in a nonclinical population. Lastly, the point in time prevalence rate of age, sex, and race/ethnicity of participants who endorsed dissociative symptomology were reported.

All 10 hypotheses in the current study were supported. Outcome data from research question one, which subsumed hypotheses one and two, as well as research question two, which subsumed hypotheses three through nine, indicated that less severe forms of dissociation are a valid entity in a nonclinical population. In addition, a significant unique proportion of the variance in dissociation can be explained by both subclinical anxiety and perceived level of psychological distress. Lastly, outcome data from research question three, which subsumed hypothesis 10, indicated that age does explain a unique proportion of the variance in less severe forms of dissociation; with a significant, negative, weak relationship between less severe forms of dissociation and age. This means that as age increases, dissociation decreases. However, this weak relationship indicated that age is not a strong explanatory factor for the variable dissociation.

It is my hope that future research on dissociation will continue so that scholars and practicing clinicians will possess a greater understanding of the role that less severe forms of dissociation play in response to normative stressors; as well as the comorbidity that can occur between dissociation and other psychiatric disorders, whether the

comorbid relationship reaches a subclinical or clinical threshold. Further research that seeks to improve current assessment measures of dissociation, and also aims to include relevant demographic variables, will provide additional knowledge that will better inform accurate assessment and treatment of dissociation. It is undisputed that continued research on dissociation will create numerous benefits to the field of psychology, such as increasing competence among clinicians in regard to the complexity of dissociation, as well as aiding toward more accurate detection and diagnosis of a myriad of mental health diagnoses. This will ultimately result in the selection of relevant interventions that will enhance overall well-being and promote recovery.

The current study has thus served to strengthen a clinical perspective, and increase awareness within the field of psychology, that the broad spectrum of dissociative experiences are a legitimate and prevalent presentation that can serve as a normative response and/or psychological coping mechanism in response to subclinical anxiety and perceived level of psychological distress in a nonclinical population. However, dissociative behavior is not always adaptive. Recognition that dissociative behavior may occur within individuals who do not demonstrate more severe forms of psychopathology or possess a trauma history is imperative, as lack of awareness on part of the clinician may result in ineffectual interventions and deleterious effects to the client.

In the end, accurate detection and diagnosis of the broad spectrum of dissociative phenomena will continue to be reliant on informed and empathic clinicians who have the necessary training and understanding of dissociation (Cardena & Weiner, 2004). It is my hope that the data gathered from the current study will work toward absolving present skepticism that exists for normative dissociative processes, and that the construct of



dissociation be welcomed back to its rightful and well earned place within training institutions and among clinical conversations, after decades of being disregarded and forgotten within mainstream psychology.

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## APPENDIX A

### SCRIPT FOR RECRUITMENT OF PARTICIPANT POOL

Institutional Review Board  
Script for Human Experiences Survey

Script for introducing study to student classes:

Hello, my name is Denise Lucia. I am a fourth year doctoral candidate in the Counseling Psychology, Ph.D. program here at the University of \_\_\_\_\_. I want to thank professor \_\_\_\_\_ for granting me a few minutes to discuss a research study that I am currently doing which includes an opportunity for you to volunteer your experience by completing a survey. The purpose of this study is to learn about everyday experiences that people may have when they perceive the level of anxiety and/or distress in their life to be elevated. Here is a copy of my informed consent document. I will read my consent form out loud so that you can gain a better understanding of my study. Participation in this survey is entirely voluntary, and at any time during the completion of this survey you will be free to stop and discontinue your participation. I have asked professor \_\_\_\_\_ to come at the end of your class period today so that if you decide that you do not want to volunteer in my study then you have the option to leave class now. After I further explain my study by reading my consent form, if you then decide you do not want to participate than you again have the option to leave class. Refusal to participate or desire to stop prematurely will in no way result in adverse consequences to your academic standing, nor will participation be connected to extra credit or a student's grade in the course.

Read *Informed Consent Document* out loud and allow participants to ask questions before proceeding. Hand out survey.

Script for introducing study to individuals within the community:

Hello, my name is Denise Lucia. I am a fourth year doctoral candidate in the Counseling Psychology, Ph.D. program at the University of \_\_\_\_\_. I want to thank \_\_\_\_\_ for granting me a few minutes to discuss a research study that I am currently doing which includes an opportunity for you to volunteer your experience by completing a survey. The purpose of this study is to learn about everyday experiences that people may have when they perceive the level of anxiety and/or distress in their life to be elevated. Here is a copy of my informed consent document. I will read my consent form out loud so that you can gain a better understanding of my study. Participation in this survey is entirely voluntary. After I further explain my study, or at any time during the completion of this survey, if you decide you do not want to participate you are free to leave the group early, and/or stop and discontinue your participation.

Read *Informed Consent Document* out loud and allow participants to ask questions before proceeding. Hand out survey.

Script for all participants post completion of survey:

As outlined in *Informed Consent Document*, wait for participants to fill out survey. Instruct them to place their survey in the manila envelope I provide, and thank them for their time and participation. Hand each participant a *Consulting Referral Form*.

APPENDIX B  
INFORMED CONSENT DOCUMENT

Institutional Review Board  
Informed Consent Document for Human Participants in Research  
Project Title: Human Experiences Survey

Researcher: Denise L. Lucia, B.S., CAC III, Ph.D. Candidate in Counseling Psychology  
Email: [luci1500@bears.unco.edu](mailto:luci1500@bears.unco.edu)  
Research Advisor: David M. Gonzalez, Ph.D., Full Professor, Interim Director of  
Training, Counseling Psychology  
Phone: 970-351-1639

My name is Denise L. Lucia. I am a doctoral candidate in Counseling Psychology at the University of \_\_\_\_\_. The purpose of this study is to learn about everyday experiences that people may have when they perceive the level of anxiety and/or distress in their life to be elevated.

Participation in this research study will require you to respond to a survey which is comprised of questions regarding common experiences that people have in their daily lives, such as, “Was listening to someone talk, and suddenly realized I did not hear all or part of what was said” and “Had the experience of feeling as though I was standing next to myself, or watching myself as if I was looking at a different person.” Other questions involve how often you have been bothered by common symptoms of anxiety and the level to which you currently perceive distress in your daily life, such as feeling “Unable to relax” and “Nervous,” as well as “Feeling lonely even when you are with people” and “Feeling tense or keyed up.” The last portion of the survey will ask you to respond to demographic questions. These questions are at the end of the survey. The survey will take approximately 15-20 minutes to complete. There are no right or wrong answers.

Participation in this survey is entirely voluntary for all participants. At any time during the completion of this survey you are free to stop and discontinue your participation. The foreseeable risks to your participating in this study, beyond those normally associated with other class-related activities, may be that you experience discomfort or adverse effects during and/or after completion of this survey. During and after the completion of this survey I will be available for you to express any concerns or to ask me any questions regarding your experience. I have also given you my email address so that you can contact me should further concerns and/or questions arise. If you are an undergraduate or graduate student taking this survey at the end of the scheduled class period, you have the option to leave class now if you choose not to participate. As an undergraduate or graduate student, your refusal to participate, or desire to stop prematurely, will in no way result in adverse consequences to your academic standing, nor is participation connected to extra credit or to your grade in the course.

Your name will not be on this survey. Your name in conjunction with your level of participation will not be included in data collection for this research study. After completing the survey, please place your survey in the provided manila envelope. Although I cannot ensure confidentiality, this procedure is in an effort to maintain



confidentiality between self-reported data and source of respondent. All surveys will be stored in a locked file cabinet that only I will have access to.

Thank you for completing the following survey. Your time is greatly appreciated. While there are no direct benefits to you for participating in this research, you will be contributing knowledge to an existing body of scientific literature so clinicians can gain a better understanding, as well as an increased awareness, of common human experiences in the general population.

Please feel free to contact me if you have any questions or concerns about this research. Please retain this copy for your records.

Sincerely,

Denise L. Lucia, B.S., CAC III  
Ph.D. Candidate in Counseling Psychology

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having an opportunity to ask any questions, completion of the survey and/or return of the questionnaire indicates consent to participate in the study. Please retain this copy for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161.

APPENDIX C  
SURVEY MEASURE

## Human Experiences Survey

Below are statements reflecting common experiences that people have in their daily lives. Please carefully read each item in the list. It is important your answers reflect how often these experiences happen to you when you are not under the influence of alcohol or drugs. Indicate *how often* you have experienced each symptom, by placing an X in the corresponding space in the column next to each symptom.

	Never	Once or twice	Sometimes	Frequently	Almost all the time
1. Drove or rode somewhere and later realized I did not remember what happened during all or part of the trip.					
2. Was listening to someone talk and suddenly realized I did not hear all or part of what was said.					
3. Found myself in a place and had no idea how I had gotten there.					
4. Found myself dressed in clothes I didn't remember putting on.					
5. Found new things among my belongings that I didn't remember buying.					
6. Was approached by someone I didn't know who called me by another name or who insisted that he or she had met me before.					
7. Had the experience of feeling as though I was standing next to myself, or watching myself as if I was looking at a different person.					
8. Was told that I sometimes do not recognize a friend or family member.					
9. Found that I had no memory for some important event in my life (for example, a wedding or graduation).					
10. Had the experience of being accused of lying when I did not think I had lied.					
11. Had the experience of looking in a mirror and not recognizing myself.					
12. Had the experience of feeling that other people, objects, and the world around me were not real.					
13. Had the experience of feeling that my body did not belong to me.					
14. Had the experience of remembering a past event so vividly that it felt like I was reliving that event.					
15. Had the experience of not being sure whether things I remember happening really did happen, or whether I just dreamed them.					

How often have you experienced each symptom:

	Never	Once or twice	Sometimes	Frequently	Almost all the time
16. Had the experience of being in a familiar place but finding it strange and unfamiliar.					
17. Found that when I was watching television or a movie I became so absorbed in the story that I was unaware of other events happening around me.					
18. Found that I became so involved in a fantasy or daydream that it felt like it was really happening to me.					
19. Was able to ignore pain.					
20. Find that I sometimes sit staring off into space, thinking of nothing, and am not aware of the passage of time.					
21. Talked out loud to myself when I was alone.					
22. Find that in one situation I act differently from when I'm in another situation to the extent I feel as if I were two different people.					
23. Find that in certain situations I am able to do things with amazing ease and spontaneity that would usually be difficult for me.					
24. Found that I could not remember whether I had done something or had just thought about doing it (for example, not knowing whether I mailed the letter or have just thought about mailing it).					
25. Found evidence that I had done things that I did not remember doing.					
26. Found writings, drawings, or notes among my belongings that I must have done but cannot remember doing.					
27. Had the experience of hearing voices inside my head that told me to do things or that commented on things that I was doing.					
28. Felt as though I was looking at the world through a fog so that people and objects appeared far away or unclear.					
29. Felt like I was dreaming when I was awake.					
30. Felt like I was disconnected from my body.					
31. Felt that I could not move my hands or feet.					

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by each symptom during the PAST WEEK, INCLUDING TODAY, by placing an X in the corresponding space in the column next to each symptom.

	NOT AT ALL	MILDLY It did not bother me much	MODERATELY It was very unpleasant but I could stand it	SEVERELY I could barely stand it
1. Numbness or tingling.				
2. Feeling hot.				
3. Wobbliness in legs.				
4. Unable to relax.				
5. Fear of the worst happening.				
6. Dizzy or light-headed.				
7. Heart pounding or racing.				
8. Unsteady.				
9. Terrified.				
10. Nervous.				
11. Feelings of choking.				
12. Hands trembling.				
13. Shaky.				
14. Fear of losing control.				
15. Difficulty breathing.				
16. Fear of dying.				
17. Scared.				
18. Indigestion or discomfort in abdomen.				
19. Faint.				
20. Face flushed.				
21. Sweating (not due to heat).				

Below is a list of problems people sometimes have. Please read each one carefully, and place an X in the corresponding space in the column next to each symptom that best describes how much that problem distressed or bothered you during the PAST 7 DAYS INCLUDING TODAY.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Nervousness or shakiness inside.					
2. Faintness or dizziness.					
3. The idea that someone else can control your thoughts.					
4. Feeling others are to blame for most of your troubles.					
5. Trouble remembering things.					
6. Feeling easily annoyed or irritated.					
7. Pains in heart or chest.					
8. Feeling afraid in open spaces or on the streets.					
9. Thoughts of ending your life.					
10. Feeling that most people cannot be trusted.					
11. Poor appetite.					
12. Suddenly scared for no reason.					
13. Temper outbursts that you could not control.					
14. Feeling lonely even when you are with people.					
15. Feeling blocked in getting things done.					
16. Feeling lonely.					
17. Feeling blue.					
18. Feeling no interest in things.					
19. Feeling fearful.					
20. Your feelings being easily hurt.					
21. Feeling that people are unfriendly or dislike you.					
22. Feeling inferior to others.					
23. Nausea or upset stomach.					
24. Feeling that you are watched or talked about by others.					
25. Trouble falling asleep.					
26. Having to check and double-check what you do.					

How much were you distressed or bothered by:

	Not at all	A little bit	Moderately	Quite a bit	Extremely
27. Difficulty making decisions.					
28. Feeling afraid to travel on buses, subways, or trains.					
29. Trouble getting your breath.					
30. Hot or cold spells.					
31. Having to avoid certain things, places, or activities because they frighten you.					
32. Your mind going blank.					
33. Numbness or tingling in parts of your body.					
34. The idea that you should be punished for your sins.					
35. Feeling hopeless about the future.					
36. Trouble concentrating.					
37. Feeling weak in parts of your body.					
38. Feeling tense or keyed up.					
39. Thoughts of death or dying.					
40. Having urges to beat, injure, or harm someone.					
41. Having urges to break or smash things.					
42. Feeling very self-conscious with others.					
43. Feeling uneasy in crowds, such as shopping or at a movie.					
44. Never feeling close to another person.					
45. Spells of terror or panic.					
46. Getting into frequent arguments.					
47. Feeling nervous when you are left alone.					
48. Others not giving you proper credit for your achievements.					
49. Feeling so restless you couldn't sit still.					
50. Feelings of worthlessness.					
51. Feeling that people will take advantage of you if you let them.					
52. Feelings of guilt.					
53. The idea that something is wrong with your mind.					

## Demographic Data

Do not put your name on this data sheet. Please circle or fill in the appropriate response.

1. Age: \_\_\_\_\_
2. Gender: Female    Male
3. Race/Ethnicity (Circle all that apply):    Native American    Black/African American    Hispanic/Latino(a)  
Asian/Pacific Islander    White/Caucasian    Other\_\_\_\_\_
4. Student classification if applicable: Undergraduate    Graduate
5. If you are an undergraduate student, please specify year of study:  
Freshmen    Sophomore    Junior    Senior
6. If you are a graduate student, please specify degree program:    MA/MS    Ed.D.    Psy.D.    Ph.D.
7. If you are a non-student, please specify level of education completed:  
High School    BA/BS    MA/MS    Ed.D.    Psy.D.    Ph.D.    M.D.
8. Occupation if applicable: \_\_\_\_\_
9. Are you currently receiving counseling/therapy from a mental health professional?    Yes    No



APPENDIX D  
CONSULTING REFERRAL FORM

Institutional Review Board  
Consulting Referral Form

As a participant in this study, in the event you feel distress and/or discomfort by questions raised in this research, you may wish to know about counseling services that are available in your community.

For Students of XXX, as well as Community Residents:

Psychological Services Clinic

McKee Hall, Room 247

University of Northern Colorado campus

Greeley, CO. 80639

Office Hours: Mon-Fri 8a-5p with some evening hrs

Phone: (970) 351-1645

For Students of XXX:

University Counseling Center

Cassidy Hall, 2<sup>nd</sup> Floor

University of Northern Colorado campus

Greeley, CO. 80639

Office Hours: Mon-Fri 8a-5p

Phone: (970) 351-2496

For Community Residents:

Community Reach Center

Commerce City Office Location

4371 E. 72<sup>nd</sup> Avenue

Commerce City, CO. 80022

Phone: (303) 853-3456

Office Hours: Mon-Fri 8a-5p with some evening hrs

There are several offices you can request to attend services. Various offices are located in Thornton, Westminster, Brighton, and Northglenn.

APPENDIX E

INFORMATION ON COPYWRITED INSTRUMENTS

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

The Beck Anxiety Inventory is available from:

Pearson Assessments, Psychological Corporation

[www.pearsonassessments.com/pai/](http://www.pearsonassessments.com/pai/)

1-800-328-5999

Derogatis, L.R. (1993). *Brief Symptom Inventory: Administration, scoring, and procedures manual, third edition*. Minneapolis, MN: National Computer Systems.

The Brief Symptom Inventory is available from:

Pearson Assessments, Psychological Corporation

[www.pearsonassessments.com/pai/](http://www.pearsonassessments.com/pai/)

1-800-328-5999

## APPENDIX F

## INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

Institutional Review Board  
IRB Approval Letter Submitted via Email

From: Maria Lahman [maria.lahman@unco.edu]  
Sent: Thursday, November 18, 2010 12:24 PM  
To: Denise Lucia  
Cc: Gonzalez, David  
Subject: Approved IRB

Dear Denise,

Your IRB request has been approved. You may start the study. In a few days Dr. Gonzales will receive a copy of this approval in campus mail.

Best Wishes,

Maria K. E. Lahman, Ph.D.  
IRB Co-Chair  
Associate Professor  
Applied Statistics and  
Research Methods  
University of Northern Colorado  
970-351-1603

APPENDIX G  
JOURNAL MANUSCRIPT

## Dissociative Experiences, Subclinical Anxiety and Perceived Level of Psychological Distress in a Nonclinical Population

### ABSTRACT

The purpose of this quantitative study was to investigate to what extent the variance in less severe forms of dissociation is explained by subclinical anxiety and perceived level of psychological distress in a nonclinical population. The demographic variable age was also examined in relationship to dissociative behavior. Outcomes were measured using a self-report survey, comprised of three existing measures which included a modified version of the Curious Experiences Survey (CES; Goldberg, 1999), the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988), and the Brief Symptom Inventory (BSI; Derogatis, 1975). Data were collected from 154 participants in a nonclinical population. Multiple linear regressions were conducted and results indicated that 44% of the variance, which represents a large effect size, in less severe forms of dissociation can be explained collectively by subclinical anxiety and perceived level of psychological distress [ $F(2, 151) = 58.07, p < .05$ ]. Results also indicated that 2.7% of the variance in less severe forms of dissociation can be explained by age; with outcome data indicating that as age increases, dissociation decreases. Contributions to the current body of literature and implications for clinical practice are discussed, along with limitations of this study and recommendations for future research.

### INTRODUCTION

The term dissociation speaks to the brilliance of the human mind, in that it has the capacity to protect the self from psychologically distressful events by altering consciousness or awareness. Dissociation should not always be viewed as pathological, for it is a form of coping that the individual has adopted in order to remain a viable, functioning being. Dissociative experiences are viewed by many scholars in the field of dissociation as an everyday cognitive process (Ray, 1996). Many contemporary theorists would agree that dissociation is more than a defense mechanism; it is a subjectively experienced self-state or state of being (Simeon & Abugel, 2006, p. 58). The mind is in a constant process of being either connected or disconnected, with every aspect of human life involving a normal, dissociative process.



Dissociative disorders and the wide spectrum of dissociative experiences have largely been unrecognized as a component of clinical training, and have lacked acknowledgement within mainstream psychology, and in the professional literature, as a legitimate and prevalent diagnostic presentation since its inception in the late 1800s (Bernstein Carlson & Putnam, 1993; Howell, 2005; Ross, Ryan, Voigt, & Eide, 1991; Trueman, 1984). Ross (1996) stated, “No other disorder has been the subject to this kind of exclusion from mainstream psychological and medical study” (p. 6).

Today, the study of dissociative identity disorder (DID) continues to be the major focus of research when examining dissociation. DID is the most extreme form of dissociation, having a causal relationship with exposure to severe trauma, most notably chronic emotional, physical, and sexual abuse. Studies that have examined the broad spectrum of dissociation are limited in size, with clinicians still lacking mutual collaboration and awareness in detecting, diagnosing, treating, and even acknowledging these diverse clinical symptoms. The vast arena of dissociation remains an area of fertile ground, and continues to be viewed with skepticism as clinicians await further empirical studies to validate the wide spectrum of dissociative symptomology (Johnson, Cohen, Kasen, & Brook, 2006; Maaranen et al., 2005; Ray & Faith, 1995).

### **Dissociation**

Less extreme forms of dissociation, such as depersonalization, derealization, and everyday normative dissociative experiences, often go unnoticed in the scientific literature and consequently, the greater majority of dissociative experiences all too often go undiagnosed and untreated. At best, clinicians primarily learn about and view dissociation as a precursor and/or marker of severe pathology. When dissociation is

discussed in the literature authors often discount the prevalence and legitimacy of dissociated memories and/or dissociated experiences, attributing fault or poor intentions on the therapist, or worse, on the client. In an effort to expose clinicians' lack of awareness and failure to endorse dissociative phenomena when present in clients, Leonard, Brann, and Tiller (2004) conducted a study which surveyed 250 clinicians and found that only 55% of clinicians regarded dissociative disorders as valid diagnoses, 35% dubiously valid, and 10% invalid. This lack of awareness and failure to detect and acknowledge dissociative phenomena speaks to the still widely held belief in the field of psychology that dissociative experiences are not a legitimate presentation, and if present, they are often speculated to be of an iatrogenic nature.

Unknown to most contemporary clinicians, dissociation has a rich clinical history and it rests on a foundation built from revered ancestors within the field of psychology. Pierre Janet was a prominent contributor to the field of human behavior, who in the latter half of the 19<sup>th</sup> century laid the foundation toward a greater breadth of understanding of dissociative symptomology. Janet's fervent passion and steadfast curiosity for this complex construct led to the development of his theory of dissociation; a theory that proved to be a seminal contribution toward the understanding of dissociation and trauma (Putnam, 1989).

Working from Janet's theoretical *states of consciousness model*, the broad spectrum of dissociative experiences is best understood in terms of a continuum model where dissociative experiences lie on a continuum from adaptive, normative dissociation, to more maladaptive, pathological dissociation (Howell, 2005). As Janet's work evolved, he conceptualized dissociation as a defense or coping mechanism that exists along a

continuum, where normative, less severe forms of dissociative experiences can occur when an individual faces everyday stressful events or subclinical anxiety, and/or perceives the level of stress in his or her life to be elevated. The general conceptualization of dissociation in the current study, as supported by Janet and other scholars, maintains that when a dissociative experience occurs, the level of distress decreases; in so doing, the dissociative experience has served as either life-enhancing or as a self-protective function in order to cope or feel more in control in the present moment. From this point of view, dissociative disorders, as conceptualized along a continuum, are not characterized by any single symptom or set of symptoms that would differentiate normal from pathological dissociation; rather, it is the frequency and intensity of dissociative experiences along a continuum that quantitatively differentiate normal from pathological dissociation (Kihlstrom, Glisky, & Angiulo, 1994, p. 118).

### **Subclinical Anxiety**

Dissociation is often comorbid with psychiatric conditions such as anxiety, depression, borderline personality disorder, posttraumatic stress disorder, and schizophrenia (Cassano et al., 1989; Maaranen et al., 2005; Mula et al., 2008a, 2008b; Ross, Joshi, & Currie, 1990). A clinician will typically have extensive training in recognizing and diagnosing anxiety and depression, but minimal, if any, training in detecting when a client is experiencing dissociative phenomena. Thus, clinicians will tend to stick within domains they are comfortable, failing to detect, diagnose, and treat dissociation when present. The field of psychology has endured a long tradition of dismissing dissociative experiences, reporting that dissociative phenomena are not a separate entity in itself, but rather born from, or a manifestation of, other psychiatric

conditions such as depression and anxiety. Studies have found this to be erroneous (Simeon et al. (2003) & Baker et al. (2003) [as cited in Simeon & Abugel, 2006]), instead reporting that even symptoms of depression and anxiety can exacerbate dissociative experiences, and often when a depressive episode or a panic attack remits, the dissociation is still present. Therefore, dissociation has been found to be a primary phenomenon, rather than one that accompanies many other disorders (Simeon & Abugel, 2006, p.100). Simeon (2004) attributes under-diagnosis of dissociative symptomology to clinician skepticism, limited familiarity in detecting a dissociative presentation, as well as tunnel vision, whereby the clinician only observes symptoms that are similar to the age-old familiar clinical entities that he or she have been trained to detect and diagnose.

### **Perceived Level of Psychological Distress**

Psychological distress is a very pertinent construct in relation to dissociation, for less severe forms of dissociation have been found to be related to daily distress in one's life, rather than solely correlated with extreme levels of stress such as complex trauma or a one time, isolated traumatic event (De Wachter, Lange, Vanderlinden, Pouw, & Strubbe, 2006). Perceived level of psychological distress is the overall psychological symptom pattern which is based on the degree to which an individual appraises experiences or situations in daily life as causing physical, cognitive, behavioral, and emotional distress (Derogatis, 1993; Poulin, Lemoine, Poirier, & Lambert, 2005).

Simeon and Abugel (2006) reported that daily prolonged stress, such as an unhappy marriage, the process of divorce, major life transitions such as leaving home for college, or demanding work conditions that lead to burnout, can all trigger dissociative phenomena. In a similar vein, De Wachter et al. (2006) found that a decrease in perceived

stress leads to a decrease in dissociative phenomena. Thus, it is not surprising that scholars have found considerable comorbidity, approximately 70%, between people who perceive to be experiencing interpersonal distress and who also report dissociative experiences (Leonard et al., 2004).

### **Rationale for Conducting Study**

The broad spectrum of dissociation is by and large an untapped area worthy of further examination in empirical research. Prior studies that have examined normative dissociation are dated and lack sufficient breadth, suggesting a need for additional and current research in this area. It was paramount that further research on dissociative processes was conducted so to increase awareness among clinicians that normative dissociation exists, thereby aiding clinicians toward accurate detection and diagnosis of dissociative symptomology.

The current study contributed to the existing body of research on dissociation because I used a sample derived from a nonclinical population to specifically examine the relationship between subclinical anxiety, perceived level of psychological distress, and less severe forms of dissociation. Using a sample derived from a nonclinical population, in addition to examining the constructs as noted above, was in marked contrast to the majority of prior research which has historically used samples derived from clinical populations when examining the relationship between severe forms of dissociation, such as dissociative identity disorder (DID), and psychiatric disorders that are typically comorbid with moderate to severe levels of trauma, such as borderline personality disorder and posttraumatic stress disorder. By making the methodological adjustments noted above, in addition to reporting the point in time prevalence rate of age, sex, and

race/ethnicity of participants who reported dissociative symptomology, outcome data from the current study contributed to the literature on dissociative experiences in a nonclinical population.

Once more, continued research in this area will increase awareness of dissociative experiences as a legitimate and normative clinical presentation, thereby aiding toward application of appropriate clinical interventions. Increasing awareness among clinicians of the comorbidity of subclinical anxiety, perceived level of psychological distress, and dissociative phenomena will not only aid clinicians toward accurate detection and diagnosis of dissociative phenomena, it will also result in expeditious and effective treatment for those suffering from dissociative symptomology. In their survey of 250 clinicians, Leonard et al. (2004) not only found that a mere 55% of clinicians regarded dissociative disorders as valid diagnoses, but that 76% of the 55 clients surveyed in this same study reported delays in diagnosis of dissociative symptomology, suboptimal treatment, and skeptical or antagonistic attitudes from clinicians that were rated as destructive. Nixon and Bryant (2006) found that a clinician can do more harm to a client when implementing interventions if the clinician fails to detect comorbid dissociative symptomology.

### **Statement of Purpose**

There were two purposes for conducting the current study. The first purpose was to examine less severe forms of dissociation and its relationship to subclinical anxiety and perceived level of psychological distress in a nonclinical population. The second purpose was to examine the relationship between less severe forms of dissociation and the demographic variable age in a nonclinical population, as well as report the point in

time prevalence rate of age, sex, and race/ethnicity of participants who endorsed dissociative symptomology.

## METHODS

### **Participants and Procedures**

The participant sample for the current study was an accessible population, in which I employed a nonprobability convenience sampling design, comprised of male and female undergraduate and graduate students from a midsized university in the Rocky Mountain region, as well as male and female members from urban communities in the Rocky Mountain region. The target population for the current study was the general population, specifically, males and females 18 years of age or older across all levels of race/ethnicity, education, and socio-economic status.

For the current study, 191 surveys were disseminated, of which 161 surveys were completed and returned; resulting in a response rate of 84%. However, because the present study desired to sample a nonclinical population, surveys that were retained were only those in which participants endorsed no current engagement in counseling services. Therefore, only 154 surveys were retained for the present study ( $N = 154$ ). Participants were not offered any type of incentive in an effort to improve response rate.

The sample for the current study consisted of 69.5% of respondents who were either an undergraduate or graduate student enrolled at a midsized university, and 30.5% of respondents who were members from urban communities. Mean age was 32 years of age ( $M = 32.18$ ,  $SD = 12.9$ ). The sample was predominately White/Caucasian, making up 86% of the sample, and 67.5% of the sample was female. The sample reflected a high level of educational attainment, with only 3.9% reporting their level of education as a

high school diploma, and the remaining 96.1% reporting a bachelor's degree or higher and/or current enrollment in an undergraduate or postgraduate program. Reported occupations ranged from home maker to attorney, with the majority of occupations reported as being in the field of human services.

In order to recruit participants for the current study, I used a script when introducing the present study to undergraduate and graduate students at a midsized university, and when introducing the present study to individuals from urban communities. In order to recruit undergraduate and graduate students at a midsized university, I first contacted faculty members and asked for permission to disseminate a survey measure at the end of their scheduled class period. Once permission was granted to enter a classroom, undergraduate and graduate students were invited by myself during a classroom presentation at the end of a scheduled class period. The presentation consisted of my reading aloud a script that introduced the current study and then reading aloud the informed consent document.

In order to recruit individuals from urban communities, I invited individuals to participate in the current study by first verbally requesting permission from acquaintances and/or managerial staff members to gain access to a variety of groups that were comprised of individuals I did not know. Once permission was granted to attend a group at a predetermined time as set by members of the group, individuals from urban communities were invited by myself after I read aloud a script that introduced the current study and then read aloud the informed consent document. I was granted permission to access various groups which included, but were not limited to: a weekly meeting comprised of chefs and sommeliers at a wine bistro; a monthly book club meeting at an



individual's home; and a weekly staff meeting comprised of mental health professionals at a community mental health center.

All survey dissemination for the current study occurred in either a university classroom, or in the location of the preestablished group. I remained present while participants completed the survey. After completing the survey, participants were asked to place their survey in a manila envelope, and then each participant was given a consulting referral form that highlighted counseling services available in the area in the event a participant felt distress and/or discomfort by questions raised in the research. Professors, managerial staff, acquaintances, and family members with whom I was affiliated in order to set up recruitment of participants did not participate in the current study.

### **Instrumentation**

A six-page, 105 item paper/pencil survey was used as the primary data collection tool to measure self-reported experiences of dissociation, subclinical anxiety, and perceived level of psychological distress in a nonclinical population. I created a survey which had three sections comprised of three existing measures and a demographic section. The first portion of the survey was a modification of the 31 item, Curious Experiences Survey (CES; Goldberg, 1999), a self-reported measure of dissociative experiences. The second portion of the survey was a 21 item, Beck Anxiety Inventory (BAI; Beck et al., 1988), a self-reported measure of anxiety. The third portion of the survey was a 53 item, Brief Symptom Inventory (BSI; Derogatis, 1975), a self-reported, point-in-time measure of the overall psychological symptom pattern of an individual. The last portion of the survey consisted of nine demographic questions.

The author of the CES (Goldberg, 1999) has reported that his survey measure is open to the public domain, and it may be reproduced and used without his permission. The BAI (Beck et al., 1988) and BSI (Derogatis, 1975) can only be used for research and/or clinical purposes with permission from and payment to Pearson Assessments, Psychological Corporation. I purchased the desired quantity of BAI and BSI record forms from Pearson Assessments for survey dissemination.

### **Dissociation**

The instrument that was used to measure dissociation in the current study was a modification of the Curious Experiences Survey (CES; Goldberg, 1999), a self-reported measure of dissociative experiences. In 1999, Goldberg developed the CES, a revised version of the Dissociative Experiences Scale II (DES-II), to measure the broad spectrum of dissociative behavior in adults in a nonclinical population. The CES is a 31 item self-report questionnaire, with a response option format on a 5-point Likert-type scale from 1 to 5. A total score is determined by calculating the sum for all 31 items, and can range from 31 to 155 (Goldberg, 1999). While an exact cutoff score is not reported in Goldberg's study, it is stated that a higher, more elevated score reflects a more severe level of dissociation and therefore a need for further diagnostic measures to assess for a potential dissociative disorder. After completing a factor analysis, Goldberg determined that the CES is comprised of three subscales: depersonalization (separation from one's self); absorption (retreating to a fantasy world); and amnesia (reporting memory disturbances). Goldberg reported that he found scores from the CES to be psychometrically sound for his nonclinical, community sample.

I modified the CES for the current study, first by altering the wording of some items in an effort to clarify the meaning of the statement so it would be more easily understood by the respondent. In 2004, Groves et al. discussed guidelines for writing good questions on survey measures, and they asserted that questions should be as specific as possible in order to reduce the chances for differences in interpretation across respondents (p. 228). I also altered the original 5-point Likert-type scale by changing the response options from 1 to 5 to 0 to 4. This was in an effort to maintain consistency of range of options across all measures so to facilitate future data entry. Lastly, I altered the original Likert-type scale by changing the words within each response option. As supported by Groves et al., this was in an effort to clarify and differentiate response options. The total score for the modified version of the CES that was used in the current study was determined by calculating the sum for all 31 items. The total score can range from 0 to 124. A cutoff score to indicate less severe forms of dissociation was not used for the current study, as there is not enough research on the CES in nonclinical populations to concretely establish a definitive cutoff score. Therefore, in order to conceptually interpret a respondent's score on the CES in the current study, dissociation was conceptualized as a continuous variable that was interpreted within a range of endorsed responses, in which lower scores on the CES reflected a lower frequency and lower intensity of dissociative symptomology.

### **Subclinical Anxiety**

The instrument that was used to measure the construct of subclinical anxiety in the current study was the Beck Anxiety Inventory (BAI; Beck et al., 1988). The BAI was originally developed to measure the severity of self-reported anxiety in both adults and

adolescents in a clinical population. The BAI has frequently been used with dissociative measures, such as the DES, in an effort to examine the relationship between levels of anxiety and levels of dissociation in clinical and nonclinical populations. The BAI is a 21 item self-report questionnaire, with a response option format on a 4-point Likert-type scale from 0 to 3. The BAI contains four symptom clusters (or factors), identified as neurophysiological, subjective, panic, and autonomic symptoms of self-reported anxiety.

During scale development of the BAI, the sample consisted of 160 adult outpatients. However, there have been some studies, although few in number, which have utilized this instrument with nonclinical populations (Dent & Salkovskis, 1986; Nixon & Bryant, 2006), and it has been reported that scores from the BAI are psychometrically sound for the nonclinical samples from which they were administered.

A total score on the BAI is determined by calculating the sum for all 21 items, each ranging from 0 to 3. The maximum score is 63 points. A score of 0-7 is defined as “minimal anxiety,” 8-15 as “mild anxiety,” 16-25 as “moderate anxiety,” and 26-63 as “severe anxiety” (Beck & Steer, 1993). However, for the current study, a cutoff score was not used to interpret the level of anxiety endorsed by respondent; rather, subclinical anxiety was conceptualized as a continuous variable that was interpreted within a range of endorsed responses, with lower scores on the BAI reflecting a lower frequency and lower intensity of anxiety symptomology.

### **Perceived Level of Psychological Distress**

The instrument that was used to measure the construct of perceived level of psychological distress in the current study was the Brief Symptom Inventory (BSI; Derogatis, 1975). The BSI is a self-reported, point-in-time measure of the overall

psychological symptom pattern of an individual. The overall psychological symptom pattern is based on the degree to which an individual appraises experiences or situations in daily life as causing physical, cognitive, behavioral, and emotional distress.

The BSI was originally normed on four groups: adult psychiatric outpatients; adult nonpatients; psychiatric inpatients; and adolescent outpatients (Derogatis, 1993). Separate norms are available for female and male respondents. During scale development of the BSI, the adult nonpatient normative sample consisted of 974 individuals, of which 480 were female and 494 were male (Derogatis, 1993). Derogatis (1993) reported that scores from the BSI are psychometrically sound for the nonclinical sample from which it was administered.

The BSI is a 53 item self-report symptom inventory, with a response option format on a 5-point Likert-type scale from 0 to 4. An individual's responses are scored and profiled using BSI scoring templates and a scoring worksheet. Responses are scored in terms of nine primary symptom dimensions and three global indices of distress (Derogatis, 1993). Please refer to the scoring worksheet in the BSI manual (Derogatis, 1993) for a more detailed explanation for scoring the three global indices and nine primary symptom dimensions.

Derogatis and Melisaratos (1983) and Derogatis (1993) recommended that interpretation should focus on the three global indices, specifically the Global Severity Index (GSI), a general index and single best indicator of current distress as perceived by the individual, in order to gain an understanding of the degree of overall distress that an individual is experiencing. Once more, Derogatis and Melisaratos recommended that interpretation of the nine primary symptom dimensions should focus on any concerning

data that the respondent is communicating to the administrator, in regards to the nature and intensity of his or her distress.

For the current study, the construct of perceived level of psychological distress was measured by calculating the GSI, a single best indicator of current distress as perceived by the individual, using the adult nonpatient norm group for male and female respondents when interpreting data. The term perceived level of psychological distress was conceptualized in the current study as a continuous variable within a range of endorsed responses, with a lower GSI score reflecting a lower frequency and lower intensity of perceived psychological distress.

## RESULTS

In an effort to understand and explain the nature of dissociative phenomena, simple linear regressions and multiple linear regressions were conducted to answer the three research questions and corresponding hypotheses in the current study. All hypotheses were supported. Determination of statistical significance for all tests was based on an alpha level of .05 unless otherwise noted. A medium effect size ( $R^2 = .13$ ) was used as the basis for estimating the sample size needed for the current study (Cohen, 1992). It was anticipated that the independent variables of interest would have a medium effect in regards to the amount of explained variance (or the magnitude of the anticipated relationship) on the dependent variable of interest (De Wachter et al., 2006; Johnson et al., 2006).

Preliminary analyses were conducted, which included exploratory factor analyses and reliability analyses. Taking into consideration the results from the EFA on the CES and BAI, as well as reliability analyses that were conducted after each EFA, it was

justified to drop item 3 from the CES, and items 7 and 18 from the BAI, in all subsequent analyses. Diagnostic testing was also conducted for each separate analysis in order to ensure that tests' assumptions were not violated. Having confidence that tests' assumptions were satisfied, the results of the hypotheses that were addressed in an effort to answer the three research questions of the current study are discussed below.

Descriptive statistics for the three measures that were used to collect data are reported, as are psychometrics, such as total scale reliability coefficients (Table 1).

Symptoms of dissociative behavior were endorsed by all 154 participants in the current study. Overall, participant endorsement of dissociation reflected a lower frequency and lower intensity of self-reported dissociative experiences, with a mean score on the CES equivalent to  $M = 21.8$  ( $SD = 12.8$ ). This mean score on the CES suggests that the majority of participants endorsed less severe forms of dissociative behavior that do not warrant additional assessment nor a formal diagnosis of a dissociative disorder.

### **Research Question One**

Q1 To what extent is the variance in less severe forms of dissociation explained by subclinical anxiety in a nonclinical population?

H1 Anxiety, as measured by the BAI, will be significantly correlated with dissociation, as measured by the CES.

Research question one examined to what extent the variance in less severe forms of dissociation can be explained by subclinical anxiety in a nonclinical population. A multiple linear regression analysis was conducted in an effort to answer research question one. This regression model was significant. Results indicated that 44% of the variance, which represents a large effect size, in less severe forms of dissociation can be explained

collectively by subclinical anxiety and perceived level of psychological distress [ $F(2, 151) = 58.07, p < .05, p = .0001$ ]. The independent variables, collectively, had a strong effect in regards to the amount of explained variance on dissociation. This was based on a medium effect size ( $R^2 = .13$ ) (Cohen, 1992). In particular, the outcome data indicated that subclinical anxiety independently explained a significant proportion of the variance, with the squared part correlation indicating that 9% of the variance in less severe forms of dissociation is uniquely explained by subclinical anxiety,  $\beta = .304, p < .05, p = .001$ . This positive Beta coefficient means that as an individual endorsed increased levels of anxiety, while still at a subclinical level, he or she also endorsed increased levels of less severe forms of dissociation. Results are presented in Table 2.

Overall, in the current study, participant endorsement of anxiety symptomology reflected a lower frequency and lower intensity of self-reported anxiety, with a mean score on the BAI equivalent to  $M = 9.5$  ( $SD = 8.5$ ). This mean score on the BAI suggests that the majority of participants endorsed subclinical levels of anxiety, levels that do not warrant a formal diagnosis of an anxiety disorder.

### **Research Question Two**

- Q2    To what extent is the variance in less severe forms of dissociation explained by perceived level of psychological distress in a nonclinical population?
- H2    Perceived level of psychological distress, as measured by a global index of current distress on the BSI, known as the General Severity Index (GSI), will be significantly correlated with dissociation, as measured by the CES.

Research question two examined to what extent the variance in less severe forms of dissociation can be explained by perceived level of psychological distress in a nonclinical population. A multiple linear regression analysis was conducted in an effort



to answer research question two. This regression model was significant. Results indicated that 44% of the variance, which represents a large effect size, in less severe forms of dissociation can be explained collectively by perceived level of psychological distress and subclinical anxiety [ $F(2, 151) = 58.07, p < .05, p = .0001$ ]. The independent variables, collectively, had a strong effect in regards to the amount of explained variance on dissociation. This was based on a medium effect size ( $R^2 = .13$ ) (Cohen, 1992). In particular, the outcome data indicated that perceived level of psychological distress independently explained a significant proportion of the variance, with the squared part correlation indicating that 16% of the variance in less severe forms of dissociation is uniquely explained by perceived level of psychological distress,  $\beta = .399, p < .05, p = .0001$ . This positive Beta coefficient means that as an individual appraised experiences or situations in daily life as causing increasingly higher levels of physical, cognitive, behavioral, and/or emotional distress, he or she also endorsed increased levels of less severe forms of dissociation. Results are presented in Table 2.

Overall, in the current study, participant endorsement of perceived level of psychological distress reflected a lower frequency and lower intensity of self-reported psychological distress, with a mean score on the GSI, a global index of current distress on the BSI, known as the General Severity Index (GSI), equivalent to  $M = 43.06 (SD = 7.4)$ . This mean score on the BSI suggests that the majority of participants endorsed levels of perceived psychological distress that do not warrant a formal diagnosis of a psychiatric disorder.

### Research Question Three

Q 3 Do demographic characteristics, such as sex, age, and race/ethnicity, explain the variance in less severe forms of dissociation in a nonclinical population?

H3 Age, as measured by self-report on the demographic section of the survey, will be negatively correlated with dissociation, as measured by the CES; such that, as age increases, dissociation decreases.

Research question three examined to what extent the variance in less severe forms of dissociation can be explained by age in a nonclinical population. Due to conflicting data in the literature, I did not have enough data to generate research hypotheses for sex and race/ethnicity. The participant sample in the current study ranged from 18 to 62 years of age, with 58.4% of the sample falling within the range of 18 to 29 years of age. A simple linear regression analysis was conducted in an effort to answer research question three. This regression model was significant. Results indicated that 2.7% of the variance in less severe forms of dissociation can be explained by age [ $F(1, 152) = 4.19, p < .05, p = .042$ ], and age is negatively correlated with dissociation. This means that as an individual increases in age, endorsement of dissociative behavior decreases. However, although this statistical analysis was statistically significant, caution should be exercised when making statements about this relationship, as results indicated a weak relationship between age and dissociation and therefore age is not a strong explanatory factor for the variable dissociation.

A simple linear regression analysis also indicated that .3% of the variance in less severe forms of dissociation can be explained by sex [ $F(1, 152) = .490$ ], which this was not statistically significant. Lastly, a simple linear regression analysis indicated that 1.4% of the variance in less severe forms of dissociation can be explained by race/ethnicity [ $F$

(1, 152) = 2.09], which this was not statistically significant. The current study also examined the point in time prevalence rate of sex and race/ethnicity of participants who endorsed less severe forms of dissociative symptomology. The participant sample for the current study was predominantly female, making up 67.5% of the sample. Lastly, the participant sample was predominately White/Caucasian, making up 86% of the sample.

Table 1

*Descriptive Statistics and Total Scale Reliability Coefficients for Measures used with a Nonclinical Sample*

Variable	<i>M</i>	<i>SD</i>	Range	Number of Items	Reliability ( $\alpha$ )
Curious Experiences Survey (CES)	21.8	12.8	2-71	30	.92
Beck Anxiety Inventory (BAI)	9.5	8.5	0-42	19	.91
Brief Symptom Inventory (BSI)	43.06	7.4	30-62	53	.97

Table 2

*Multiple Regression Analysis for Variables Less Severe Forms of Dissociation, Subclinical Anxiety, and Perceived Level of Psychological Distress*

Variable	$R^2$	df	<i>B</i>	Less Severe forms of Dissociation			
				<i>SE</i>	$\beta$	<i>F</i> value	<i>p</i> value
Regression Model	.435**	2	-	-	-	58.07	.0001
Subclinical Anxiety	-	-	.456	.141	.304*	-	.001
Perceived Level of Psychological Distress	-	-	.691	.162	.399**	-	.0001

\*\*Correlation is significant at the .0001 level

\*Indicates significance level of .05 or less

## DISCUSSION

Results from the current study further advocate that endorsement of dissociative experiences are not solely isolated to clinical populations, nor does endorsement of dissociative experiences demand evidence of a history of trauma or other forms of psychopathology. Outcome data from the current study lend support to prior scholars who asserted that dissociation is a valid clinical entity, and that less severe forms of dissociative experiences are more common in the general population than clinicians have previously recognized (Johnson et al., 2006; Simeon, 2004).

Outcome data from the current study indicated that self-reported levels of subclinical anxiety and perceived psychological distress are comorbid with self-reported dissociative experiences; and each variable explained a significant unique proportion of the variance in less severe forms of dissociation. More specifically, as an individual endorsed increased levels of subclinical anxiety, and appraised experiences or situations in daily life as causing increasingly higher levels of physical, cognitive, behavioral, and/or emotional distress, he or she also endorsed increased levels of less severe forms of dissociation. Lastly, outcome data from the current study indicated that age is negatively correlated with dissociation; suggesting that as age increases, dissociation decreases. More research is needed in order to further substantiate the relationship between dissociative behavior and the demographic variable age.

### **Implications of the Study**

The findings from the current study present several implications for clinicians and for clinical practice. Given that all 154 participants in the current study endorsed some form of dissociative behavior, and all 154 participants were not currently engaged in

mental health counseling services, speaks to the fact that contemporary psychology has underestimated the prevalence of dissociation in the general population. It is possible that the participants in the current study will seek counseling services at some point in the future. Therefore, it may be helpful for clinicians to work at outreach programs in the community to serve individuals who are not currently seeking mental health services, but who are endorsing elevated levels of dissociation, anxiety, and perceived distress, although at subclinical levels. Early intervention is essential in order to avoid exacerbation of symptoms.

In order for clinicians to provide useful and effective treatment, they should be educated about the broad spectrum of dissociation, in addition to the comorbidity that can exist between dissociation and other mental health symptoms. This increased awareness will aid clinicians toward being more responsive and effective practitioners. Consequently, if clinicians lack proper training on dissociative behavior, they not only risk delays in diagnosis and application of inaccurate diagnostic labels, but they also risk implementation of ineffectual and potentially harmful treatments, of which could exacerbate dissociative behavior.

Following this line of thinking, the results from the current study then present implications for clinicians during the initial intake and assessment period. Putnam (2009) urged clinicians to routinely screen for dissociative symptomology. If dissociative behavior is present, it will typically have a clinical course that is characterized as chronic and recurrent (DSM-IV-TR, 2000); therefore, expeditious and effective treatment for those suffering from dissociative symptomology is essential.

### **Limitations of the Study**

A known limitation that existed for the current study was the sampling procedure, which was a nonprobability convenience sampling design. Participants were not selected by chance; therefore, every member did not have an equal chance of selection into the current study. This sampling procedure can impact the external validity of this study by limiting the extent to which the results are generalizable to other samples. Although the sample for the current study was intended to be representative of the general population, coverage error did exist. Members from the sample in the current study may differ from members in the general population because every member of the general population is not an undergraduate and/or graduate student at a midsized university in the Rocky Mountain region, every member of the general population does not live and work in urban communities in the Rocky Mountain region, nor does every member of the general population share characteristics that members of the various different groups in the current study may share. Also, student respondents may differ from nonstudents in the general population in that student respondents may reflect a more affluent and educated population; consequently, responses may be biased. Similarly, nonstudent respondents from the urban communities may be, on average, of an older age than the student respondents; therefore, nonstudent respondents may differ from student respondents on variables of interest, such as lower endorsement of dissociative experiences throughout the lifespan, and they may endorse less anxiety and a lower level of perceived psychological distress due to increased social support and coping strategies (Brantley, Waggoner, Jones, & Rappaport, 1985).

Another known limitation that existed for the current study was that the measures employed are based on participant self-report. This means that each participant may have interpreted items differently, as well as interpreted the severity and/or intensity of items differently. For example, there may be moderating variables which can include characteristics of each participant, such as coping strategies, or environmental factors, such as social supports, or low grade chronic anxiety due to felt oppression, which could have augmented or moderated the endorsement of participant self-report on the constructs of interest in the current study (Brantley et al., 1985).

Lastly, a known limitation for the current study was that I modified the CES measure, and I dropped item 3 on the CES and items 7 and 18 on the BAI. I do not know the true effect of modifying these scales due to dropping these items. Modifying these measures may impact the validity and reliability of test scores, and it may impact the extent to which the results from the current study are generalizable to other samples.

Overall, due to the above mentioned limitations, the strength and nature of all relationships that were found between the constructs of interest will be largely restricted to the sample of respondents who chose to participate in the current study.

### **Recommendations**

The broad spectrum of dissociation is by and large an untapped area worthy of further examination in empirical research. As previously stated, continued research in this area will increase awareness among clinicians that dissociative experiences are a normative and legitimate clinical presentation. Once more, continued research on the comorbidity of subclinical anxiety, perceived level of psychological distress, and less severe forms of dissociation will aid clinicians toward accurate detection and diagnosis of

dissociative phenomena, and it will result in the expeditious application of appropriate clinical interventions that are effective in the treatment of individuals suffering from dissociative symptomology.

Future research could focus on the development of measures that are more sensitive to measuring dissociative behavior in nonclinical samples. Future research could also examine the role age plays, specifically whether increased age plays a significant and meaningful role in ameliorating the effects of less severe forms of dissociative experiences; thereafter age norms could be employed when interpreting scores on dissociative instruments. Development of measures that are more sensitive to assessing the extent of engagement of more normative types of dissociation, also including how this may impact current level of functioning, may serve as a preventative tool so that clinicians can intervene earlier and educate clients on more adaptive coping responses before dissociative behavior becomes a chronic and recurrent response to life events. This includes continuing future studies that use the CES, with item 3 dropped, and the BAI, with items 7 and 18 dropped, in order to establish additional psychometric data in an effort to address the scale limitations of the current study.

Additionally, further research that seeks to improve current assessment measures of dissociation could also include relevant demographic variables, so to further examine whether these variables independently moderate the effects of endorsement of less severe forms of dissociation. Cardena and Weiner (2004) urged future scholars to determine whether dissociative symptomology is a normal expression within one's cultural group, as well examine if individual dissociative experiences, regardless of cultural norms, are a source of significant dysfunction or distress. Race may not be the only factor affecting



endorsement of dissociative behavior; rather, exploring culture may provide insight as to whether endorsement of dissociative behavior is a reaction to felt prejudice, privilege, and oppression in society.

### **Summary**

The current study investigated to what extent the variance in less severe forms of dissociation can be explained by subclinical anxiety and perceived level of psychological distress in a nonclinical population. All three research questions and corresponding hypotheses in the current study were supported. Outcome data indicated that less severe forms of dissociation are a valid clinical entity in a nonclinical population, and a significant unique proportion of the variance in dissociation can be explained collectively by subclinical anxiety and perceived level of psychological distress.

It is my hope that future research on dissociation will continue so that scholars and practicing clinicians will possess a greater understanding of the role that less severe forms of dissociation play in response to normative stressors; as well as the comorbidity that can occur between dissociation and other psychiatric disorders. It is undisputed that continued research on dissociation will create numerous benefits to the field of psychology, such as increasing competence among clinicians in regard to the complexity of dissociation, as well as aiding toward more accurate detection and diagnosis of a myriad of mental health diagnoses. This will ultimately result in the selection of relevant interventions that will enhance overall well-being and promote recovery.

In the end, accurate detection and diagnosis of the broad spectrum of dissociative phenomena will continue to be reliant on informed and empathic clinicians who have the necessary training and understanding of dissociation (Cardena & Weiner, 2004). It is my

hope that the data gathered from the current study will work toward absolving present skepticism that exists for normative dissociative processes, and that the construct of dissociation be welcomed back to its rightful and well earned place within training institutions and among clinical conversations, after decades of being disregarded and forgotten within mainstream psychology.

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