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The Influence of Gender and Alcohol Use on Depressive Symptoms Among Men and
Women

A Dissertation

Presented to
the Faculty of the Morgridge College of Education
University of Denver

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Philosophy

by

Elizabeth A. Peters, M.S.W.

August 2013

Advisor: Dr. Patrick Sherry, Ph.D.

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Title: THE INFLUENCE OF GENDER AND ALCOHOL USE ON DEPRESSIVE SYMPTOMS AMONG MEN AND WOMEN

Advisor: Dr. Patrick Sherry, Ph.D.

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Abstract

This study investigated the extent to which gender influences self-reported prototypical and masculine-specific symptoms of depression in men and women and whether or not alcohol mediates this relationship. Secondly, this study evaluated the effectiveness of the Denver Comprehensive Depression Inventory (DCDI), in measuring prototypical and masculine-specific depressive symptoms in clinical and non-clinical samples of men and women.

This paper summarizes the literature on gender differences in depression and the assessment of depression and gender, and outlines the current research on masculine-specific depression. It is argued that current assessment instruments identify prototypical symptoms of depression, as outlined in the DSM-IV-TR, but do not assess for masculine-specific symptoms of depression. Next, this paper outlines the methodology of the study, including participants, procedures, measures and data analyses, followed by the results and a discussion of the findings.

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Chapter 1: STUDY OVERVIEW

Introduction and Statement of the Problem

Research indicates that, in childhood, boys and girls report experiencing depression equally; however, in adulthood, women report experiencing depression two to three times more than men (Ge, Conger & Elder , 2001). Depression is defined by the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision, as a mood disorder marked by either a depressed mood or the loss of interest in nearly all activities, occurring over the course of at least 2 weeks. Symptoms must also represent a change in previous functioning (DSM-IV-TR, 2000). Researchers Gotlib and Hammen (2002) report that more than 60 million Americans will meet diagnostic criteria for depression at some time in their lives, and women will experience significantly higher rates of clinical depression than men. In addition to the significantly higher rates of depression in women than in men, fewer men than women will seek treatment for their depression (NIMH, 2003).

Interestingly, the rate of suicide in men is four times higher than in women (NIMH, 2003), which may suggest that men have different coping strategies than women, are reluctant to seek help, and experience depression differently than women. Current research suggests that the differential rates of depression and willingness to seek out treatment is a function of the development of gender differences as the result of biological, social, cognitive, and methodological factors (Hyde et al., 2008).

Understanding these causes as interrelated will help to conceptualize the gender differences between women and men (Hyde et al., 2008).

The World Health Organization (WHO) defines gender as “the socially constructed roles, attributes and behaviors that society deems appropriate for men and women” (World Health Organization, 2011, p.1). While theoretical research on the social processes influencing gender is substantial, newer clinical research has started to investigate the influence of gender on the way men and women experience and express depression differently (Boughton & Street, 2007).

Most commonly, gender differences are understood using a comprehensive approach, often referred to as a “biopsychosocial” framework. This framework takes into account the biological, psychological and social factors that influence how an individual functions and experiences the world. It is important to consider how socialization processes influence depression in men and women. A growing body of research has started to explore gender-specific symptoms of depression and whether or not masculine-specific symptoms help account for the differences of depression between men and women.

In 2003, the National Institute of Mental Health (NIMH) launched a nation-wide campaign to increase awareness of depression in men and to decrease the stigma often associated with such depression. The NIMH unveiled their campaign, “Real Men Real Depression” by featuring the stories of six average American men battling depression. The NIMH acknowledged that American men may have difficulty reporting depressive symptoms or seeking treatment for their depression and the consequential impacts this

may have on diagnosis and treatment of depression in men (2003). The NIMH campaign reported that, while men and women often experience prototypical symptoms of depression (as documented in the DSM-IV-TR), they may also experience gender-specific symptoms of depression and subsequent coping behaviors (NIMH, 2003).

More recently, research has started to examine masculine-specific depression and the influence of gender on psychopathology. Masculine gender norms and cultural expectations have been thought to influence how men experience and report depression (Cochran & Rabinowitz, 2003). Masculine-specific depressive symptoms can accompany prototypical symptoms of depression and include: denial, anger, physical complaints, irritability, interpersonal conflict, suicidal ideation and behaviors and substance use (Chuick et al., 2009).

Chuick, Greenfeld, Greenberg, Shepard, Cochran and Haley (2009) argue that men experience depression very differently than women, suggesting that women are more likely to internalize their depression, whereas men are more likely to externalize their depression. Internalizing behaviors include typical DSM-IV-TR criteria for a depressive episode (depressed or sad mood, tearfulness, loss of pleasure, weight loss or gain, problems sleeping, psychomotor agitation, fatigue, difficulty concentrating, indecisiveness and thoughts of death) (DSM-IV-TR, 2000). In contrast to the DSM-IV-TR diagnostic criteria, externalizing depressive symptoms include anger, aggression, infidelity, isolation, avoidance, denial and suicidal ideation (Chuick et al., 2009). Brownhill, Wilhelm, Barclay and Schmied (2005) highlighted the difficulty involved in measuring masculine-specific depressive symptoms with current assessment instruments,

noting that masculine depression is not fully accounted for by DSM-IV-TR criteria and often overlooked by traditional assessment instruments.

Researchers Cochran and Rabinowitz (2003) and the NIMH (2003) suggest that men and women are likely to experience similar typical symptoms of depression, as outlined in the DSM-IV-TR, accompanied by gender-specific symptoms of depression. Cochran et al. (2003) have explored anecdotal evidence and reports of depression and have determined that men are more likely to report problems performing at work, interpersonal conflict, aggression, anger and increased alcohol and drug use. Speculation as to whether these symptoms are actually behaviors that mask the underlying feelings of depression is offered. On the other hand, according to the National Institute of Mental Health (2003), women have been found to endorse symptoms related to general sadness, feelings of guilt, and worthlessness as their socially acceptable manifestation of depression.

Alcohol use has been shown to be associated with depression (Parker, Parker, Harford & Farmer, 1987); however, the extent of this relationship is unclear and warrants further research (Chuick et al., 2009). In a qualitative study by Brownhill, Wilhelm, Barclay and Schmied (2005), researchers found that depression in men may be “hidden” by externalizing and risky behaviors, such as substance abuse, suicidal ideation, sexual activities, anger and violence. Similarly, in a large empirical study conducted by Angst, Gamma, Gastpar, Lepine, Mendlewicz and Tylee (2002), 78,458 men and women were interviewed and it was found that men reported fewer DSM-IV-TR symptoms necessary to meet the threshold for a diagnosis of a major depressive episode (13.9% of men met

the criteria for depression compared to 22.4% of women), while 19.4% of the depressed men in the study reported alcohol use as a coping behavior, compared to 11% of depressed women in the study (Angst et al., 2002).

Based on these data, it is hypothesized that increased rates of substance use in men may in fact be a reflection of symptoms of clinical depression. It is speculated that depression may manifest through a higher level of alcohol use than in the more visible display of typical depressive affect, as found in the DSM-IV-TR. Furthermore, the existing array of assessment instruments is seemingly designed to assess the more traditional and prototypical manifestation of depression seen in women than what is typically presented in men. Therefore, a need for more comprehensive assessment techniques or tools is warranted in order to be able to fully assess the level of depression that is experienced by both genders. There are very few masculine-specific depression assessments, and these assessments require additional research to improve validity and reliability (Magovcevic & Addis, 2008).

Purpose of the Study

The purpose of this study was first, to determine the extent to which gender influences self-reported prototypical and masculine-specific symptoms of depression in men and women and whether or not alcohol influences this relationship. Secondly, this study sought to evaluate the Denver Comprehensive Depression Inventory (DCDI), which attempts to measure prototypical and masculine-specific depressive symptoms in clinical and non-clinical samples of men and women.

Research Questions

Research on gender and depression suggests that gender roles and socialization processes may play an important role in understanding the gender gap in depression (Brownhill et al., 2005). Therefore, the research questions were as follows:

1. Does the Denver Comprehensive Depression Inventory (DCDI) effectively measure prototypical and masculine-specific depressive symptoms in clinical and non-clinical samples?
2. How do the gender roles of men and women influence the manifestation of feminine and masculine symptoms of depression?
3. Are masculine and feminine manifestations of depression differentiated by the frequency of alcohol use such that higher levels of alcohol use are more likely associated with the presence of depression in masculine-depression when contrasted with feminine depression?

Hypotheses

Based on the above research questions, the following are the research hypotheses:

1. Hypothesis 1: Individuals who score above the median on the masculinity scale of the BSRI (“masculine” or “androgynous” classifications) will have higher scores on the masculine specific depressive symptoms of the DCDI, than those who score below the median on the masculinity scale of the BSRI (“feminine” or “undifferentiated” classifications).
2. Hypothesis 2: Individuals who score above the median on the masculinity scale of the BSRI (masculine or androgynous classifications) will have lower scores on

the BDI-II than those who score below the median on the masculinity scale of the BSRI (feminine or undifferentiated classifications).

3. Hypothesis 3: Individuals who score above the DCDI cut off for significant depression will report more alcohol use on the NIAAA-QF measure than those who report significant BDI-II scores.
4. Hypothesis 4: The DCDI will demonstrate an acceptable convergent validity with the BDI-II when controlling for alcohol use.

Definitions of Key Concepts

For the purpose of this study, the following definitions were used.

Depression: A mood disorder marked by either a depressed mood or the loss of interest in nearly all activities, occurring over the course of at least 2 weeks. Symptoms must also represent a change in previous functioning. Diagnostic criteria for a major depressive episode requires at least five additional symptoms in addition to depressed mood or loss of interest, including: significant weight loss or gain, insomnia or hypersomnia, psychomotor agitation, fatigue or loss of energy, feelings of worthlessness or excessive or inappropriate guilt, diminished ability to think or concentrate, or indecisiveness and recurrent thoughts of death or suicidal ideation (DSM-IV-TR, 2000).

Masculine-specific depression: Symptoms including denial, anger, physical complaints, irritability, interpersonal conflict, suicidal ideation and behaviors and substance use (Chuick et al., 2009).

Externalizing symptoms of depression (also referred to as atypical symptoms of depression, or masculine-specific depressive symptoms): Denial, anger, physical

complaints, irritability, interpersonal conflict, suicidal ideation and behaviors and substance use (Chuick et al., 2009).

Internalizing symptoms of depression (also referred to as prototypical or typical symptoms of depression): Loss of interest or pleasure, weight gain or loss, problems sleeping, loss of energy, crying, feelings of worthlessness or guilt, difficulty concentrating and indecisiveness.

Sex: The biological and physiological characteristics of males and females (The World Health Organization, 2011). Sex is biologically determined (Feldman, 2010).

Gender: “Gender refers to the socially constructed roles, attributes and behaviors that society deems appropriate for men and women,” (The World Health Organization, 2011, p.1). Gender is different than sex: gender is socially constructed whereas sex is biologically determined.

Biopsychosocial Framework: A comprehensive approach to understanding the individual, by taking into account biological, psychological and social factors that may influence how the individual functions and experiences the world.

DSM-IV-TR: The Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision. The DSM-IV-TR was published by the American Psychological Association in 2000. This manual outlines diagnostic criteria necessary to diagnose specific mental disorders and medical conditions.

Beck Depression Inventory-II (BDI-II): A widely used assessment instrument for depression consisting of 21 self-report items. Each item on the inventory consists of four statements, increasing in severity of depressive symptoms. The items on the BDI-II align

with the diagnostic criteria for a depressive episode and do not include masculine-specific symptoms.

Denver Comprehensive Depression Inventory (DCDI): A newly developed instrument for measuring depression in men and women. The DCDI was adjusted from Dr. Field's Men's Depression Inventory. The DCDI instrument consists of 51 self-report items and respondents rate themselves on a scale from 1 to 6 in severity. The measure consists of masculine-specific symptoms (unaccounted for in the DSM-IV and BDI-II) and prototypical symptoms that align with DSM-IV-TR criteria.

Suicidal ideation: Suicidal thoughts, behaviors, plans or attempts.

Bem Sex Role Inventory (BSRI): The BSRI is a 60-item self-report rating scale that measures gender role perceptions in men and women and evaluates masculinity, femininity, androgyny and undifferentiated scales.

Center for Epidemiological Studies Depression Scale (CES-D10): The CES-D10 is a brief depression-screening instrument consisting of 10 items measuring current depressive symptoms. It has been shortened from the 20-item CES-D20 and includes half of the items from the original screening tool.

Summary

Despite the overwhelming research that documents the gender gap in rates of depression between men and women, questions still remain as to the cause of this discrepancy. Biological, cognitive and social factors have been shown to play important roles in understanding the relationship between gender and depression (Hyde, Mezulis, & Abramson, 2008) but more research on the social processes involved in the gender-

specific expressions of depression is necessary. Despite the body of theoretical literature and qualitative studies that highlight the effects of gender socialization on men and women, there are conflicting results in gender and depression research, depending on the population sampled and research methods used (Kleinke, Staneski & Mason, 1982). Furthermore, limited empirical research has been done to examine the relationship among the variables of gender, depression and alcohol use.

In order to contribute to the biopsychosocial framework currently used to conceptualize gender differences in depression, an investigation of gender-specific symptomology is important. Amongst the growing body of qualitative research on masculine-depression, limited assessment instruments have been validated to adequately measure masculine-specific depressive symptomology and little research has been done to examine the relationship between alcohol use and masculine-specific depression (Cochran & Rabinowitz, 2003). Based on the review of literature, a study of the effects of gender roles on prototypical and masculine-specific depression was conducted and data on the relationship between masculine-specific depression and alcohol was investigated.

Chapter 2: REVIEW OF LITERATURE

History of Depression

Origins of Depression

Early origins of depression stem from the Hippocratic times in ancient Greece during the 15th century (Akiskal, 2008). Historically, depression was referred to as “melancholia,” which originated from the Greek word, “melankholia”; literally defined as “black bile” (Taylor & Fink, 2006). An excess of black bile was thought to be the cause of depression during ancient times in Greece (Taylor & Fink, 2006). The Greeks believed melancholia was characterized by sadness, gloom and irritability (Taylor & Fink, 2006). Ancient Greek physician, Hippocrates, defined melancholia as “persistent sadness and morbid thoughts” (Taylor and Fink, 2006, p. 2). The term melancholia became a concept used widely by psychoanalysts during the early 1900’s to describe a depressed mood state.

In 1917, psychoanalyst Freud wrote his manuscript, “Mourning and Melancholia,” and defined melancholia as:

A profoundly painful dejection, cessation of interest in the outside world, loss of the capacity to love, inhibition of all activity, and a lowering of the self-regarding feelings to a degree that finds utterance in self-reproaches and self-revilings, and culminates in a delusional expectation of punishment” (Freud as cited in Fiorini, Bokanowski & Lewkowicz, 2009, p.244).

Freud attributed melancholia or depression to “the reaction to the loss of a loved object (Freud as cited in Fiorini, Bokanowski & Lewkowicz, 2009, p. 245). Freud’s writings on

melancholia or depression served to influence later diagnostic criteria widely used by researchers and clinicians in the Diagnostic and Statistical Manual of Mental Disorders. In fact, the DSM-III includes three specifiers for a depressive episode: with melancholia, without melancholia and unspecified.

History of Depression in the Diagnostic Statistical Manual of Mental Disorders

During the 1920's and 1930's, depression was understood in terms of psychoanalytic theory; depression, or melancholia, was thought to result from "introjected aggression toward a lost object." (Hirshbein, 2009, p. 14). Practitioners during this time spent much of their effort addressing the somatic complaints of their patients, which they often found to be related to depression (Hirshbein, 2009). During the early 1900's, no medications existed to treat depression, so electric shock therapies and brain surgeries were used to fix the brain dysfunction of depressed patients (Hirshbein, 2009). In the 1920's, no formal diagnosis for depression existed, however, during the 1930's, more psychiatrists showed a growing interest in classifying mental health illnesses (Hirshbein, 2009). By 1933, the first classification system existed and psychiatrists started to research clinical populations and various mental health illnesses (Hirshbein, 2009).

In 1952, the first DSM was published and depression was classified under manic-depressive psychosis and neurotic diagnoses (Hirshbein, 2009). As research on specific mental health symptoms increased, so did issues with consensus on what psychiatrists were actually measuring (Hirshbein, 2009). In 1968, the DSM-II was published, which included minor changes to the first DSM (Hirshbein, 2009). Still, the DSM-II did not

include adequate or accurate research and this was a major critique of the initial classification system (Hirshbein, 2009). Not until the DSM-III in 1980, did the manual include specific criteria for depression as a separate construct.

In 1972, researchers from the Washington University developed the “Feighner Criteria,” which outlined diagnostic criteria for various mental disorders, including depression. Working from Feighner’s criteria and earlier research on depression, psychiatrist Robert Spitzer elaborated on this topic and developed the Research Diagnostic Criteria (RDC), which differentiated several subtypes of depression, including “primary, secondary, recurrent unipolar, psychotic, incapacitating, endogenous, agitated, retarded, situational, simple and predominant mood” (Hirshbein, 2009, p.41). Spitzer’s criteria for depression required the patient to have experienced depressed mood and a number of other depressive symptoms over the course of one month (Hirshbein, 2009).

Depressive criteria from the RDC were used to define the criteria in the DSM-III, published in 1980. Diagnoses with depressive symptoms listed in the DSM-III included involuntional melancholia (code 296.0), manic-depressive illnesses (manic type, depressed type or circular type, codes 296.1, 296.2 and 296.3 respectively). A depressive episode was characterized by “severely depressed mood and by mental and motor retardation progressing occasionally to stupor. Uneasiness, apprehension, perplexity and agitation may also be present” (American Psychiatric Association, 1968, p.37). The DSM-III also outlined diagnostic criteria for depressive neurosis (code 300.4), which was characterized by “an excessive reaction of depression due to an internal conflict or to an identifiable event such as the loss of a love object or cherished possession. It is to be distinguished

from involuntional melancholia and manic-depressive illness” (American Psychiatric Association, 1968, p. 40).

The DSM-III marked a drastic change from the first two editions of the DSM, by including research and diagnostic classifications that emphasized reliability over validity; it was a priority of Spitzer and his researchers to ensure that all psychiatrists were using the same definition and criteria for depression (Hirshbein, 2009). Research on depression during the development of the DSM-III focused on identifying specific symptoms of depression in clinical populations, and interestingly, did not include individuals who had substance abuse or drug dependence issues (Hirshbein, 2009).

During Spitzer’s work developing the RDC, he sought feedback from physicians in his clinical community (Hirshbein, 2009). He suggested a broad and inclusive classification system for depression; however, Spitzer’s psychoanalytic peers struggled with the idea that all depression could be grouped under one broad classification (Hirshbein, 2009). Spitzer sent out clinical vignettes to those in his psychiatry community and requested feedback to help contribute to the diagnostic criteria for depression (Hirshbein, 2009). Spitzer included the feedback from his peers into the RDC and DSM-III classifications (Hirshbein, 2009). Psychoanalysts also disliked the idea that Spitzer’s RDC symptom-specific criteria for depression would be different than the psychoanalytic conceptualization of the illness, originally defined by Freud (Hirshbein, 2009). The RDC criteria differs only slightly from the DSM-III criteria, as the DSM-III requires fewer symptoms in addition to dysphoric mood, and symptoms had to occur over 2 weeks, rather than one month (Hirshbein, 2009).

The broad symptoms for depression as outlined in the DSM-III resulted in an increase in the number of individuals who met criteria for this diagnosis (Hirshbein, 2009). Historically, depression was viewed as a “women’s disease” and the majority of individuals that were studied by American male researchers to determine diagnostic criteria for depression in the DSM have been women (Hirshbein, 2009, p.99). Researchers for the DSM-III studied individuals who met their (the researchers) working definition of depression and only individuals who were able to provide clear descriptions of their symptoms and mood-states were included in their studies (Hirshbein, 2009). Consequently, much of the DSM-III criteria for depression was based on women’s subjective experiences of depression (Hirshbein, 2009). In fact, the most significant revision from the DSM-III to the DSM-IV-TR is that “irritability” was removed from the criteria; a symptom that more recent research has shown to be an important part of male depression (Chuick et al., 2009).

Once the DSM-III was published, it served to inform subsequent research on theory and clinical practice of psychology and psychiatry; symptoms from this manual were used to study depression in individuals and helped structure future research on depression (Hirshbein, 2009). Diagnostic criteria for a major depressive episode in the DSM-III stated:

Dysphoric mood or loss of interest or pleasure in all or almost all usual activities and pastimes. The dysphoric mood is characterized by symptoms such as the following: depressed, sad, blue, hopeless, low, down in the dumps, irritable. The mood disturbance must be prominent and relatively persistent, but not necessarily the most dominant symptom, and does not include momentary shifts from one dysphoric mood to another dysphoric mood, e.g., anxiety to depression to anger, such as are seen in states of acute psychotic turmoil. (For children under six, dysphoric mood may have to be inferred from a persistently sad facial

expression). At least four of the following symptoms have each been present nearly every day for a period of at least two weeks (in children under six, at least three of the first four): (1) poor appetite or significant weight loss (2) insomnia or hypersomnia (3) psychomotor agitation or retardation (4) loss of interest or pleasure in usual activities, or decrease in sexual drive (5) loss of energy, fatigue (6) feelings of worthlessness, self-reproach, or excessive or inappropriate guilt (7) complaints or evidence of diminished ability to think or concentrate (8) recurrent thoughts of death, suicidal ideation, wishes to be dead or suicide attempt.” (American Psychological Association, 1980, p. 215).

A major depressive episode could be specified by “melancholia” (significant loss of pleasure and several other depressive symptoms from the original criteria), “without melancholia” or “unspecified” (American Psychological Association, 1980).

Following the DSM-III publication in 1980, DSM taskforce chairman Spitzer and other psychiatrists in “DSM work groups” attempted to improve and revise the DSM-III.

Workgroup members reviewed the manual and then came up with criteria that needed to be changed; for the DSM-III-R, it was decided by the work groups to not include “irritability” as a depressive symptom in the revised edition.

The DSM-IV was published in 1994 and included the same diagnostic criteria for depression as the DSM-III-R, and in 2000, the DSM-IV-TR was published and included the same criteria for a major depressive episode as seen in the DSM-IV. The most notable change in diagnostic criteria for the DSM happened in the DSM-III, after major depressive symptoms were classified separately from “manic-depression.” Additionally, the diagnostic criteria evolved to include a broader threshold for diagnostic classification, which increased the number of individuals who met the cut-off for a diagnosis of depression.

In summary, the development of diagnostic criteria for a major depressive episode in the DSM-IV-TR was initiated by an interest of practitioners during the early 1900's to make psychoanalysis more scientific. In an effort to do so, researchers started to classify specific mental illnesses, by using early clinical studies that surveyed mostly clinical female populations who were able to articulate their symptoms clearly and had no substance or alcohol abuse issues (Hirshbein, 2009). Once DSM workgroup researchers identified a specific collection of depressive symptoms to work from, they conducted further research to support their diagnostic criteria. Current DSM criteria for a major depressive episode has important connections to early 1900's theory and research. Additionally, the DSM-IV-TR has no gender-specific diagnostic criteria for depression.

History of Depression Research

Over the past 20 years, researchers have attempted to understand the factors that cause depression (Gotlib & Hammen, 2002). Early research examined genetic and biological factors contributing to depression; however, early into the 21st century, researchers with the Human Genome Project recognized that biology could only explain a portion of clinical depression (Gotlib & Hammen, 2002). Twin studies have shown that heritability for major depressive disorder is between 40% and 50% (Craighead, Miklowitz & Craighead, 2008). Twin studies involving monozygotic pairs (identical twins) have helped researchers understand the extent to which biology is able to explain rates of depression in family members; monozygotic twins share the same genetic make-up as one another, so any differences between monozygotic twins can be accounted for by environmental factors. Although twin studies have provided important information on

depression and genetics, the biological model of depression cannot explain depression in its entirety (Gotlib & Hammen, 2002).

Researchers then started to thoroughly examine the impact of cognitive and interpersonal factors on depression (Gotlib & Hammen, 2002). Beck proposed a cognitive theory of depression in the 1960's and argued that depression could be understood in terms of a person's cognitive thought processes and distorted thought patterns (Ziegler, 2005). Beck argued that depression was less about biology, and more about how people thought. Beck's cognitive model of depression marked a shift in the way depression was understood in the field of psychology. Similarly, researchers Abramson, Seligman and Teasdale proposed a second cognitive model of depression known as attribution theory (Gotlib & Hammen, 2002). This model of depression emphasized the causal relationship between negative attitudes and depressed mood (Gotlib & Hammen, 2002).

Research on depression has influenced the way clinicians and theorists conceptualize depression in men and women. Instead of relying solely on biological and cognitive models for depression, contemporary researchers have emphasized the impact an individual's social environment has on their mental health (Gotlib & Hammen, 2002). Researchers have looked at the way a person's environment contributes to the onset, duration and severity of a depressive episode (Gotlib & Hammen, 2002). This biopsychosocial approach to understanding depression has influenced the more recent research on gender differences in depression. Current research has started to investigate

the role socialization processes and gender has on depressive symptomology and gender-specific symptoms.

Methodological developments in depression research have also evolved over time (Gotlib & Hammen, 2002). Early research studies often relied primarily on self-report measures in homogeneous populations, whereas more contemporary approaches to data collection utilize mixed methods and interview-based assessments to measure depressive symptomology in diverse groups (Gotlib & Hammen, 2002). In addition, research has moved from an emphasis on cross-sectional research studies to more longitudinal research studies with depressed individuals (Gotlib & Hammen, 2002).

The epidemiology of depression has been greatly influenced by methodological and conceptual advances in research. Historical foundations in depression research have informed current and contemporary approaches to researching and treating clinical depression in men and women.

Gender and Depression

National studies on lifetime rates of depression indicate that 21.3% of women, compared to 12.7% of men were likely to experience a major depressive episode throughout their life (Cochran & Rabinowitz, 2000). A large study conducted by Smucker in 1982 found that 15% of the children (boys and girls) in his study reported symptoms of clinical depression (Nolen-Hoeksema, 1990). A later study by Kandel and Davies in 1986 found that 21% of adolescents reported depression (Nolen-Hoeksema, 1990). These studies represent a significant increase in depressive symptoms between childhood and adolescence. Longitudinal studies have shown that rates of depression

between girls and boys before 11 years old are equal, but starting at age 14 and up, girls are twice as more likely to experience depression as boys and this difference continues into adulthood (Galambos, Leadbeater & Barker, 2004).

A study by Albert and Beck (1975) found that 57% of 13 year-old girls they surveyed reported depression using the Beck Depression Inventory (BDI), while only 23% of 13 year-old boys surveyed reported depression (as cited in Nolen-Hoeksema, 1990). This early study supports other research that found adolescent girls report significantly more depression than adolescent boys. In spite of several early studies on this topic suggesting that gender does not influence self-reported rates of depression, the majority of research suggests that there is at least some relationship between gender and reports of depression in adolescents and adults (Nolen-Hoeksema, 1990).

Men and women who experience depression during their teenage years are far more likely to experience depression in their 20's (Nolen-Hoeksema, 1990). A number of research studies suggest that individuals between the ages of 18 and 24 are the most depressed age group (Nolen-Hoeksema, 1990). However, as with most research, there are conflicting results; one study that examined depression in UCLA undergraduates found no gender differences in rates of depression (Nolen-Hoeksema, 1990).

In 1984, a large study conducted by the NIMH surveyed 9,543 non-clinical men and women and found that women reported more depression than men in every age group within the sample (Nolen-Hoeksema, 1990). The NIMH study only looked at a non-clinical sample, but gender differences in depression have been found in both clinical and non-clinical samples (Brems, 1995, as cited in Beckham & Leber, 1995). At the time of

publication, the NIMH study was viewed to be the most accurate depiction of depression in the United States. This research also showed that more women than men seek therapeutic help for their depression (Nolen-Hoeksema, 1990). In support of these findings, the National Comorbidity Study found that 21.3% of women and only 12.7% of men experience depression throughout their life (Nolen-Hoeksema, 2002, as cited in Gotlib & Hammen, 2002).

However, additional research on gender and depression continues to provide contrasting results, depending on the population surveyed and the research methods utilized (Nolen-Hoeksema, 1990). More recently, the National Institute of Mental Health reported results from the National Comorbidity Study Replication that women are 70% more likely than men to report experiencing depression during their lifetime (2011).

The National Comorbidity Survey Replication (NCS-R) study conducted 9090 face-to-face interviews of American adults (18 years and older) to assess for major depressive disorder. The NCS-R used the Composite International Diagnostic Interview (CIDI), the Quick Inventory of Depressive Symptomatology Self-Report (QIDS-SR), the World Health Organization's Disability Assessment Scale and the structured clinical interview for Major Depressive Disorder from the DSM-IV-TR (Kessler, Berglund, Demler, Jin, Merikangas & Walters, 2005). Results from the NCS-R study showed 16.2% of American adults will experience major depressive disorder throughout their lifetime and 6.6% of the representative sample met criteria for major depressive disorder 12 months prior to the study (Kessler et al., 2005). Past estimates for lifetime rates of depression in American adults were as high as 32.6 to 35.1 million and between 13.1 and

14.2 Americans had experienced depression within the past 12 months (Kessler et al., 2005). Additionally, results from the NCS-R study found that lifetime rates of depression in women were significantly higher than lifetime rates of depression in men ($p=.05$) (Kessler et al., 2005).

To better understand the comparatively lower rates of depression in men, current qualitative research has explored factors specific to masculine-depression (Cochran & Rabinowitz, 2003). Cochran and Rabinowitz (2003) argue that social, biological and affective factors explain the gender gap in depression. Likewise, assessment issues and differences in the expression and self-report of depression in men and women may also help to explain the discrepancy in gender differences in depression (Narrow, First, Sirovatka, & Regier, 2007).

An early study by researchers Padesky and Hammen (1977) sampled 972 men and 1,300 women in a non-clinical college population. Participants completed the BDI. Researchers found no differences in the rates of depression in men and women, but discovered differences in the way men and women express their depression. Hammen and Padesky's female college sample endorsed more prototypical symptoms of depression, as outlined in the DSM-II, which included crying, indecisiveness and lower self-esteem; whereas the study's male college students reported symptoms such as an inability to cry, loss of interest in others, a sense of failure and somatic symptoms (Padesky & Hammen, 1977). Padesky and Hammen (1977) hypothesized that the varying expressions of depression, as measured on the BDI, may be related to different coping

behaviors and help-seeking behaviors as a result of social factors (Padesky & Hammen, 1977).

Researchers Kleinke, Staneski & Mason (1982) found a similar pattern to Hammen and Padesky. They surveyed 100 male and 100 female non-clinical college students. Participants completed the Depression Coping Questionnaire and the BDI. Results showed that women were more likely to report crying, eating and smoking, and men were more likely to report aggression, denial, drug use, isolation and sexual activities (Kleinke et al., 1982). Kleinke et al. (1982) also found that women engaged in more help-seeking behaviors, such as social support, when compared to men. This research suggests that the differences in gender and depression may be due to the different ways men and women experience depression (Kleinke et al., 1982). Kleinke et al. (1982) hypothesized that results of their study support previous research by Hammen and Padesky (1971, 1981) and that men and women have different coping behaviors, life experiences, help-seeking behaviors and approaches to labeling depression; no conclusions were made as to the reason for these differences.

Theoretical Explanations for Gender Differences in Depression

Biological Explanations

Historical explanations of depression have emphasized various biological models of depression. For example, during the 1800's and early 1900's, women's mental health was understood in terms of their reproductive system (Nolen-Hoeksema, 1990). Researchers believed problems with the female reproduction system resulted in nervous disorders and psychosis in women (Nolen-Hoeksema, 1990). In addition, women were

perceived as having different, more “excitable” nervous systems when compared to men, which, at the time, researchers thought contributed to their emotional problems (Nolen-Hoeksema, 1990). During this time period in psychology, the psychological problems that women faced were thought to be directly related to their menstruation and biological inclination to being overly-emotional; however, these theories proved to be inaccurate and detrimental to the overall understanding and treatment of women’s psychological mental health (Nolen-Hoeksema, 1990).

More recent research on the biological influences of gender differences in depression includes theories of genetic vulnerability and hormonal and pubertal changes (Hyde et al., 2008). Research has shown that depression is genetically linked, but there are inconsistencies in the literature as to whether or not this genetic explanation is gender-specific (Hyde et al., 2008). More recent research on genetic pre-disposition and gender differences related to depression show that the MAOA gene (on the X chromosome) might contribute to women’s genetic vulnerability to depression (Hyde et al., 2008), but this research is not fully supported. Inheritability for depression is well documented in the literature (Brems, 1995, as cited in Beckham & Leber, 1995), however, newer research is starting to examine whether or not genetic processes influence the gender-specific heritability of depression.

In a large female-female twin study using adult twin pairs from the Virginia Twin Registry (Kendler, Neale, Kessler, Heath, Eaves, 1992), researchers sought to investigate the role of genetics on rates of depression in women. Researchers assessed lifetime rates of depression in 1033 Caucasian twin pairs with the Structured Clinical Interview for

DSM-III-R Diagnosis. Extra questions were added to the interview to account for additional definitions of depression using the Washington University Criteria (WUC), the Research Diagnostic Criteria (RDC), Gershon Criteria, DSM-III and DSM-III-R. Results showed rates of depression between 31% and 33% using criteria from the DSM-III, RDC and DSM-III-R for major depression (Kendler, Neale, Kessler, Heath, Eaves, 1992). Rates of depression ranged between 20% and 25% when using the WUC, RDC and Gershon criteria, and when using the WUC criteria, lifetime rates of depression ranged between 12% and 15% (Kendler et. al., 1992). The WUC criteria includes more requirements, such as a longer time frame for the depressive episode (four weeks compared to two weeks as outlined in the DSM-III-R and DSM-IV-TR) and other specific inclusion and exclusion criteria related to dysphoric mood and appetite changes or weight gain (Kendler et al., 1992). When not including the WUC criteria and definition of depression, estimates of genetic heritability for depression in women is between 33% and 45% (Kendler et al., 1992).

In response to the all female twin study, a study was published in 1998 looking at male-male twin pairs and rates of depression in men. In the study, 3372 male-male twins born between 1939 and 1957 and served in the Vietnam War were surveyed and assessed for major depression. The sample consisted of 1,874 monozygotic twins and 1,498 dizygotic twins from the Vietnam Era Twin Registry (Lyons, Eisen, Goldberg, True, Lin, Meyer, Toomey, Faraone, Meria-Ramos & Tsuang, 1998). The average age was 44 years old and 90% of the sample was Caucasian. The Diagnostic Interview Schedule Version III Revised was conducted over the telephone with all twin pairs, and DSM-III-R criteria

for major depression and dysthymia was used to diagnose each twin. Results of the study showed lifetime rates of major depression were 9.2% and lifetime rates of dysthymia were 2.4%, with monozygotic twins reporting significantly higher rates of lifetime depression than dizygotic twins and no difference in rates of dysthymia (Lyons, Eisen, Goldberg, True, Lin, Meyer, Toomey, Faraone, Meria-Ramos & Tsuang, 1998).

In 2006, a large twin research study in Sweden was conducted by Kendler, Gatz, Gardner and Pederson (2006) and published in the American Journal of Psychiatry. Researchers surveyed 15,493 twin pairs, and measured depression using the Composite International Diagnostic Interview Short Form (CIDI-SF) based off of DSM-IV-TR criteria for major depression. The study attempted to replicate results from the Virginia Twin Study and used a computer-assisted telephone interview to assess for symptoms of major depression in the twin pairs (Kendler et al., 2006). Results of this study showed significantly elevated heritability of lifetime rates of depression in women than in men, with 42% of women experiencing major depression compared to 29% of men. Results showed that genetic factors played a moderate role in rates of depression in men and women, with women experiencing higher rates of depression than men (Kendler et al., 2006).

Cognitive Explanations

A cognitive theory of depression was developed by Beck in 1963, and since then, researchers have explored the role cognitive styles have on gender differences in depression (Haaga, Dyck & Ernst, 1991). Cognitive theory is based on the assumption that depressed individuals engage in negative automatic thinking about themselves, their

environment and their future (Haaga et al., 1991). Gender theorist and researcher Nolen-Hoeksema (2002) argued that men and women have different ways of thinking about their depressed moods and negative life stressors. In a study by Nolen-Hoeksema (2002), results showed that women are more likely than men to ruminate in response to their negative moods and this results in depressive symptoms lasting longer than those who engage in more active, problem-solving cognitive styles. Rumination was defined as a “tendency to focus on one’s symptoms of distress, and the possible causes and consequences of these symptoms, in a repetitive and passive manner rather than in an active, problem-solving manner” (Nolen-Hoeksema, 2002, as cited in Gotlib & Hammen, 2002, p. 498). Rumination as a contributing factor to depression has been well documented in the research (Papageorgious & Wells, 2004).

Nolen-Hoeksema (1990) identified “distraction” as an alternative cognitive response style to rumination. She defined distraction responses as “cognitions and behaviors designed to draw a person’s attention away from his symptoms of depression” (Nolen-Hoeksema, 1990, p. 161). She notes that adaptive distraction responses are different than maladaptive and short-term distraction techniques, such as drinking heavily or other risky behaviors (Nolen-Hoeksema, 1990). However, she argues “a person must acknowledge that he is experiencing depression before it can be said that he is using distraction responses” (Nolen-Hoeksema, 1990, p. 162). Adaptive distraction behaviors in response to negative affect can help to manage and alleviate depressive symptoms, if done in a healthy way (Nolen-Hoeksema, 1990, p. 162). For example, someone who acknowledges they are depressed and then actively engages in behaviors that help to take

their mind off of their negative affect is less likely to experience severe and frequent depressive episodes, when compared to a person who denies they are depressed and uses unhealthy behaviors to distract themselves from their depression. Gender has been shown to influence how individuals cope with depression.

Hankin & Abramson (2001) suggest that an individual's cognitive attribution style affects whether or not they are likely to experience depression. Attribution style describes a person's attitude towards a particular event (Hankin & Abramson, 2001). Hankin & Abramson (2001) found that those who made negative inferences towards a certain event were more likely to interpret the event in a dysfunctional way, which increased depressive symptoms. However, due to the pessimistic nature of depression, it may be hard to differentiate this cognitive style as a causal factor of depression or just another symptom of depression.

Social Explanations

Hyde, Mezulis and Abramson (2008) suggest that social factors also play a large role in understanding gender-differences in depression. Social factors influencing depression include gender socialization, environmental stressors and gender-based trauma. In adolescence, girls and boys experience a significant increase in social pressure to adhere to specific gender norms (Nolen-Hoeksema, 2001). The role of gender socialization prior to and during adolescence shapes the way in which boys and girls respond to stress (Brems, 1995, as cited in Beckham & Leber, 1995). The pressure to conform to gender roles may explain the higher rates of depression among young girls (Nolen-Hoeksema, 2001). For example, many women feel pressure from society to diet

to stay thin, to buy stylish clothes and makeup, while placing emphasis on domestic duties and taking on nurturing and caring roles in their relationships (Worell, 2011). The pressure faced by men to conform to gender roles and underreport depressive symptoms may also explain the comparatively low rates of depression among men. For example, American men who experience depression may be perceived as “unmanly” and “weak” (McCusker & Galupo, 2011, p.275). Other research has suggested masculinity is a protective factor against depression (Brems, 1995, as cited in Beckham & Leber, 1995).

Chuick, Greenfeld, Greenberg, Shepard, Cochran and Haley (2009) suggest that men experience depression very differently than women. Chuick et al. (2009) argue that women are more likely to internalize their depression, whereas men are more likely to externalize their depression. Other research suggests that men who adhere to strict gender roles are at a greater risk for depression than men who do not adhere to strict gender roles (Zamarripa, Wampold & Gregory, 2003). Conversely, female gender role socialization has thought to result in maladaptive coping styles that contribute to depression (McGrath, Keita, Strickland & Russo, 1991, as cited in Beckham & Leber, 1995), while some studies have suggested that masculine gender role identity serves as a buffer to depression (Brems, 1995, as cited in Beckham & Leber, 1995).

Cochran (2000) argued that gender plays an important role in understanding differences in depression between men and women. It is unclear how exactly masculinity and femininity influence depressive symptomology and coping, however, contemporary research has started to look deeper into the influence of gender identity in men’s and women’s mental health. Regardless of the contradictions in clinical research, it is well

documented that men and women are socialized very differently throughout their lives and gender socialization may influence how individuals experience and report depression (Brems, 1995, as cited in Beckham & Leber, 1995).

Research has also explored whether or not girls experience more life stressors than boys. Some studies suggest that girls on average experience more stressful events during and after puberty, which helps explain the higher rates of depression in women (Jose & Ratcliffe, 2004). Other researchers argue that boys and girls experience the same number of stressful events during adolescence, but that the discrepancy in depression is related to the way in which girls appraise and interpret life stressors differently than boys (Jose & Ratcliffe, 2004). However, there is no consensus on this subject in contemporary research.

Hyde, Mezulis and Abramson (2008) have identified various social factors that influence gender differences in depression, reporting that girls are faced with more gender-specific trauma during adolescence, specifically, sexual abuse. The Rape Abuse and Incest National Network (RAINN) reports that approximately 213,000 sexual assaults occur each year in the United States and 90% of these victims are women (2011) and as many as 60% of sexual assaults are not reported to police (RAINN, 2011). Researcher Nolen-Hoeksema (1994) argues that girls experience an increase in sexual abuse during adolescence and are two to three times more likely than boys to be sexually abused or assaulted. This may be due in part by women's lack of social power in relation to men, resulting in an increase in vulnerability to sexual abuse (Nolen-Hoeksema, 2001). Many theorists have conceptualized gender differences in depression from a social justice

perspective, arguing that due to women's social disadvantage, the mental health of women is compromised on individual and systemic levels (Brems, 1995, as cited in Beckham & Leber, 1995).

Individuals who experience sexual victimization have a higher degree of depression (Nolen-Hoeksema, 1994). If young girls are being sexually abused at a higher rate than young boys, then it is likely that young girls are experiencing more depression than young boys (Nolen-Hoeksema, 1994). Nolen-Hoeksema and Cutler (1991) reported that as much as 35% of the gender discrepancy in adolescents is the result of young women experiencing more sexual trauma than boys. Similarly, Brems (as cited in Beckham & Leber, 1995) argues that women are faced with more discrimination and gender-bias than men, which may result in more depressive symptoms than men.

However, it should be noted that the gender discrepancy in sexual victimization and discrimination might also be the result of underreporting by men, due to societal pressure for men to adhere to masculine gender norms. Furthermore, RAINN identified that males were least likely to report sexual assaults to the police (RAINN, 2006) and it is unclear to what extent this may influence statistics on sexual assaults.

Integrated Models of Depression

Several researchers have proposed integrative models of depression to help explain gender differences. Nolen-Hoeksema (as cited in Gotlib & Hammen, 2002) suggests that biological, social and cognitive factors are interconnected, and together explain the gender gap in depression. For example, a woman who is genetically vulnerable to depression will not necessarily experience depression in her lifetime—other

factors must activate the depressive episode (such as puberty, cognitive coping styles or environmental stressors) (Nolen-Hoeksema, as cited in Gotlib & Hammen, 2002). Nolen-Hoeksema's interactive model for the emergence of gender differences in depression in adolescence focuses on the impact gender socialization has on emotional coping styles, and the gender-specific stressors that are specific to young girls (1994).

Hankin and Abramson (2002) suggest a cognitive vulnerability-transactional stress model to explain gender differences in depression and defined cognitive vulnerability as “dysfunctional attitudes and negative inferential styles” (Hankin & Abramson, 2002, p.777). Hankin and Abramson (2002) propose that dysfunctional attitudes and inferential styles interact with negative events or already depressed affect—which in turn, feeds the cycle of depression. Cognitive-vulnerability is a well-supported explanation for a portion of the variance in gender differences in depression.

Researchers Hyde et al. (2008) also propose an integrative model to explain the emergence of gender differences in depression. This model suggests that affective, biological and cognitive factors influence women's vulnerability to depression during adolescence (Hyde et al., 2008). Their model is a comprehensive approach to understanding gender differences in depression. The model takes into account biological factors (hereditary vulnerability, genetic factors and pubertal hormones and timing), affective factors (temperamental attributes and emotional reactivity), cognitive factors (cognitive styles, coping tendencies and body consciousness) and social factors (negative life events, sexual trauma and gender roles), which influence depressive symptoms in adolescent boys and girls (Hyde et al., 2008).

Depression in Men

To help explain some of the variance in rates of depression between men and women, it has been hypothesized that men and women may experience and express depression differently, thus contributing to the underrepresentation of male depression in current research studies (Boughton & Street, 2007). Qualitative research exploring gender-specific depressive symptomology appears to have been fueled by the alarming statistics on men and suicide. Research has also shown that men are less likely than women to seek help to treat depression and men are approximately 4-5 times more likely to commit suicide than women (Mahalik & Rochlen, 2006). Masculine-specific depression may look differently than prototypical depression and be influenced by societal pressures and gender socialization processes. Many of the studies on masculine-specific depression have been qualitative, so empirical studies on this topic are limited and future research in this area is warranted.

Cochran and Rabinowitz (2000) hypothesize that cultural norms influence the presentation of depression and other mood disorders in men. In a qualitative research study by Chuick et al. (2009) grounded theory methodology was used to investigate men's experiences of depression. The study included a random sampling of 15 adult male subjects who participated in an in-person interview (Chuick et al., 2009). It was found that in addition to the prototypical symptoms of depression, male depression may also include atypical symptoms of depression, such as denial, anger, physical complaints, irritability, interpersonal conflict, suicidal ideation and substance use (Chuick et al., 2009). Additionally, Chuick et al. (2009) suggested that masculinity and societal

expectations for men make depressive symptoms socially unacceptable. In fact, Chuick et al. (2009) discovered that the men in their qualitative study felt pressure to hide their depressive symptoms and negative feelings in efforts to align with masculine gender roles.

Similarly, in a qualitative study by Wisdom et al. (2007) examining the influence of gender role expectations on depression in adolescence, researchers found that boys felt significant pressure to adhere to masculine gender roles and to avoid expression of their emotions. Male respondents in this study identified denial and distraction as frequently used and socially acceptable forms of coping with depression (Wisdom et al., 2007). Furthermore, Wisdom et al. (2007) found that adolescent boys favored socially acceptable forms of emotion, such as anger, over expressions of sadness. Researchers concluded that externalizing behaviors, such as anger and substance use is characteristic of male depression. Wisdom et al. (2007) recommended helping boys learn to manage societal expectations and pressures to adhere to masculine gender norms, which influences the expression of depression.

Conversely, Wichstrom (1999) suggested that the gender intensification hypothesis helps to explain the gender gap in depression. This hypothesis argues that during early adolescence, boys and girls begin to experience an increase in gender socialization (Wichstrom, 1999) during which, boys begin to adhere more to masculine gender norms and girls begin to adhere more to feminine gender norms (Wichstrom, 1999). He suggests that masculine traits (active coping and assertiveness) serve as

protective factors against depression. As femininity increases, depression also increases and as masculinity increases, depression decreases (Wichstrom, 1999).

Brownhill, Wilhelm, Barclay and Schmied (2005) investigated 10 focus groups made up of male and female teachers and students from an education institution, and used qualitative research methods to explore male depression. They discovered that men's depression may be "hidden or overlooked" by friends or treatment providers, due to the atypical symptoms that often accompany the prototypical symptoms of depression in men (Brownhill et al., 2005). Atypical symptoms included denial, avoidance, aggression, violence, suicidal ideation and substance use (Brownhill et al., 2005). Researchers hypothesized that men tend to let their emotional distress "build" up inside of them, which later is released through externalizing behaviors, such as aggression, violence, anger or self-harm. Amongst this emotional "build up," depression in men may be "hidden" by externalizing and risky behaviors, such as substance abuse, suicidal behaviors, sexual activities, anger and violence (Brownhill et al., 2005).

Depression in Women

NIMH (2010) reported that women are 70% more likely than men to experience depression during their lifetime. A biopsychosocial perspective is often used to help understand the high prevalence of depression in women (Accortt, Freeman & Allen, 2008). Gender differences are most likely the result of a variety of interconnected factors, such as biological, cognitive and social explanations (Boughton & Street, 2007). To supplement this perspective, socialization processes (including gender) should also be

considered, to help better understand how and why women experience depression differently than men.

In a qualitative study by Brownhill, Wilhelm, Barclay and Schmied (2005), in which 45 women were interviewed, they found that women were more likely than men to express distress through sadness, help-seeking behaviors and self-report of depressive symptoms. Gender-specific symptoms of depression in women tend to be more observable than masculine-specific symptoms, and thus, more diagnosable (Brownhill et al., 2005). Researchers concluded that gender differences in depression may be related to the different ways men and women express and present with depression or emotional distress (Brownhill et al., 2005).

In a qualitative study by Wisdom, Rees, Riley and Weis (2007), researchers found that girls experience a great deal of social pressure to adhere to feminine gender roles, which contributes to depressive symptomology. However, study participants expressed that they felt it was more acceptable for girls to express emotions and for boys to hide feelings of sadness (Wisdom et al., 2007). It is unclear how societal expectations may influence men and women's self-report of depressive symptoms and whether or not this contributes to the gender gap in depression.

A growing number of twin studies support the idea that genetics play a moderate role in explaining rates of depression in men and women, but few studies have examined whether or not men and women experience depressive symptoms differently. In efforts to explore gender differences in depression, Khan, Gardner, Prescott and Kendler (2002) investigated the depressive symptomology in opposite-sex dizygotic twin pairs.

Researchers conducted telephone surveys with 1,404 twin pairs. Telephone surveys involved asking the participants questions to assess for DSM-III-R symptoms for major depression. Researchers found that women endorsed different depressive symptomology more so than men (including fatigue, hypersomnia, psychomotor retardation and help-seeking behaviors); while men endorsed more insomnia and agitation when compared to women (Khan et al., 2002). Researchers hypothesized that the differences in depressive symptomology between genders may be the result of a combination of factors, including social expectations, the ability to recall symptomology, negative life stressors or biological factors (Khan et al., 2002).

A study by Bertakis, Helms, Callahan, Azari, Leigh and Robbins (2001) examined gender differences in the diagnosis of depression in a primary care setting. Bertakis et al. (2001) found higher rates of depression in women than in men, using the Beck-Depression Inventory-II. They also discovered that women were more likely than men to be diagnosed with depression by their primary care physicians (Bertakis et al., 2001). As women's visits to see their primary care physician increased, so did the diagnoses of depression by their doctor (both correct and incorrect diagnoses of depression) (Bertakis et al., 2002). Increased rates of depression in women, but not men, were also associated with various demographic variables, including education level and marital status (such as separated, widowed, divorced). The higher rates of depression diagnoses in women may be related to higher help-seeking behaviors in women, stereotypical expressions of depression or gender-bias from diagnosing physicians (Bertakis et al., 2001).

Gender differences in depression have also been found in European cultures (Angst, Gamma, Gastpar, Lepine, Mendlewicz & Tylee, 2002). In a large-scale survey of 78,458 men and women in six European countries, 11.29 % of men reported feeling sad or depressed when compared to 19.69% of women. Women also reported significantly more prototypical symptoms of depression, including appetite problems, sleep issues, agitation, fatigue, feelings of worthlessness and guilt, difficulty concentrating, suicidal ideation and interference with work (Angst, 2002). Of the study participants who sought clinical help for depression, gender differences continued to be apparent and significantly more women than men endorsed prototypical symptoms of depression. Gender differences were also present in coping behaviors; men endorsed more coping behaviors related to playing sports, watching television and other activities (Angst, 2002). Most notably, more women coped with depression by laughing/crying (31.3% compared to 19% of men) and religion (18.2% compared with 13.1% of men). Angst et al. (2002) hypothesized that gender differences in depression may be the result of biological, social and diagnostic factors, but that more research is needed to accurately understand this relationship.

Socialization and Self-Reported Depression

Societal norms influence how men and women present to the world (Fieldman, 2010). Women are typically expected to adhere to feminine traits, such as passivity and selflessness; whereas men are expected to adhere to traditional masculine norms, which include assertiveness and independence (Accortt et al., 2008). Although gender

identification is evolving and becoming less dichotomous, traditional gender norms still exist.

It has been suggested that women's pressure to adhere to society's gender roles increases their vulnerability to depression and anxiety (Accortt et al., 2008). The overrepresentation of women diagnosed with depression has been argued to be related to the increased rates of gender-specific violence, including sexual abuse, domestic violence and power differentials between men and women (Hyde et al., 2008). However, it is unclear if this discrepancy is partially the result of men underreporting sexual abuse and domestic violence due to gender role expectations and societal pressure to conform to the traditional masculine gender role.

An early study by Chevron, Quinlan & Blatt (1978) investigated gender differences in depressive symptomology in male and female college students. Researchers found that level of sex role adherence influences the expression of depressive symptoms in men and women. Researchers hypothesized that men and women would experience depressive symptomology differently, according to societal sex role expectations (Chevron et al., 1978). Results of the study showed that men who reported depressive symptomology scored higher items associated with "self-criticism," whereas women scored higher on items associated with "dependency," indicating that men and women experience depressive symptoms differently due to differing gender roles.

Vredenburg, Krames and Flett (1986) measured rates of depression and depressive symptomology in a clinical population in an attempt to explore underreporting of symptoms by men. Vredenburg et al. (1986) predicted that men are less likely to report

symptoms inconsistent with the masculine gender role because they have learned it is unacceptable to show depressive symptoms in society. Results of the study concluded that men and women showed similar prototypical symptoms of depression, as well as gender-specific symptoms. Men endorsed symptoms consistent to the masculine gender role, including problems performing their job, difficulty making decisions, somatic concerns and increased suicidal ideation (Vredenburg, 1986). Women endorsed symptoms consistent to the feminine gender role, such as crying spells, self-esteem issues, body image issues, fatigue and irritability (Vredenburg, 1986). Similar studies have found that women's coping styles may be aligned with socially accepted feminine norms, such as seeking social support or expressing their emotions, whereas men's coping styles aligned with masculine gender norms, like denial and substance use (Vredenburg, 1986).

Sigmon, Pells, Boulard, Whitcomb-Smith, Edenfield, Hermann, LaMattina, Schartel and Kubik (2005) investigated whether or not socialization may influence underreporting of depressive symptoms by college men. Study participants completed measures on gender-related attitudes, beliefs about mental health, social desirability and depressive symptoms. Researchers found that men reported more depressive symptoms when they were not part of any follow-up group, but as the intrusiveness of follow-up procedures increased, depressive symptoms decreased in male respondents. Sigmon et al. (2005) concluded that gender differences in rates of depression may be linked to contextual issues influencing social desirability and reporting bias.

In a qualitative study by Brownhill, Wilhelm, Barclay & Schmied (2005), 77 men and 25 women were interviewed in small focus groups about their perceptions of men and depression. Results indicated that the men interviewed associated depression with weakness and socially unacceptable behavior. The societal stigma of male depression may influence underreporting of symptoms by men (Brownhill et al., 2005). Few quantitative research studies have examined the relationship between socialization, gender roles and self-reported depression in men and women. Most research studies have relied on qualitative data to explore the role gender plays in how men and women experience depressive symptoms differently.

Gender Roles

Measuring Gender

The most widely used instruments to measure gender traits are the Bem Sex Role Inventory (BSRI) and the Personal Attributes Questionnaire (PAQ) (Chrisler & McCreary, 2010). The BSRI is the only instrument that measures gender as a trait that is differentiated by masculinity, femininity, androgyny and undifferentiated (other scales do not look at androgyny). The BSRI has been psychometrically validated, but some researchers question whether or not gender roles have changed significantly enough to impact the construct validity of the instrument since its first publication in 1974 (Holt & Ellis, 1998). A study by Holt and Ellis (1998) reported conflicting results suggesting that gender roles have changed since 1974, whereas other studies found gender roles have not changed (Street, Kimmel & Kromrey, 1995). Holt and Ellis (1998) confirmed that the BSRI may still be valid for measuring gender roles, but more validation of this

instrument is warranted.

While the PAQ has been psychometrically validated, some researchers have similar questions as they do the BSRI, regarding its age and applicability to modern gender roles (Chrisler & McCreary, 2010). The PAQ includes three scales of masculinity, femininity and bi-polar masculinity-femininity (Chrisler & McCreary, 2010) and assesses 24 personality traits related to gender roles.

Gender related behaviors that are often associated with femininity include “compassion, tenderness, tactfulness, communication and nurturance” (Woo & Oei, 2008); whereas, traits often associated with masculinity include, “self-confidence, independence, leadership and assertiveness” (Woo & Oei, 2008). Androgynous traits are a combination of both masculine and feminine traits.

Carter, Corra and Holland (2007) suggest that gender roles have started to shift over the past thirty-years, depending on a variety of factors, including ethnicity, race, socioeconomic status, education and culture. Specifically, Carter et al. (2007) have suggested that gender roles have evolved to be more egalitarian between men and women. However, Lorber (2006) argues that gender inequality continues to exist, stating “the continuing purpose of gender as a modern social institution is to construct women as a group to be the subordinates of men as a group” (p.117). Theories on the extent to which gender roles for men and women have changed over the years, differs drastically, depending on the source of the information.

Common beliefs about the masculine gender role have been characterized by “instrumental or assertive qualities associated with high status” (Gerber, 2009, p. 297)

and for the feminine gender role, “women have more of the expressive or accommodating qualities linked with low status” (Gerber, 2009, p. 297). Other stereotypical gender traits that are often associated with the traditional masculine gender role include independence, assertiveness, decisiveness and being goal oriented (Gerber, 2009, p.297). Traits that are associated with the traditional feminine gender role include warmth, acceptance, giving or helpful qualities, selflessness, promotion of others and dismissiveness of the self (Gerber, 2009). Gerber (2009) suggested that the instrumental-assertive traits characteristic of masculinity and the expressive or accommodating traits characteristic of femininity may be influenced by social status. The Bem Sex Role Inventory is commonly used to measure men’s and women’s gender traits associated with instrumental-assertive, expressive and androgynous characteristics (Gerber, 2009).

Gender and Alcohol

Assessing Alcohol Use and Frequency

Assessing alcohol use in clinical and community populations largely depends on self-reports of the individuals being evaluated (Sobell & Sobell, 2004). Self-report alcohol assessments have been determined to be adequately valid and reliable, but more so if certain steps are taken to ensure honest reporting (Sobell & Sobell, 2004). Factors that have been shown to improve validity and reliability of self-report for alcohol assessments include: participants being sober during the assessment, a guarantee that responses are confidential, voluntary participation, clearly worded and direct questions, and visual aids to help recall past behavior (such as a calendar) (Sobell & Sobell, 2004).

In 1953, Straus and Bacon created the very first quantity-frequency assessment

questionnaire to measure alcohol use in college students (Sobell & Sobell, 2004). Today, the quantity-frequency questionnaire is a commonly used assessment tool in clinical and research settings (Dawson, 2003). Historically, the quantity-frequency questionnaire consisted of two questions asking the respondent how often they consumed alcohol and how much alcohol was consumed on those days; now, researchers have concluded that adding a third question about the maximum number of drinks the respondent has on any given day, makes the brief quantity-frequency questionnaire an effective tool to measure alcohol use (Dawson, 2003).

Quantity-frequency measures have been used in normal and clinical samples and college populations. Two major studies using quantity-frequency questionnaires include the National Longitudinal Alcohol Epidemiologic Survey funded by the National Institute on Alcohol Abuse and Alcoholism in 1992, and in 2001, the National Epidemiologic Survey on Alcohol and Related Conditions conducted by the National Institute on Alcohol Abuse and Alcoholism (Dawson, 2003).

For the purpose of this study, alcohol use was measured by a quantity-frequency questionnaire. Quantity-frequency questionnaires are short and simple measures that provide immediate information regarding the number of days the respondent drinks in a 30 day period, the number of drinks the respondent drinks in a typical day and the maximum number of drinks the respondent has on one day over the past month. Quantity-frequency questionnaires have been used on adults and adolescents, and with alcohol abusers, normal alcohol drinkers and college students (Sobell & Sobell, 2004).

Psychometric properties for quantity-frequency measures have shown good

reliability and good content, criterion and construct validity (Sobell & Sobell, 2004). Quantity-frequency measures use assessment timeframes of the past 30 days, past three months, one year and lifetime use. The National Institute on Alcohol Abuse and Alcoholism Quantity Frequency (NIAAA QF) questionnaire measures the average quantity of alcohol per occasion and the average frequency per occasion over the past 30 days (Sobell & Sobell, 2004). The NIAAA QF is short (3 questions) and direct. For the purpose of this study, the NIAAA QF will efficiently provide all necessary information required to determine study participant's quantity and frequency of alcohol use.

Gender Differences in Alcohol Use

Gender differences in alcohol use have been widely documented in psychology and health research (Nolen-Hoeksema, 2004). Results from the National Survey on Drug Use and Health (NSDUH) conducted by the United States Department of Health and Human Services in 2009 found that from a sample of 68,700 Americans in 2009, 57.6% of alcohol users were male and 46.5% were female. Gender differences were also apparent in young adults (age 18-25) with 65.9% of men reporting alcohol use, compared to 57.7% of women reporting alcohol use (National Survey on Drug Use and Health, 2010). College students (aged 18-22, enrolled full-time) reported higher alcohol use than non-college students (NSDUH, 2010). Of these college students, 63.8% reported current drinking behaviors (1 drink in the past 30 days), 45.5 % reported binge drinking behaviors (5+ drinks on the same day in the past 30 days) and 16.0% reported heavy drinking behaviors (5+ drinks on the same day on each of 5 or more days in the past 30 days) (NSDUH, 2010).

Nolen-Hoeksema (2004), summarized a list of risk factors that help to explain the gender differences in alcohol use, which included: genetics, social consequences, gender roles, coping styles, motivations to drink, depression or stress, self-esteem problems, impulsivity and antisocial tendencies, interpersonal relationships and sexual assault. The National Comorbidity Study (NCS) reported that from a sample of 9,282 American adults in 2007, men are more likely to experience a substance abuse disorder than women throughout their lifetime (41.8% of men and 29.6% of women). Additionally, more men than women were found to abuse alcohol with or without dependence throughout their lifetime (19.6% of men and 7.5% of women) (NCS, 2007). It is well documented that men consume more alcohol than women, but the cause for this gender difference continues to be researched (Nolen-Hoeksema, 2004).

Assessment of Depression

Assessment Instruments

Self-report assessment instruments are commonly used in clinical and research settings to measure the severity of depressive symptoms in men and women (Persons & Fresco, 1996). The Beck-Depression Inventory – II (BDI-II), the Center for Epidemiological Studies' Depression Scale (CES-D), the Hamilton Rating Scale for Depression (HRSD) and the Minnesota Multiphasic Personality Inventory – Depression Scale (MMPI-D) are widely used instruments found in a variety of clinical and non-clinical settings.

The BDI-II has become one of the most widely used depression measures in clinical and non-clinical populations (Persons & Fresco, 1996). The BDI-II is short (21

items), empirically validated and aligns with the DSM-IV-TR diagnostic criteria (Persons & Fresco, 1996). It measures cognitive, behavioral, somatic and motivational depressive symptoms (Persons & Fresco, 1996); however, the BDI-II does not account for masculine-specific depressive symptomology.

The CES-D has been widely used to assess depression in community samples, ethnic minorities, older adults and adolescents (Persons & Fresco, 1996). It is a short scale that identifies 20 depressive symptoms, but focuses mostly on the affective symptoms of depression (Persons & Fresco, 1996). The CES-D assesses for symptoms found in the DSM-IV-TR, but does not identify masculine-specific symptoms of depression. The CES-D10 is a shorter version of the CES-D and includes 10 items measuring current depressive symptomology. The CES-D10 is a brief depression-screening tool that has been validated in community samples of clinical and non-clinical populations (Shean & Baldwin, 2008). The CES-D10 has shown good reliability (Cronbach's alpha = 0.75) and the CES-D10 is correlated with the BDI-II ($r_s = 0.74$) (Cole, Rabin, Smith & Kaufman, 2004).

The Hamilton Rating Scale for Depression is a 24-item interview rated instrument that assesses for severity of depressive symptoms. Although it has adequate internal reliability (Bagby, Ryder, Schuller & Marshall, 2004), more recently researchers have identified problems with its interrater and retest reliability and content validity (Bagby et al., 2004). It contains items that align with the DSM-IV-TR diagnostic criteria and includes three additional anxiety scales (item 19. Anxiety – Psychic; item 20. Anxiety – Somatic; Item 21. Hypochondriasis). The HRSD does not measure masculine-specific

depressive symptoms.

The MMPI-D is a scale within the larger inventory of the MMPI. It consists of 60 items and is empirically supported and validated (Persons & Fresco, 1996). Items on the MMPI-D are both face-valid and non-face valid, making this instrument different than the BDI-II, CES-D and HRSD, which contain only face-valid items (Persons & Fresco, 1996). The MMPI-D does not account for masculine-specific symptoms of depression.

The instruments listed above (BDI-II, CES-D, HRSD and MMPI-D) all assess for prototypical symptoms of depression, as outlined in the DSM-IV-TR; but none assess for masculine-specific depressive symptoms. Several measures have been developed to measure masculine-specific depressive symptoms, including the Gotland Scale for Assessing Male Depression (GSAMD) and the Masculine Depression Scale (MDS); however both have psychometric limitations and validity and reliability statistics are few, due to the limited number of studies testing these properties.

The GSAMD was originally developed to measure depression in suicidal men living on the island of Gotland in Sweden (Magovcevic & Addis, 2008). Reliability and validity for the GSAMD has been tested in two separate studies, but there remain to be construct, reliability and validity issues related to the measure (Magovcevic & addis, 2008). Construct validity appears to be a significant concern due to the population this measure was normed on (inpatient suicidal men in Sweden) (Magovcevic & Addis, 2008).

The MDS was developed in response to the limited number of effective masculine-specific depression instruments, including the GSAMD. However, there is

limited psychometric support for this instrument, as it was normed on 102 male participants who were predominantly Caucasian (Magovcevic & Addis, 2008). The developers of the MDS concluded that, based on their 102 participant study, it is unclear whether or not the instrument measures externalizing symptoms of depression, or externalizing behaviors in general. The instrument has not been validated with a female or clinical sample (Magovcevic & Addis, 2008).

The study by Magovcevic and Addis (2008) surveyed 102 men at an urban YMCA who reporting experiencing some type of stressful event over the past three months. Participants completed the Stressful Life Events Checklist, the Psychiatric Disorders Screening Questionnaire, the Center for Epidemiological Studies Depression scale, the Beck Depression Inventory, the Gotland Male Depression Scale, the Conformity to Masculine Norms Inventory and the Male Role Norms Scale. Results showed that men who adhere to masculine gender norms endorsed more externalizing symptoms of depression and fewer typical symptoms of depression on the MDS (Magovcevic & Addis, 2008). However, due to the small, homogeneous sample size (male, non-clinical Caucasian men), results appear to be inconclusive.

At this point in time, no assessment instruments have been empirically supported to adequately measure prototypical and masculine-specific symptoms of depression simultaneously in male and female populations, clinical or non-clinical.

Issues with Assessing Depression in Men and Women

In addition to the biological, social and cognitive explanations for gender differences in depression, reporting issues and differences in depressive symptomology

between men and women have been studied. Some theorists suggest that women are more likely to report depression than men due to gender socialization, and that the relatively higher rates of depression in women may be related to underreporting by men (Brems, as cited in Beckham & Leber, 1995, Sigmon, Pells, Boulard, Whitcomb-Smith, Edenfiled, Hermann, LaMattina, Schartel, Kubik, 2005). However, other researchers such as Nolen-Hoeksema (1990) argued that there is little evidence to support this claim. O'Neil, Lance and Freeman (as cited in Beckham & Leber, 1995) suggest that the gender discrepancy between men and women can be explained by the fact that women have a tendency to discern certain symptoms as depression, whereas men are less likely to do so, and thus, men report fewer symptoms of depression than women. This may be the result of differences in the way men and women perceive depression, based on social processes, which in turn may influence how men and women report their depressive experiences.

Chuick et al. (2009) suggest that women experience “typical” internalizing symptoms of depression, whereas men experience “atypical” externalizing symptoms of sadness. For example, women may show passive symptoms of depression, such as crying, tearfulness, or social withdrawal, whereas men may show increased substance use, avoidance, distraction and aggression when they become depressed (Nolen-Hoeksema, 1987, as cited in Beckham & Leber, 1995). If this is the case, then it follows that men’s externalizing symptoms of depression are not accounted for in the diagnostic criteria for depression in the DSM-IV-TR, and as such, men’s depression may be going unreported and undiagnosed. However, more research is needed to test this claim.

More recent clinical researchers and theorists also take into account the role gender socialization has in explaining gender differences in self-reported depression. Chuick et al. (2009) suggests that it is more socially acceptable for women than men to seek help and report depressive symptoms. They argue that gender socialization results in a tendency for men to deny negative/depressed emotions on surveys (Chuick et al., 2009). If this is the case, the current measures used to assess depressive symptomology in men are not adequate because they are not able to detect the atypical symptoms of depression. There is a need for an empirically validated and reliable assessment instrument that accounts for masculine-specific depressive symptoms, in addition to the prototypical symptoms of depression outlined in the DSM-IV-TR.

Adherence to gender roles may affect whether or not a person reports psychological symptoms (Sigmund et al., 2005). Due to masculine gender norms, men are less likely to report depressive symptoms because these symptoms do not adhere to societal expectations for men (Sigmund et al., 2005). Additionally, gender stereotypes influence self-reports of depression and as a result, women are expected to express emotions more readily than men, and men are expected to withhold emotion (Sigmund et al., 2005). Men and women have experienced very different socialization processes that influence how they experience and report depressive symptoms (Sigmund et al., 2005).

A study by Page & Bennesch (1993) assessed whether or not males would respond differently to the Beck Depression Inventory-II and the Hopkins Symptom Checklist, based on whether or not they were aware of the “depression condition” or the “daily hassles condition.” Each condition measured the same variable (depressive

symptoms), but was labeled differently. The “daily hassles” condition did not mention depression, whereas the “depression condition” was explicitly labeled “depression project” for the subjects to see. The study included 75 men and 135 women college students, and researchers (1993) predicted that due to gender expectations, men would report fewer “depressive symptoms” and more “daily hassles.” Researchers hypothesized that men and women would respond to certain situations differently based on their perceptions of expected gender roles. The study concluded that testing conditions have some relationship to underreporting of depressive symptoms, due to gender role expectations, but again, this relationship is not fully understood.

Summary

A good deal of research has explored possible factors that influence the well-documented gender differences in rates of self-reported depression (Chnick et al, 2009). However, little research has provided empirical data on how gender roles influence depressive symptomology in men and women. Cochran (2000) has argued the case for masculine-specific depression; but quantitative data supporting these concepts is lacking. Speculation based on qualitative studies has argued that masculine-specific depressive symptoms may include increased aggression, problems at work, difficulty concentrating, interpersonal difficulties, violence and suicide (Wasserman, 2006), yet there is little empirical data to support these claims. Furthermore, the criteria from the DSM-IV-TR used to diagnose a major depressive episode does not account for gender differences in depression, nor does it include masculine-specific depressive symptomology. The DSM-IV-TR and other widely used assessment instruments for depression do not take into

account how gender roles influence the way men and women experience depression differently. The impact of gender on social behavior is well documented in the literature (Ore, 2006), yet there is a large gap in the research on the influence of gender on depressive symptomology in men and women.

The first developed masculine-specific depression instrument, the Gotland Scale for Male Depression, was normed on suicidal, inpatient Caucasian Swedish men, which resulted in significant methodological and construct issues (Magovcevic & Addis, 2008). In an effort to devise an instrument to measure masculine-specific depressive symptoms more accurately, Magovcevic and Addis (2008) developed the Masculine Depression Scale. Although theoretically an innovative idea, the study proved to lack empirical data to support the measure's psychometric properties and left the construct of male depression in question. The study has several significant limitations, including small sample size, homogeneous population, lack of diversity, no clinical population and no female population. Furthermore, alcohol use was not considered in this study, even with numerous qualitative researchers citing the important role alcohol may play in masking male depression (Wasserman, 2006). Additionally, the study only explored masculine gender roles, and did not include any data on how femininity or androgyny might influence the measure.

In effort to better understand the discrepancy in rates of depression between men and women, this study will focus on gathering empirical data that will help to support or dispute the growing construct of masculine-specific depression. Furthermore, both genders must be included in future research, as well as clinical and non-clinical

populations. Lastly, to support current theoretical arguments and qualitative data on alcohol use in male depression, quantitative information on how alcohol use influences gender-specific depression is strongly warranted. If it is true that alcohol use may mask depressive symptoms in men, this will change how depression is assessed and treated.

Only over the past decade have researchers started to examine masculine-specific depressive symptomology. The available qualitative studies on this topic are rich and revealing sources of information, but these studies are very limited. In addition, empirical data on masculine-specific depression and gender-specific symptomology are inadequate, as are the assessment instruments that measure this construct. Furthermore, no quantitative research studies have ever investigated the role alcohol may play in hiding depressive symptoms in men.

This study will test four hypotheses: (1) individuals who score above the median on the masculinity scale of the BSRI (“masculine” or “androgynous” classifications) will have higher scores on the masculine specific depressive symptoms of the DCDI, than those who score below the median on the masculinity scale of the BSRI (“feminine” or “undifferentiated” classifications); (2) individuals who score above the median on the masculinity scale of the BSRI will have lower scores on the BDI than those who score below the median on the masculinity scale of the BSRI; (3) individuals who score above the DCDI threshold for significant depression will report more alcohol use on the QF measure than those who report significant BDI-II scores; and (4) the DCDI will demonstrate an acceptable convergent validity with the BDI-II when controlling for alcohol use.

This study's hypotheses were formulated based on the preceding literature review, which highlight the significance of gender roles on social behavior and the expression of depressive symptomology. It is argued that gender influences how men and women experience depression and that adherence to more masculine gender roles will result in more masculine-specific depressive symptomology. Additionally, alcohol use has been shown in qualitative studies to play an important role in hiding depressive symptomology and this study will add meaningful empirical data by testing this finding. Lastly, this study will attempt to validate the Denver Comprehensive Depression Inventory by including both men and women in the sample and data from clinical and non-clinical individuals.

Chapter 3: Methodology

The purpose of this study was to determine the extent to which gender influences self-reported prototypical and masculine-specific symptoms of depression in men and women and whether alcohol mediates this relationship. Secondly, this study provided exploratory information on the factor structure of the DCDI.

The results of this study provide clinicians and researchers with helpful information about the way gender influences depressive symptomology in men and women. Future research based on the results of this study should continue to investigate gender differences in depression in larger and diverse samples, as well as to further validate and improve the DCDI.

Participants

Participants in this study consisted of clinical and non-clinical populations of both men and women from three different settings. Clinical participants included clients from the University of Denver's Health and Counseling Center and clients receiving mental health services at the Community Reach Center, a local community mental health center serving a demographically diverse group of individuals. The non-clinical sample comprised graduate students from the University of Denver's counseling psychology program. Individuals ranged from 18 to 69 years of age.

Procedure

Prior to data collection, approval was granted by the Institutional Review Board (IRB) of the University of Denver. Participants from the University of Denver's Health and Counseling Center and the Community Reach Center were offered the opportunity to participate in the study by trained front desk staff, upon checking in for their regular scheduled counseling or psychiatric appointments at either Center. Participants from the non-clinical group of graduate students at the University of Denver were approached by the principal investigator of the study after classes and invited to participate in the study. It was explained to all three groups that the study and survey packets were voluntary and anonymous. Upon participation in the study, participants were offered a chance to win one of 10 \$100 Visa gift cards, and were informed that they could opt out of the study at any point with no penalty to them.

Study packets included the informed consent form, a brief depression-screening tool (the Center for Epidemiological Studies Depression Scale – 10 Item version) (Radloff, 1977) and the four study measures. Participants had to be at least 18 years old to participate in the study and only those able to read the description of the study and give written consent to participate in the study were permitted to take part in the study. The study packets took approximately 20 minutes to complete.

Measures

Center for Epidemiology Studies Depression Scale – 10 Item Version

The CES-D10 (Cole, Rabin, Smith & Kaufman, 2004) is a self-administered brief depression-screening tool that measures recent depressive symptoms and depressed

mood. It consists of 10 items and the respondent is asked to score himself or herself from one to four to describe how they have been feeling over the past week, where one is “rarely or none of the time,” and four is “most or all of the time.” The CES-D10 is recommended for use as a screening tool and not a diagnostic tool. The CES-D10 was not used in exploration of the primary hypotheses, but offered additional information about the sample characteristics and depressive symptoms. The CES-D10 has shown good reliability (Cronbach’s alpha = 0.75) and the CES-D10 is correlated with the BDI-II ($r_s = 0.74$) (Cole, Rabin, Smith & Kaufman, 2004) and has shown to be correlated with the CES-D20, which has also shown good reliability (Cronbach’s Alpha = .86) (Irwin, Artin & Oxman, 1999).

Beck Depression Inventory-II

The BDI-II (Beck, Steer, & Brown, 1996) is a self-administered questionnaire consisting of 21 items assessing the severity of depressive symptoms in clinical and non-clinical populations. Each item on the inventory consists of four options to choose from, each increasing in severity of depressive symptoms. The items on the BDI-II align with the diagnostic criteria for a depressive episode in the DSM-IV-R. Scores on the BDI can range from 0 to 63 (Arnau, Meagher, Norris & Bramson, 2001). The BDI-II has been found to be psychometrically sound and is widely used to assess for depression in clinical and non-clinical populations. The BDI-II has been shown to have high good internal consistency (.86 and .81 in clinical and non-clinical samples) and good concurrent validity with the Hamilton Rating Scale for Depression and the Depression scale of the Minnesota Multiphasic Personality Inventory (Fields, 2010). The full inventory is

presented in Appendix B.

Bem Sex Role Inventory (BSRI)

The BSRI (Bem, 1978) is a 60-item self-report rating scale. It measures gender role perceptions and differentiates based on masculinity, femininity, androgyny and undifferentiated scales. The BSRI is widely used in psychology research and has adequate psychometric properties (Holt & Ellis, 1998). Bem (as cited in Holt & Ellis, 1998) reported high internal consistency and test-re-test reliability. The BSRI has high reliability, with coefficient alphas for masculinity (.86) and femininity (.82) (Holt & Ellis, 1998). The BSRI has high test re-test reliability for masculinity ($r = .90$), femininity ($r = .90$) and androgyny ($r = .93$) (Holt & Ellis, 1998). In a study by Holt and Ellis (1998), items from the BSRI were assessed and further validated, but more research using the BSRI was recommended by researchers in order to further validate the instrument. Construct validity may be an issue for this instrument, as some researchers have suggested gender roles have changed since the BSRI was developed, however, through this study, information was collected on current gender role perceptions and will be discussed further in the discussion chapter of this dissertation. The full inventory is presented in Appendix C.

Denver Comprehensive Depression Inventory

The scale developed for this study was revised and adapted from Dr. Andrew Fields' measure "Men's Depression Inventory" for his dissertation (Fields, 2010). New items were added to the instrument so that both women and men could respond to the items. Additionally, 13 new items assessing prototypical symptoms of depression were

added and nine items assessing newer masculine-specific depressive symptoms were also added to the measure. Several items were changed because of high logit difficulties on the original measure.

The DCDI is a self-administered instrument that assesses masculine-specific and prototypical symptoms of depression. It consists of 51 items and respondents are asked to rate themselves on a scale of 1-6 (1=Strongly Disagree and 6 = Strongly Agree) based on the past two weeks. The instrument showed good internal consistency (Cronbach's Alpha=.882) and was moderately correlated with the BDI-II (.521, $p < .001$) (Fields, 2010). The full inventory is presented in Appendix D.

National Institute on Alcohol Abuse and Alcoholism Quantity Frequency Questionnaire (NIAAA QF)

The NIAAA QF (NIAAA, 2003) is a very brief and simple three-item questionnaire. The questionnaire asks respondents (1) on average, how many days per week do you drink alcohol? (2) on a typical day when you drink, how many drinks do you have? And (3) what is the maximum number of drinks you had on any given occasion during the last month? The NIAAA QF assesses the respondents' alcohol consumption and frequency of use over the past 30 days. Quantity-Frequency measures are commonly used to gauge alcohol use in a variety of populations and were among some of the first assessment tools to measure alcohol use (NIAAA, 2013). The NIAAA QF has been used with college populations, non-clinical groups and clinical groups with alcohol disorders (Sobell, & Sobell, 1992). The questionnaire is presented in Appendix E. Psychometric properties for quantity-frequency measures have shown good reliability and good content, criterion and construct validity (Sobell & Sobell, 2004).

Statistical Analyses

Statistical analyses were conducted using IBM SPSS Statistics to test whether gender influences self-reported rates of depression. This study examined the combined data from the three settings (the University of Denver's Health and Counseling Center, Community Reach Center and graduate students from the University of Denver's counseling psychology program). Combined data from the three groups were analyzed, as well as data from the three groups separately, followed by an examination of differences between clinical and non-clinical groups.

For the purpose of the study, gender was determined by totaling the masculine and feminine items separately into two distinct scale scores. Self-identified gender was also obtained, as reported by each participant on the demographics questionnaire and was also used in analyses. Final BSRI classifications were determined by using the median scores of each masculine and feminine scale to classify the participant into one of four groups: undifferentiated, masculine, feminine or androgynous. Undifferentiated groups consisted of individuals who scored below the medians on both masculine and feminine scales. Masculine groups consisted of individuals who scored above the median on the masculine scale, but below the median on the feminine scale. Feminine groups consisted of individuals who scored above the median on the feminine scale, but below the median on the masculine scale. Androgynous groups consisted of individuals who scores above the medians on both the masculine and feminine scales.

A one way analysis of variance (ANOVA) was used to compare means of the four BSRI classifications on the BDI-II and DCDI for hypothesis 1 and hypothesis 2. A

planned contrast was used to compare the clinical and non-clinical groups for hypotheses 1 and 2.

The specificity and sensitivity of various cutoff scores on the DCDI were identified using a Receiver Operating Characteristics (ROC) procedure in which the DCDI was calibrated with the BDI-II. The cut-off value of 146 for the DCDI was obtained by maximizing specificity and sensitivity in order to differentiate depressed and not depressed individuals in the sample. A second cut-off score for the DCDI was also considered, when looking at the top 15% of the total scores; this cut off score was 194. For Hypothesis 3, t-tests were performed to examine alcohol use in individuals with significant CES-D10 scores and the NIAAA-QF items. To test hypothesis 4, correlations were computed to evaluate any relationship between the BDI-II and alcohol use, and the DCDI and alcohol use. This analysis was preceded by computing the correlation between the BDI-II and the DCDI.

The structure of the DCDI was explored using factor analysis. Principal component analysis with varimax (orthogonal) rotation was used and items with factor loadings below .4 were omitted.

Summary

This chapter presented the methodology that was used in this study. Participants were men and women from three different settings, including the University of Denver's Health and Counseling Center, Community Reach Center and graduate students from the counseling psychology program at the University of Denver. Upon Institutional Review Board approval, study participants were invited to complete a study package with the four

surveys, a depression screener and one demographic questionnaire. Data was analyzed using ANOVAs, t-tests and correlations, and the structure of the newly developed DCDI was examined by factor analysis.

Chapter 4: RESULTS

This chapter presents the results of the statistical analyses associated with the current study. Considerations made prior to data analysis are discussed, followed by participant demographics, an examination of the factor analysis for the DCDI and testing of primary hypotheses.

Considerations Made Prior to Data Analysis

One consideration was addressed prior to data analysis. The sample contained four data packets that were missing significant amounts of data (50% or more blank data), which were removed from the study.

Participant Demographics

The sample comprised 120 men and women from three different settings: the University of Denver's Health and Counseling Center (N = 40), the Community Reach Center outpatient services in Commerce City, Colorado (N = 31), and graduate students from the University of Denver's counseling psychology program (N = 49). Two of the settings were clinical settings: The University of Denver's Health and Counseling Center and Community Reach Center. Graduate students from the University of Denver were used as the non-clinical sample. This section outlines group demographics as a whole and then provides specific demographics for each of the three settings, followed by a look at demographic differences between clinical and non-clinical groups.

Total Sample

The total sample consisting of 120 participants was 70.0% women, 29.2% men and .8% “other”. The sample was 70.8% Caucasian, 14.2% Hispanic, 4.2% Asian/Pacific Islander, 1.7% African American/Black, .8% American Indian, 4.2% “other” and 4.2% Multiracial. The average age was 31 years old, with ages ranging from 18-69 (Table 1).

Table 1
Participant Characteristics for the Total Sample (N=120)

Demographic	Percent	Frequency	
Gender			
Woman	70.0	84	
Man	29.2	35	
Other	.8	1	
Ethnicity			
Caucasian	70.8	85	
Hispanic	14.2	17	
Asian/Pacific Islander	4.2	5	
African American/Black	1.7	2	
American Indian	.8	1	
Other	4.2	5	
Multiracial	4.2	5	
Age			
<i>Mean = 31.38</i>	18-24	33.3	40
<i>Range =18-69</i>	25-30	26.6	32
	31-35	14.1	17
	36-40	5.8	7
	40-60	19.1	23
	60+	1.6	2

The majority of the total sample was currently receiving mental health services (72.5%) at the time of the study. Of the total sample, 18.3% had been diagnosed with major depressive disorder, 15% had been diagnosed with Generalized Anxiety Disorder, 9.2% had been diagnosed with bipolar disorder, 14.2% had been diagnosed with PTSD,

4.2% had been diagnosed with a personality disorder and 14.2% had been diagnosed with “other” mental health diagnosis. Individuals were also asked if they were currently taking any psychotropic medications and 41.7% of the sample reported “yes” (Table 2).

Table 2
Mental Health Characteristics for the Total Sample (N=120)

Mental Health Variable		Percent	Frequency
Currently Receiving Mental Health Services	Yes	72.5	87
	No	27.5	33
Diagnosis (self-report):			
Major Depressive Disorder	Yes	18.3	22
	No	80.8	97
Generalized Anxiety Disorder	Yes	15	18
	No	85	102
Bipolar disorder	Yes	9.2	11
	No	90.8	109
PTSD	Yes	14.2	17
	No	85.8	103
Personality Disorder	Yes	4.2	5
	No	95.8	103
Other Mental Health Diagnosis	Yes	14.2	17
	No	85.8	103
Taking Psychotropic Medication			
	Yes	41.7	50
	No	55.8	67

Among the 120 study participants, the mean total score for the Beck Depression Inventory (BDI-II) was 16.57 (SD = 14.72; Range = 60.67), a score in the mildly depressed range. Of the total sample, 53% were in the minimally depressed range, 9.2%

were in the mildly depressed range, 15.8% were in the moderately depressed range and 21.7% were in the severely depressed range (Zimmerman, 1986) (Table 3).

Table 3
Means, Standard Deviations, Ranges, Minimum and Maximum Values for the Total Sample and Cronbach's Alpha for Each Instrument

Instruments	M	SD	Range	Min	Max	Cronbach's Alpha
BDI-II	16.57	14.72	60.67	0	60.67	.94
DCDI	138.08	50.76	232.00	59.00	291.00	.88
CES-D	22.47	8.30	30.00	10.00	40.00	.96
BSRI						.91
Masculine Score	4.49	.84	5.15	1.50	6.65	
Feminine Score	4.69	.76	4.45	2.20	6.65	

Based on the BSRI classification system, 30.8% of the total sample were classified as “undifferentiated,” 25% were classified as “masculine,” 20% were classified as “feminine,” and 24.2% were classified as “androgynous” (Table 4).

Table 4
BSRI Classifications for the Total Sample (N=120)

BSRI Classification	Percent	Frequency
Undifferentiated	30.8	37
Masculine	25.0	30
Feminine	20.0	24
Androgynous	24.2	29

Among the participants, the mean total score for the DCDI was 138 (SD = 50.76; Range = 232). A cut-off score of 146 was determined by running a ROC curve with a BDI-II cut off score of 11 (scores < 11 were not depressed and scores > 11 were depressed). The area under the curve was .93 and those participants with scores greater than 146 were considered clinically significant DCDI scores. The best cut off that maximizes (sensitivity + specificity) is 146. (Figure 1).

Figure 1
ROC Curve for the DCDI using the BDI-II

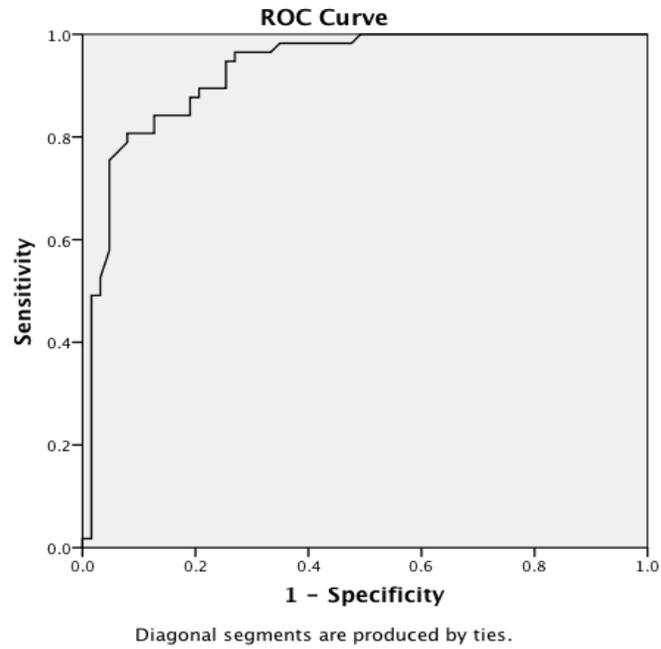


Table 5
BSRI Classifications for Each Group

BSRI Classifications	DU CNP Students (N=40)	Community Reach Center (N=31)	DU HCC (N=49)
	<i>Percent</i>		
Undifferentiated	10.0	38.7	42.9
Masculine	30.0	16.1	26.5
Androgynous	35.0	6.5	16.3
Feminine	25.0	38.7	14.3

Table 6

Means, Standard Deviations, Ranges, Minimum and Maximum Values for Each Group

Instruments	DU CNP Students (N=40)		Community Reach Center (N=31)		DU HCC (N=49)	
	M	SD	M	SD	M	SD
BDI-II	5.15	5.92	26.95	16.01	19.31	12.77
DCDI	94.11	26.85	173.97	44.89	151.25	43.85
CES-D	16.00	5.94	26.11	7.51	25.4	7.37
BSRI						
Masculine	4.63	5.60	4.60	1.07	4.31	.89
Feminine	4.94	5.70	4.75	1.00	4.45	.77

Table 7

DCDI, BDI-II and CES-D Means for Each Group Based on BSRI Classifications

Measures	TOTAL Sample (N=120)		DU CNP Students (N=40)		Community Reach Center (N=31)		DU HCC (N=49)	
	M	SD	M	SD	M	SD	M	SD
DCDI								
Undiff.	123.58*	29.65	82.19	24.08	133.44	19.00	125.83*	29.83
Masc.	107.04	35.85	81.91	7.47	123.8	27.39	123.79	34.49
Fem.	85.05**	28.9	72.07	17.27	130.66	33.46	96.37**	31.08
Androg.	98.74**	42.60	65.70	11.27	128.84	46.75	94.73**	25.45
BDI-II								
Undiff.	25.53*	15.77	8.25	9.67	35.65	13.38	23.03	14.40
Masc.	13.71**	11.69	6.16	6.71	20.23	12.49	18.16	11.87
Fem.	10.74**	10.15	5.44	5.34	30.00	11.31	15.22	9.05
Androg.	12.91**	14.77	2.3	3.09	20.56	17.38	14.95	11.84
CES-D								
Undiff.	26.45	7.28	17.00	4.54	29.54	5.15	26.47	7.36
Masc.	22.00	7.56	18.00	7.43	23.40	6.10	25.15	6.90
Fem.	20.87	8.69	16.28	6.06	31.50	7.77	26.25	7.97
Androg.	19.20	8.30	12.80	2.85	22.91	8.69	22.00	8.14

Note: Groups marked with an asterisk (*) represent the group with the highest mean score when compared to groups with a double asterisk (**) to reflect only the statistically significant differences between the groups ($p < .05$).

University of Denver, Non-clinical Graduate Student Group

The non-clinical sample of graduate students at the University of Denver consisted of 40 men and women. 77.5% were women and 22.5% were men. The average age was 27 years old. The sample was 72.5% Caucasian, 10% Hispanic, 7.5% Asian/Pacific Islander, 7.5% Multiracial and 2.5% “other.” The average age was 27.28 (Table 8).

Table 8
Participant Characteristics, Non-Clinical Graduate Students in Counseling Psychology (N=40)

Demographic	Percent	Frequency
Gender		
Woman	77.5	31
Man	22.5	9
Ethnicity		
Caucasian	72.5	29
Hispanic	10.0	4
Asian/Pacific Islander	7.5	3
Other	12.5	1
Multiracial	7.5	3

Of the 40 participants, the mean total score for the BDI-II was 5.15 (SD = 5.92; Range = 24). The mean total score for the DCDI was 94.11 (SD = 26.85; Range = 120) (Table 9). The non-clinical sample was classified by the BSRI as 10% undifferentiated, 30% Masculine, 35% Feminine and 25% Androgynous (Table 10).

Table 9

Means, Standard Deviations, Ranges, Minimum and Maximum Values for Non-clinical Graduate Students in Counseling Psychology (N=40)

Instruments	M	SD	Range	Min	Max
BDI-II	5.15	5.92	24.00	.00	24.00
DCDI	94.11	26.85	120.00	59.00	179.00
CES-D	16.00	5.94	23.00	10.00	33.00
BSRI					
Masculine Score	4.63	.46	1.95	3.65	5.60
Feminine Score	4.94	.36	1.45	4.25	5.70

Table 10

BSRI Classifications for Non-clinical Graduate Students in Counseling Psychology (N=40)

BSRI Classification	Percent	Frequency
Undifferentiated	10.0	4
Masculine	30.0	12
Feminine	35.0	14
Androgynous	25.0	10

Community Mental Health Center Group

The community mental health clinical sample consisted of 31 participants. The sample was 67.7% were women and 32.3% men. The average age was 41 years old. The sample was 58.1% Caucasian, 32.3% Hispanic, 3.2% African American/Black, 3.2% Multiracial and 3.2% American Indian (Table 11).

Table 11

Participant Characteristics, Community Mental Health Group (N=31)

Demographic	Percent	Frequency
Gender		
Woman	67.7	21
Man	32.3	10
Ethnicity		
Caucasian	58.1	18
Hispanic	32.3	10
African American/Black	3.2	1
American Indian	3.2	1
Multiracial	3.2	1

The total mean score for the BDI-II was 26.95 (SD = 16.01; Range = 59.67). Of this group, 22.6% were in the minimally depressed range, 12.9% were in the mildly depressed range, 25.8% were in the moderately depressed range and 38.7% were in the severely depressed range. The mean score for the DCDI was 173.97 (SD = 44.89; Range = 198.00) (Table 12). According to the BSRI, the sample was classified as 38.7% undifferentiated, 16.1% masculine, 6.5% feminine and 38.7% androgynous (Table 13).

Table 12

Means, Standard Deviations, Ranges, Minimum and Maximum Values for Community Mental Health Group (N=31)

Instruments	M	SD	Range	Min	Max
BDI-II	26.95	16.01	59.67	1.00	60.67
DCDI	173.97	44.89	198.00	93.00	291.00
CES-D	26.11	7.51	27.00	13.00	40.00
BSRI					
Masculine Score	4.60	1.07	5.15	1.50	6.65
Feminine Score	4.75	1.00	4.45	2.50	6.65

Table 13

BSRI Classifications for Community Mental Health Sample (N=31)

BSRI Classification	Percent	Frequency
Undifferentiated	38.7	12
Masculine	16.1	5
Feminine	6.5	2
Androgynous	38.7	12

College Counseling Center Group

The college mental health clinical sample consisted of 49 participants. The sample was 65.3% women, 32.7% men and 2% “other.” The average age was 28 years old. The sample was 77.6% Caucasian, 6.1% Hispanic, 4.1% Asian/Pacific Islander, 2.0% African American/Black, 8.2% “other” and 2% Multiracial (Table 14).

Table 14

Participant Characteristics, College Counseling Center Group (N=49)

Demographic	Percent	Frequency
Gender		
Woman	65.3	32
Man	32.7	16
Other	2.0	1
Ethnicity		
Caucasian	77.6	38
Hispanic	6.1	3
Asian/Pacific Islander	4.1	2
African American/Black	2.0	1
Other	8.2	4
Multiracial	2.0	1

The total mean score for the BDI-II was 19.31 (SD = 12.77; Range = 49) (Table 15). Of this group, 40.8% were in the minimally depressed range, 14.3% were in the mildly depressed range, 16.3% were in the moderately depressed range and 28.6% were

in the severely depressed range. The total mean score for the DCDI was 151.25 (SD = 43.85; Range = 174).

Table 15
Means, Standard Deviations, Ranges, Minimum and Maximum Values for College Counseling Center Group (N=49)

Instruments	M	SD	Range	Min	Max
BDI-II	19.31	12.77	49.00	.00	49.00
DCDI	151.25	43.85	174.00	64.00	238.00
CES-D	25.4	7.37	27.00	10.00	37.00
BSRI					
Masculine Score	4.31	.89	4.05	1.85	5.90
Feminine Score	4.45	.77	3.70	2.35	6.05

According to the BSRI, the college counseling center sample was 42.9% undifferentiated, 26.5% masculine, 16.3% feminine and 14.3% androgynous (Table 16).

Table 16
BSRI Classification for College Counseling Center Group (N=49)

BSRI Classification	Percent	Frequency
Undifferentiated	42.9	21
Masculine	26.5	13
Feminine	16.3	8
Androgynous	14.3	7

Clinical vs. Non-clinical Groups

The non-clinical sample included university graduate students and the clinical sample consisted of university mental health patients and community mental health patients. In the non-clinical sample, 77.5% were women and 22.5% were men, compared to the clinical sample, which consisted of 66.3% women and 32.5% men and 1.3% other (Table 17). The average age for the non-clinical group was 27 years old and the average age for the clinical group was 33 years old. The non-clinical sample was 72.5% Caucasian, 10% Hispanic, 7.5% Asian/Pacific Islander, 7.5% Multiracial and 2.5% other;

whereas the clinical sample was 70% Caucasian, 16.3% Hispanic, 2.5% Asian/Pacific Islander, 2.5% African American/Black, 1.3% American Indian, 5.0% “other,” and 2.5% multiracial.

Table 17
Participant Characteristics for Clinical and Non-clinical Groups (N=120)

Demographic	Non-Clinical (N=40)	Clinical (N=80)
Gender	<i>Percent</i>	
Woman	77.5	66.3
Man	22.5	32.5
Other		1.3
Ethnicity		
Caucasian	72.5	70
Hispanic	10	16.3
Asian/Pacific Islander	7.5	2.5
African American/Black	-	2.5
American Indian	-	1.3
Other	2.5	5.0
Multiracial	7.5	2.5

The total mean score for the BDI-II in the clinical group was 22.27 (SD = 14.51; Range = 60.67), contrasted with the non-clinical group mean score on the BDI-II of 5.15 (SD = 5.92; Range = 24). The clinical group consisted of 33.8% in the minimally depressed range, 13.8% in the mildly depressed range, 20% in the moderately depressed range and 32.5% in the severely depressed range; and the non-clinical group consisted of 92.5% in the minimally depressed range and 7.5% in the moderately depressed range. The mean score for the DCDI in the clinical group 160.06 (SD = 45.36, Range = 227). For the non-clinical sample, the total mean score for the DCDI was 94.11 (SD = 26.85; Range = 120). These differences are outlined in Table 18.

Table 18

Means, Standard Deviations, Ranges, Minimum and Maximum Values for Clinical and Non-clinical Groups

Instruments	Non-Clinical (<i>N</i> =40)		Clinical (<i>N</i> =80)	
	M	SD	M	SD
BDI-II	5.15	5.92	22.27	14.51
DCDI	94.11	26.85	160.06	45.36
CES-D	16.00	5.94	25.70	7.38
BSRI				
Masculine	4.63	5.60	4.42	.97
Feminine	4.94	5.70	4.57	.87

The clinical sample was categorized by the BSRI as 41.3% undifferentiated, 22.5% masculine, 12.5% feminine and 23.8% androgynous. The non-clinical sample was categorized by 10% undifferentiated, 30% Masculine, 35% Feminine and 25% Androgynous individuals (Table 19).

Table 19

BSRI Classifications for Clinical and Non-clinical Groups

BSRI Classification	Non-Clinical (<i>N</i> =40)	Clinical (<i>N</i> =80)
	<i>Percent</i>	
Undifferentiated	10.0	41.3
Masculine	30.0	22.5
Androgynous	35.0	12.5
Feminine	25.0	23.8

Normality Tests

Prior to the main hypotheses being tested, all interval measures were tested for normality by using the Shapiro-Wilkes test of normality (Table 20). In addition to the normality test, skewness and kurtosis was also considered. The data were not normally distributed for total scores on the DCDI or the BDI-II. Although the data was not

normally distributed, parametric tests were used due to the sufficient sample size of the data (Fagerland, 2012).

Table 20
Shapiro-Wilkes Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
DCDI Total Score	.096	120	.008	.956	120	.001
BDI Total Score	.172	120	<.001	.901	120	<.001

Internal Consistency Reliability of the DCDI

Internal consistency reliability was examined for the total scale and for each subscale revised from Field’s MDI (2010). Using data from the current study, the total scale showed good internal consistency reliability (Cronbach’s Alpha = .88). Fields (2010) reported good internal consistency on the MDI with a Cronbach’s Alpha of .882 on his original scale. The Anger subscale had a Cronbach’s Alpha of .93 (as compared to a Cronbach’s Alpha of .87 on the original MDI). The Social Withdrawal subscale had a Cronbach’s Alpha of .84 (compared to a Cronbach’s Alpha of .64 on the MDI). The Substance Use subscale had a Cronbach’s Alpha of .85 (compared to .83 on the MDI) and the Restricted Emotions subscale had a Cronbach’s Alpha of .84 (compared to .753 on the MDI). The newly added DSM subscale had a Cronbach’s Alpha of .91 and the New Masculine Specific Subscale had a Cronbach’s Alpha of .82.

Factor Analysis

The structure of the DCDI was explored using factor analysis. Principal

component analysis with varimax (orthogonal) rotation suggested the presence of 3 factors, which cumulatively explained 46.89% of the variance across the 51 survey items (Appendix H). For ease of interpretation, coefficients smaller than .40 were omitted from the table.

The revised subscales from Field's Men's Depression Inventory (2010) included four subscales assessing masculine-depression. The factors identified seemed to generally correspond to these subscales. For instance, all items from the Anger, Aggression and Hostility subscale load on factor 1; all 8 items from the Social Withdrawal subscale load on factor 2; and all 7 items from the Substance Use subscale load on factor 3 and includes no other items from the scale. Factor 1 includes 9 of the 12 items from the new DSM-IV subscale; items 34, 35 and 36 had coefficients smaller than .40. Item 49 from the New Masculine-Specific Items Subscale, "I've been having difficulty performing my job at work," did not load on any factor. Factor 1 loaded 5 of the 8 items from the new Masculine-Specific Items Subscale. Several of the remaining items overlapped on more than one factor; generally, the newly added items from the DSM subscale and the New Masculine Specific subscale appeared to load on the underlying dimensions measured by the original subscales.

Results of the factor analysis suggest that Factor 1 is the Anger, Aggression and Hostility subscale from the MDI (Fields, 2010), as well as the majority of items from the DSM-IV subscale and the New Masculine-Specific Items Subscale. Factor 2 includes both the Social Withdrawal Subscale and the Restricted Emotions Subscale, and Factor 3 is exclusively the Substance Abuse Subscale from the MDI (Fields, 2010). While these

results are generally consistent with the originally proposed structure of the DCDI, given the low ratio of data points versus parameters estimated, this factor analysis should be interpreted as preliminary and exploratory.

Testing of Main Hypotheses

Hypothesis 1

It was predicted that individuals who score above the median on the masculinity scale of the BSRI (masculine and androgynous classifications) would have higher scores on the masculine-specific depressive symptoms of the DCDI, than those who score below the median on the masculinity scale of the BSRI (feminine and undifferentiated).

To test this hypothesis, a one-way analysis of variance (ANOVA) was used to examine differences in gender classifications from the BSRI and scores on the masculine-specific depressive symptoms of the DCDI (Table 21). The effect was statistically significant, $F(3, 116) = 6.54, p < .001, \eta^2 = .146$. A planned contrast revealed no significant results, $t(116) = -.223, p = .824$. However, results of a planned contrast found no difference between masculine or androgynous groups versus the feminine and undifferentiated groups on DCDI (Table 21).

Table 21
Planned Contrast for Hypothesis 1 using BSRI Classifications and DCDI Scores

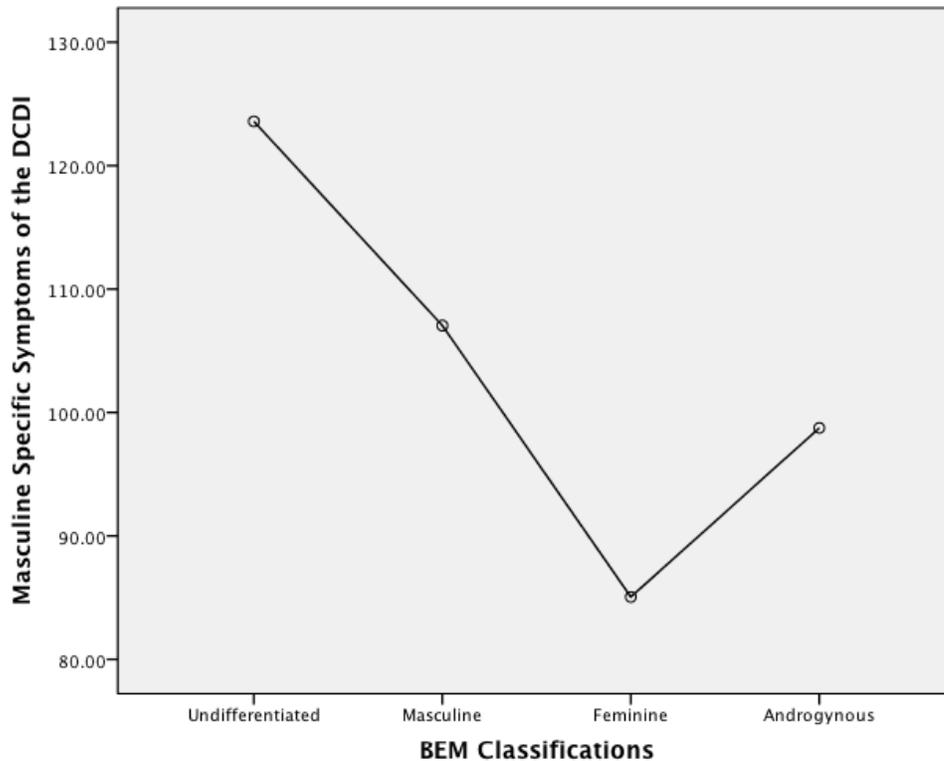
Contrast	Value of Contrast	Std. Error	t	Df	Sig. (2-tailed)
DCDI	-2.85	12.79	-.22	116	.824

Table 22
ANOVA Results for Hypothesis 1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4417.54	3	1472.51	7.98	.000
Within Groups	21401.60	116	184.49		
Total	25719.15	119			

Figure 2 provides a display of BSRI group means on masculine-specific depressive DCIDI symptoms. Tukey post hoc analyses were then conducted to assess mean differences between all pairwise comparisons. The following pairs of groups were found to be significantly different ($p < .05$): undifferentiated ($M = 123.58$, $SD = 29.65$) and feminine ($M = 85.05$, $SD = 28.97$), $p < .001$; and undifferentiated ($M = 123.58$, $SD = 29.65$) and androgynous ($M = 98.74$, $SD = 42.60$), $p = .023$. There was no statistically significant difference between those with masculine classifications and feminine, undifferentiated or androgynous classifications. Results reveal that undifferentiated participants scored significantly higher on the DCIDI than androgynous and feminine participants. As predicted, feminine scoring participants scored lowest on the masculine-specific symptoms of the DCIDI when using the total sample ($N=120$).

Figure 2
Means Plot for BSRI Classifications and DCDI Masculine Specific Item Scores



This hypothesis was also tested in the clinical and non-clinical groups separately. An ANOVA was used to examine gender classifications from the BSRI and scores on the masculine-specific depressive symptoms of the DCDI within the non-clinical group and the result was not statistically significant, $F(3, 36) = 1.48, p = .234, \eta^2 = .11$. The result was also not statistically significant for the clinical group, $F(3, 76) = 1.74, p = .167, \eta^2 = .06$.

ANOVAs were also run separately for each clinical group. Results were not significant for the community mental health sample, $F(3, 27) = .10, p = .959, \eta^2 = .019$.

Results were significant for the University of Denver's Health and Counseling Center, $F(3, 45) = 3.18, p = .033, \eta^2 = .175$. Tukey post-hoc analyses did not show specific group differences where $p < .05$, but a review of the means for each gender group revealed that the undifferentiated group had higher scores on the DCDI than the feminine and androgynous groups.

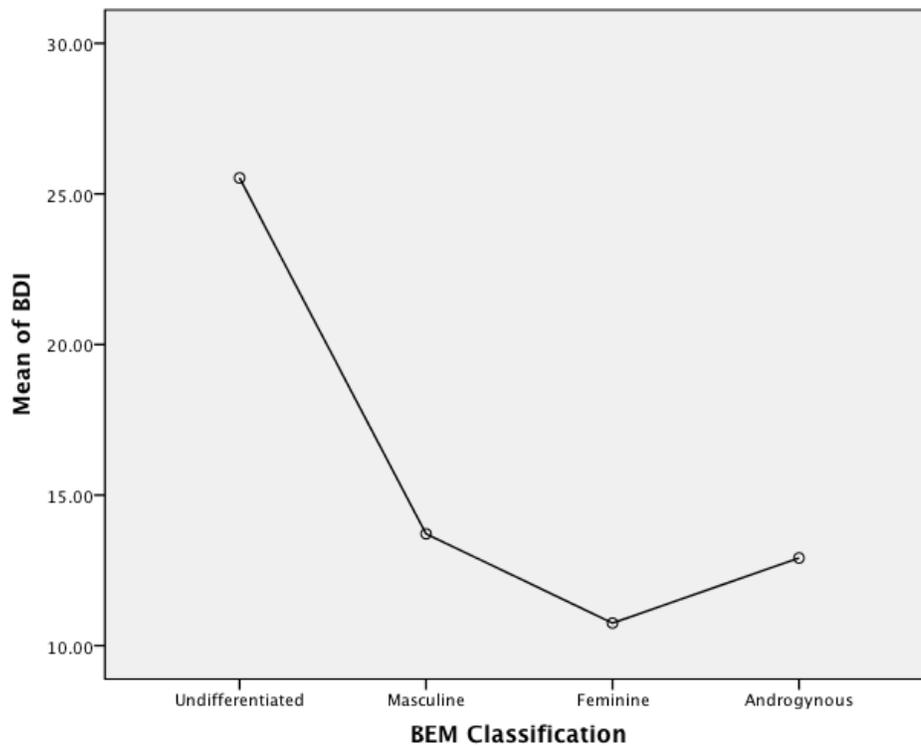
Hypothesis 2

It was predicted that individuals who scored above the median on the masculinity scale of the BSRI (masculine or androgynous classifications) would have lower scores on the BDI-II, than those who score below the median on the masculinity scale of the BSRI (feminine or undifferentiated).

To test this hypothesis, an ANOVA was used to examine differences in gender classifications from the BSRI and scores on the BDI-II (Figure 3). The result was significant, $F(3, 116) = 7.98, p < .001, \eta^2 = .17$. A planned contrast revealed no significant results, $t(116) = -1.92, p = .057$.

Tukey post hoc analyses found undifferentiated ($M = 25.53, SD = 15.77$) to be different from the other three gender classifications, masculine ($M = 13.71, SD = 11.69$), $p = .003$; feminine ($M = 10.74, SD = 10.15$), $p < .001$; and androgynous ($M = 12.91, SD = 14.77$), $p = .002$. Results reveal that undifferentiated participants scored higher than masculine, feminine and androgynous groups.

Figure 3
Means Plot for BSRI Classifications and BDI-II Scores



This hypothesis was also tested in the clinical and non-clinical groups separately. An ANOVA was used to examine gender classifications from the BSRI and scores on the BDI-II within the non-clinical group and the result was not significant $F(3, 36) = 1.296, p = .291, \eta^2 = .097$. The result was also not statistically significant for the clinical group, $F(3, 76) = 2.712, p = .051, \eta^2 = .096$.

ANOVAs were also run separately for the two clinical groups. Results were not significant for the community mental health sample, $F(3, 27) = 2.443, p = .086, \eta^2 = .213$. The analysis was not significant for the HCC sample, $F(3, 45) = 1.19, p = .324, \eta^2 = .073$.

Hypothesis 3

It was predicted that individuals who report significant DCDI scores (using a cut off score of > 146 on the DCDI) would report more alcohol use on the QF measure than those who report significant BDI-II scores (using a cut off score of > 11 on the BDI-II).

An independent-samples t-test was conducted to compare participant's DCDI and BDI-II scores on three questions of the NIAAA QF. There was no significant difference in the scores for weekly alcohol use $t(118) = -.339, p = .735$ or average daily use $t(118) = -.866, p = .388$. Nor was there a significant difference in the scores for maximum daily use of alcohol in the last month $t(118) = .261, p = .794$. Results reveal that there was no relationship between alcohol use and scores on the BDI-II or the DCDI.

Data from the CES-D10 were also analyzed to test this hypothesis. An independent samples t-test was used and showed no significant difference in the scores for weekly alcohol use $t(118) = -.40, p = .685$, or average daily use $t(118) = -.92, p = .358$, or were maximum daily use of alcohol in the last month $t(118) = -.01, p = .985$.

This hypothesis was also tested in the clinical and non-clinical groups separately. An independent-samples t-test was conducted to compare participant's DCDI and BDI-II and then CES-D10 scores on three questions and results were not significant for any of the individual or clinical groups, except in the non-clinical graduate student group for maximum daily use of alcohol in the last month, $t(38) = -2.068, p = .045$.

Independent-samples t-tests were also run separately for the two clinical groups using scores from the BDI-II, DCDI and CES-D10. Results were not significant for the community mental health sample for all three NIAAA items. Results were also not

significant for the DU HCC sample.

Hypothesis 4

It was predicted that the DCDI would demonstrate an acceptable convergent validity with the BDI-II when controlling for alcohol use. Correlations were computed to test if a relationship existed between alcohol and the BDI-II and the DCDI. Results showed no relationship between the depression measures and alcohol use. A Pearson product-moment correlation coefficient was computed to assess the relationship between the DCDI and the BDI-II. There was a strong, statistically significant correlation between the two variables ($r = .79$, $n = 120$, $p < .001$). This result demonstrates good convergent validity between the two measures.

Summary

This chapter detailed the results of the statistical analyses of the current study. Considerations made prior to data analysis were addressed, followed by details of the sample demographics and the statistical analyses for the primary hypothesis. The structure of the DCDI was also explored using factor analysis. It was found that Hypothesis 1 was not supported. Hypothesis 2 and 3 were also not supported, but Hypothesis 4 was supported. The next chapter will provide a discussion of the results, implications of the results and recommendations for future research related to gender, depression and alcohol use.

Chapter 5: DISCUSSION

An emerging body of research suggests that the gender gap in the relative frequency of symptoms of depression in men and women may be due, in part, to the presence of a masculine-specific type of depression that is not captured by traditional depression assessment measures. Cochran (2000) argued the case for masculine-specific depression and has offered a number of qualitative studies to support this construct. While there are a number of other qualitative studies available, there is limited empirical data on this topic. Newer qualitative studies have suggested that masculine-specific depressive symptoms may include: increased aggression, problems at work, difficulty concentrating, interpersonal difficulties, substance use, violence and suicide (Wasserman, 2006), yet few studies provide quantitative data.

The goals of the current study were: (1) to investigate the extent to which gender influences self-reported prototypical and masculine-specific symptoms of depression in men and women and whether or not alcohol mediates this relationship; and (2) to evaluate the effectiveness of the DCDI. Specifically, it was hypothesized that: (1) individuals who score above the median on the masculinity scale of the BSRI (“masculine” or “androgynous” classifications) will have higher scores on the masculine specific depressive symptoms of the DCDI, than those who score below the median on the masculinity scale of the BSRI (“feminine” or “undifferentiated” classifications); (2)

individuals who score above the median on the masculinity scale of the BSRI will have lower scores on the BDI-II than those who score below the median on the masculinity scale of the BSRI; (3) individuals who score above the DCDI threshold for significant depression will report more alcohol use on the QF measure than those who report significant BDI-II scores; and (4) the DCDI will demonstrate an acceptable convergent validity with the BDI-II when controlling for alcohol use.

Factor Analysis

Principal component analysis with varimax (orthogonal) rotation was used to look at the structure of the DCDI and suggested the presence of three factors, which cumulatively explained 46.89% of the variance across the 51 survey items. While these results are consistent with the originally proposed structure of the DCDI, revised from the MDI, this factor analysis should be interpreted as preliminary and exploratory, given the low ratio of data points versus parameters estimated.

Overall, the results of the factor analysis indicated that three distinct factors were present within the DCDI. Factor one comprised all items from the anger, aggression and hostility subscale; factor two comprised all items from the social withdrawal subscale and the restricted emotions subscale; Factor three comprised all items from the substance use subscale exclusively. The two new subscales (DMS-IV items and New Masculine-Specific Depressive Symptoms) were dispersed between factors one and two.

Hypothesis 1

Hypothesis 1 was not supported. An ANOVA using the data from the total sample (N=120) showed there were statistically significant differences between gender

classifications on DCDI scores, but a planned contrast revealed that individuals classified as masculine or androgynous on the BSRI did not have significantly higher scores on the masculine-specific depressive items of the DCDI when compared to those individuals classified as feminine or undifferentiated. There were, however, significant differences between individuals classified as undifferentiated and individuals classified as feminine, as well as differences between individuals classified as undifferentiated and those classified as androgynous. Specifically, undifferentiated individuals scored higher on the DCDI than feminine and androgynous individuals. This result reveals that undifferentiated individuals were the most depressed gender group and endorsed significantly more masculine-specific depression symptoms than feminine subjects.

In a study looking at “male-depression” (which included symptoms of aggression and externalizing behaviors) in non-clinical college students, researchers Moeller-Leimkuehler and Yucel (2009) found female students were more likely to be at risk for male-type depressive symptoms than males and individuals classified as undifferentiated and feminine were more likely to be at risk for male-depression than other gender classifications. The research suggested that male-depression is not exclusive to men and should also include women (Moeller-Leimkuehler & Yucel, 2009). Similarly, data from the current study found that individuals classified as undifferentiated endorsed more masculine-specific depressive symptoms than other gender classifications on scores of the DCDI and the BDI-II, but there were no significant differences between those individuals classified as masculine and feminine. Additionally, findings from the current

study showed no differences in rates of depression between men and women, as reported on the demographic questionnaire.

Hypothesis 1 was also tested in several other ways: (1) in the total sample (N=120); (2) in each of the three subgroups of the total sample; (a) graduate students in a counseling psychology department (N=40); (b) clients at a community mental health center (N=31); and (c) clients from a college counseling center (N=49); and (3) in a group of the clinical samples (subgroups (b) and (c) combined, N=80). Results were not significant for the community mental health group or the non-clinical graduate group. Results for the clinical group (the community mental health sample and the university health and counseling center combined) were also not significant. An ANOVA was run for the college counseling center group separately and provided a significant result, but did not reveal specific differences in post-hoc analyses. Further examination of these group differences support previous findings that revealed individuals classified undifferentiated had significantly higher scores on the DCDI than feminine and androgynous groups.

Hypothesis 2

Hypothesis 2 predicted individuals classified as masculine or androgynous on the BSRI would have lower scores on the BDI-II, when compared to feminine or undifferentiated groups. This hypothesis was not supported. An ANOVA using the total sample's data showed that there were statistically significant differences between gender classifications on BDI-II scores, but a planned contrast revealed masculine or androgynous groups did not have lower scores on the BDI-II when compared to feminine

or undifferentiated groups. Further analysis showed that individuals classified as undifferentiated had statistically significantly higher scores on the BDI-II than individuals classified as masculine, feminine or androgynous. Similar to Hypothesis 1, data was analyzed for the total group, each of the subgroups, and the combined clinical groups. Results were not significant in any of the groups.

A study by Oliver and Toner (1990) examined differences between masculinity and femininity and scores on the BDI. Data from a sample of undergraduate psychology students showed that individuals who were classified as feminine reported significantly more emotional symptoms than masculine subjects on the BDI and individuals who were classified as masculine reported significantly more social withdrawal and somatic symptoms on the BDI than feminine subjects (Oliver & Toner, 1990). Although the current study did not examine specific items on the BDI-II like Oliver and Toner's (1990) study, when looking at total mean scores on the BDI-II, in the current study, the present data continued to show undifferentiated individuals as having the highest depression scores when compared with all other gender groups. Additionally, no differences on the BDI-II were found for the BSRI groups classified as masculine or feminine, or in self-identified men and women (as marked on the demographics questionnaire). Interestingly, the data from Oliver and Toner's (1990) study suggests that, although men and women endorse different patterns of depressive symptoms than each other, the rates of depression did not differ between men and women (1990). Future research should look at specific BDI-II items and subscales to explore this concept further.

Hypothesis 3

Hypothesis 3 was also not supported. Independent t-tests looked at all groups together and separately, and individuals with elevated scores on the DCDI did not report more alcohol use on the NIAAA QF than those with significant BDI-II or CES-D10 scores. Based on these results, alcohol use was not related to the degree of depression on symptoms of depression in the sample. This data suggests that alcohol use does not mask depressive symptoms in individuals classified as masculine. Differences in alcohol use between men and women are well-documented in the literature, with men reporting significantly more alcohol use and alcohol abuse compared to women (Capraro, 2000). Some research suggests that the discrepancies in alcohol use among men and women may serve to explain the gender gap in depression (Wasserman, 2006). In other words, it may be that women are not more depressed than men, but that men's depression may be masked by alcohol use. A study looking at drinking behaviors in college students found that men reported drinking alcohol "for escapism or to get drunk," more than women (Capraro, 2000). This supports the argument that increased alcohol use in individuals classified masculine could serve to mask depressive symptoms in men; on the other hand, it may also be reflective of increased alcohol abuse disorders in men, unrelated to depression. Future research should test the NIAAA QF scale against the national average in the general.

Research has shown high co-morbidity between depression and alcohol abuse disorders (Grant & Hartford, 1995). Perhaps due to the large clinical sample size and high rates of depression in the current study, group differences in alcohol use and depressive

symptoms on the DCDI were less visible. Or, the DCDI is differentiating non-masculine depression in undifferentiated and feminine groups, as seen by the relatively lower scores of depression on the DCDI in the feminine group.

Hypothesis 4

Hypothesis 4 was supported. Correlations were run and revealed high convergent validity between the DCDI and the BDI-II. Convergent validity was explored between the two measures, in an effort to validate the DCDI by seeing if it measuring what it was developed to measure (depression) (Strauss & Smith, 2009). Comparing it with a strongly validated measure such as the BDI-II suggests that the DCDI correlated with the BDI-II and is measuring depression. Significant differences in total mean scores on the DCDI and the masculine-specific subscales between undifferentiated groups and feminine groups suggests that the DCDI is effective at measuring a pattern of symptoms different between the two groups, but it is unclear what this pattern of symptoms is reflecting, and again, represents an area for future research.

Interpreting the Results

Several methodological issues may have influenced the results: (1) sample characteristics - size, demographics and severity of depression, which prevent generalizing results beyond the group from which the sample was taken; and (2) the BSRI and the DCDI may not have accurately measured the constructs of gender and depression.

Interpretation of the data is considered through the following lenses: (1) the construct of “masculine-specific depression” may be flawed or may only have a minor or

limited effect; (2) theories advocating for masculinity as a protective factor or masking factor against depression may be flawed or they only have a minor or limited effect; (3) the relatively lower proportion or absence of both feminine and masculine traits in individuals may increase vulnerability to depression; and (4) the severity of depression may influence the degree to which gender affects depression in men and women.

Sample Characteristics

The current study used data obtained from three distinct groups of individuals (1) clients from a community clinical mental health center (2) clients from a college counseling center and (3) non-clinical graduate students from a counseling psychology program. The characteristics of each of the groups are important to consider when interpreting the results of the study. Examining the characteristics of each of the three groups may help to explain why the data should not be used to generalize beyond the group from which the sample was obtained. The hypotheses for each of the groups were not supported by the data for Hypotheses 1, 2 and 3, even when investigated with respect to each of the groups and the combined clinical group.

Of the total sample, the majority were women (70%), the average age was 31 years old, the majority identified as Caucasian (70.8%) and most of the participants were from clinical settings (individuals currently in mental health services on an outpatient basis) (72.5%). Of the total sample, 74.16% were university students (graduate and undergraduate) and the total mean score on the BDI-II for the total sample was 16.57. However, in looking only at the demographics of the total sample, rather than individual

groups, meaningful data may be lost, especially when examining differences between clinical and non-clinical groups.

While there were some areas of similarity in the constituency of the groups within the total sample, there were some significant differences in the groups, which makes analysis between the subgroups problematic. For example, ethnicity differed significantly between groups. The non-clinical student group was 77.5% women, 72.5% Caucasian and 10% Hispanic, whereas the community mental health group was 67.6% women, 58.1% Caucasian and 32.3% Hispanic. The non-clinical graduate group's average total score on the BDI-II was 5.15. This score reveals significantly less depression in the non-clinical group when compared with the two clinical groups. The clinical sample from the community mental health center had a total mean score of 26.95 on the BDI-II, with the largest proportion of participants (38.7%) in the severely depressed range. This score is reflective of a very depressed group, and very much different in comparison to the non-clinical group. The college counseling center group was also different than the other two groups and was comprised of 65.3% women, 77.6% Caucasian, with a total mean score of 19.31 on the BDI-II. Each group's demographics are unique to their setting and reflect findings that are only generalizable to each group. An area of concern for the current study is related to sample characteristics, which influences the integrity of the sample. However, even when the data was examined in each individual subset of the total sample, Hypotheses 1, 2 and 3 were still not supported.

A very significant difference was apparent in the gender classifications for each group, especially between the non-clinical graduate students group and the individuals

from the community mental health group and the college counseling center group. Only 10% of the non-clinical graduate students classified as “undifferentiated,” compared to 38.7% of the community mental health center clients and 37.5% of the college counseling center clients. This significant difference in gender between the clinical and non-clinical groups is especially interesting as it relates to the current study and raises two important questions for future research: (1) are individuals classified as undifferentiated diagnosed as suffering from depression more frequently than other genders; and (2) in the alternative, does depression contribute to more undifferentiated gender identity schemas in the individuals? (Szpitalak & Prochwicz, 2013).

Gender Classifications and the BSRI

This study used the BSRI to measure gender in participants. The continued validity of the BSRI may be subject to question in today’s environment. Data from the current study suggests gender roles in 2013 have changed since the BSRI was normed in the 1970’s. While further research is necessary to answer this question, data from the current study has contributed additional information on current gender roles in clinical and non-clinical populations. Research undertaken in the 1990s suggests that gender roles have changed since the BSRI was developed in the 1970s, which would impact the construct validity of the instrument (Holt & Ellis, 1998). Holt and Ellis (1998) reported conflicting results suggesting that gender roles have changed since it was developed, whereas other studies found gender roles have not changed (Street, Kimmel & Kromrey, 1995).

The original BSRI norming sample used a highly educated, non-clinical sample of 340 females and 476 males from Stanford University. Of the females, 39.4% were classified as feminine, 12.4% masculine, 30.3% androgynous, and 17.9% undifferentiated. Of the males, 11.6% were classified as feminine, 42.0% masculine, 19.5% androgynous and 26.9% undifferentiated (BEM, 1974). Unfortunately, there are no studies that offer comparable statistics for BSRI scores in clinical populations, and much needs to be learned about larger gender trends in depressed clinical populations. Interestingly, two larger studies using non-clinical college students offer more recent data on gender trends in this population, suggesting that women continue to classify mostly as feminine, followed by androgynous, undifferentiated and then masculine (Hoffman & Borders, 2001; Marrs, Sigler & Brammer, 2012), while there are less obvious trends among current gender roles in men. Hoffman and Borders (2001) found that most of their male college sample classified as masculine (55.1%), followed by androgynous (22.4%), undifferentiated (18.4%) and feminine (4.1%); while a study by Marrs, Sigler and Brammer (2012) found that most men in their study classified as androgynous (40.76%), followed by feminine (28.8%), masculine (15.76%) and undifferentiated (14.67%). While the sample size of the non-clinical graduate group was too small for statistical analysis, it does tend to support the conclusions of this later research, reinforcing the notion that gender classifications are changing and adds further support to the emerging view that the BSRI is no longer a valid measure for gender classification. If the BSRI is not accurately accounting for the changes in gender roles, then there is the risk that

symptoms of depression are in fact, gender related, and may be masked or distorted through the use of the BSRI.

The BSRI is a self-report instrument, which asks individuals to rate their gender role adherence based on their self-perceptions. This calls into question: (1) social desirability factors that may have influenced the accuracy of participant's self-report; and (2) the effectiveness of using a self-report measure to assess gender roles. The data used in this study to measure gender may not be accurate depictions of an individual's true gender.

Masculine-Specific Depression as a Construct

Masculine-specific depression is a relatively new construct that has been proposed by a number of qualitative studies. Researchers explored this construct in response to the underrepresentation of male depression in current literature (Boughton & Street, 2007). To help understand the gender gap between men and women, researchers hypothesized that men may be underreporting their depression due to societal stigma and other socialization processes related to acceptable gender roles (Cochran & Rabinowitz, 2000). As a result of these social processes and cultural norms, men may experience and express depression differently than women, in addition to the prototypical symptoms of depression (Cochran & Rabinowitz, 2000). The data from the current study does not support this construct. As discussed previously, more data from a larger sample is needed in order to contribute to understanding masculine-specific depression. Additionally, since there are a number of questions related to the validity of the BSRI, future studies should

consider alternative gender measures in order to contribute to masculine-specific depression research.

There is very limited empirical data that supports the construct of masculine-specific depression. Most of the research has been qualitative and has used data from non-clinical samples. Additionally, most of this research has looked exclusively at men. Perhaps what is being termed, “masculine-specific depression,” may in fact not be “depression,” but rather, a plethora of externalizing symptoms or other disorders in men (for example, a substance abuse disorder, or aggression and anger problems). Perhaps the largely discrepant rates of depression in women are not the result of underreporting of depression by men, but in fact, the result of biological, social and psychological factors specific to women. A significant amount of research suggests the gender gap in depression is not due to the presence of masculine-specific depression, but instead, due to differences in coping styles and cognitive vulnerability factors, inherent to women and men (Hankin & Abramson, 2002).

Research has shown depression is two times as prevalent in women than in men (with 21.3% of women having a lifetime prevalence of depression, compared with 12.7% of men) (Kessler, McGongale, Swartz, Blazer & Nelson, 1993), and it is unclear how much of this difference is due to inherent differences between the sexes and how much of this difference is the result of the underreporting of depressive symptoms in men or the result of masculine-specific depressive symptoms not being identified by traditional assessment tools.

The research on “masculine-specific” depression is relatively recent and the nuances to assessing this construct are complex. While the current study attempted to add more empirical data to better understand the construct of “masculine-specific depression,” it is important for this construct to be evaluated in clinical and non-clinical populations, as well as in men and women and gender classifications. While the high rates of depression in the current study’s sample offers information that may be generalizable to clinical settings, it does not show individuals with masculine gender roles as having greater depression in the general population.

Surprisingly, “undifferentiated” individuals made up the largest gender group within the sample: 38.7% of the community mental health participants classified as undifferentiated and 42.9% of the college counseling center’s participants classified as undifferentiated. However, undifferentiated individuals only comprised 10% of the university non-clinical group. Perhaps the low rate of individuals classified as undifferentiated in the non-clinical graduate sample is due to the unique traits of counseling psychology students and is not reflective of typical gender trends in most populations. On the other hand, perhaps this difference is reflective of meaningful gender differences between clinical and non-clinical individuals. In other words, it may be that individuals classified as undifferentiated have more vulnerability factors for depression and are more likely to be depressed than other genders. It may also be that individuals with symptoms of depression respond ambivalently on the BSRI Likert scale, thereby receiving lower scores on each masculine and feminine scale. Another possibility may be that depression influences an individual’s gender schema (Szpitalak & Prochqicz, 2013):

that is, the more depressed someone is, the more likely they are to have less developed masculine and feminine traits.

A study by Szpitalak and Prochwicz (2013) found that individuals classified as undifferentiated were the most depressed group on the BDI-II, followed by a high rate of depression in individuals classified feminine. Research has shown that individuals classified as undifferentiated “are characterized by low self-esteem, lower social openness, and smaller sensitivity and protectiveness in comparison with those representing other types [genders]” (Szpitalak & Prochwicz, 2013, p. 55). Perhaps undifferentiated individuals are more vulnerable to depression; or, depressive symptoms result in undifferentiated gender traits.

New research suggests that individuals classified as undifferentiated possess characteristics that may make them more disposed to depression (Szpitalak & Prochwicz, 2013). Szpitalak and Prochwicz (2013) hypothesize that individuals classified as undifferentiated are characterized by “poor adjustment and low self-esteem,” (p. 58). They further speculate that having less developed masculine and feminine traits together means less coping behaviors to help manage distress (Szpitalak and Prochwicz, 2013). The data from the current study supports this hypothesis, since undifferentiated individuals, across all groups, were the most depressed gender group on the DCI and the BDI-II.

Alcohol use was not related to depression in the present study. It is well documented that men report higher alcohol use than women (Nolen-Hoeksema, 2004), and some research suggests that alcohol use may mask depressive symptoms in men

(Cochran et al., 2003). The data from this study does not support this hypothesis. This may be due to methodology issues related to the NIAAA QF, social desirability factors contributing to possible under-reporting of alcohol use, or evidence that alcohol use does not mask depressive symptoms.

The DCDI

Data did not support the hypothesis that masculine or androgynous gender roles would result in higher scores on the DCDI and lower scores on the BDI-II, when compared to individuals classified as feminine or undifferentiated. It was hypothesized that the DCDI would capture gender differences in depression among masculine and feminine groups, but this was not supported by the data. Instead, the DCDI revealed an ability to differentiate the severity of depressive symptoms between individuals classified as undifferentiated and feminine. This finding suggests that there may be meaningful differences in patterns of depressive symptoms amongst these two groups. Future research should examine patterns and severity of depression in undifferentiated and feminine groups in clinical and non-clinical samples. Another interpretation of the data from the current study may be related to the structure of the DCDI instrument itself and problems with capturing masculine-specific symptoms in individuals classified as masculine on the BSRI.

The DCDI is in the beginning stages of validity assessment and requires additional validation and reliability testing to assess its effectiveness in measuring masculine-specific depression. The DCDI was revised from Fields' Men's Depression Inventory (2010), which was originally developed to measure the distinct presentation of

depression in men (Fields, 2010). For the purpose of the current study, new items were added to the instrument so that both women and men could respond. Thirteen new items assessing prototypical symptoms of depression as outlined in the DSM-IV and nine items assessing masculine-specific depressive symptoms were added to the measure based on qualitative data suggestive of additional masculine-specific symptoms of depression. Several items were changed because of high logit difficulties on the original measure. More information is needed to show that the DCDI is effectively measuring what it was developed to measure. A possible interpretation of the results is that the DCDI did not effectively measure masculine-specific depressive symptoms. As research continues, the effectiveness of this measure will be assessed over time with additional research.

Masculinity as Protective Factor Against Depression

Some research suggests that masculine traits serve as a protective factor against depression (Wichstrom, 1999; Brems, 1995, as cited in Beckham & Leber, 1995). This research is based on the increased rates of depression between girls and boys that emerge in adolescence, once individuals begin to adhere to gender norms and take on specific gender roles (Wichstrom, 1999). Researchers argue that masculinity either protects or masks depression in men, and that this helps to explain the significantly lower rates of depression in men compared to women (Wichstrom, 1999). It has been argued that as femininity increases, depression also increases, and as masculinity increases, depression decreases (Wichstrom, 1999). Data from the current study identified a new group of individuals that challenge this argument: those classified as undifferentiated, who have both low femininity and masculinity.

The results of the current study call into question the idea that masculinity serves as a protective factor against depression. Hypotheses 1 and 2 predicted that individuals classified as masculine or androgynous would have higher scores on the DCDI and lower scores on the BDI-II than individuals classified as feminine and undifferentiated, but the data did not support this. There were no significant differences between individuals classified as masculine and other gender groups, suggesting that masculinity does not protect against or mask depressive symptoms.

The Absence of Feminine and Masculine Traits and Depression

Another possible interpretation of the results may be explained by the presence of both a relatively lower proportion or absence of feminine and masculine traits. Perhaps having fewer feminine and masculine traits makes men and women more vulnerable to depression. This may help to explain the high rates of depression in individuals classified as undifferentiated, since this classification requires an individual to score below the median on both the feminine and masculine scales. Currently, few studies have looked at the effects of individuals who self-report a relatively lower proportion of feminine and masculine traits. This concept may reveal that these individuals, those who have both low feminine and masculine traits, have a higher vulnerability to depression than other genders. Most of the gender and depression research examines masculinity and femininity exclusively and few studies examine depression in individuals classified as undifferentiated. The current study demonstrates that this group of undifferentiated individuals warrants more research to understand their high rates of depression.

Depression Severity and Gender

One of the current study's strengths was being able to use data from two clinical groups (a community mental health clinic and a college counseling center). This data provided a range of severity of depressive symptoms (from mild to severe) and depressed individuals represented the greatest proportion of the total sample. The majority of the community mental health sample was severely depressed on the BDI-II, whereas the non-clinical graduate group did not meet the threshold for mild depression on the BDI-II. Perhaps the results of this study speak to the role symptom severity has in mitigating the role of gender in depression. In other words, once depressive symptoms surpass a threshold of severity, gender may not play a significant factor. Research supports this concept and studies have shown that in clinical populations, sex differences in the severity of depressive symptoms are less present in more depressed samples (Branney & White, 2008).

Limitations of the Study and Recommendations for Future Research

This study has several limitations: (1) the subgroup sample sizes were small and the data was from three very different settings, which prevented generalizability of the findings to a wider population (2) the majority of the sample consisted of women and individuals who self-identified as Caucasian and lacked data from other ethnic groups and (3) gender was measured using the BRSI, which may have significant validity problems.

Future research should continue to explore the construct of masculine-specific depression and continue to validate the DCDI. Specifically, more empirical data is

needed in order to understand this construct. Future studies should look at clinical and non-clinical populations, both men and women, and diverse ethnic groups. Rather than using data from three very different settings, gathering a large amount of data from one homogenous group would be more useful in making findings generalizable. It will also be important for future studies to consider the role ethnicity, race and culture might have on gender, and how depression is presented and assessed for in different ethnic groups. Future research and data analysis should also control for factors such as socioeconomic status and ethnicity.

Due to the diversity of the sample and the complexity of variables within the sample, future research and data analysis should control for the association between gender and clinical or non-clinical sites. It would also be interesting to explore the data from both clinical and non-clinical samples by looking at the subscales of the DCDI and the BDI-II individually. Further examination of the subscales may provide valuable information regarding the specific symptomology reported by each gender.

Future research should also continue to look at the structure of the DCDI and further validate it as an instrument that measures depression in men and women. Specifically, Rasch analysis of the DCDI would offer statistical information related to scoring considerations and cut-off scores.

Given the limitations with using the BSRI to measure gender, it is also recommended that future research understand the extent to which gender has changed since the 1970's when the BSRI was normed, and revise the BSRI to reflect current gender roles, or create new assessment tools to measure gender.

The data from this study did not support the construct of masculine-specific depression; however, it revealed a group of individuals, classified by the BSRI as undifferentiated, that appear to be experiencing depression at a higher degree than other gender groups. These individuals scored below the median on both the masculine and feminine scales, reflecting less developed stereotypical gender traits. Future research should explore if a relatively lower proportion of feminine and masculine traits makes individuals more vulnerable to depression, or if depressive symptoms influence the gender schemas of individuals.

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Appendix A – Center for Epidemiological Studies Depression Scale – 10 Item Version

Using the scale provided, please **circle** the number that corresponds to your response of each item.

**Rarely or
none of the time**

**Most or all of
the time**

1 **2** **3** **4**

For each of the following statements, please circle the number that best describes how often you felt or behaved this way during the PAST WEEK, including today.	<u>CIRCLE ONE</u>			
1. I was bothered by things that usually don't bother me.	1	2	3	4
2. I had trouble keeping my mind on what I was doing.	1	2	3	4
3. I felt depressed.	1	2	3	4
4. I felt that everything I did was an effort.	1	2	3	4
5. I felt hopeful about the future.	1	2	3	4
6. I felt tearful.	1	2	3	4
7. My sleep was restless.	1	2	3	4
8. I was happy.	1	2	3	4
9. I felt lonely.	1	2	3	4
10. I could not get "going."	1	2	3	4

Appendix B – Beck Depression Inventory-II

Please read each group of statements carefully, and then pick the ONE statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including item 16 (changes in sleeping pattern) or item 18 (changes in appetite).

<p>1. Sadness</p> <p>0 I do not feel sad. 1 I feel sad much of the time. 2 I am sad all of the time. 3 I am so sad or unhappy that I can't stand it.</p>
<p>2. Pessimism</p> <p>0 I am not discouraged about my future. 1 I feel more discouraged about my future than I used to be. 2 I do not expect things to work out for me. 3 I feel my future is hopeless and will only get worse.</p>
<p>3. Past Failure</p> <p>0 I do not feel like a failure. 1 I have failed more than I should have. 2 As I look back, I see a lot of failures. 3 I feel I am a total failure as a person.</p>
<p>4. Loss of Pleasure</p> <p>0 I get as much pleasure as I ever did from the things I enjoy. 1 I don't enjoy things as much as I used to. 2 I get very little pleasure from the things I used to enjoy. 3 I can't get any pleasure from the things I used to enjoy.</p>
<p>5. Guilty Feelings</p> <p>0 I don't feel particularly guilty. 1 I feel guilty over many things I have done or should have done. 2 I feel quite guilty most of the time. 3 I feel guilty all of the time.</p>

6. Punishment Feelings

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7. Self-Dislike

- 0 I feel the same about myself as ever.
- 1 I have lost confidence in myself.
- 2 I am disappointed in myself.
- 3 I dislike myself.

8. Self-Criticalness

- 0 I don't criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults.
- 3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10. Crying

- 0 I don't cry anymore than I used to.
- 1 I cry more than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can't.

11. Agitation

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something

12. Loss of Interest

- 0 I have not lost interest in other people or activities
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It's hard to get interested in anything.

13. Indecisiveness

- 0 I make decisions about as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

14. Worthlessness

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

15. Loss of Energy

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have enough energy to do very much.
- 3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

- 0 I have not experienced any change in my sleeping pattern.
- 1a I sleep somewhat more than usual.
- 1b I sleep somewhat less than usual.
- 2a I sleep a lot more than usual.
- 2b I sleep a lot less than usual.
- 3a I sleep most of the day.
- 3b I wake up 1-2 hours early and can't get back to sleep.

17. Irritability

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

18. Changes in Appetite

- 0 I have not experienced any change in my appetite.
- 1a My appetite is somewhat less than usual.
- 1b My appetite is somewhat greater than usual.
- 2a My appetite is much less than before.
- 2b My appetite is much greater than usual.
- 3a I have no appetite at all.
- 3b I crave food all the time.

19. Concentration Difficulty

- 0 I can concentrate as well as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

- 0 I have not noticed any recent change in my interest in sex
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.

Appendix C – Bem Sex Role Inventory (BSRI)

Using the scale provided, please **circle** the number that corresponds to your response of each item.

**Never, or almost
never true.**

**Always, or
almost always
true.**

1 2 3 4 5 6 7

Rate yourself on each item, on a scale from 1-7	CIRCLE ONE						
1. self-reliant	1	2	3	4	5	6	7
2. yielding	1	2	3	4	5	6	7
3. helpful	1	2	3	4	5	6	7
4. defends own beliefs	1	2	3	4	5	6	7
5. cheerful	1	2	3	4	5	6	7
6. moody	1	2	3	4	5	6	7
7. independent	1	2	3	4	5	6	7
8. shy	1	2	3	4	5	6	7
9. conscientious	1	2	3	4	5	6	7
10. athletic	1	2	3	4	5	6	7
11. affectionate	1	2	3	4	5	6	7
12. theatrical	1	2	3	4	5	6	7
13. assertive	1	2	3	4	5	6	7
14. flatterable	1	2	3	4	5	6	7
15. happy	1	2	3	4	5	6	7
16. strong personality	1	2	3	4	5	6	7
17. loyal	1	2	3	4	5	6	7
18. unpredictable	1	2	3	4	5	6	7
19. forceful	1	2	3	4	5	6	7
20. feminine	1	2	3	4	5	6	7
21. reliable	1	2	3	4	5	6	7
22. analytical	1	2	3	4	5	6	7
23. sympathetic	1	2	3	4	5	6	7
24. jealous	1	2	3	4	5	6	7
25. has leadership abilities	1	2	3	4	5	6	7
26. sensitive to the needs of others	1	2	3	4	5	6	7
27. truthful	1	2	3	4	5	6	7
28. willing to take risks	1	2	3	4	5	6	7
29. understanding	1	2	3	4	5	6	7
30. secretive	1	2	3	4	5	6	7
31. makes decisions easily	1	2	3	4	5	6	7

32. compassionate	1	2	3	4	5	6	7
33. sincere	1	2	3	4	5	6	7
34. self-sufficient	1	2	3	4	5	6	7
35. eager to soothe hurt feelings	1	2	3	4	5	6	7
36. conceited	1	2	3	4	5	6	7
37. dominant	1	2	3	4	5	6	7
38. soft-spoken	1	2	3	4	5	6	7
39. likeable	1	2	3	4	5	6	7
40. masculine	1	2	3	4	5	6	7
41. warm	1	2	3	4	5	6	7
42. solemn	1	2	3	4	5	6	7
43. willing to take a stand	1	2	3	4	5	6	7
44. tender	1	2	3	4	5	6	7
45. friendly	1	2	3	4	5	6	7
46. aggressive	1	2	3	4	5	6	7
47. gullible	1	2	3	4	5	6	7
48. inefficient	1	2	3	4	5	6	7
49. acts as a leader	1	2	3	4	5	6	7
50. childlike	1	2	3	4	5	6	7
51. adaptable	1	2	3	4	5	6	7
52. individualistic	1	2	3	4	5	6	7
53. does not use harsh language	1	2	3	4	5	6	7
54. unsystematic	1	2	3	4	5	6	7
55. competitive	1	2	3	4	5	6	7
56. loves children	1	2	3	4	5	6	7
57. tactful	1	2	3	4	5	6	7
58. ambitious	1	2	3	4	5	6	7
59. gentle	1	2	3	4	5	6	7
60. conventional	1	2	3	4	5	6	7

Appendix D – Denver Comprehensive Depression Inventory

Using the scale provided, please **circle** the number that corresponds to your response of each item.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6

<i>The following questions refer to the PAST 2 WEEKS, including today.</i>	<i>CIRCLE ONE</i>
1. I have been getting more angry than usual.	1 2 3 4 5 6
2. At times I get so angry that sometimes I feel like hitting something.	1 2 3 4 5 6
3. Sometimes I get too angry.	1 2 3 4 5 6
4. Others would say I've had a bad temper lately.	1 2 3 4 5 6
5. I have been more aggressive than usual lately.	1 2 3 4 5 6
6. When things go badly, I get angry.	1 2 3 4 5 6
7. I've noticed myself acting more aggressively towards others or things (road rage, physical aggression towards family or strangers, breaking things, calling people names, etc...)	1 2 3 4 5 6
8. I find myself pulling away from others.	1 2 3 4 5 6
9. I have people I can rely on when I am having a hard time.	1 2 3 4 5 6
10. I find it easy to be around others.	1 2 3 4 5 6
11. When I'm upset I just want to be left alone.	1 2 3 4 5 6
12. I enjoy the support I receive from others.	1 2 3 4 5 6
13. Relying on others is a sign of weakness to me.	1 2 3 4 5 6
14. Needing others makes me feel weak.	1 2 3 4 5 6
15. I do not feel comfortable having others help me when I'm down.	1 2 3 4 5 6
16. I have been drinking more than usual.	1 2 3 4 5 6
17. Drinking has helped me deal with things more easily.	1 2 3 4 5 6
18. I have had an alcohol or substance use problem in the past.	1 2 3 4 5 6
19. Drinking alcohol can take the edge off during times of stress.	1 2 3 4 5 6
20. I tend to drink more when things aren't going well for me.	1 2 3 4 5 6
21. I tend to avoid situations where I am not able to drink.	1 2 3 4 5 6
22. I dislike talking with others about how I feel.	1 2 3 4 5 6
23. It can be hard to describe how I feel.	1 2 3 4 5 6
24. I find it easy to put my feelings into words.	1 2 3 4 5 6
25. I have difficulty telling others I care about them.	1 2 3 4 5 6
26. Strong emotions are difficult for me to understand.	1 2 3 4 5 6
27. Expressing feelings makes me feel open to attack by other people.	1 2 3 4 5 6
28. I have difficulty expressing my emotional needs to my partner.	1 2 3 4 5 6
29. I have difficulty expressing my tender feelings.	1 2 3 4 5 6
30. I have been using recreational drugs more than usual.	1 2 3 4 5 6

31. I feel depressed or sad most of the day.	1 2 3 4 5 6
32. Others would say I've appeared tearful most days.	1 2 3 4 5 6
33. I've lost interest in activities that I usually find pleasure in.	1 2 3 4 5 6
34. I've gained or lost more than 5% of my regular body weight.	1 2 3 4 5 6
35. I've noticed a change in my appetite (eating more or less).	1 2 3 4 5 6
36. I have trouble getting enough sleep most days.	1 2 3 4 5 6
37. Most days I feel as though I sleep too much.	1 2 3 4 5 6
38. Others have noticed that my body appears restless, fidgety or slowed down.	1 2 3 4 5 6
39. Most days I feel tired and have little energy.	1 2 3 4 5 6
40. Nearly every day I feel worthless and guilty about things.	1 2 3 4 5 6
41. I find it difficult to concentrate and make decisions.	1 2 3 4 5 6
42. I have recurrent thoughts about death.	1 2 3 4 5 6
43. I've noticed more problems/conflict in my relationships.	1 2 3 4 5 6
44. I often feel irritable or get annoyed easily.	1 2 3 4 5 6
45. When I feel bad, I prefer to be alone.	1 2 3 4 5 6
46. Lately, I've noticed myself arguing more with others.	1 2 3 4 5 6
47. If I feel really bad, I try to tell myself I don't feel <i>that</i> bad.	1 2 3 4 5 6
48. I've been experiencing physical pain or discomfort lately and I'm not sure exactly what the cause is.	1 2 3 4 5 6
49. I've been having difficulty performing my job at work.	1 2 3 4 5 6
50. When I feel bad, I try hard not to think about what makes me feel this way.	1 2 3 4 5 6
51. When I feel bad or angry, I try to do something to help distract me from feeling that way (ex: shopping, video-games, playing sports, playing cards, having a few drinks, etc...)	1 2 3 4 5 6

Appendix E – National Institute of Alcohol Abuse and Alcoholism Quantity and Frequency Questionnaire

Instructions: Please answer the following three questions regarding your alcohol use. Write your answer on each line provided.

1. On average, how many days per week do you drink alcohol?

_____.

2. On a typical day when you drink, how many drinks do you have?

_____.

3. What is the maximum number of drinks you had on any given occasion during the last month?

_____.

Appendix F – Demographics Questionnaire

Note: These questions help determine general characteristics of the people who respond to the questions. We will NOT be reporting any individual responses. Only group averages will be used. Please mark your response on the line provided.

1. Please indicate your gender:

_____ Woman
_____ Man
_____ Other

2. How old are you?

I am _____ years old.

3. What racial or ethnic group do you identify?

_____ Caucasian/White
_____ Hispanic/Latino
_____ Asian/Pacific Islander
_____ African American/Black
_____ American Indian
_____ Other (please specify: _____)

4. What is your highest level of education?

_____ Grade School
_____ Some high school
_____ High school diploma or GED
_____ Some college
_____ Associate's degree or trade school
_____ Bachelor's degree
_____ Post Graduate Degree

5. Are you currently receiving mental health services? (For example, individual counseling, medication management, group therapy, etc...)

_____ Yes
_____ No

6. Do you have a mental health diagnosis that you are aware of?

_____ No

_____ Yes (if so, please specify below)

A. _____ Major Depressive Disorder

B. _____ Generalized Anxiety Disorder

C. _____ Bipolar Disorder

D. _____ Post Traumatic Stress Disorder

E. _____ Personality Disorder (please specify if known: _____)

F. _____ Other (please specify if known: _____)

7. Are you currently taking any psychotropic medications such as anti-depressants, anti-anxiety medications, etc...?

_____ Yes (please specify type of medication if known: _____)

_____ No

Appendix G – Informed Consent to Participate in Study and Confidentiality Agreement

INFORMED CONSENT

You are invited to participate in a study about gender, depression and alcohol use. This study is being conducted by Elizabeth Peters, M.S.W. under the supervision of Dr. Patrick Sherry, Ph.D. as part of the requirements for the doctoral degree in Counseling Psychology at the University of Denver. This study is being conducted to better understand how individuals experience depression and how to best assess depressive symptoms in men and women.

During the course of the study, you as the client will be asked to complete a brief screening questionnaire, a demographic questionnaire, the Beck Depression Inventory-II, the Bem Sex Role Inventory, the Denver Comprehensive Depression Inventory and three short questions on alcohol use. The study package will take approximately 15-20 minutes to complete.

There are minimal foreseeable risks or discomforts that are likely to result from participation in this study. You might experience some psychological discomfort when answering emotionally sensitive questions. Although it is not anticipated that the questionnaires will cause you any undo stress, if this does occur, you can choose not to complete the questionnaires and terminate participation in the study at any time. There will be no penalty to you if you decide to withdraw from the study.

This study's findings may be presented and published for professional use; however, no identifying information about you will be used in any written or verbal form. The information will be **anonymous and confidential**. Your consent forms and any other identifying materials will be kept separate from your completed questionnaires in order to maintain confidentiality. A code number will be assigned and used instead of your name, and all data will be kept in secured, locked files. To ensure your safety, a staff person will check 2 items from the Beck Depression Inventory-II and Denver Comprehensive Depression Inventory regarding suicidal thoughts or plans (2 questions will only be reviewed by immediate staff personnel for safety). If either of these questions indicates you may be high risk for suicide, you will be provided resources and referrals to get additional help. No name or identifying information will be used throughout this study, and all information will remain confidential.

If you have any questions or concerns about this study, please contact Elizabeth Peters at (720) 301-9026 or epeters5@du.edu or Dr. Patrick Sherry at

(303) 871-2495. If you have any concerns or complaints about the survey package, please contact Susan Sadler, Chair, Institutional Review Board for the Protection of Human Subjects, at 303-871-3454, or Sylk Sotto-Santiago, Office of Research and Sponsored Programs at 303-871-4052 or write to either at the University of Denver, Office of Research and Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-4820.

By signing below you certify the following:

Your participation in this study is completely voluntary, and you may withdraw your participation at any time. If you choose not to participate or to discontinue your participation, there will be no penalty.

There are two exceptions to the promise of confidentiality. If information is revealed regarding suicide, homicide, or child abuse and neglect, it is required by law that this be reported to the proper authorities.

I have read and understood the above descriptions of the study of gender, depression and alcohol use. I have asked for and received a satisfactory explanation of any language that I did not fully understand. I agree to participate in this study, and I understand that I may withdraw my consent at any time. I have received a copy of this consent form.

Printed Name of Participant

Date

Signature of Participant

Date

Appendix H – Rotated Component Matrix for the DCDI

DCDI Items	Component		
	1	2	3
1. I have been getting more angry than usual.	.764		
2. At times I get so angry that sometimes I feel like hitting something.	.834		
3. Sometimes I get too angry.	.824		
4. Others would say I've had a bad temper lately.	.810		
5. I have been more aggressive than usual lately.	.804		
6. When things go badly, I get angry.	.690		
7. I've noticed myself acting more aggressively towards others or things.	.734		
8. I find myself pulling away from others.	.530	.528	
9. I have people I can rely on when I am having a hard time.		.517	
10. I find it easy to be around others.		.558	
11. When I'm upset I just want to be left alone.		.405	
12. I enjoy the support I receive from others.		.627	
13. Relying on others is a sign of weakness to me.		.602	
14. Needing others makes me feel weak.		.701	
15. I do not feel comfortable having others help me when I'm down.		.695	
16. I have been drinking more than usual.			.673
17. Drinking has helped me deal with things more easily.			.722
18. I have had an alcohol or substance abuse problem in the past.			.683
19. Drinking alcohol can take the edge off during times of stress.			.773
20. I tend to drink more when things aren't going well for me.			.814
21. I tend to avoid situations where I am not able to drink.			.488
22. I dislike talking with others about how I feel.		.602	
23. It can be hard to describe how I feel.		.537	
24. I find it easy to put my feelings into words.		.447	
25. I have difficulty telling others I care about them.		.423	
26. Strong emotions are difficult for me to understand.		.536	
27. Expressing feelings makes me feel open to attack by other people.		.597	
28. I have difficulty expression my emotional needs to my partner.		.569	
29. I have difficulty expressing my tender feelings.		.564	
30. I have been using recreational drugs more than usual.			.625
31. I feel depressed or sad most of the day.	.626	.507	
32. Others would say I've appeared tearful most days.	.661		
33. I've lost interest in activities that I usually find pleasure in.	.679	.484	
34. I've gained or lost more than 5% of my regular body weight.			

35. I've noticed a change in my appetite (eating more or less).			
36. I have trouble getting enough sleep most days.			
37. Most days I feel as though I sleep too much.	.403		
38. Others have noticed that my body appears restless, fidgety or slowed down.	.569		
39. Most days I feel tired and have little energy.	.530		
40. Nearly every day I feel worthless and guilty about things.	.471	.572	
41. I find it difficult to concentrate and make decisions	.597		
42. I have recurrent thoughts about death.	.529		
43. I've noticed more problems/conflict in my relationships.	.663		
44. I often feel irritable or get annoyed easily.	.682		
45. When I feel bad, I prefer to be alone.		.520	
46. Lately, I've noticed myself arguing more with others.	.612		
47. If I feel really bad, I try to tell myself I don't feel that bad.	.511		
48. I've been experiencing physical pain or discomfort lately and I'm not sure exactly what the cause is.	.421		
49. I've been having difficulty performing my job at work.			
50. When I feel bad, I try hard not to think about what makes me feel this way.		.435	
51. When I feel bad or angry, I try to do something to help distract me from feeling that way.			