

Fall 12-2022

Counselor Perceived Competence Diagnosing Disorders from DSM-5 Diagnostic Categories Survey Results and the Development and Validation of Scores on the Diagnostic Self- Efficacy Scale

Erin Elizabeth Woods
Old Dominion University, Erines89@gmail.com

Follow this and additional works at: https://digitalcommons.odu.edu/chs_etds



Part of the [Counseling Commons](#), and the [Mental and Social Health Commons](#)

Recommended Citation

Woods, Erin E.. "Counselor Perceived Competence Diagnosing Disorders from DSM-5 Diagnostic Categories Survey Results and the Development and Validation of Scores on the Diagnostic Self-Efficacy Scale" (2022). Doctor of Philosophy (PhD), Dissertation, Counseling & Human Services, Old Dominion University, DOI: 10.25777/d9b3-jp74
https://digitalcommons.odu.edu/chs_etds/144

This Dissertation is brought to you for free and open access by the Counseling & Human Services at ODU Digital Commons. It has been accepted for inclusion in Counseling & Human Services Theses & Dissertations by an authorized administrator of ODU Digital Commons. For more information, please contact digitalcommons@odu.edu.

**COUNSELOR PERCEIVED COMPETENCE DIAGNOSING DISORDERS FROM DSM-
5 DIAGNOSTIC CATEGORIES SURVEY RESULTS AND THE DEVELOPMENT AND
VALIDATION OF SCORES ON THE DIAGNOSTIC SELF-EFFICACY SCALE**

by

Erin Elizabeth Woods

B.S. December 2011, Virginia Polytechnic Institute and State University

M.S. May 2014, East Carolina University

A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirements for the Degree of

DOCTOR OF PHILOSOPHY

EDUCATION (COUNSELING)

OLD DOMINION UNIVERSITY

December 2022

Approved By:

Edward Neukrug (Chair)

Michael Kalkbrenner (Methodologist)

Alan Schwitzer (Member)

Shana Pribesh (Member)

ABSTRACT

COUNSELOR PERCEIVED COMPETENCE DIAGNOSING DISORDERS FROM DSM-5 DIAGNOSTIC CATEGORIES SURVEY RESULTS AND THE DEVELOPMENT AND VALIDATION OF SCORES ON THE DIAGNOSTIC SELF-EFFICACY SCALE

Erin Elizabeth Woods
Old Dominion University, 2022
Chair: Dr. Edward Neukrug

This dissertation focused on the diagnostic self-efficacy of mental health counselors. The diagnosis of mental health disorders serves a wide array of functions in the counseling field including communication, treatment planning, and third-party reimbursement. Self-efficacy, or one's belief in their own ability to accomplish a task, is considered a factor in successful task completion. The literature lacked information about which mental health disorders counselors are most confident diagnosing and an instrument which measured the self-efficacy of counselors specific to the diagnostic process. The MEASURE approach was employed to create the Diagnostic Self-Efficacy Scale and validate scores on this instrument with a sample of mental health counselors ($N=450$). The sample was also asked to complete a survey of perceived diagnostic competence related to specific *DSM-5* diagnostic categories. Diagnostic Self-Efficacy Scale scores were analyzed using exploratory factor analysis to determine the instrument's underlying factor structure. The results of this analysis indicated the Diagnostic Self-Efficacy Scale measured the intended construct, diagnostic self-efficacy, and items grouped together to form subscales. Three possible underlying factor solutions emerged. Mean confidence scores on the perceived diagnostic competence survey indicated this sample of mental health counselors reported higher levels of confidence diagnosing anxiety disorders, depressive disorders, trauma and stressor related disorders, substance-related and addictive disorders, bipolar and related disorders, and obsessive-compulsive and related disorders. They reported lower confidence

levels when diagnosing medication-induced movement disorders and other adverse effects of medications, paraphilic disorders, elimination disorders, sleep-wake disorders, sexual dysfunctions, neurocognitive disorders. Implications for practitioners, counselor educators and supervisors, consumer stakeholders, and other professional stakeholders, along with limitations and areas for future research, are discussed.

Keywords: mental health disorder, diagnosis, self-efficacy, Diagnostic Self-Efficacy Scale (DSES), MEASURE approach

Copyright, 2022, by Erin Elizabeth Woods, All Rights Reserved.

This dissertation is dedicated to my parents, Sharon and Alex, and my grandparents, Nina and Buddy. You made me believe anything was possible.

ACKNOWLEDGEMENTS

As I sit here thinking about the dissertation process and all the people who have helped me along the way, I am overcome with an immense sense of gratitude. I started the Ph.D. program in August of 2019. The world was very different then. I was optimistic about starting a new journey but looking back I realize I had no concept of how the next few years would shape me as a professional and as a person. So many people helped me along the way. Even though I don't think I can express how grateful I truly am, I am going to give it a try.

First, thank you to my phenomenal committee. I learned so much from working with each of you. Dr. Schwitzer and Dr. Pribesh, thank you both for your sharing your expertise. Your feedback, patience, and flexibility were critical to my success. Dr. Kalkbrenner, thank you for being the methodologist for this study. To say I couldn't have done this without your guidance and support would be an understatement. Your kindness, patience, flexibility, and willingness to answer all my questions made all the difference. Finally, Dr. Neukrug, thank you so much for being my chair. You believed in this study from the beginning and supported me every step of the way, even when I had my doubts. Your vast knowledge was a key piece of the puzzle. You were flexible, patient, and you helped me think outside the box while also keeping me grounded. Your sense of humor helped make a long, stressful process much more fun.

Thank you to the world's greatest cohort. We had a very interesting ride. We were in-person for a little over a semester before COVID changed everything. We figured it out together and laughed a lot. A very special thank you to Alex, Judith, and Allison. I couldn't have done it without you. I also want to thank all the amazing faculty members who have supported me on this journey, especially Dr. Vanessa Dominguez and Dr. Jenn Linnekaste.

Thank you to my parents, Sharon and Alex, and my brother, Garrett. You always believed I could do anything and pushed me to challenge myself. Your love and support made me feel confident to take risks and dream big. I always knew you had my back, no matter the outcome. My grandparents, Buddy and Nina, passed away when I was in middle school, but they had a huge impact on my life. They taught me to value hard work, education, honesty, and kindness. They helped establish the foundation that got me here and I am forever grateful to them. I am also grateful to my extended family and chosen family, who are some of my biggest cheerleaders.

Finally, Thank you to my husband, John. When I told you I wanted to apply to Ph.D. programs, you encouraged me. From the day I got in, you did everything in your power to support me. On the good days you helped me celebrate my successes, and on the bad days you reminded me why I didn't want to quit. Thank you for going on this journey with me. I love you.

TABLE OF CONTENTS

	Page
LIST OF TABLES	x
LIST OF FIGURES	xi
INTRODUCTION	1
THE PROBLEM.....	1
PURPOSE OF THE STUDY	3
SIGNIFICANCE OF THE STUDY.....	3
RESEARCH QUESTIONS	4
RESEARCH DESIGN	4
LIMITATIONS.....	6
DEFINITIONS OF WORDS AND TERMS	7
CONCLUSION.....	9
LITERATURE REVIEW	10
SIGNIFICANCE OF ACCURATE DIAGNOSIS.....	10
THE DIAGNOSTIC AND STATISTICAL MAUNUAL OF MENTAL DISORDERS.....	15
CRITICAL DIAGNOSTIC TASKS	39
COUNSELOR TRAINING	46
SELF-EFFICACY.....	48
RATIONALE.....	51
CONCLUSION.....	52
METHODOLOGY	54
RESEARCH METHOD	54
MAKE PURPOSE AND RATIONALE CLEAR	55
ESTABLISH EMPIRICAL FRAMEWORK	55
ARTICULATE A THEORETICAL FRAMEWORK.....	57
SYNTHESIZE CONTENT AND SCALE DEVELOPMENT.....	59
USE EXPERT REVIEWERS.....	61
RECRUIT PARTICIPANTS	63
EVALUATE VALIDITY AND RELIABILITY.....	69
PERCEIVED DIAGNOSTIC COMPETENCE SURVEY	76
LIMITATIONS.....	76
CONCLUSION.....	78
RESULTS.....	79
DEMOGRAPHIC INFORMATION AND DESCRITPIVE STATISTICS.....	79

	Page
PERCEIVED DIAGNOSTIC COMPETENCE SURVEY	
DESCRIPTIVE DATA	84
PRELIMINARY ANALYSES	88
EXPLORATORY FACTOR ANALYSIS.....	89
FACTOR EXTRACTION	89
FACTOR RETENTION	89
FACTOR ROTATION	91
TWO-FACTOR SOLUTION	92
THREE-FACTOR SOLUTION.....	96
FOUR-FACTOR SOLUTION.....	100
CONCLUSION.....	104
DISCUSSION	105
SUMMARY OF THE PROBLEM	105
RQ#1: THE UNDERLYING FACTOR STRUCTURE OF THE DSES	106
TWO-FACTOR SOLUTION	108
THREE-FACTOR SOLUTION.....	109
FOUR-FACTOR SOLUTION.....	111
RQ #2: PERCEIVED COMPETENCE DIAGNOSING DSM-5	
DIAGNOSTIC CATEGORIES	113
IMPLICATIONS FOR THE COUNSELING FIELD.....	115
IMPLICATIONS FOR COUNSELOR EDUCATORS AND	
SUPERVISORS	116
IMPLICATIONS FOR PRACTITIONERS	120
IMPLICATIONS FOR PROFESSIONAL STAKEHOLDERS.....	121
IMPLICATIONS FOR CONSUMER STAKEHOLDERS	123
LIMITATIONS.....	124
FUTURE RESEARCH	125
CFA AND CONVERGENT VALIDITY TESTING	126
VALIDATION WITH DIFFERENT POPULATIONS	127
MIXED METHODS STUDIES.....	127
OBSERVED COMPETENCE.....	128
CONCLUSION.....	129
REFERENCES	130
APPENDICES	138
APPENDIX A: INITIAL DSES ITEM LIST FOR EXPERT REVIEW	138
APPENDIX B: EXPERT REVIEW FORM.....	144
APPENDIX C: IRB EXEMPTION LETTER	146
APPENDIX D: PILOT STUDY MATERIALS	147
APPENDIX E: RECRUITMENT LETTER.....	161

	Page
APPENDIX F: INFORMED CONSENT DOCUMENT	162
APPENDIX G: DEMOGRAPHIC QUESTIONNAIRE	166
APPENDIX H: PERCEIVED COMPETENCE OF DIAGNOSING DSM-5 DIAGNOSTIC AREAS	167
APPENDIX I: DSES ITEM LIST	168
APPENDIX J: GIFT CARD DRAWING SURVEY	171
APPENDIX K: DESCRIPTIVE STATISTICS FOR YEAR OF MASTER'S DEGREE COMPLETION	172
APPENDIX L: DESCRIPTIVE STATISTICS FOR STATE IN WHICH MASTER'S DEGREE WAS OBTAINED	174
APPENDIX M: DESCRIPTIVE STATISTICS LICENSES/PRACTICE STATE	176
VITA	178

LIST OF TABLES

Table	Page
3.1. Descriptive Statistics for Pilot Study	65
4.1. Descriptive Statistics for Gender	80
4.2. Descriptive Statistics for Race/Ethnicity	80
4.3. Descriptive Statistics for Licensure Status	82
4.4. Descriptive Statistics for Years of Active Post-Graduate Counseling Practice.....	82
4.5. Descriptive Statistics for Perceived Diagnostic Competence.....	84
4.6. Total Variance Explained	90
4.7. Two-Factor Solution	93
4.8 Two-Factor Solution Factor Correlation Matrix.....	96
4.9. Three-Factor Solution	97
4.10. Three Factor Solution Factor Correlation Matrix	100
4.11. Four-Factor Solution.....	101
4.12. Four-Factor Solution Factor Correlation Matrix.....	104

LIST OF FIGURES

Figure	Page
3.1. Theoretical Blueprint	59
3.2. Updated Theoretical Blueprint.....	63
4.1. Scree Plot	91
5.1. Two-Factor Solution Theoretical Blueprint.....	109
5.2. Three-Factor Solution Theoretical Blueprint.....	111
5.3. Four-Factor Solution Theoretical Blueprint.....	112

CHAPTER ONE

INTRODUCTION

In this chapter, I identify the existing problem and explain the study's purpose and significance. I provide an overview of the research questions, design, and limitations. Finally, I define relevant words and terms.

The Problem

The diagnosis of mental health disorders is an integral aspect of client care. Diagnosis serves to help counselors plan interventions, consider client needs and prognosis, determine if certain treatments may be beneficial, and communicate with others (APA, 2013; Eriksen & Kress, 2006; First, 2010; Neukrug, 2019, 2022; Peterson, 2015; Schwitzer & Rubin, 2014). Often a diagnosis is required for individuals to receive certain benefits or services, such as school accommodations (Neukrug & Fawcett, 2020). Thus, accurate diagnosis is an important factor in clients receiving care that best meets their needs (APA, 2013; Eriksen & Kress, 2006; First, 2010; Neukrug, 2019, 2022; Neukrug & Fawcett, 2020; Peterson, 2015; Schwitzer & Rubin, 2014). Even counselors who utilize theories that do not rely heavily on diagnosis often find they have to diagnose for billing purposes and coordination of care (Eriksen & Kress, 2006; Neukrug 2019, 2022). Dailey et al. (2014) highlight that diagnosis has become a part of mental health counselors' identity because of requirements by third-party payers, impacts on the treatment process, and laws placing diagnosis within counselors' scope of practice in many states.

While diagnosis plays a critical role in the counseling profession, there are many counselors who believe diagnosis does not align with their professional identity and values (Eriksen & Kress, 2006). Diagnosis does not fully align with some developmental theories and does not always take into consideration contextual and cultural factors which counselors

recognize as critical (Eriksen & Kress, 2006; Neukrug, 2022). In addition, many have concerns that diagnosis involves a bias about what is “normal.” Diagnosis falls in line with a medical model of treatment that is often not embraced by counselors, who tend to work from a biopsychosocial model when conceptualizing and treating clients. Some have also suggested it can perpetuate the power differential in the client-counselor relationship, and it can feel like something the counselor imposes on the client (Eriksen & Kress, 2006). Despite possible reservations about the diagnostic process, it’s often unavoidable role in the counseling field, paired with the benefits of accurate diagnosis and dangers of misdiagnosis, make it a particularly important counseling task.

Hayes et al. (2009) explored diagnostic variance in 41 counselors and counselors in training. Participants received the same case summary for one of six clients with adjustments based on client demographics. The participants were asked to diagnose the client and were then interviewed. The researchers found diagnostic variance among the participants, noting a variety of different diagnoses assigned to the client. Many of the counselors in the sample reported a lack of perceived self-competence and desire to allow “more competent” professionals to diagnose (Hayes et al., 2009, p. 10). Of the 41 participants, 25 shared feelings of uncertainty about the diagnoses they picked, and 11 said they were less certain of their diagnosis during the interview process than when assigning it.

Self-efficacy is a critical factor in successful task completion (Bandura, 1997, 2006; Bandura et al., 2003). The findings of Hayes et al. (2009) speak to the importance of diagnostic self-efficacy in counselors. Since assigning a diagnosis is often not optional for counselors (Eriksen & Kress, 2006; Neukrug 2019), it is important that they feel confident in their ability to accurately diagnose a wide range of mental disorders. Currently there is no self-efficacy scale

specifically designed to assess counselors' perceived ability to diagnose disorders. Such a scale could help identify specific diagnostic tasks counselors feel less self-efficacious completing. This data could then be used to enhance education and supervision around these specific tasks. It is also important to inquire about which diagnostic categories counselors are most confident diagnosing, as this can help highlight potential areas of focus for diagnostic courses.

Purpose of the Study

The first purpose of this study was to develop and validate scores on an instrument that can help counselor educators and supervisors better understand the level of self-efficacy mental health counselors have related to their ability to diagnose mental health disorders. I aimed to establish the content validity, factor structure, and reliability of scores on a new scale, the Diagnostic Self-Efficacy Scale (DSES). My goal was to create an instrument that measures a counselor's task specific diagnostic self-efficacy. The second purpose of this study was to use a survey to gather information about counselors' diagnostic self-efficacy related to specific *DSM-5* diagnostic categories. It was my hope that this descriptive data from the survey could provide further insight into the diagnostic self-efficacy of mental health counselors by identifying which diagnostic categories they are most and least confident diagnosing. The DSES and the diagnostic competence survey responses both have significant implications for counselor educators and counselor supervisors and can be used to inform supervision, coursework, and continuing education materials.

Significance of the Study

As counselor educators and supervisors, it is important to identify whether counselors feel adequately prepared for essential counseling tasks, including diagnosis (Eriksen & Kress, 2006; First, 2010; Neukrug 2019, 2022). This study aimed to bridge a gap in the current

counseling self-efficacy scale instruments through the development and validation of scores on an instrument to measure counselors' overall and task specific diagnostic self-efficacy using the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*. I also included a perceived diagnostic competence survey which gathered information about which specific diagnostic classifications counselors are most confident diagnosing. The DSES has the potential to serve a variety of purposes in counselor education and supervision. The instrument can be utilized to identify specific tasks in which individuals or a group (e.g., a class, cohort) have low self-efficacy, which counselor educators or supervisors can then work to address. The data obtained from the perceived diagnostic competence survey responses can also inform counselor educators and supervisors. Information related to which diagnostic categories mental health counselors are most confident diagnosing can help counselor educators and supervisors explore and enhance interventions that build self-efficacy. Alternatively, information about which diagnostic categories mental health counselors are least confident diagnosing can help counselor educators and supervisors identify areas where additional interventions, coursework, or field experience could provide opportunities to increase self-efficacy.

Research Questions

I utilized the following research questions to guide the study:

- What is the underlying factor structure of the DSES?
- Which *DSM-5* diagnostic categories do a sample of clinical mental health counselors report being most and least confident diagnosing?

Research Design

I utilized the MEASURE Approach (Kalkbrenner, 2021a) to develop and validate scores on the DSES. This seven-step approach provides clear direction in the creation and

validation of measures for use in quantitative research. Each letter in “MEASURE” represents a specific step: 1) “Make the purpose and rationale clear,” 2) “Establish empirical framework,” 3) “Articulate theoretical blueprint,” 4) “Synthesize content and scale development,” 5) “Use expert reviewers,” 6) “Recruit participants,” and 7) “Evaluate validity and reliability” (Kalkbrenner, 2021a, p.1).

The first two steps were completed through a review of the existing literature and presented in chapters one and two of this dissertation. The empirical framework was primarily based on specific tasks in the diagnostic process derived from the literature (APA, n.d, 2013; Karg & Wiens, 2005; Mears, 2015; Neukrug, 2022) and Bandura’s (1977, 1997, 2006) theory related to self-efficacy. Johnson and Stuart’s (2008) approach to assessing self-efficacy by breaking the concept into three domains also influenced the empirical framework. This framework helped inform the third step, the creation of the instrument blueprint (Kalkbrenner, 2021a). In step four, I engaged in consensus question creation with a research team member to create a large list of possible items. We then removed duplicate questions from the list and determined which of the remaining questions were sent to expert reviewers. In step five, I sent the initial item list to expert reviewers for feedback. After applying the expert review feedback, I moved forward to step six. Step six consisted of pilot testing followed by data collection for the primary study. The methodologist and I conducted exploratory factor analyses in step seven to establish the internal structure of scores on the DSES.

I also included a survey to gather descriptive data about diagnostic self-efficacy related to *DSM-5* diagnostic categories. In this survey, I asked participants to rank their confidence diagnosing disorders from each of the 22 *DSM-5* diagnostic categories on a 7-point Likert scale.

I then utilized the information gathered to determine which *DSM-5* diagnostic categories this sample of mental health counselors reported being most and least confident diagnosing.

Limitations

One of the major limitations of this study was related to the recent announcement of the release of the *DSM-5 Text Revision* (Moran, 2021). The new version of the manual has multiple changes (Moran, 2021), but it was unclear when use of the manual will become widespread in the mental health profession. Thus, this study proceeded with the *DSM-5* as the current edition.

Factor analysis requires 10 participants per item or 200 participants, whichever is greater (Kalkbrenner, 2021a). To obtain this large sample, I used non-probability convenience and snowball sampling. The use of these sampling types could also be considered a limitation, as both can result in participants who share characteristics and may miss other eligible individuals (Rue et al., 2016). There is a danger of social desirability bias, or participants responding in a way they believe will be viewed favorably (Morris & Wester, 2018; Rue et al., 2016).

A further sampling limitation was the presence of “bot” and “human bot” responses to the survey following recruitment via social media. Bots are computer programs that often repeatedly fill out surveys online and human bots are humans who inattentively, quickly, and repeatedly complete surveys (Yarrish et al., 2019). The goal of bots and human bots is to obtain the survey’s incentive. Yarrish et al. (2019) outline warning signs that responses might be bot or human bot responses and I utilized these to remove any suspected bot or human bot responses.

It is important to note that obtaining a second sample of participants and conducting confirmatory factor analysis (CFA) is necessary to determine if the DSES maintains factorial validity with a second sample of mental health counselors. This would help further establish the internal structure validity of the DSES and help determine which of the three retained factor

solutions is the best fit. After conducting CFA, the construct validity of scores on the DSES could be strengthened by the addition of convergent validity testing (Kalkbrenner 2021a). I plan to conduct these analyses in future studies.

Definition of Words and Terms

Proper understanding of how I utilize significant words and terms in this study will allow readers to better understand the information presented. These terms are: “mental health counselor,” “*Diagnostic and Statistical Manual of Mental Disorders, 5th edition*,” “mental disorder,” and “self-efficacy.”

Mental Health Counselor

Neukrug (2022) notes that the term counselor generally refers to someone with a master’s degree in counseling and goes on to note that “Although there are many kinds of counselors, all tend to have had common coursework in professional orientation and ethical practice, social and cultural diversity, human growth and development, career development, the helping relationship, group work, assessment and testing, and research and program evaluation” (p. 5). There are several counseling specialties outlined by the Council for Accreditation of Counseling and Related Education Programs (CACREP; 2016) including: mental health counseling; addictions counseling; career counseling; school counseling; clinical rehabilitation counseling; rehabilitation counseling; college counseling and student affairs; and marriage, couple, and family counseling. Each of these specialty areas has additional specific education requirements. This study will focus on counselors with master’s degrees in mental health counseling because this specialty area has specific CACREP requirements related to diagnosis (2016). Thus, counselors within this specialty area should have similar education related to the diagnosis of mental disorders.

Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition

The *Diagnostic and Statistical Manual of Mental Disorders (DSM)* is the diagnostic text published by the American Psychiatric Association (APA) and most widely used by the mental health field (APA, 2013). Per the APA (2013), “*DSM* is intended to serve as a practical, functional, and flexible guide for organizing information that can aid in the accurate diagnosis and treatment of mental disorders” (p. xli). The DSES and the perceived diagnostic competence survey will both focus on diagnostic self-efficacy when utilizing the current edition of the manual, the *DSM-5*.

Mental Disorder

The American Psychiatric Association (2013) provides the following definition of mental disorder, or mental health diagnosis, and is the definition that will be utilized through this study:

A mental disorder is a syndrome characterized by clinically significant disturbance in an individual’s cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental Disorders are usually associated with significant distress or disability in social, occupational, or other important activities. An expectable or culturally approved response to a common stressor or loss, such as the death of a loved one, is not a mental disorder. Socially deviant behavior (e.g., political, religious, or sexual) and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above (p. 20).

Self-Efficacy

Bandura (2006) notes that “self-efficacy is concerned with perceived capability” (p. 308). In its simplest terms, self-efficacy can be defined as a person’s belief in their ability to accomplish a task (Bandura, 1997, 2006; Larson & Daniels, 1998). This definition will be used throughout the study and the scale.

Conclusion

Diagnosis is an important task which serves a variety of purposes in the counseling field (APA, 2013; Eriksen & Kress, 2006; First, 2010; Neukrug, 2019, 2022; Peterson, 2015; Schwitzer & Rubin, 2014). While self-efficacy is considered a significant factor in successful task completion (Bandura, 1997, 2006; Bandura et al., 2003), counselors have reported they believe they lack competence when diagnosing mental health disorders (Hayes et al., 2009). In this study, I aimed to develop and validate scores on an instrument that measures diagnostic self-efficacy using Kalkbrenner’s (2021a) MEASURE approach. I also utilized a survey to gather information about which *DSM-5* diagnostic categories counselors are most and least confident diagnosing. In this chapter, I presented the existing problem, the purpose of the study, and the significance of the study. I also provided an overview of the methodology I used throughout this study. Finally, I shared the limitations of this study and defined important words and terms. In the next chapter, I provide a review of the existing literature related to diagnosis and self-efficacy.

CHAPTER TWO

LITERATURE REVIEW

In this chapter, I provide an overview of relevant literature which informed this study. With this literature review, I seek to provide a greater understanding of diagnosis and self-efficacy. I include an overview of the significance of accurate diagnosis, the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*, critical diagnostic tasks, counselor training in diagnosis, and self-efficacy.

Significance of Accurate Diagnosis

Diagnosis serves many purposes in the mental health field. For instance, a client's diagnosis informs treatment planning and recommendations (APA, 2013; Eriksen & Kress, 2006; Neukrug, 2019, 2022; Schwitzer & Rubin, 2014). It can inform public health information decision-making related to specific mental disorders and be used to further research the nature of such disorders (APA, 2013; Eriksen & Kress 2006). Many funding sources, such as insurance companies, require a diagnosis for reimbursement purposes (Dailey et al., 2014; Eriksen & Kress, 2006; Neukrug 2019). To best understand why a mental health counselor's diagnostic self-efficacy is important, it is critical to first conceptualize the importance of diagnosis and the dangers of diagnosis.

The Importance of Diagnosis

From a clinical perspective, diagnosis is a powerful driver in treatment (APA, 2013; Eriksen & Kress, 2006; Neukrug, 2019, 2022; Schwitzer & Rubin, 2014). The diagnostic process can help counselors organize information to better understand clients. This understanding can then inform treatment plans, the choice of therapeutic approaches, and appropriate referrals. Diagnosis provides a common language providers can use to share information about client care

(APA, 2013; Eriksen & Kress, 2006; Neukrug, 2019, 2022; Peterson, 2015; Schwitzer & Rubin, 2014). It can also help the counselor recognize when a client's concerns are outside their scope of practice (APA, 2013; Eriksen & Kress, 2006). For example, if during an intake assessment, the counselor utilizes the information provided to diagnose an eating disorder, the counselor may recognize that they do not have the training to address this concern adequately and ethically. This would result in a referral to an appropriate treatment provider, thus avoiding harm to the client and ensuring the client gets treatment that meets their needs.

State and federal laws require schools to provide appropriate accommodations and services for children with mental health, behavioral, and learning disorders (Neukrug & Fawcett, 2020). Often, a diagnosis is required for children to be identified for and receive these services. The Americans with Disabilities Act requires reasonable accommodations for individuals with disabilities. Mental health disorders are among the conditions covered by the Americans with Disabilities Act. Accurate diagnosis is a critical component of identifying and providing the appropriate accommodations for each individual.

For some clients, the diagnostic process itself can be therapeutic as a diagnosis can help them better understand their own experience and help externalize the problem (Eriksen & Kress, 2006). For example, a client experiencing repetitive violent intrusive thoughts may be relieved to learn these thoughts are a symptom of obsessive-compulsive disorder. They can then seek the appropriate treatment to better understand and manage their symptoms. Diagnosis can also help the client set realistic expectations for treatment (Neukrug, 2019). Psychoeducation for a client's family members about a diagnosis can help reduce shame and blame. It can also reduce misunderstanding of a client's experience for both the client and their friends and family (Eriksen and Kress, 2006). Furthermore, a counselor's ideas about a client and attitude towards a

client can also be impacted by diagnosis (Eriksen & Kress, 2005). For instance, a clinician may be more understanding and willing to interact with a client once they understand their diagnosis because they better understand their struggles and experiences related to the diagnosis.

Research is a critical task in the advancement of the counseling profession, and diagnosis can be an important focus of research. The results of research can inform public health data utilized for policy making, and it can assist researchers in gathering appropriate participants while creating samples for specific research studies (APA, 2013). The *DSM* and diagnostic classifications help researchers better understand the cause and course of mental disorders, and such an understanding can help researchers develop studies that identify and explore treatment, prevention, and outcomes (Eriksen & Kress, 2006).

While the wellbeing of the client and the furthering of the profession through research are clear priorities for counselors, counseling is also a job. Funding and payment for services is an important consideration for many counselors. Sources of service funding include, but are not limited to, grants, government programs, and insurance (Eriksen & Kress, 2006). Some funded grants focused on mental health disorders, many government programs that focus on mental illness, and insurance that pays for client services for mental disorders require a *DSM* diagnosis (Dailey et al., 2014; Eriksen & Kress, 2005, 2006). If a counselor opts not to diagnose a client, they risk losing payment and not meeting the requirements of their employer (Eriksen & Kress, 2005, 2006). Eriksen and Kress (2006) also note the risk of losing credibility, status in the field, and opportunities for credentialing associated with deciding not to engage in diagnosis.

In addition to its importance to clinical care, research, and payment, accurate diagnosis and diagnostic competency is important to the counseling profession as a whole. Mascari and Webber (2013) acknowledge licensure portability as an on-going concern for counselors across

the country. They note several standards licensing boards would need to agree to adopt in order to facilitate licensure portability for counselors. One of these requirements is a would be a “two tiered” examination using both the National Counselor Exam (NCE) or Certified Rehabilitation Counseling Examination (CRCE) and the National Clinical Mental Health Counseling Examination (NCMHCE) “to measure both knowledge and competency in diagnosis and treatment” (Mascari & Webber, 2013, p.18). This specifically highlights the need for the assessment of diagnostic competence before allowing licensure portability. The importance of accurate diagnosis is especially clear when considering the dangers of diagnosis.

Dangers of Diagnosis

When considering accurate diagnosis and the diagnostic process, it is important to consider the dangers of misdiagnosis. There are several situations that can be considered misdiagnosis (Hayes et al., 2009). The first is when a counselor assigns a client a diagnosis that is not correct. An example of this might be a counselor assigning a diagnosis of generalized anxiety disorder when the client’s symptoms are more accurately described by bipolar I disorder. Misdiagnosis can also describe a situation when a counselor gives a diagnosis when the client does not have a mental disorder or one where the counselor does not identify a mental disorder when the client does present with one.

Since diagnosis plays such an important role in client care and treatment, avoiding misdiagnosis is important to ensure clients receive appropriate treatment (Hays et al., 2009). For example, individuals sometimes begin experiencing symptoms of obsessive-compulsive disorder during or immediately following pregnancy (Challacombe & Wroe, 2013). These symptoms often include repetitive, anxiety producing thoughts about intentionally or accidentally harming the baby. When not diagnosed properly, these individuals can be inaccurately labeled as being at

a high risk for harming their children and may not be provided proper treatment (Challacombe & Wroe, 2013). Scenarios such as this highlight the danger of misdiagnosis.

It is critical for counselors to recognize the importance of cultural factors in the diagnostic process. Individuals from diverse cultural backgrounds may express symptoms differently or present with language barriers (Neukrug, 2022). Distrust for counselors or the medical system, rooted in years of oppression and mistreatment, may make it harder for clients to share their concerns. Counselors may not understand value differences and may pathologize behaviors or experiences without considering the cultural context. Thus, individuals from culturally oppressed groups experience misdiagnosis at higher rates. Misunderstanding and mislabeling can result in individuals receiving less effective treatment or dropping out of treatment prior to completion.

Ensuring the appropriate diagnosis is assigned is critical to the client accurately understanding their experience. This is especially important because sometimes clients begin to believe their diagnosis means they have an inherent illness, and this belief can leave them feeling hopeless (Eriksen & Kress, 2005, 2006). There is still significant stigma surrounding mental health (Eriksen & Kress, 2005). This stigma is evident in mental health related social policies and media representations. Individuals diagnosed with mental health conditions often face the negative consequences of such stigma, including housing and employment barriers. Thus, it stands to reason that misdiagnosis could lead to the client experiencing stigma they would not otherwise have to endure. Counselors utilize the *DSM* as a diagnostic tool to help ensure accurate diagnosis (APA, 2013).

The Diagnostic and Statistical Manual of Mental Disorders

The classification of mental disorders is not a new concept. In 1733, physician George Cheyne began using the term “English Malady” to describe a variety of symptoms similar to what we currently refer to as depression and anxiety (Horwitz, 2021). Throughout the 1800s and early 1900s, classification systems were created to explain mental health disorders (APA, 2013; Horwitz, 2021). These were precursors to the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*, which has become the “gold standard” mental health diagnostic manual (Horwitz, 2021).

The first edition of the *DSM (DSM-I)* was published in 1952, and over the years the *DSM* has been revised several times as the world of mental health has expanded and evolved (APA, 2013; APA, 2020; Horwitz, 2021; Neukrug, 2019). Through this evolution, the *DSM* has grown in recognition, power, and influence. Often referred to as “psychiatry’s bible,” it is the most utilized manual for diagnosing mental health conditions worldwide (Horwitz, 2021). The *DSM* provides detailed descriptions of mental health disorders, including symptom checklists; information on disorder development and prognosis; and cultural factors for consideration (APA, 2013). Providers across the mental health field, including counselors, utilize the current edition of the *DSM* when diagnosing client concerns.

Work began on the current version of the *DSM*, the *DSM-5*, over 20 years ago, and it was published in 2013 (APA, 2013, 2020; Horwitz, 2021; Neukrug & Fawcett, 2020). The *DSM-5* remains the primary source of diagnostic information and a critical diagnostic tool for most mental health professionals (APA, 2013, 2020). When considering the complexity of mental health diagnoses, it is important to understand the evolution of the *DSM*, including detailed information about the disorders housed in the current *DSM*.

Precursors to the Diagnostic and Statistical Manual of Mental Disorders

In 1844, the American Psychiatric Association (APA), then known as the Association of Medical Superintendents of American Institutions for the Insane, created a system to classify patients in mental health institutions (APA, 2013, 2019). The goal of the system was to improve communication about the individuals being treated (APA, 2013). Horwitz (2021) notes that as the cost of running institutions increased, states wanted to know how funds were being utilized. Classification of patients helped institutions provide records and explain costs. In 1918, the APA published the *Statistical Manual for the Use of Institutions for the Insane*. This manual was the first standardized guide and contained conditions seen in institutionalized patients. It also contained information about the biological roots of mental health disorders. Twenty of the twenty-one disorder groups found in the manual were psychoses. The diagnoses in the manual were not based on empirical data. From 1918 to 1942 the manual was revised 10 times. The need for broader causality and a manual that had application outside of institutions became more apparent during World War II (Horwitz, 2021).

World War II brought about a variety of considerations and challenges for those in the mental health field. Individuals volunteering or being drafted to serve in the war were being screened for mental health concerns, and almost two million potential service members were rejected because they were diagnosed with mental health disorders (Horwitz, 2021). Additionally, Individuals returning home from war were experiencing distress and mental health crises that were not covered in the *Statistical Manual for the Use of Institutions for the Insane*. Terms such as “shell shock,” “war neurosis,” and “combat fatigue” were used to describe these concerns. There was a need for a standardized classification of disorders that expanded beyond

those covered by the current manual (Horwitz, 2021). This need was addressed by the creation of the Medical 203.

The Medical 203, formally known as the War Department Technical Bulletin, Medical 203, was initially released in 1943 by the U.S. War Department to serve as a formal classification system for mental health diagnoses (Houts, 2000). As the war was ending, there was hope that mental-health providers could help individuals in the community, not just the severely mentally ill in institutions (Houts, 2000). There was an increase in the belief that mental health disorders did not just include severe illness, like psychosis, but could also include problems arising from stress and life circumstances. In fact, approximately 1,000,000 of the 11,400,000 individuals who served in World War II underwent inpatient hospitalization for “neuropsychiatric problems” (Houts, 2000, p. 940), which served as evidence that otherwise “normal” individuals could experience mental health disorders when exposed to stress (Houts, 2000). The Medical 203 reflected this change in thinking.

The Medical 203 contained five broad diagnostic classification categories: transient personality reactions to acute or special stress, psychoneurotic disorders, character and behavior disorders, disorders of intelligence, and psychotic disorders (Horwitz, 2021). It also implied that there were four areas for consideration when assigning a diagnosis: “the types and severity of symptoms, the amount of stress, the presence of personality types that predisposed someone to develop a mental illness, and the degree of incapacity” (Horwitz, 2021, p. 23). Medical 203 also encouraged the assignment of severity to diagnosis, ranging from not present to severe (Horwitz, 2021). The manual was the immediate precursor to the *Diagnostic and Statistical Manual of Mental Disorders (DSM; Neukrug & Fawcett, 2020)*.

The Diagnostic and Statistical Manual of Mental Disorders: The Beginning

In 1948, the APA, the U.S. Army, and the Veterans Administration began work on the first edition of the *DSM* (*DSM-I*; Horwitz, 2021; Houst, 2000)). The National Institute of Mental Health would also join the effort in 1950. In 1952, the *DSM-I* was published (Horwitz, 2021; Houst, 2000). The manual focused on clinical use and was based on revisions to the Medical 203 (Houts, 2000; Neukrug & Fawcett, 2020). It included 106 diagnoses that were grouped into three categories (Horwitz, 2021; Houts, 2000; Neukrug & Fawcett, 2020), which contained diagnoses typically seen in inpatient settings and those typically seen in outpatient settings (Horwitz, 2021).

In its first category, the *DSM-I* included 26 syndromes which were organic disorders resulting from damage to the brain (Horwitz, 2021). The second category was psychogenic disorders. Psychogenic disorders were broken into five subcategories and were noted to be caused by environmental stress combined with predispositions. Disorders in this category were all considered and referred to as “reactions.” The third and final category of diagnoses found in the *DSM-I* was Transient Situational Personality Disorders. There were four subcategories and 5 sub-subcategories within this section. Each diagnosis within the overall Transient Situation Personality Disorders category was considered “acute responses to overwhelming stress that did not involve a more fundamental personality disturbance” and had to be “short-lived responses to stressful circumstances” (Horwitz, 2021, p.30). With these categories, the *DSM-I* was the first step in an on-going effort to improve the diagnostic process. Sixteen years after its publication, the first revision of the manual would be released.

The second edition of the *DSM* (*DSM-II*) was released in 1968 (Horwitz, 2021; Houst, 2000; Neukrug & Fawcett, 2020). The revision was prompted by a desire to align the mental health diagnoses utilized in the United States with the *International Classification of Diseases*

sponsored by the World Health Organization. This edition of the manual was less focused on the causes of the disorders listed and included over 180 diagnoses across over 10 categories (Horwitz, 2021). It created new, more specific labels and included more diagnoses focused on children and adolescents (Horwitz, 2021; Neukrug & Fawcett, 2020). The *DSM-II* also included more specific diagnoses related to substance use disorders and behavior disorders. Ten diagnoses within a “special symptoms” category, which included eating disorders and sleep disorders, were another notable addition.

The first two editions of the *DSM* were greatly influenced by psychoanalysis (Horwitz, 2021). Although *DSM-I* and *DSM-II* were the precursors to what was to become a widely and often required diagnostic tool, during those times treatment of mental disorders and the use of prescription drugs often did not require a diagnosis. The general public was not acutely aware of specific diagnoses at this time. Thus, while the *DSM-I* and *DSM-II* were significant developments in the mental health world, overall, they received little attention.

Conflict around one of the diagnoses in the manual gained the public’s attention in the 1970’s (Horwitz, 2021). The diagnosis in question was the first disorder listed in the manual’s sexual deviations category, “homosexuality.” The idea of “homosexuality” as a disorder was widely and publicly debated. Ultimately, it was decided that the diagnosis would include a statement that it would only be used if a person’s sexual orientation caused them significant distress. This change was noted in the 1974 version of the *DSM-II*. Continued conflict around “homosexuality” as a diagnosis was one of multiple factors that would prompt the revision of the *DSM-III*.

The Diagnostic and Statistical Manual of Mental Disorders: DSM-III and DSM-III-R

Per Horwitz (2021), several major factors converged to influence the development of the third edition of the *DSM* (*DSM-III*). The way people thought about mental health and diagnosis was changing. Research was highlighting a biomedical approach to mental health. The National Institute of Mental Health (NIMH) and the Food and Drug Administration (FDA) both supported a shift towards more specific diagnoses. For the FDA, groups in drug studies needed to have the same diagnosis. The FDA was also facing controversy around tranquilizers. An early 1970s movement led by feminists claimed tranquilizers were not used to treat legitimate medical concerns, but rather kept women in lesser roles. This prompted the FDA to insist medications be used for the treatment of specific diagnoses, which also increased the pharmaceutical companies' interest in diagnosis. The NIMH, which had previously placed a strong focus on social factors contributing to mental health concerns, was facing budget cuts and backlash because of the perception that they did not focus on real diseases. This influenced their support of the new, biomedically focused edition of the *DSM*, which was seen as a remedy to this problem. Mental health providers were increasingly being asked by third-party reimburses to provide a diagnosis, and this greatly increased their desire for a more specific guide for diagnosis. These insurance companies wanted to be sure they were paying for treatment for real illnesses and placed limits on the number of visits based on the illness being treated. The combination of these factors with the growth of the mental health field and psychiatrists' desire to differentiate themselves from other mental health providers resulted in the revision of the *DSM-II* and the release of the *DSM-III* in 1980 (Horwitz, 2021).

The *DSM-III* was a true turning point in the mental health profession (Horwitz, 2021). There were disagreements among clinicians and researchers during the revision process. The

DSM-III was modeled after the Feighner criteria from the Washington University Department of Psychiatry and the research diagnostic criteria (RDC) created by Bob Spitzer with the NIMH and a group from Washington University. Spitzer was an advocate for the importance of more specific diagnoses and had significant control in the development of the *DSM-III*.

Ultimately, the *DSM-III* included 265 diagnoses (Neukrug & Fawcett, 2020). It provided specific criteria lists for each diagnosis and included no information on disorder causation. The *DSM-III* criteria lists focused on clients' current, observable problems and symptoms. Clients could be diagnosed with more than one disorder if they met the criteria (Horwitz, 2021). In response to the controversy around "homosexuality" as a diagnosis, it was replaced by "ego-dystonic homosexuality." The change was subtle but changed the source of distress from the presence of "homosexual arousal" to the "lack of heterosexual arousal and presence of sustained patterns of homosexual arousal" (Horwitz, 2021, p. 80).

A major change in the *DSM-III* was the utilization of a multiaxial approach to diagnosis which had not been present in the first two editions (Neukrug & Fawcett, 2020). A provider using the *DSM-III* would place most mental health disorders a client met the criteria for on Axis I. Developmental disorders and personality disorders would be placed on Axis II, and physical disorders or illnesses would be listed on Axis III. Axis IV was reserved for stress related to psychosocial concerns. Axis V was reserved for a score which represented the client's current level of overall functioning (Neukrug & Fawcett, 2020).

The *DSM-III* quickly gained traction and was accepted by many in the mental health professions (Horwitz, 2021). However, the evolution of the *DSM* was far from complete. The next edition of the *DSM*, the *DSM-III-R*, was published in 1987. While the *DSM-III-R* remained structurally similar to the *DSM-III*, it contained 292 diagnoses, 27 more than the 265 contained

in the *DSM-III*. A specific group for sleep disorders was added to the *DSM-III-R*. The *DSM-III-R* removed the diagnosis of “ego-dystonic homosexuality” amid concerns that it was inconsistent to say dissatisfaction or distress related to “homosexual” orientation was a diagnoseable condition, but dissatisfaction or distress related to heterosexual orientation was not. There were also concerns that the presence of distress did not meet the full criteria for a disorder. Sexual disorder not otherwise specified was added to the *DSM-III-R*. This diagnosis was used when an individual was distressed about their sexual orientation (Horwitz, 2021).

Horwitz (2021) notes the cultural shift around the *DSM* which occurred in the 1980s. The public became more aware of and interested in the *DSM* and of the specific diagnoses contained within. There was an interest in the epidemiology of mental health disorders, and this became a research focus. As diagnostic criteria expanded, more and more people met the criteria for a mental health disorder. Drug companies became more interested in diagnoses, as diagnoses could be used to market medications. Outside groups also had a vested interest in the *DSM* and mental health disorders.

Feminists had a strong influence on the *DSM* revisions occurring around this time (Horwitz, 2021). During the creation of the *DSM-III-R* there was controversy around diagnoses that could be seen as pathologizing women, including those related to menstruation, and the possible social impact of these diagnoses. Feminists at the time also advocated for expansion of trauma diagnoses. These concerns, conflicts, and conversations would continue into the development of the *DSM-IV*.

The Diagnostic and Statistical Manual of Mental Disorders: DSM-IV and DSM-IV-TR

The *DSM-IV* was released in 1994 (Neukrug & Fawcett, 2020). Horwitz (2021) notes the group of people brought together to create this edition of the *DSM* were more diverse than

those who created the *DSM-III*. There was also a new leader at the helm, Allen Frances. Frances was more clinically oriented than Spitzer, who had led the development and revisions of the *DSM-III* and *DSM-III-R*. The *DSM-IV* set standards of evidence which had to be met for a new diagnosis to be included. Only eight new diagnoses were added to the *DSM-IV*, and it ultimately contained 297 diagnoses, only five more than the *DSM-III-R*. One substantial change from all previous editions was that the *DSM-IV* did not include organic disorders as its own classification of disorders. Another notable change in the *DSM-IV* was the removal of the term “sexual orientation,” as it was no longer considered grounds for a diagnosis of a mental health disorder. The *DSM-IV* was followed by the *DSM-IV Text Revisions (DSM-IV-TR)*, which included limited changes, minor revisions to text (Horwitz, 2021), and 17 major diagnostic classifications (Peterson, 2015). The next round of revisions to the *DSM* generated a great deal of interest and discussion, so much so that 3,000 articles were published about it during the five years prior to its publication (Horwitz, 2021).

The Diagnostic and Statistical Manual of Mental Disorders: DSM-5

The development of the fifth edition of the *DSM (DSM-5)* was not intended to just be a revision of the existing manual, but a major revamp of the mental health diagnostic system (Horwitz, 2021). The development of the *DSM-5* was not a smooth process, and all of the planned changes to the diagnostic system did not occur. Many of the new ideas the creators hoped to include are listed in its appendices. There was controversy and disorganization in the initial phases, which resulted in the appointment of an oversight committee. Conflict and push back throughout the revision process continued. The revision process began in 1999, and the *DSM-5* was released in May 2013 (Horwitz, 2021; Neukrug & Fawcett, 2020).

Among the most notable changes to the *DSM-5* was the removal of the axis system introduced in the *DSM-III* (Horwitz, 2021; Neukrug & Fawcett, 2020). This included the removal of the global assessment of functioning score. One factor influencing this change was the desire to destigmatize personality disorders by removing them from a separate axis. It also allowed biopsychosocial factors to be listed with mental health disorders, as these may be areas of focus in treatment (Neukrug & Fawcett, 2020). The *DSM-5* works to align with both the International Classification of Disease (ICD) 9 and ICD 10 (Neukrug & Fawcett, 2020).

The *DSM-5* also included major changes to a variety of diagnoses, including substance use disorders (Horwitz, 2021). Substance abuse and substance dependence diagnoses were combined into substance specific substance use disorder with a continuum for symptom severity (APA, 2013; Horwitz, 2021; Peterson, 2015). For example, what once would have been either diagnosed as opioid dependence or opioid abuse would now be diagnosed as opioid use disorder, mild, moderate, or severe. There was some concern because the new criteria for substance use disorders is easier to meet, which may result in individuals being incorrectly diagnosed.

The *DSM-5* remains the current edition of the *DSM* and is used by a variety of mental health providers worldwide. It contains mental health disorders grouped into over 20 classifications based on symptom constellation and causation (APA, 2013, 2020; Neukrug & Fawcett, 2020). For the purposes of this study, it is important to provide a brief overview of the diagnostic categories the *DSM-5* describes.

Neurodevelopmental Disorders

The first diagnostic grouping described in the *DSM-5* is neurodevelopmental disorders. This classification includes a wide variety of disorders usually diagnosed in childhood, although some may not be diagnosed until later in life (APA, 2013; Neukrug & Fawcett, 2020). These

disorders are often co-occurring; individuals with one neurodevelopmental disorder often also have another neurodevelopmental disorder. There are several subgroups of disorders within the neurodevelopmental disorders.

Intellectual disabilities are the first of these subgroups. The first diagnosis in this grouping is intellectual disability. Individuals who meet criteria for this disorder present with impairments in “general mental abilities, such as reasoning, problem solving, planning, abstract thinking, judgment, academic learning, and learning from experience” (APA, 2013, p. 31). These impairments often result in difficulty with independence and social responsibility across at least one area of life. Global developmental delay is also included in this diagnostic grouping. This diagnosis is reserved for individuals who are delayed in meeting milestones but are too young to undergo the testing needed for a formal diagnosis of intellectual disability. Unspecified intellectual disability is another diagnosis included in this cluster. This diagnosis is used for individuals who are old enough to be assessed but cannot complete assessments for a specific intellectual disability diagnosis for a variety of reasons. It is noted this diagnosis “should only be used in exceptional circumstances and requires reassessment after a period of time” (APA, 2013, p. 41).

The next subgroup found under neurodevelopmental disorders is communication disorders (APA, 2013). This grouping includes five diagnoses: language disorder, social (pragmatic) communication disorder, speech sound disorder, childhood-onset fluency disorder, and unspecified communication disorder. Language disorder, social communication disorder, and social communication disorder all involve problems related to the development and use of speech, language, and other social communication. Childhood onset fluency disorder, often

referred to as stuttering, refers to difficulties with sound production and/or speech fluency (APA, 2013).

Autism spectrum disorder is the next subcategory under neurodevelopmental disorders. In a highly debated move (Horwitz, 2021), the *DSM-5* consolidated Asperger's disorder, pervasive developmental disorder, and autistic disorder into one diagnosis: autism spectrum disorder (APA, 2013). As the name implies, symptoms of this disorder occur across a spectrum of severity. Criteria for this diagnosis include problems with social interaction and communication and "restricted, repetitive patterns of behavior, interests or activities" (APA, 2013, p. 50). While these criteria can be met in a variety of ways, the symptoms must cause impairment across areas of functioning.

Attention-Deficit/Hyperactivity Disorder is another subgroup under neurodevelopmental disorders (APA, 2013). Symptoms indicative of this disorder include significant difficulty with organization, difficulty paying attention, and impulsive behavior or hyperactivity. These symptoms must be excessive when the individual's developmental level is considered. People may present with primarily inattentive symptoms, primarily hyperactive symptoms, or a combination of primary symptoms (APA, 2013).

Another set of neurodevelopmental disorders is specific learning disorders (APA, 2013). These disorders are characterized by difficulty learning or processing information. Symptoms cause impairment in school or work performance. Specific learning disorders can occur around reading, writing, or math skills and can exist at varying severity levels.

Motor disorders are also listed under neurodevelopmental disorders (APA, 2013). Developmental coordination disorder involves difficulty with developing and executing motor skills. Stereotypic movement disorder is manifested as "repetitive, seemingly driven, and

apparently purposeless motor behavior” (APA, 2013, p. 77). Tic disorders are also listed under motor disorders. There are several tic disorder diagnoses: Tourette’s disorder, persistent (chronic) motor or vocal tic disorder, provisional tic disorder, other specified tic disorder, and unspecified tic disorder. To meet diagnostic criteria, the onset of tics must be before age 18.

The final subgroup found in the neurodevelopmental disorders section is other neurodevelopmental disorders (APA, 2013). The diagnosis of other specified neurodevelopmental disorders can be utilized when an individual experiences impairment but does not meet the full criteria for a specific neurodevelopmental disorder. Unspecified neurodevelopmental disorder is another diagnosis that can be utilized when an individual does not meet full criteria for a specific diagnosis and is usually used when there is insufficient information to make a more detailed diagnosis (APA, 2013).

Schizophrenia Spectrum and Other Psychotic Disorders

The second classification of disorders defined in the *DSM-5* is schizophrenia spectrum and other psychotic disorders (APA, 2013). Disorders in this classification are characterized by symptom constellations which include delusions, hallucinations, unusual motor behavior, and disorganized speech and thinking. Negative symptoms are also associated with disorders in this classification. Negative symptoms include decreases in behaviors such as emotional expression, speech, and the ability to experience positive stimuli. The disorders in this chapter include schizotypal personality disorder, delusional disorder, brief psychotic disorder, schizophreniform disorder, schizophrenia, schizoaffective disorder, substance/medication induced psychotic disorder, psychotic disorder due to another medical condition, other specified schizophrenia spectrum and other psychotic disorders, and unspecified schizophrenia spectrum and other psychotic disorder. The diagnostic criteria for catatonia specifiers are also included in this

chapter, but it is important to note catatonia can be present in multiple mental disorders across several classifications (APA, 2013).

Bipolar and Related Disorders

Bipolar and related disorders is a unique classification of disorders within the *DSM-5*. Disorders within this classification have commonalities with disorders classified as depressive disorders and those classified as schizophrenia spectrum and other psychotic disorders (APA, 2013). Like depressive disorders, symptoms of mental disorders within this classification include sadness, emptiness, irritability, cognitive changes, and somatic symptoms. A hallmark of diagnoses in this classification, which separates them from depressive disorders, is the presence of manic or hypomanic episodes. These episodes are periods of unusually irritable or elated mood, increased energy, more goal-directed activity which last at least four days in a row for hypomanic episodes or at least 1 week for manic episodes. Psychosis may be present in various diagnoses within this classification. Bipolar I disorder, bipolar II disorder, substance/medication induced bipolar and related disorder, cyclothymic disorder, other specified bipolar and related disorder, unspecified bipolar and related disorder, and bipolar and related disorder due to another medical condition can be found in this classification (APA, 2013). In previous editions of the *DSM*, depressive disorders and bipolar and related disorders were grouped together into one classification. Despite similarities in some symptoms, they are distinct diagnostic categories with differences in the “duration, timing, and presumed etiology” of depressive and bipolar disorder (APA, 2013, p.155).

Depressive Disorders

Depressive disorders are characterized by a variety of mood related symptoms, such as feeling sad, irritable or empty (APA, 2013). Cognitive and somatic symptoms are also common

in disorders found in this classification. Symptoms of depressive disorders impact the person's functioning in various areas of life. There are several disorders that fall under the depressive disorder classification. These include major depressive disorder, persistent depressive disorder, disruptive mood dysregulation disorder, premenstrual dysphoric disorder, substance/medication induced depressive disorder, depressive disorder due to another medical condition, unspecified depressive disorder, and other specified depressive disorder (APA, 2013).

Anxiety Disorders

The APA (2013) defines anxiety as “anticipation of a future threat,” and differentiates anxiety from fear, which it describes as “the emotional response to real or perceived imminent threat” (p. 189). Both fear and anxiety are symptoms associated with anxiety disorders. The fear and anxiety associated with these disorders is outside of normal levels and impacts an individual's functioning across various life areas. Separation anxiety disorder, selective mutism, specific phobia, social anxiety disorder, panic disorder, agoraphobia, generalized anxiety disorder, substance/medication-induced anxiety disorder, anxiety disorder due to another medical condition, other specified anxiety disorder, and unspecified anxiety disorder are the mental disorders classified as anxiety disorders. The criteria for the panic attacks specifier are also included in this classification.

Obsessive-Compulsive and Related Disorders

Obsessive-compulsive and related disorders is a diagnostic classification separate from anxiety disorders in the *DSM-5* (APA, 2013). One of the hallmark symptoms of these disorders is the presence of obsessions and or compulsions. Obsessions are defined as “recurrent and persistent thoughts, urges, or images that are experienced as intrusive and unwanted,” and compulsions are defined as “repetitive behaviors or mental acts that an individual feels driven to

perform in response to an obsession or according to rules that must be applied rigidly” (APA, 2013, p.235). This classification includes the following diagnoses: obsessive-compulsive disorder (OCD), hoarding disorder, body dysmorphic disorder, excoriation, trichotillomania, substance/medication-induced obsessive-compulsive and related disorder, and obsessive-compulsive and related disorder due to another medical condition. This classification also includes other specified obsessive-compulsive or related disorder and unspecified obsessive-compulsive or related disorders.

Trauma and Stressor Related Disorders

When individuals experience extremely stressful or traumatic experiences, their reactions can vary (APA, 2013). The experience of such an event is a required diagnostic criterion for the mental disorders included in this category. While individuals diagnosed with trauma and stressor related disorders may experience anxiety and fear, as seen in anxiety disorders, they may also experience anhedonia, anger, dissociation, and/or aggression. Diagnoses in this classification include reactive attachment disorder, disinhibited social engagement disorder, posttraumatic stress disorder, acute stress disorder, adjustment disorders, other specified trauma and stressor related disorders, and unspecified trauma and stressor related disorder (APA, 2013).

Dissociative Disorders

Dissociative identity disorder, depersonalization/derealization disorder, dissociative amnesia, other specified dissociative disorder and unspecified dissociative disorder are the five disorders included within the dissociative disorders classification (APA, 2013; Neukrug, 2019). These disorders involve the “disruption of and or discontinuity of the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control and

behavior” (APA, 2013, p. 291). Amnesia, identity fragmentation, derealization, and depersonalization are symptoms which are seen in these disorders. These disorders are often related to trauma. The interruptions of consciousness and lack of awareness and control associated with these disorders can cause problems across a variety of life areas (APA, 2013).

Somatic Symptom and Related Disorders

Somatic symptom and related disorders is a new *DSM-5* diagnostic classification. One symptom shared by all diagnoses in this classification is the presence of somatic symptoms. Somatic symptoms are physical symptoms that usually lack a medical explanation or cause (APA 2013; Neukrug, 2019). There is emphasis placed on how an individual presents and is impacted by their beliefs about the symptoms (APA, 2013). Often there is no medical explanation for somatic symptoms, but somatic disorders can occur with a medically diagnosed disorder. Because of the nature of these disorders, individuals experiencing associated symptoms are often first seen in medical settings. To qualify for diagnosis, somatic symptoms must cause impairment and distress for the individual. There are seven somatic symptom and related disorders diagnoses: somatic symptom disorder, conversion disorder, illness anxiety disorder, factitious disorder, psychological factors affecting other medical conditions, other specified somatic symptom and related disorder, and unspecified somatic symptom and related disorder (APA, 2013).

Feeding and Eating Disorders

Diagnoses in the feeding and eating disorders classification involve eating or eating-related behavior concerns that negatively affect an individual’s physical or psychological health (APA, 2013). Symptoms associated with disorders in this classification include but are not limited to restricting food consumption, overeating, purging, preoccupation with weight, and

eating items that are not considered food. The following disorders are found under feeding and eating disorders: Pica, rumination disorder, avoidant/restrictive food intake disorder, anorexia nervosa, bulimia nervosa, binge-eating disorder, other specified feeding or eating disorder, and unspecified feeding or eating disorder (APA, 2013).

Elimination Disorders

Elimination disorders is the classification containing disorders that are characterized by “inappropriate elimination of urine or feces” (APA, 2013, p. 355). There are two primary diagnoses in this classification, enuresis and encopresis. Enuresis is the repeated, inappropriate elimination of urine and encopresis is the repeated, inappropriate voiding of feces. For both diagnoses, the elimination may be voluntary or involuntary (APA, 2013; Neukrug, 2022). Both diagnoses also have subtypes. Subtypes of enuresis are based on the time of day the voiding occurs (nocturnal only, diurnal only, or both) (APA, 2013). Encopresis subtypes are based on whether the encopresis occurs with or without constipation and overflow incontinence. These disorders can co-occur or occur separately. Elimination disorders also include other specified elimination disorder and unspecified elimination disorder diagnoses.

Sleep-Wake Disorders

Another diagnostic classification found in the *DSM-5* is sleep-wake disorders (APA, 2013). Disorders in this classification often require a multidisciplinary approach to diagnosis and treatment. These disorders rarely occur on their own and may be associated with anxiety, depression, and other mental health and medical conditions. As the name implies, disorders in this category involve problems related to sleep. These problems can involve the amount, onset, and/or quality of sleep. Insomnia disorder, hypersomnolence disorder, and narcolepsy are found in this chapter of the *DSM-5*. The breathing related sleep-wake disorders include obstructive

sleep apnea hypopnea, central sleep apnea, and sleep-related hypoventilation. Circadian rhythm sleep-wake disorders, parasomnias, substance/medication-induced sleep disorder, and several “other specified” and “unspecified” variations of sleep-wake disorder round out this classification (APA, 2013).

Sexual Dysfunctions

Disorders distinguished by problems experiencing sexual pleasure or being able to respond sexually are grouped together in the sexual dysfunctions diagnostic classification (APA, 2013). These disorders may co-occur. Diagnoses in this classification may be further specified by noting if they are lifelong or acquired and whether they are generalized or situational. In addition to unspecified sexual dysfunction and other specified sexual dysfunction, sexual dysfunctions include premature ejaculation, male hypoactive sexual desire disorder, genito-pelvic pain/penetration disorder, female sexual interest/arousal disorder, female orgasmic disorder, erectile disorder, and substance/medication- induced sexual dysfunction (APA, 2013).

Gender Dysphoria

Gender dysphoria was previously known as gender identity disorder (APA, 2013). This was changed in the *DSM-5* to shift clinical focus to dysphoria as the problem, not gender identity. Diagnoses in this category are characterized by distress related to incongruence between one’s assigned gender and one’s experienced gender (APA, 2013; Neukrug 2019). This classification contains gender dysphoria, other specified gender dysphoria, and unspecified gender dysphoria. The diagnosis of gender dysphoria has two major subtypes: gender dysphoria in children and gender dysphoria in adolescents and adults (APA, 2013).

Disruptive, Impulse Control, and Conduct Disorders

Disorders characterized by problems with self-control that often infringe on the rights of others or cause one to have conflict with authority are found in the disruptive, impulse control, and conduct disorders chapter of the *DSM-5* (APA, 2013). This classification includes conduct disorder, oppositional defiant disorder, antisocial personality disorder (also included in personality disorders), kleptomania, pyromania, intermittent explosive disorder, unspecified disruptive, impulse control and conduct disorders, and other specified disruptive, impulse control, and conduct disorders. These disorders tend to begin in childhood and to be more common in males than females. It is important to note that many of the symptoms found in these disorders can occur during average development. Frequency, impairment, and persistence across life areas/situations are what differentiate typical developmental behavior from behavior that qualifies for a diagnosis (APA, 2013).

Substance-Related and Addictive Disorders

This classification includes diagnoses related to 10 substances and problem gambling (APA, 2013). The diagnoses under each substance include substance use disorder, which occurs on a continuum of severity, and substance induced disorders. The Substance induced disorders are substance specific intoxication, withdrawal, and substance/medication induced mental disorders. Under each substance there are also diagnostic options of other specified or unspecified use disorder diagnosis. The ten substances included in this chapter are: alcohol; caffeine; cannabis; hallucinations; opioids; inhalants; stimulants; tobacco; other or unknown substances; and sedatives, hypnotics, and anxiolytics. Stimulants are broken down into three subtypes: cocaine, amphetamine-type substances, and other stimulants. Hallucinogens are broken into either phencyclidine or other hallucinogens. This chapter represents a large change from the

DSM-IV, which previously split the diagnosis of the specific substance use disorder into the specific substance abuse and specific substance dependence (APA, 2013; Horwitz, 2021).

The diagnosis of gambling disorder is included in this classification (APA, 2013). This is included with substance disorders because problem gambling produces similar responses to drug use in the brain's reward system. Comparable behaviors are also present when examining people who have problems with gambling and individuals with substance use concerns. There are other "behavioral addictions" being studied, but they are not yet included as formal diagnoses in the *DSM-5*.

Neurocognitive Disorders

The neurocognitive disorders classification, previously known as "dementia, delirium, amnestic and other cognitive disorders" (APA, 2013, p.591), are disorders grouped together because the core of the concern is a deficit in cognitive functioning. To meet criteria for a neurocognitive disorder, the deficit must be acquired, not lifelong, and it must be a decline from previous functioning. The first set of diagnoses in this classification are delirium, other specified delirium, and unspecified delirium. The remaining diagnoses are classified as either major or minor neurocognitive disorders, which are then labeled by the cause of the impairment. For example, an individual with cognitive decline related to Alzheimer's disease could be diagnosed with mild neurocognitive disorder due to Alzheimer's disease. Mild or Major neurocognitive disorders can be listed as due to Alzheimer's disease, Lewy body disease, vascular disease, traumatic brain injury, frontotemporal lobar degeneration, substance/medication use, HIV infection, prion disease, Huntington's disease, Parkinson's Disease, another medical condition, or multiple etiologies. There is also a diagnosis of unspecified neurocognitive disorder (APA, 2013).

Personality Disorders

Due to disagreement during the development of the *DSM-5*, personality disorders can be found in two sections of the manual (APA, 2013). The chapter found in section two represents the current use of personality disorder diagnoses. A Personality disorder is an ongoing, rigid way of being that begins in early adulthood or adolescence. The behavior and inner experience of the individual is notably different from what is expected in the person's culture and leads to impairment and stress across a variety of life areas. While all ten personality disorders listed in the *DSM-5* share these features, they also differ in many ways. They are grouped together in clusters.

People with a cluster A personality disorder diagnosis may present as "odd or eccentric" while those diagnosed with a cluster B personality disorder may "appear dramatic, emotional, or erratic" (APA, 2013, p. 646). Those with a cluster C personality disorder may come across as "anxious or fearful" (APA, 2013, p. 646). Paranoid, schizotypal, and schizoid personality disorders are grouped together in cluster A. Cluster B is made up of antisocial, histrionic, narcissistic, and borderline personality disorders. Lastly, cluster C is comprised of obsessive-compulsive, dependent, and avoidant personality disorders (APA, 2013). Other personality disorder diagnoses include personality change due to another medical condition, other specified personality disorder, and unspecified personality disorder. A dimensional approach to personality disorders was suggested for the *DSM-5* and is included in section III of the manual for consideration.

Paraphilic Disorders

Diagnoses classified under paraphilic disorders are characterized by the presence of a problematic paraphilia (APA, 2013). Paraphilias are intense, ongoing sexual interest that is

outside of what is generally considered a normal sexual interest with a consenting, mature, human partner. The presence of a paraphilia is not enough to meet the criteria for a paraphilic disorder. To be a diagnosable condition, the paraphilia must also cause distress or problems for the individual experiencing it or satisfaction of the paraphilia has involved risk of harm or actual harm to another person or persons.

Paraphilic disorders listed in the *DSM-5* are associated with common paraphilia or related to paraphilia that are considered crimes if acted on (APA, 2013). The disorders in this chapter are broken into two groups: anomalous activity preferences and anomalous target preferences. Anomalous activity preference is then further divided into courtship disorders and algolagnic disorders. Courtship disorders involve behaviors that are deviations of normal dating or relationship behaviors. The anomalous activity preference courtship disorders are voyeuristic disorder, frotteuristic disorder, and exhibitionistic disorder. Disorders related to suffering and pain are considered algolagnic disorders. The disorders classified as algolagnic disorders are sexual sadist disorder and sexual masochism disorder. Anomalous target preferences are divided into paraphilias directed at others and paraphilias directed somewhere else. Pedophilic disorder is considered a paraphilic disorder that is an anomalous target preference directed at others. Transvestic disorder and fetishistic disorder are the *DSM-5* paraphilic disorders that are anomalous target preferences directed somewhere else (APA, 2013). Other specified paraphilic disorder and unspecified paraphilic disorder diagnoses can be utilized when a paraphilia that causes impairment or distress is present but does not fit one of the specific diagnoses in the classification.

Other Mental Disorders

Other mental disorders is the classification of disorders that is used when a person presents with concerns indicative of a mental health concern, but does not meet the criteria for a more specific *DSM-5* diagnosis (APA, 2013). There are four diagnoses in this category: Other specified mental disorder due to another medical condition, unspecified mental disorder due to another medical condition, other specified mental disorder, and unspecified mental disorder. The medical diagnosis being referenced should be specified for a diagnosis of other specified mental disorder due to another medical condition or unspecified mental disorder due to another medical condition (APA, 2013).

Medication-Induced Movement Disorders and Other Adverse Effects of Medications

Medication-induced movement disorders and other adverse effects of medications are included in the *DSM-5* due to their importance in mental health treatment. Neukrug (2019) summarizes these disorders as “the result of adverse and severe side effects to medications, although a causal link cannot always be shown” (p.52). Disorders in this chapter include neuroleptic malignant syndrome, medication-induced acute akathisia, tardive akathisia, tardive dyskinesia, medication-induced postural tremor, other medication-induced movement disorder, neuroleptic induced parkinsonism, medication- induced dystonia, antidepressant discontinuation syndrome, and other adverse effect of medication (APA, 2013; Neukrug, 2019).

Other Conditions That May Be a Focus of Clinical Assessment

Other conditions that may be a focus of clinical attention include problems, situations, and conditions that may require or be helped by clinical treatment, but are not mental health disorders (APA, 2013). These disorders, if not addressed, may impact treatment of a client’s primary mental health diagnosis. These disorders are broken into subcategories and are coded as

V/Z codes. There are over 90 specific conditions listed in this classification, grouped into one of the following subcategories: Problems related to family upbringing, other problems related to primary support group, child maltreatment and neglect problems, child sexual abuse, child neglect, child psychological abuse, adult maltreatment and neglect problems, educational problems, occupational problems, housing problems, economic problems, problems related to access to medical and other health care, and nonadherence to medical treatment.

Critical Diagnostic Tasks

To best understand the diagnostic process and assess self-efficacy, it is important to define some key diagnostic tasks. These tasks will be critical in the development of the diagnostic self-efficacy measure. While the *DSM-5* provides lists of symptoms for each disorder, the act of assigning a diagnosis is more complex than completing a basic checklist (APA, 2013). The diagnostic process involves the use of both clinical skills and critical thinking skills (Schwitzer & Rubin, 2014). During the diagnostic process, counselors should assess the whole person (APA, 2013; Eriksen & Kress, 2005, 2006; Neukrug & Fawcett, 2020); gather information through appropriate assessment tools, questions and measures (APA, n.d., 2013; Karg & Wiens, 2005; Mears, 2015); consider diagnostic criteria (APA, 2013; Neukrug & Fawcett, 2020), and code and order assigned diagnoses appropriately (APA, 2013; Neukrug & Fawcett, 2020).

Assessment of the Whole Person

The APA (2013) includes guidelines for how to utilize the *DSM-5*. In these guidelines, the importance of recognition of “the combination of predisposing, precipitating, perpetuating, and protective factors” and their role in the client’s current presentation (APA, 2013, p. 19). These factors can be biological, social, psychological, or environmental. The importance of

cultural considerations when assigning a diagnosis is also highlighted throughout the *DSM-5*.

The assessment of each of these areas and the client's clinical history can help the clinician assign an appropriate diagnosis to guide treatment planning.

Assessment of Psychosocial and Environmental Factors

The APA (2013) recognizes that an individual's mental health can be impacted by a variety of psychosocial and environmental stressors. Many of these stressors are included in the *DSM-5* under "other conditions that may be the focus of clinical assessment" (APA, 2013).

Neukrug (2020) highlights that consideration of these factors can give diagnostic clues. For example, imagine a teenage client who presents with symptoms of anxiety and depression. When the clinician asks the client questions about their relationships and environment, the clinician learns this client moved to town last month and has not made any friends at their new school. This information may lead the clinician to consider an adjustment disorder instead of a depressive disorder or anxiety disorder.

Address Medical Considerations

The *DSM-5* often specifies the importance of ruling out any medical causes prior to diagnosing a mental health disorder (APA, 2013). There are physical illnesses that may present similarly to mental health disorders. Neukrug and Fawcett (2020) provide an example of how symptoms of thyroid concerns can mimic symptoms of depression. Clinicians should refer the client to a primary care physician if an underlying medical condition is suspected (Mears, 2015; Neukrug & Fawcett, 2020). Many diagnoses in the *DSM-5* also have a specific criterion which requires the diagnoses not be caused by substance use (APA, 2013).

Take into Account Cultural Considerations

The APA specifically states “mental disorders are defined in relation to cultural, social, and familial norms and values” (p.14, APA, 2013). The *DSM-5* includes a cultural formulation interview which can be utilized with clients during the interview process. Culture can impact a client's presentation during assessment and attitude towards treatment. Interpretation and impact of beliefs, feelings, or behaviors can vary across cultures. It also includes a “Glossary of Cultural Concepts of Distress” which clinicians can refer to for information about “some common cultural syndromes, idioms of distress, and causal explanations relevant to clinical practice” (APA, 2013, p. 14). Lack of awareness of cultural considerations or an inability to recognize these factors can lead to misdiagnosis (Eriksen & Kress, 2005; Neukrug, 2022).

It is also important for counselors to be aware of their own biases and preconceived ideas. Diagnostic variance is a phenomenon that occurs in the diagnostic process during which diagnosis is impacted and influenced by what individuals are prone to see or not see based on life experience, training, fear, and interest (Dumont & LeComte, 1987; Hayes et al., 2009).

Counselors’ concerns related to misdiagnosis, stigma, counselor identity, and other diagnostic limitations can result in some counselors’ hesitance to engage in the diagnostic process (Eriksen & Kress, 2006). Eriksen and Kress (2005) highlight that while counselors often get training related to a variety of values topics, such as abortion, they do not often get training in how to address the values that exist related to diagnosis and how these could conflict with their own professional values (Eriksen & Kress, 2006).

Gather Information Through Appropriate Assessment Tools, Questions, and Measures

Mears (2015) notes the importance of the intake interview in the diagnosis process, while also acknowledging it is unlikely that all information will be gathered in one session. A

balance of basic counseling skills, such as open-ended questions, closed-ended questions, empathic reflection, paraphrasing, and summarization, often results in a more productive intake session and better understanding of a client's symptoms and concerns (Mears, 2015). The accuracy of diagnosis can be enhanced by the use of assessments and by collateral information from family members with the intake interview (Karg & Wiens, 2005; Mears, 2015)

One tool often used in the intake process is a mental status examination (MSE) (Mears, 2015). While the exact structure of the MSE can vary, it generally assesses appearance, behavior, attitude, affect, mood, speech, thought content, thought organization, hallucinations, delusions, orientation, cognitive functioning, suicidal ideation, homicidal ideation, impulse control, memory, insight, and judgement (Mears, 2015). The assessment of these domains can provide critical information for consideration when reviewing diagnostic criteria.

We may also consider the use of many diagnostic assessments, symptom checklists, and questionnaires in the diagnostic process (Mears, 2015). The *DSM-5* contains cross-cutting symptoms measures, the clinician-rated dimensions of psychosis severity tool, the Cultural Formulation Interview, and the World Health Organization Disability Assessment Schedule 2.0. These measures can be utilized to help clinicians make diagnostic decisions (APA, 2013). These measures, other disorder-specific severity measures, personality inventories, cultural formulation interviews, and early development and home background forms can be found online (APA, n.d, 2013). There are a multitude of other assessment tools and measures available to assist counselors in the diagnostic process. Awareness of how to find, choose, administer, and score these tools is a critical component of the diagnostic process.

Consider Diagnostic Criteria

For each mental disorder listed in the *DSM-5*, there is a list of specific criteria which must be met for the diagnosis to be assigned which includes specific symptoms and duration periods (APA, 2013). It is critical that counselors are able to compare the information they gather through the intake interview, assessments, records, and client self-report against the criteria to determine the most appropriate diagnosis. Part of this process is considering differential diagnoses, provisional diagnoses, and diagnoses severity, specifiers, and subtypes.

Differential Diagnoses

The diagnostic information for each mental disorder in the *DSM-5* includes a section which discusses differential diagnosis (APA, 2013). These are diagnoses that may have similar presentations to the diagnosis being considered. For example, when considering a diagnosis of Major Depressive Disorder, the clinician is encouraged to consider the following differential diagnoses: Mood disorder due to another medical condition, manic episodes with irritable mood or mixed episodes, attention-deficit/hyperactivity disorder, substance/medication-induced depressive or bipolar disorder, and adjustment disorder with depressed mood. Clinicians are also encouraged to consider whether the symptoms meet the criteria for major depressive disorder or whether the client is experiencing a period of sadness which does not meet criteria for a mental disorder (APA, 2013). To ensure the most accurate diagnosis is assigned, it is important for clinicians to consider whether the client's symptoms are better explained by a different diagnosis.

Consider Provisional Diagnosis

It can be difficult to gather all relevant information in one intake session (Mears, 2015). Sometimes after one or multiple sessions a clinician may have enough information to feel a

client will meet the criteria for a diagnosis but may not have all the information to confirm this. In these situations, a clinician can make a “provisional” diagnosis (APA, 2014; Neukrug, 2022). Neukrug (2022) also provides a list of diagnostic terms that can be used in communication with other clinicians or in the diagnostic summary. These terms are *traits*, *rule-out*, *by history*, and *by self-report*. Traits can be used when a person does not meet diagnostic criteria but presents with many criteria of the diagnosis. *Rule-out* is often utilized when a client meets a significant number of the symptoms for a diagnosis but not enough to diagnose the disorder, and the clinician plans to continue to monitor and observe for this diagnosis. *By history* is a qualifier used when records indicate the client was once diagnosed with the disorder. Finally, *by self-report* is utilized when the client claims they have been assigned a diagnosis without evidence to substantiate the claim, such as past medical records (Neukrug, 2022).

Diagnosis Subtype, Specifiers, and Severity

Some diagnoses allow for the specification of subtypes based on symptom groupings. Subtypes are mutually exclusive (APA, 2013; Neukrug, 2022). For example, schizoaffective disorder has two subtypes: bipolar type and depressive type. The clinician making the diagnosis must decide which of the two subtypes the client’s symptoms best fit. Both cannot be selected.

Specifiers can co-exist (APA, 2013; Neukrug, 2022). If the manual asks the clinician to “specify if,” that indicates the clinician can select as many of those specifiers as is appropriate. Providers may specify if catatonia occurs with schizoaffective disorder. There are also several course specifiers for schizoaffective disorder, which provide information such as whether this is the first episode, one of multiple episodes, or a continuous episode. These course specifiers also indicate if the episode is acute, in partial remission, or in full remission.

Many diagnoses in the *DSM-5* also allow for the specification of severity (APA, 2013; Neukrug, 2022). The diagnosing provider should choose the most appropriate level of symptom severity at the present time. The *DSM-5* recommends utilizing the clinician-rated dimension of psychosis severity to determine the appropriate level of severity for schizoaffective disorders. The severity levels listed are: none, equivocal, present but mild, present and moderate, or present and severe.

Diagnosis subtypes, specifiers, and severity ratings provide important information about the clinical presentation of the client (APA, 2013; Neukrug, 2022). It is therefore critical that counselors diagnosing mental health disorders be able to utilize these diagnostic features to ensure the most detailed and accurate diagnosis is assigned.

Code and Order Assigned Diagnoses

Diagnoses are accompanied by a code that identifies the diagnosis, usually for billing and data analysis purposes. The coding instructions for each mental disorder are included with the disorder's diagnostic criteria in the *DSM-5* (APA, 2013). Clients often meet the diagnostic criteria for multiple diagnoses (APA, 2013; Neukrug, 2022). When multiple diagnoses are present, also called co-occurring, the clinician must decide what order to list them in. The principal diagnosis is the first diagnosis listed and is the primary reason for and focus of treatment. Other diagnoses are listed in the order of focus in treatment. If the disorder is due to a medical condition, the medical condition is listed first (APA, 2013). For billing, data collection, and overall communication purposes, it is important that counselors are able to properly code and order the diagnoses they assign.

Counselor Training

While the specifics of counselor training can vary from program to program, the Council for Accreditation of Counseling and Related Educational Programs (CACREP; 2016) provides standards which accredited programs must meet. The most recent revision to CACREP standards was in 2016. It is important to note, to receive accreditation, programs must meet the minimum standards established by CACREP, but how much they focus on each area is up to the discretion of the individual program (CACREP, 2016). The supervised period immediately following graduation from a master's program also provides a valuable opportunity to practice and learn more about the diagnosis process.

CACREP 2016 Standards Related to Diagnosis

CACREP Standard 2.F outlines the eight core curriculum areas for all counseling programs. Standard 2.F.7, assessment and testing, specifically outlines areas related to assessment, testing, and diagnosis that must be minimally addressed. Per this standard, CACREP accredited programs must include curriculum related to the history, meaning, and methods of testing and assessment in the counseling field. Accredited programs must also include some instruction related to the use of diagnostic assessments. Standard 2.F.7 requires the inclusion of instruction on the use of symptom checklists, psychological testing, personality testing, environmental assessments, and observation of behavior. It also includes a requirement related to selecting, giving, and scoring assessments that are both ethical and culturally appropriate (CACREP, 2016). Section 5 of the 2016 CACREP Standards is divided into requirements based on specialty areas. Several of these specialty areas include specific standards related to diagnosis.

Clinical mental health counseling is specialty area that has specific CACREP requirements related to diagnosis (CACREP, 2016). These standards require programs to cover

the diagnostic process. They specify differential diagnosis and the use of the *DSM* and *ICD* as part of the diagnostic process. There is also a standard related to the practice of the mental status evaluation, intake interview, mental health history, biopsychosocial history, mental health history, and psychological assessment. Based on this information, it is reasonable to assume that counselors who have graduated from a CACREP-accredited clinical mental health counseling master's program have had some coursework specifically related to diagnosis. How CACREP standards must be fulfilled is not specified, which leaves it up to programs to design and implement a curriculum that adequately prepares counselors in training to enter the field with the knowledge and confidence to adequately assess and diagnose clients.

Teaching Diagnosis

Curriculum to meet the CACREP requirements related to diagnosis can vary from program to program. Often diagnostic course work involves memorization and exams (Kress & Eriksen, 2010). One way counselor educators might seek engage counselors in training in critical thinking about and development of diagnostic skills is to utilize a constructivist approach. A constructivist approach to teaching diagnosis includes a variety of learning activities to meet the different developmental needs and learning styles of students. This can include more traditional, structured learning activities such as readings and minilectures, but also places emphasis on experiential learning activities, modeling, and discussion. This can include incorporating opportunities for observation (e.g., instructor modeling skills, video demonstrations), practice (e.g., develop role plays, applying diagnostic information to case studies, presentations) or reflection (e.g., reflection papers).

For new counselors in most states, their education does not end post-graduation. All states require a period of post-graduate supervised professional experience before a new

counselor can practice as an independently licensed counselor (ACA, 2015). This allows further opportunity for the development of counseling skills and self-efficacy, including diagnostic self-efficacy.

Residency

Another opportunity for new counselors to practice and develop self-efficacy related to their diagnostic ability is during a supervised period post-graduation. During this period, often referred to as residency, the new counselor works in a clinical position, gaining experience, while being supervised by an independently licensed counselor. Each state licensing board determines its own requirements for full independent licensure so the pre-licensure, supervised period can vary greatly (ACA, 2015). Supervisors can have a significant impact on the counseling self-efficacy of counselors in training (Johnson & Stuart, 2008).

Self- Efficacy

Self-efficacy can be summed up as a person's belief or confidence in their own ability to accomplish a task (Bandura, 1997, 2006; Larson & Daniels, 1998). A brief exploration of self-efficacy theory, self-efficacy in counseling, and an overview of some of the current counseling related self-efficacy scales are provided to help establish the need for the development of a diagnostic self-efficacy survey.

Self-Efficacy Theory

Self-efficacy is a large factor in Bandura's Social Cognitive Theory (Bandura, 1997; Bandura et al., 2003), which posits that personal, environmental, and behavioral influences all impact each other. Bandura notes that self-efficacy impacts behavior, goals, outcome expectations, perception of obstacles, affective proclivities, and perception of opportunities (Bandura, 1997, 2006; Bandura et al., 2003). It influences a person's attitude and thought

process. It can impact a person's effort, expectations, resilience, and perseverance related to a task or challenge (Bandura, 1997, 2006; Bandura et al., 2003). He notes that if a person does not believe they can accomplish a task successfully, they have little motivation to try or to keep trying when difficulties arise. Per Bandura et al. (2003), successful people often possess both self-efficacy and a belief that the task they are completing matters. Because self-efficacy influences so many areas, it is important to identify ways to build self-efficacy.

Bandura (1997; Bandura et al., 2003) proposes four major ways of developing self-efficacy: 1) mastery experiences, 2) social modeling, 3) social persuasion, 4) awareness and attention to physical and emotional states. The most effective of these is mastery experiences, or the successful completion of the task in question despite challenges or barriers. Social modeling occurs when individuals see others succeed at the task and receive feedback from their models. When considering diagnosis, this could include observing a supervisor's work and receiving feedback from a supervisor (Johnson & Stuart, 2008). Encouragement from a supervisor fits into the category of social persuasion. When others believe an individual can successfully complete a task, this can help convince the individual they have the ability to do so (Bandura 1997; Bandura et al., 2003). The final way of developing self-efficacy is an individual's awareness of their own physical and emotional states. This includes recognizing when they are experiencing physical or emotional states, such as stress or tiredness, that may impact their current ability.

Counseling Self-Efficacy

Per Larson and Daniels (1998), counseling self-efficacy (CSE) can be described as "one's beliefs or judgements about her or his capabilities to effectively counsel a client in the near future" (p.180). CSE was adapted from Bandura's social cognitive theory. CSE has been prevalent in the counseling literature since the 1970s and often focuses on specific counseling

tasks (Larson & Daniels, 1998). It has been shown CSE is related to counselor performance and anxiety and can also impact the supervision environment. There are many self-efficacy scales related to counseling.

Counseling Self- Efficacy Scales

There have been multiple scales created related to self-efficacy in counseling, including the Counseling Activities Self-Efficacy Scales (CASES; Lent et al., 2003), the Counseling Self Estimate Inventory (COSE; Larson et al., 1992), the Psychologist and Counsellor Self-Efficacy Scale (PCSE; Watt et al. 2019). Despite multiple scales measuring self-efficacy related to specific counseling tasks, diagnosis is often omitted, or the scale does not explore self-efficacy related to specific diagnostic tasks or diagnoses.

The COSE does include questions about a counselor's perceived ability to conceptualize and make a correct assessment about a client's problems, but it does not specifically address diagnostic tasks, such as using the *DSM* or differential diagnosis (Lent et al., 2003). The CASES also contains a question regarding client conceptualization, but does not specifically address diagnosis (Lent et al., 2003). The PCSE does include a section related to assessment and measurement. It asks about a counselor's confidence in their ability to classify client concerns, use instruments, select appropriate tools for assessment, decide the "technical adequacy of instruments," "understand the limits of psychometric tests" and correctly interpret and document results of tests (Watts et al., 2019, p. 507). While these questions are related to some specific diagnostic tasks, the instrument covers a wide variety of counseling tasks and does not focus on diagnostic self-efficacy. There are several diagnostic tasks such as consideration of culture, differential diagnosis, ordering and coding diagnosis, and utilizing the *DSM* that are not included.

One self-efficacy instrument that does address perceived confidence in a provider's ability to diagnose specific mental disorders is the Mental Illness Management Scale (MIMS; Loeb et al., 2017a, 2017b). This instrument was designed for use by physicians in primary care settings. It asks about perceived self-efficacy in diagnosing and treating bipolar disorder, generalized anxiety disorder, and major depressive disorders. It also asks about their perception of their ability to have conversations with psychiatrists and psychologists about caring for a client with bipolar disorder, their ability to treat someone with chronic medical disorders and mental health disorders, and their ability to address suicidality in a client. While these are important questions, the survey does not specifically address which bipolar disorder it is referring to, the physician's confidence in using the *DSM*, or their perceived ability to differentiate between disorders with similar symptoms constellations.

In the Multicultural Counseling Self-Efficacy Scale -Racial Diversity Form, Sheu & Lent (2007, 2012) include questions related to considering cultural factors when conceptualizing client concerns and assessing for *DSM-IV* culture bound syndromes. This information can be helpful in the creation of a more thorough diagnostic specific self-efficacy scale. Overall, the existing counselor self-efficacy scales offer many useful pieces, but do not thoroughly and specifically assess diagnostic self-efficacy.

Rationale

Diagnosis is a critical aspect of a counselor's work and serves a wide range of clinical, research, and financial purposes (Dailey et al., 2014; Eriksen & Kress, 2005, 2006; Neukrug, 2022; Neukrug & Fawcett, 2020; Peterson, 2015). Self-efficacy has been shown to be an important factor in motivation, attitude, and other factors related to task completion (Bandura, 1997, 2006; Bandura et al., 2003). While the existing self-efficacy scales are valuable tools, there

is not currently a scale that explores counselors' self-efficacy related to specific diagnostic tasks. The literature is also lacking information about which *DSM-5* diagnostic categories counselors feel most confident diagnosing. This information could be invaluable to counselor educators and supervisors on both large and small scales.

Identifying which diagnostic classifications counselors are less confident in diagnosing and the specific diagnostic tasks they are less confident performing can help counselor educators and supervisors recognize areas for further training, consultation, and encouragement. Counselor educators and supervisors could incorporate self-efficacy building activities such as mastery experiences, social modeling, and social persuasion (Bandura, 1997; Bandura et al., 2003). This could be applied in individual supervision or in a classroom or program specific setting. The instrument and survey could be administered over time to assess for progress.

On a larger scale, patterns across data could help inform counselor education curriculum and supervision requirements. For example, if the majority of participants indicate low self-efficacy related to differential diagnosis, counselor education programs could establish ways to incorporate self-efficacy building activities, which are in line with the learning activities utilized in a constructivist approach to teaching diagnosis (Kress & Eriksen, 2010). By establishing the factorial structure, reliability, and validity of the DSES, I aim to develop a tool which can help inform diagnostic training.

Conclusion

The diagnostic process and the DSM have evolved throughout the history of the mental health field (APA, 2013; Horwitz, 2021; Neukrug, 2022; Neukrug and Fawcett, 2020). Accurate diagnosis is an important aspect of client treatment for a variety of reasons, and misdiagnosis can have significant consequences for the client (APA, 2013; Eriksen & Kress, 2005, 2006; Neukrug,

2022). Diagnosis is a complex task (APA, 2013), and self-efficacy is considered an important factor in the successful completion of tasks (Bandura, 1997, 2006; Bandura et al., 2003). Thus, it stands to reason that diagnostic self-efficacy would be an important factor in successfully diagnosing mental health disorders. Through this literature review, I found the counseling self-efficacy literature is lacking a measure to gauge the diagnostic self-efficacy of counselors. In the methodology chapter of this proposal, I explain how I plan to bridge this gap in this study.

CHAPTER THREE

METHODOLOGY

In this chapter, I provide a detailed description of the research design and data analysis I utilized throughout this study. I explain the development of and validation of scores on an instrument to examine the diagnostic self-efficacy of mental health counselors. I share how I used the MEASURE Approach to instrument development and score validation (Kalkbrenner, 2021a) to guide the process. I also discuss how I gathered information related to confidence diagnosing mental health disorders within specific *DSM-5* diagnostic categories. Finally, I note the methodological limitations of this study.

Research Method

Survey research is an efficient, flexible, and effective research design which can allow for generalizability (Ruel et al., 2016). This type of research allows a large amount of research to be gathered with relative ease. For survey research to be effective and accurately measure the defined construct, the survey instrument must be well designed. I employed Kalkbrenner's (2021a) MEASURE Approach to instrument development and score validation to develop and initially validate scores on a screening tool for measuring mental health counselors' diagnostic self-efficacy, the Diagnostic Self-Efficacy Scale (DSES). The seven, empirically based steps of the MEASURE Approach and how I accomplished each are outlined in the following sections. I share how I utilized the MEASURE approach and an additional survey to answer the following research questions:

- What is the underlying factor structure of the DSES?
- Which *DSM-5* diagnostic categories do a sample of clinical mental health counselors report being most and least confident diagnosing?

Make the Purpose and Rationale Clear

The first step of the MEASURE Approach is to “make the purpose and rationale clear” (Kalkbrenner, 2021, p.3). To complete this step, I conducted a thorough review of the existing literature and assessment tools. Through this process I established that the measurement literature is lacking a self-efficacy tool that captures the diagnostic self-efficacy of counselors related to specific diagnostic tasks. Due to the multiple benefits of self-efficacy identified through the literature review, measuring a counselor's diagnostic self-efficacy has potential to provide important information to inform counselor education and supervision.

Establish Empirical Framework

After establishing a rationale for an instrument development and score validation study, the next step in the MEASURE Approach is to establish the empirical framework that will be utilized to guide the item development process (Kalkbrenner, 2021a). I established the framework below based off existing literature, which informed the development of the DSES.

The content of the DSES items is based on a specific, critical, complex, and often mandatory task in the counseling profession; diagnosis (Dailey et al., 2014; Eriksen & Kress, 2005, 2006; Neukrug 2019, 2022; Neukrug & Fawcett, 2020). The APA (2013) outlines a variety of tasks involved in the diagnostic process. Counseling texts and scholarly works also include guidance on specific tasks within the diagnostic process. These tasks include the assessment of the whole person (APA, 2013; Eriksen & Kress, 2005, 2006; Neukrug, 2022; Neukrug & Fawcett, 2020); gathering information and using appropriate assessment tools (APA, n.d., 2013; Karg & Wiens, 2005; Mears, 2015); considering *DSM-5* diagnostic criteria (APA, 2013; Neukrug, 2022; Neukrug & Fawcett, 2020); coding and ordering diagnoses (APA, 2013;

Neukrug, 2022; Neukrug & Fawcett, 2020). Each of these tasks was explored in more detail in chapter 2.

In addition to the diagnostic tasks for counselors outlined by APA (2013), I built the empirical framework of this study upon the notions that self-efficacy is a person's belief that they have the ability to achieve a specific task and that self-efficacy plays a role in the successful completion of the identified task (Bandura, 1997, 2006; Bandura et al., 2003). Self-efficacy is an important factor in successful task completion for a variety of reasons. Individuals with high self-efficacy are more likely and more motivated to attempt the task, even when it is difficult (Bandura, 1997, 2006; Bandura et al., 2003). They are more likely to put in increased effort in the face of setbacks and tend to recover from setbacks quickly.

Bandura highlights that while possessing the necessary skills is important, it can be overshadowed by low self-efficacy (Bandura, 1997). Thus, someone who has the knowledge needed to perform the skill may still perform the skill poorly if they do not believe they can execute the skill. Related to this assertion by Bandura (1997), Johnson and Stuart (2008) broke self-efficacy into three domains (comfort level, skill, and confidence) when assessing the role specific self-efficacy of supervisors. In doing this, they were able to measure self-efficacy across roles and explore sources of perceived competence. Based on the collective empirical framework, the intended construct of measurement is diagnostic self-efficacy, which can be defined as a counselor's belief that they can successfully complete the task of accurately diagnosing mental health disorders. I further operationalized the content areas and domains of the DSES through the development of a theoretical blueprint.

Articulate Theoretical Blueprint

Articulating a theoretical blueprint assists in enhancing the content validity of an instrument (Kalkbrenner, 2021a; Menold, 2015). Using the theoretical framework as a foundation, the blueprint allows the researcher the opportunity to create domain and content areas and determine the proportion of items in each area. This serves as a guide for instrument creation. In the blueprint (see Figure 3.1), I outlined the content areas and domains explored by each question in the DSES initial item list. Content areas are the subject areas that comprise the measure's construct, while domain areas are the application-based areas of the measure's construct (Kalkbrenner, 2021a). For the DSES, content areas are the specific tasks that make up the overall task of diagnosis and the domain areas are aspects of self-efficacy.

My aim in the creation of the current study was the development and validation of scores on an instrument that measures counselors' diagnostic self-efficacy specifically. In line with Bandura's (1997, 2006) assertion that self-efficacy scales should be task specific, the content areas I included were chosen due to their significance as tasks which make up the diagnostic process. These content areas are based on the current literature and include: assessment of the whole person (APA, 2013; Eriksen & Kress, 2005, 2006; Neukrug, 2022; Neukrug & Fawcett, 2020); gathering information and using appropriate assessment tools (APA, n.d., 2013; Karg & Wiens, 2005; Mears, 2015); considering *DSM-5* diagnostic criteria (APA, 2013; Neukrug, 2022; Neukrug & Fawcett, 2020); coding and ordering diagnoses (APA, 2013; Neukrug, 2022; Neukrug & Fawcett, 2020). One way a theoretical blueprint enhances content validity is by allowing test developers to weigh the relative importance of each intersecting content and domain area (Kalkbrenner, 2021a). The approximate proportion of items I planned to develop for each intersecting content and domain are depicted in Figure 1. The number of items for each

intersection are estimates based on the number of specific subtasks outlined in the literature related to each content area. The content areas assessment of the whole person, gathering information, and considering diagnostic criteria will contain a similar number of items because there are more subtasks outlined under each of these content areas. Coding and ordering diagnoses will have approximately a quarter of the questions because the subtasks in this content area are limited when compared to the subtasks found in the other four content areas. There was also a content area that focused on the overall diagnostic process. This was the most general content area and does not include specific diagnostic tasks. It had fewest questions, as it serves as an overall snapshot and other content areas look at the specific diagnostic tasks in more detail.

I based the domain areas of this instrument on Bandura's (1997) assertion that possessing skills alone is not enough; one must believe they can implement their skills. Johnson and Stuart (2008) list this assertion as the guiding factor in their decision to divide self-efficacy into three domain areas (comfort-level, skill, and confidence level) in their study related to role specific supervisor self-efficacy. For each item, Johnson and Stuart (2008) asked participants to rank their comfort level, skill level, and confidence level. I was influenced by their decision to divide self-efficacy into multiple domains. Bandura (1997) discusses declarative knowledge and procedural knowledge. Declarative knowledge is factual information about a task, while procedural knowledge is related to task implementation. Complex tasks require both for successful completion. Thus, it is important to consider both when assessing for diagnostic self-efficacy. Counselors may believe they know facts about diagnosis, but do not know how to diagnose a mental health disorder or vice versa. Based on this information, I included two domain areas in the DSES blueprint: confidence in task knowledge/understanding and confidence in task application. The first represents declarative knowledge and the second

represents procedural knowledge. Following the example of Johnson and Stuart (2008), I included the same number of items in each domain due to the importance of each.

Figure 3.1

Theoretical Blueprint for The Diagnostic Self-Efficacy Scale

	Confidence in Knowledge/ Understanding	Confidence in Application	Total
Overall Diagnostic Ability	2	2	4
Assessment of Whole Person	12	12	24
Gathering Information	12	12	24
Consider Diagnostic Criteria	12	12	24
Code and Order Diagnoses	3	3	6
Total	41	41	82

*Note: The numbers represent the approximate number of items that will be developed for each intersecting content and domain area.

Synthesize Content and Scale Development

Once a blueprint has been established, it can be used with the theoretical framework to synthesize content for the instrument (Kalkbrenner, 2021a). As suggested by Kalkbrenner (2021a), I enlisted a research team member to engage in consensus item creation. We each created our own list of as many items as possible for the instrument based on the existing literature. We did so with the knowledge many of these items would be eliminated throughout the following stages of instrument development (DeVellis, 2016; Kalkbrenner, 2021a). We then

met to review the items, deleting any redundant items (Kalkbrenner 2021a). From the remaining items, we selected those that best represented the empirical framework and blueprint.

Throughout the item creation process, we kept in mind several item creation guidelines. We aimed to make items user friendly by considering factors such as formatting consistency, reading level, and item clarity (Kalkbrenner, 2021a; Morris & Wester, 2018; Rue et al., 2016). We also worked to avoid items that asked about multiple ideas, also known as double-barreled items (Morris & Wester, 2018; Rue et al., 2016). Bandura (2006) notes the importance of language when creating items related to perceived self-efficacy, including the importance of asking about what the individual can currently do instead of what they will do or may be able to do at a future date. The creation of brief questions and use of item stems can help minimize survey fatigue (Kalkbrenner, 2021a). When considering these two points, I decided to initially utilize “Currently, how confident are you that you...” as an item stem for all items on the DSES. Special attention was paid to the ordering of items, which we initially grouped together based on the content areas outlined in the theoretical blueprint and then randomized before administration to reduce the chances of creating a response set.

Bandura (2006) recommends creating self-efficacy scales using an incremental, uni-polar response scale that measures perceived current ability. To meet these criteria, I utilized Likert scaling for the DSES items. Likert scaling is commonly used in the social sciences and is especially appropriate for measuring constructs related to an individual's beliefs (DeVellis, 2016; Kalkbrenner 2021a). Likert scales utilize statements with a response scale indicating various, anchored levels of agreement (DeVellis, 2016; Kalkbrenner, 2021a; Morris & Wester, 2018). I determined the DSES would utilize a 5-point Likert scale. Adapted from Vagias (2006), the initial anchors established for the scale were: 1 = *Not Confident At All*, 2 = *Slightly Confident*, 3

= *Moderately Confident*, 4 = *Confident*, and 5 = *Extremely Confident*. Ultimately, scale development resulted in 93 items, which were then sent to experts for review.

Use Expert Reviewers

Morris and Wester (2018) note that it can be easy for researchers to “get too close” to a topic when developing a survey (p.55). This can result in the researcher overlooking an important item or believing their items read a certain way when they do not. One way to help address these concerns is to utilize expert review. Expert review is used in instrument development to establish face and content validity (Ruel et al., 2016; Kalkbrenner 2021a). Expert review can aid in identifying and correcting concerns related to question wording, instrument layout, and possible respondent burden (Ikart, 2019). While instrument developers ultimately decide what they believe constitutes an expert, it is often someone with 10 or more years’ experience in their area of expertise (Ikart, 2019). I utilized expert reviewers with at least 10 years’ experience and at least two peer reviewed publications related to their areas of expertise.

While the number of expert reviewers utilized can vary, it is generally between three and five (Ikart, 2019; Kalkbrenner, 2021a). Each expert reviewer falls into one of two categories: content/subject matter experts and survey and questionnaire experts. Survey and questionnaire experts have extensive knowledge and experience related to item development and instrument creation, while subject matter experts possess substantial knowledge about the specific constructs an instrument explores. Because the construct explored by the DSES is made up of two main components (self-efficacy and mental health diagnosis), three reviewers were utilized for the expert review of DSES items. Two subject matter experts were utilized, one expert in mental health diagnosis and one expert in self-efficacy. The final reviewer was a survey or questionnaire expert who provided feedback related to the psychometrics of the instrument.

I identified potential expert reviewers through a review of related literature and recommendations from individuals within my network (Kalkbrenner, 2021a). I reached out to potential expert reviewers via email to request their assistance. Once the expert review panel was established, each expert reviewer received a copy of the initial DSES item list (Appendix A) in a word document, along with expert review scoring sheet (Appendix B) to rate the instrument and provide feedback. The expert review scoring sheet utilized the following anchors to assess content and readability: NA = *Not Applicable*, 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, 5 = *Strongly Agree* (Vagias, 2006). Expert reviewers were also given the option of providing item specific feedback (Kalkbrenner, 2021a) via the comments tool on the initial DSES item list word document.

After receiving feedback from the expert review panel, I applied feedback related to minor changes, such as item wording. One particularly noteworthy piece of feedback from an expert reviewer was related to the inclusion of confidence in knowledge items. The expert reviewer felt this was outside the realm of self-efficacy. I met with the dissertation chair, who also meets the criteria set for expert reviewers, to further explore the expert feedback and eliminate items. Ultimately, we removed the knowledge/understanding questions and other questions that we felt were repetitive.

Following the expert review process, the DSES was 42 items. The theoretical blueprint was significantly changed (See Figure 3.2). An expert reviewer provided feedback regarding the clarity of the initial Likert scale, and thus the research team adjusted the DSES Likert Scale to include a neither confident or not confident option to create the finalized Likert scale for the DSES: 1 = *Not Confident at All*, 2 = *Slightly Confident*, 3 = *Neither Confident or Not Confident*, 4 = *Confident*, and 5 = *Extremely Confident*. The DSES item stem was adjusted to “Currently, how

confident are you that you can ...” for the finalized instrument. I then moved forward to step six of the MEASURE approach, recruit participants.

Figure 3.2

Updated Theoretical Blueprint for the Diagnostic Self-Efficacy Scale

	Confidence	Total
Overall Diagnostic Ability	1	1
Assessment of Whole Person	8	8
Gathering Information	19	19
Consider Diagnostic Criteria	9	9
Code and Order Diagnoses	5	5
Total	42	42

Recruit Participants

Prior to recruiting participants for this study, I submitted all necessary materials to Old Dominion University’s Human Subjects Review Board for Institutional Review Board consideration (Kalkbrenner 2021a). The study was deemed exempt (see Appendix C), and I began pilot study participant recruitment.

Pilot Study

For initial pilot testing, my goal was to recruit approximately 40 participants. All participants in the pilot study had to meet one of the following criteria: be a current student in a counseling master’s degree program, be a counselor educator, or be counselor. The participation

criteria were broader than the criteria to participate in the primary study to allow for a larger range of feedback from counselors of different levels. Participants were recruited through emails to individuals within my network and counseling students and faculty. Individuals were also encouraged to pass on the recruitment information to others in their networks. The pilot study (See Appendix D) consisted of an informed consent, a demographic questionnaire, a perceived diagnostic competence rating scale, the DSES, and four feedback questions. Participants were also provided space to comment on each question. There was no incentive offered for pilot study completion. Ultimately, there were 38 completed pilot study responses.

I reviewed pilot study data to identify technological issues, problems with using the scale, and any feedback from participants about the readability of the items. I found most participants (79.0%) completed the pilot study in 20 minutes or less. The median amount of time for completion was 9 minutes at 44 seconds. There were 3 responses that had significantly greater completion times of over six hours. After I removed these outliers, the mean completion time was 13 minutes and 43 seconds.

I reviewed the responses to the four feedback items (See Table 3.1) and any written feedback on individual items. There were no consistent concerns related to any of the specific items or feedback areas, thus no adjustments were made related to the pilot study data. After pilot testing data was considered, I began the recruitment process for the primary study.

Table 3.1*Descriptive Statistics for Pilot Study Feedback Items*

	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
The items on the instrument read smoothly	0 (0%)	0 (0%)	1 (2.6%)	19 (50.0%)	18 (47.4%)
The scale on the instrument is clear.	0 (0%)	2 (5.3%)	2 (5.3 %)	15 (39.5%)	19 (50.0%)
The directions for participants on the instrument are clear	0 (0%)	0 (0%)	1 (2.6%)	16 (42.1 %)	21 (55.3%)
The items on the instrument effectively measure diagnostic self-efficacy	0 (0%)	0 (0%)	5 (13.2%)	12 (31.6%)	21 (55.3%)

Primary Study Sampling

To ensure participants were mental health counselors who had education that met similar standards, participants in the study were required to be master's level counselors who obtained their master's degree from a CACREP accredited clinical mental health counseling program. To establish the underlying factor structure of the DSES, I needed to recruit enough participants to conduct exploratory factor analyses. While there is no cap on the number of participants, a minimum of 10 participants per item or 200 participants, whichever is greater, is needed for

factor analysis (Kalkbrenner, 2021a). Based on this information and the number of items on the DSES, my goal was to recruit a minimum of 420 participants. For ease of access to a large number of participants, all sampling procedures were conducted online (Rue et al., 2016) and non-probability convenience sampling was utilized to recruit participants (Rue et al., 2016).

I posted the recruitment letter (see Appendix E) in the American Mental Health Counselors Association's open forum, which is distributed to members daily via email. I repeated this post two additional times, with multiple weeks between each post. I also emailed the recruitment letter to a counselor educator list-serv, CESNET, a total of three times with multiple weeks between each email. I sent a one-time email to the CACREP contact for each CACREP accredited clinical mental health counseling program in the United States, requesting that they share the email with their alumni. I invited counselors within my network to participate via email and social media. I posted the recruitment letter in the ACA Connect "Calls for Study Participants" forum and had it posted to the International Obsessive-Compulsive Disorder Foundation's research seeking participation page. I also posted the recruitment letter to my personal Facebook and Linked-in and in therapist specific Facebook groups I belong to. In a form of snowball sampling, the recruitment letter included an invitation to pass along the study information to others who may wish to participate (Rue et al., 2016). Individuals in my network were also asked to pass along the study information. This resulted in the study information being shared, including posts to various therapist specific Facebook groups, Linked-in profiles, and Twitter.

If an individual elected to participate, they clicked the provided study link that directed them to the informed consent (See Appendix F). If they agreed to the terms laid out in the informed consent, they proceeded to the demographic questionnaire (See Appendix G), followed

by a rating scale of perceived competence in diagnosing *DSM-5* diagnostic areas (see Appendix H), and then the DSES (see Appendix I). Due to the multiple benefits of electronic survey platforms, the informed consent, demographic questionnaire, and DSES were completed via Qualtrics (2020; Kalkbrenner, 2021a). Participant responses were anonymous to promote honest answers and help avoid social desirability bias (Rue et al., 2016). Responses were collected until it was clear at least 420 responses which met participation criteria had been collected.

Incentive Distribution

All participants who met the participation criteria, completed the informed consent, demographic questionnaire, diagnostic rating scale, and DSES in their entirety were eligible to participate in the incentive drawing for one of five \$20.00 Amazon gift cards. Anyone who completed all study materials was redirected to a separate Qualtrics survey (Appendix J) that provided the opportunity to opt in or out of the drawing. The purpose of the redirection to another survey was to help enhance anonymity of responses. To be included in the drawing individuals provided were asked to provide their first name and email address. After the completion of the study, individuals who opted out, were believed to be bots or human bots, or who opted in but did not provide an email address were removed. The remaining responses were randomized, assigned a number, and a random number generator was used to select the five winners. I purchased the gift cards and emailed them to winners.

Cleaning the Data

To determine the number of usable responses, I cleaned the data to remove responses that: 1) were suspected to be bots or human bots, 2) did not meet the participation criteria, 3) selected no on the informed consent, or 4) or did not complete their response. I was able to easily remove responses that were not completed or where the individual had selected no to the

informed consent. To remove responses that did not meet the participation criteria, I reviewed participant responses to the demographic question “If your master’s degree is not in clinical mental health counseling, please specify specialty area.” I removed any response that indicated the persons degree was not in clinical mental health (e.g., social work, psychology). I also removed any response where the participant wrote responded to the question in a that made it unclear if their degree was in clinical mental health (e.g., LPCC as degree name, yes, no). Individuals who indicated they had two degrees or a degree that incorporated an additional specialty (e.g., art therapy and clinical mental health) were only included if the degree name specifically stated mental health and/or clinical counseling. The most complicated aspect of cleaning the data was removing responses from suspected bots and human bots.

Responses from bots and human bots are a disadvantage of conducting research via online platforms (Yarrish et al., 2019). Bots are non-human computer programs that are designed to complete forms quickly. Human bots are people who are able to repeatedly and quickly complete surveys. Both bots and human bots complete online surveys with the hope of obtaining the associated incentive. Yarrish et al. (2019) share several red flags that can indicate a response may be from a bot or human bot. These include short response times, answers that are impossible or do not make sense, and very similar answers to open-ended questions across multiple responses. I reviewed all completed, recorded responses to check for suspected bot and human bot responses. As I reviewed the data, I found large influxes of responses around the dates the study information was posted on Twitter and Linked-in. Most of these responses appeared to be bot or human bot responses based on the warning signs noted above. Many had responses to questions that were impossible (e.g., clusters of responses where the respondent reported receiving their master’s degree prior to their birth), were extremely similar (e.g., large clusters of

responses that all came in at the same time and wrote in the same age), or had very short response times to complete all study materials. In reviewing the responses, hundreds were eliminated as suspected bots or human bots. I erred on the side of caution, eliminating all suspicious responses. Ultimately, I was left with 450 usable responses.

Evaluate Validity and Reliability

In the final step of the MEASURE approach, I evaluated the validity and reliability of scores on the DSES using exploratory factor analysis. I utilized IBM SPSS to perform exploratory factor analytic testing. It is important to understand the purpose of validity and reliability evidence and how the internal structure validity of scores on the DSES was established.

Validity Evidence

When creating an instrument, it is important to determine whether it measures what it is intended to measure, or the validity evidence of the instrument scores (Kalkbrenner, 2021a, 2021c). One form of validity evidence that is used to assess whether an instrument measures the specific latent variable intended is construct validity. As the DSES intends to measure a latent variable, self-efficacy, establishing the construct validity of the instrument scores was imperative. The two most common ways of showing construct validity are establishing internal structure validity and showing relations with other theoretically relevant constructs. In this study, I focused on the internal structure validity of scores on the DSES.

Internal Structure Validity. The internal structure validity of scores explores not only whether the instrument items group together, but how they group together to create factors (Kalkbrenner, 2021c). Factors are a combination of items from the instrument that group together because they have similar meaning. To establish internal structure validity of scores on the DSES, I utilized

exploratory factor analysis, with plans to conduct confirmatory factor analysis in a future study (Bandalos & Finney, 2019; Kalkbrenner, 2021a, 2021c).

Exploratory Factor Analysis. Exploratory factor analysis (EFA) is a multistep analysis that reveals which items group together to form factors (Kalkbrenner, 2021a, 2021c; Mvududu & Sink, 2013). These factors are aspects that make up the overall construct the instrument aims to measure (Beavers et al., 2013; Kalkbrenner 2021a). After cleaning the data, I met with the methodologist to engage in the EFA process. Prior to conducting analyses, the methodologist and I checked for missing values and found a missing values rate of 0% for all responses. We then Winsorized the data to address outliers (Blaine, 2018). We Winsorized less than 10% of the data. Finally, we conducted the steps first steps of EFA as follows: preliminary tests, factor extraction, factor retention, and factor rotation (Kalkbrenner 2021a, 2021c). I then worked with another research team member to name the rotated factors.

The methodologist and I first conducted three preliminary tests to determine if the data were appropriate for factor analysis (Beavers et al., 2013; Kalkbrenner 2021a; Mvududu & Sink, 2013.) The first was the inter-item correlation matrix. This was used to reveal items that had a high correlation with other items, thus are repetitive, and items that have a low correlation, or poor fit, with other items. If every item inter-correlates between $r = .20$ and $r = .80/.85$ with at least three other items, the inter-item correlation matrix is considered factorable (Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017). Items below this range are considered to be a poor fit and if many items fall above this range, it can indicate multicollinearity (Mvududu & Sink, 2013). Ideally an item would have a correlation coefficient between $r = .20$ and $r = .80/.85$ with five or more other items to be considered a factor, but as few as three items can comprise a

factor (Kalkbrenner, 2021c). Items that do not have a correlation coefficient within this range with at least three other items are removed.

After the inter-item correlation matrix was completed, the methodologist and I computed Bartlett's Test of Sphericity. This test was used to evaluate whether the inter-item correlation matrix was an identity matrix, or a matrix in which the item correlations are zero (Kalkbrenner, 2021c; Mvududu & Sink, 2013). Because identity matrices are unfactorable (Kalkbrenner, 2021c; Mvududu & Sink, 2013), I hoped to find a significant *p*-value which would indicate the matrix is not an identity matrix (Kalkbrenner, 2021c). Lastly, we conducted a Kaiser-Meyer-Olkin (KMO) Test for Sampling Adequacy (Kalkbrenner 2021a, 2021c). This evaluated shared variance of matrix items (Kalkbrenner, 2021c; Watson, 2017) with a score ranging from 0 to 1 (Watson, 2017). Kaiser (1974) describes the interpretations of KMO scores as: "in the .90s – marvelous, in the .80s – meritorious, in the .70s – middling, in the .60s – mediocre, in the .50s – miserable, below .50 – unacceptable" (p. 35). All three preliminary tests produced satisfactory results; thus, we moved forward and compute an EFA.

In the factor extraction stage of EFA, we extracted factor solutions by separating the shared variance of each item from its unique variance and error variance (Kalkbrenner, 2021c; Mvududu & Sink, 2013). These factor solutions help identify the underlying factor structure of the items (Mvududu & Sink, 2013). Previously, principal component analysis (PCA) was the primary method used by the social sciences for factor extraction. PCA extracts shared, unique, and error variance, which makes it more appropriate as a data reduction tool because it is not possible to determine which type of variance is responsible for the factor structure (Kalkbrenner, 2021c). We considered two other options for factor extraction, principal axis factoring (PAF) and maximum likelihood (ML) factor extraction (Kalkbrenner, 2021c; Mvududu & Sink, 2013;

Watson, 2017). For data that have a fairly normal distribution with kurtosis and skewness and values $\leq \pm 1$, the ML factor extraction method is the best fit (Kalkbrenner, 2021c; Watson, 2017). PAF is a more appropriate choice if the data are moderately deviant from normality (skewness $< \pm 2$, kurtosis $< \pm 7$), as PAF is robust to moderate deviations from normality (Kalkbrenner 2021c; Mvududu & Sink, 2013; Watson, 2017). We investigated the data for extreme deviations in normalization and found none. However, we decided to utilize PAF because it is more resistant.

After factor extraction is completed, the next step in EFA is factor retention, or retaining the simplest factor solution (Kalkbrenner, 2021c; Watson, 2017). Watson (2017) notes that this is a particularly important stage of EFA, as it can have a great impact on the analysis outcome. In factor analysis, the goal is to account for the maxim variance possible (at least 50 and 75%+ is ideal) while retaining the fewest number of factors possible (Kalkbrenner, 2021c; Mvududu & Sink, 2013). There are four criteria that are recommended for use in deciding how many factors to retain: Kaiser criterion, meaningful variance accounted for, scree plot, and parallel analysis (Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017).

First, we considered the Kaiser criterion, which asserts that factors with eigenvalues (EV) ≥ 1 should be retained. Kalkbrenner (2021c) describes an eigenvalue as representing how much of the factor matrix's total variance is accounted for by each factor. The second criteria I considered is the percentage of variance among items that is explained by each factor. This criterion is based on the idea that factors are only meaningful if they make up a large enough proportion of the variance, or at least 5% of the total model variance (Kalkbrenner, 2021c; Mvududu & Sink, 2013). Next, we created a Scree plot which plots the extracted factors based on eigenvalues in descending order. A distinct bend, or elbow, will be visible on the Scree plot

(Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017). Factors to the left of the elbow are generally retained (Watson, 2017). Lastly, we conducted parallel analysis (Kalkbrenner, 2021c; Watson, 2017). To do so, we generated EVs from a random data set (Kalkbrenner, 2021c). The data set will be based on the sample data's number of items and sample size. We retained factors from the sample data that have EVs larger than the EVs of the random data set. These factors were retained because they explain more variance than one would expect to occur by chance (Kalkbrenner, 2021c). If the four criteria produce conflicting results, often the simplest factor solution is retained (Kalkbrenner, 2021c). It is also possible to retain multiple factor solutions in EFA, as the internal structure of scores can produce more than one acceptable model. In these instances, CFAs can be computed to confirm and identify the superior model. We retained multiple factor solutions, with the goal of conducting CFA in a future study to identify the superior model.

After factor retention was complete, we began factor rotation. The purpose of factor rotation is to explore how items are associated to factors, or whether they load to certain factors (Kalkbrenner, 2021c; Watson, 2017). Factor loading scores can range from 0 (low) to 1 (high). In this process, we aimed to find simple structure. In simple structure, items have a high factor loadings on one factor and low factor loadings to all other factors (Kalkbrenner, 2021c; Watson, 2017). To help find this structure, factors are rotated on vectors (Kalkbrenner, 2021c; Mvududu & Sink, 2013). Rotation methods are either orthogonal or oblique. Vectors are rotated at 90-degree angles in orthogonal rotation in an attempt to minimize covariation of factors. If the constructs being measured are distinct (i.e., uncorrelated), orthogonal rotation methods are most appropriate. Because of the nature of counseling research, constructs are often interrelated and orthogonal rotation methods are not appropriate. Oblique rotations methods are more appropriate

for studies where there is less distinction between factors. The vectors are rotated less than 90 degrees to allow for some covariance (Kalkbrenner, 2021c; Mvududu & Sink, 2013). The constructs explored by the DSES will likely be intercorrelated, thus we utilized an oblique rotation method (direct oblimin) to determine the factor structure that best fit the data (Mvududu & Sink, 2013).

After the rotation of factors, we evaluated the commonality values (h^2) of each item. If the item had an h^2 value between .30 and .99 it was retained (Kalkbrenner, 2021c; Watson, 2017). If the h^2 value is too high (> 1.0), it could indicate problems with sample size or factor extraction and those with h^2 values of less than .30 were removed (Kalkbrenner, 2021c; Watson, 2017). We removed items one at a time and recalculate the EFA after each removal.

There are two matrices produced by oblique factor rotation: the pattern matrix and the structure matrix (Kalkbrenner, 2021c; Mvududu & Sink, 2013). The structure matrix shows the correlation between all factors and items, while the pattern matrix depicts how items and one factor relate while controlling for relationships with other factors. We reviewed both matrices but only interpreted the matrix which showed the simplest structure with minimum cross-loadings. If items did not show a factor loading of $\geq .40$, we deleted them. An item with factor loadings $> .35$ on at least two factors is indicative of cross-loading (Beavers et al., 2013; Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017). Cross-loading items were also deleted. We deleted items one at a time and recalculated the EFA will after each deletion.

The subjective process of naming the rotated factors is the final step in the EFA process (Kalkbrenner, 2021c; Mvududu & Sink, 2013). This process should be rooted in the theoretical framework and reviewed literature informing the study (Kalkbrenner, 2021c; Mvududu & Sink, 2013). The label should reflect the meaning of the items grouped on the factor. I worked with a

research team member to establish brief names for each factor. We completed this task by individually naming each factor before coming together to come to agreement about the factor names. After completing EFA, I explored reliability evidence.

Reliability Evidence

Reliability refers to the consistency of an instrument's scores (Kalkbrenner, 2021a). After establishing the validity of the instrument scores, it is critical to test their reliability. There are several types of reliability evidence, but because I only gathered data once, I focused on internal consistency reliability (Bardhoshi & Erford, 2017; Kalkbrenner, 2021a). This type of reliability evidence explores how well items “hang together or measure each other” (Bardhoshi & Erford, 2017, p. 257). I explored the internal consistency reliability of the DSES scores using coefficient alpha and coefficient omega (Kalkbrenner, 2021b).

In social sciences research, coefficient alpha, or Cronbach's alpha, is the most commonly used estimate of internal consistency reliability (Kalkbrenner, 2021b). Cronbach's alpha can be used to evaluate internal consistency reliability of instruments that use scales with more than three responses. Since the DSES uses a 5-point Likert scale, Cronbach's alpha can be considered. There are several assumptions that must be met for the use of Cronbach's alpha, including: (a) unidimensional scale, (b) unit-weighted scores, (c) essential tau equivalence, (d) items are measured on a continuous level scale and consistent with a normal distribution, and (e) uncorrelated error (Kalkbrenner, 2021b). If these assumptions are not met, it can result in the inflation or underinflation of internal consistency reliability estimates.

Another option of evaluating internal consistency reliability is coefficient omega, which is a generalized form of Cronbach's alpha (Kalkbrenner, 2021b). In situations where all of Cronbach's alpha's assumptions are met, the results of Cronbach's alpha and coefficient omega

will be the same. Because coefficient omega only requires the assumption of unidimensionality to be met, it can be used in cases where the other assumptions required for the use of Cronbach's alpha are not present. Thus, if the scores for both Cronbach's alpha and coefficient omega are computed and are not equal, one can assume at least one of the assumptions needed to utilize alpha as reliability evidence is not present. For this study, I computed both coefficient alpha and coefficient omega. If the coefficient scores differed, I referred to the coefficient omega score for internal consistency reliability evidence.

Perceived Diagnostic Competence Survey

To gather information about which diagnostic categories counselors were most confident diagnosing mental health disorders from, I included a brief survey after the demographic questionnaire. This survey asked participants to rate their confidence in diagnosing disorders in each of the *DSM-5* diagnostic categories using the following scale: 1 = *Extremely Not Confident*, 2 = *Not Confident*, 3 = *Slightly Not Confident*, 4 = *Neither Confident or Confident*, 5 = *Slightly Confident*, 6 = *Confident*, and 7 = *Extremely Confident*. I explored the descriptive data obtained from this question to answer the second research question.

Limitations

This study had several potential methodological limitations. When creating questions in step three of the measure approach, I engaged in consensus item creation with one research team member. While feedback on the items was obtained from others throughout the process (e.g., expert reviewers, pilot study participants), more items may have been developed if I had included more individuals in consensus item creation.

This study used non-probability convenience and snowball sampling, which can result in participants who share characteristics (such as involvement in an organization) and may miss

other individuals who fit the participant criteria (Rue et al., 2016). Because random or probability sampling is not used, there may be limits to the generalizability of the study. Another possible limitation is social desirability bias, the possibility that an individual may have answered questions in a way they believed would be viewed favorably (Morris & Wester, 2018; Rue et al., 2016).

Bot and human bot responses posed an additional limitation to the sampling process. There is the possibility that in attempting to remove suspected bot or human bot responses, legitimate participant responses may have been removed. There is also a chance that some bot or human bot responses may not have been excluded. I attempted to minimize the impact of bot or human bot responses by erring on the side of caution and removing any response that exhibited warning signs (Yarrish et al., 2019).

One response was included for a participant who graduated in 1973, which was prior to the start of CACREP accreditation in 1981 (CACREP, 2022). It was not intentionally included, but the program may have been accredited by ACEs prior to the implementation of CACREP accreditation (CACREP, 2022) or may have become CACREP accredited at a later date, which may have led the participant to feel they met the participation criteria.

Time constraints and difficulty obtaining participants resulted in the decision not to complete CFA at this time. I plan to complete CFA in the future to determine which of the extracted factor structures is the superior model (Kalkbrenner, 2021c). The construct validity of scores on the DSES could be strengthened by the addition of convergent validity testing, which will be conducted in future studies (Kalkbrenner 2021a).

An unforeseen limitation is the upcoming release of the *DSM-5 Text Revision* in March 2022. There are multiple noted changes to the manual, but at the time of this proposal the

updated version has not been released (Moran, 2021). It is also unclear when use of the new manual will be widespread among counselors. Thus, this study proceeds with the *DSM-5* as the current edition.

Conclusion

In this study, I focused on the development and validation of scores on the DSES. As outlined in this chapter, I followed the step-by-step process outlined in Kalkbrenner's (2021a) MEASURE approach to instrument development and score validation. I provided the foundation of the DSES by establishing the rationale, theoretical framework, and theoretical blueprint for the instrument. Next, I developed the instrument and established content validity through consensus question creation, the use of expert reviewers, and pilot testing. Through electronic communication, I recruited a large sample of professional mental health counselors to complete the DSES. The methodologist and I analyzed the data using exploratory factor analysis and reliability testing to answer the first research question. I also gathered information related to diagnostic category specific diagnostic self-efficacy and explored the descriptive statistics to answer the second research question. In the next chapter, I present the results of the study.

CHAPTER FOUR

RESULTS

In this chapter, I share the results of this study. First, I present the demographic breakdown of the participants and the descriptive data related to perceived diagnostic competence survey. Next, I include the results of the preliminary analyses. Finally, I provide the results of the exploratory factor analysis, including factor extraction, retention, rotation, and naming.

Demographic Information and Descriptive Statistics

I collected usable responses from 450 clinical mental health counselors whose ages ranged from 23 to 76 years ($M = 36$, $SD = 9.47$). There were two missing values for age because one person typed in “prefer not to answer” and one entered a typo of “552.” For gender (See Table 4.1), 0.7% ($n = 3$) of participants were fluid/genderfluid, 2.2% ($n = 10$) were gender non-conforming/genderqueer, 5.8% ($n = 26$) were men, 0.90% ($n = 4$) were non-binary, 0.2% ($n = 1$) were transgender men/trans men, 89.8% ($n = 404$) were women, 0.2% ($n = 1$) indicated their gender was not listed ($n = 1$), and 0.2% ($n = 1$) preferred not to answer. For race/ethnicity (See Table 4.2), 0.7% ($n = 3$) of participants were American Indian or Alaska Native, 2.0% ($n = 9$) were Asian or Asian American, 2.2% ($n = 10$) were Black or African American, 7.6% ($n = 4$) were Hispanic, Latinx, or Spanish, 0.9%, were Middle Eastern or North African, 4.4% ($n = 20$) reported multiple ethnic identities, 81.1% ($n = 365$) were White or European American, 0.4% ($n = 2$) were another race, ethnicity, or origin, and 0.70% ($n = 3$) of participants indicated they would rather not answer.

Table 4.1*Descriptive Statistics for Gender*

	<i>N</i>	%
Fluid/Genderfluid	3	0.7%
Gender Non-Conforming/Genderqueer	10	2.2%
Man	26	5.8%
Non-Binary	4	0.9%
Transgender Man/Trans Man	1	0.2%
Transgender Woman/Trans Woman	0	0.0%
Woman	404	89.8%
Not Listed (please specify)	1	0.2%
Prefer not to answer	1	0.2%
Total	450	

Table 4.2*Descriptive Statistics for Race/Ethnicity*

	<i>N</i>	%
American Indian or Alaska Native	3	0.7%
Asian or Asian American	9	2.0%
Black or African American	10	2.2%

	<i>N</i>	%
Hispanic, Latinx, or Spanish	34	7.6%
Origin		
Middle Eastern or North	4	0.9%
African		
Multiple ethnic identities	20	4.4%
(please specify)		
Native Hawaiian or Other	0	0.0%
Pacific Islander		
White or European American	365	81.1%
Another race, ethnicity, or	2	0.4%
origin (please specify)		
Rather not answer	3	0.7%
Total	450	

Participants were asked demographic questions related to the year they obtained their master's degree, their current licensure status, and the number of years they had actively practiced counseling. The participants' year of master's degree completion (see Appendix K) ranged from 1973 to 2022. For licensure status (See Table 4.3), 66.4% ($n = 299$) of participants reported being fully licensed to practice in their state independently, 29.6% ($n = 133$) reported they were under post-graduate supervision, and 4.0% ($n = 18$) selected "other." Participants' years of active post-graduate counseling experience (See Table 4.5) ranged from less than 1 year to 35 years ($M = 5$ years, $SD = 5.78$). Participants obtained their master's degree from 44 states

(See Appendix L). They indicated they were licensed/practicing counseling in 48 states, with 20 participants licensed/practicing in multiple states (See Appendix M).

Table 4.3

Descriptive Statistics for Licensure Status

	<i>N</i>	%
Fully licensed to practice in your state independently	299	66.4%
Under post-graduate supervision	133	29.6%
Other (please specify)	18	4.0%
Total	450	

Table 4.4

Descriptive Statistics for Years of Active Post-Graduate Counseling Practice

	<i>N</i>	%
Less Than 1 year	56	12.4%
1	27	6.0%
2	58	12.9%
3	41	9.1%
4	40	8.9%
5	34	7.6%
6	34	7.6%
7	24	5.3%

	<i>N</i>	%
8	20	4.4%
9	20	4.4%
10	17	3.8%
11	9	2.0%
12	14	3.1%
13	7	1.6%
14	6	1.3%
15	11	2.4%
16	5	1.1%
17	3	0.7%
18	3	0.7%
19	3	0.7%
20	5	1.1%
21	5	1.1%
23	1	0.2%
25	3	0.7%
28	1	0.2%
29	1	0.2%
34	1	0.2%
35	1	0.2%
Total	450	

Perceived Diagnostic Competence Survey Descriptive Data

After the demographic questionnaire, participants used a 7-point Likert scale to rate their self-efficacy when diagnosing mental health disorders within each of the 22 *DSM-5* diagnostic categories (See Table 4.5). The scale options were 1 = *Extremely Not Confident*, 2 = *Not Confident*, 3 = *Slightly Not Confident*, 4 = *Neither Confident or Not Confident*, 5 = *Slightly Confident*, 6 = *Confident*, and 7 = *Extremely Confident*. The mean score was calculated for each diagnostic category. They are listed here from lowest (least confident diagnosing) to highest (most confident diagnosing): Medication-induced movement disorders and other adverse effects of medications ($\bar{x} = 3.26$), paraphilic disorders ($\bar{x} = 3.42$), elimination disorders ($\bar{x} = 3.58$), sleep-wake disorders ($\bar{x} = 3.73$), sexual dysfunctions ($\bar{x} = 3.94$), neurocognitive disorders ($\bar{x} = 3.98$), somatic symptom and related disorders ($\bar{x} = 4.35$), dissociative disorders ($\bar{x} = 4.53$), schizophrenia spectrum and other psychotic disorders ($\bar{x} = 4.56$), feeding and eating disorders ($\bar{x} = 4.61$), gender dysphoria ($\bar{x} = 4.79$), other conditions that may be a focus of clinical assessment ($\bar{x} = 4.94$), personality disorders ($\bar{x} = 4.99$), disruptive, impulse control, and conduct disorders ($\bar{x} = 4.99$), obsessive-compulsive and related disorders ($\bar{x} = 5.28$), bipolar and related disorders ($\bar{x} = 5.35$), substance-related and addictive disorders ($\bar{x} = 5.43$), trauma and stressor related disorders ($\bar{x} = 6.09$), depressive disorders ($\bar{x} = 6.26$), and anxiety disorders ($\bar{x} = 6.34$).

Table 4.5

Descriptive Statistics for Perceived Diagnostic Competence

Medication-Induced Movement Disorders and Other Adverse Effects of Medication						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
10.7%	29.1%	18.9%	18.2%	14.0%	5.8%	3.3%

Paraphilic Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
10.9%	24.7%	18.7%	19.1%	14.4%	8.4%	3.8%
Elimination Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
7.6%	23.1%	17.3%	21.8%	18.0%	10.2%	2.0%
Sleep-Wake Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
5.3%	21.1%	16.2%	22.0%	24.7%	9.1%	1.6%
Neurocognitive Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
7.6%	16.4%	18.4%	17.8%	24.9%	12.4%	2.4%
Sexual Dysfunctions						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
5.6%	18.2%	14.4%	20.0%	25.3%	12.2%	4.2%
Neurodevelopmental Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
3.8%	20.7%	15.1%	15.8%	27.1%	13.8%	3.8%

Somatic Symptom and Related Disorders						
1 <i>Extremely Not Confident</i>	2 <i>Not Confident</i>	3 <i>Slightly Not Confident</i>	4 <i>Neither Confident or Not Confident</i>	5 <i>Slightly Confident</i>	6 <i>Confident</i>	7 <i>Extremely Confident</i>
2.2%	9.3%	16.0%	20.2%	31.3%	17.3%	3.6%
Dissociative Disorders						
1 <i>Extremely Not Confident</i>	2 <i>Not Confident</i>	3 <i>Slightly Not Confident</i>	4 <i>Neither Confident or Not Confident</i>	5 <i>Slightly Confident</i>	6 <i>Confident</i>	7 <i>Extremely Confident</i>
4.4%	7.6%	12.0%	16.9%	30.9%	22.2%	6.0%
Schizophrenia Spectrum and Other Psychotic Disorders						
1 <i>Extremely Not Confident</i>	2 <i>Not Confident</i>	3 <i>Slightly Not Confident</i>	4 <i>Neither Confident or Not Confident</i>	5 <i>Slightly Confident</i>	6 <i>Confident</i>	7 <i>Extremely Confident</i>
5.6%	8.4%	13.1%	10.2%	31.1%	23.1%	8.4%
Feeding and Eating Disorders						
1 <i>Extremely Not Confident</i>	2 <i>Not Confident</i>	3 <i>Slightly Not Confident</i>	4 <i>Neither Confident or Not Confident</i>	5 <i>Slightly Confident</i>	6 <i>Confident</i>	7 <i>Extremely Confident</i>
3.1%	8.7%	12.0%	12.2%	35.1%	22.4%	6.4%
Gender Dysphoria						
1 <i>Extremely Not Confident</i>	2 <i>Not Confident</i>	3 <i>Slightly Not Confident</i>	4 <i>Neither Confident or Not Confident</i>	5 <i>Slightly Confident</i>	6 <i>Confident</i>	7 <i>Extremely Confident</i>
3.1%	9.8%	9.6%	13.6%	23.8%	27.3%	12.9%
Other Conditions That May Be a Focus of Clinical Assessment						
1 <i>Extremely Not Confident</i>	2 <i>Not Confident</i>	3 <i>Slightly Not Confident</i>	4 <i>Neither Confident or Not Confident</i>	5 <i>Slightly Confident</i>	6 <i>Confident</i>	7 <i>Extremely Confident</i>
0.9%	4.7%	3.8%	25.8%	24.9%	34.7%	5.3%

Personality Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
1.3%	6.0%	10.2%	9.3%	31.8%	30.9%	10.4%
Disruptive, Impulse Control, and Conduct Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
1.8%	6.0%	9.3%	11.3%	27.6%	34.2%	9.8%
Other Mental Health Conditions						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
0.4%	1.8%	2.9%	27.3%	28.2%	33.3%	6.0%
Obsessive-Compulsive and Related Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
0.7%	3.1%	4.9%	9.6%	32.9%	38.9%	10.0%
Bipolar and Related Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
0.7%	3.3%	5.3%	7.8%	29.6%	40.7%	12.7%
Substance-Related and Addictive Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
2.2%	3.6%	6.7%	7.6%	20.9%	34.7%	24.4%

Trauma and Stressor Related Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
0.7%	0.7%	0.7%	2.4%	14.0%	46.0%	35.6%
Depressive Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
0.7%	0.2%	0.9%	0.9%	9.6%	43.8%	44.0%
Anxiety Disorders						
1	2	3	4	5	6	7
<i>Extremely Not Confident</i>	<i>Not Confident</i>	<i>Slightly Not Confident</i>	<i>Neither Confident or Not Confident</i>	<i>Slightly Confident</i>	<i>Confident</i>	<i>Extremely Confident</i>
0.4%	0.7%	0.4%	0.0%	7.8%	42.9%	47.8%

Preliminary Analyses

In this study, the methodologist and I conducted three preliminary analyses to determine if factor analysis was possible and appropriate: the inter-item correlation matrix, Bartlett's Test of Sphericity, and the Kaiser-Meyer-Olkin (KMO) Test for Sampling Adequacy (Beavers et al., 2013; Kalkbrenner 2021a; Mvududu & Sink, 2013.) The results for all three tests were satisfactory for exploratory factor analysis. We found that the interitem correlation matrix was favorable. Interitem correlation ranged from $r = .14$ to $r = .73$. All items correlated at least $r = .20$ with at least 3 other items and thus, no items were removed (Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017). Bartlett's test of Sphericity was significant ($\chi^2(450) = 10681.50$, $df = 861$, $p < .001$), which indicated the matrix was factorable and was not an identity matrix.

The KMO was .96, which indicated a shared variance Kaiser (1974) would describe as “marvelous.” After determining that all three tests indicated EFA was appropriate, we moved forward to Factor analysis.

Exploratory Factor Analysis

After the methodologist and I determined that all of the preliminary tests were satisfactory, we began the factor analysis process to determine the underlying factor structure of the DSES. This process included factor extraction, factor retention, and factor rotation. We retained three factor solutions. I then worked with another member of the research team to name the factors for each of the retained factor solutions.

Factor Extraction

To determine how to separate the shared variance of each item from its own unique variance and error variance, we first investigated for extreme deviations. To do so, we reviewed the skewness and kurtosis values and found no extreme deviations from normality (skewness $> \pm 2$, kurtosis $> \pm 7$). Despite finding no extreme deviations in normalization, 31 of the items had skewness and or kurtosis values were greater than ± 1 . Accordingly, we utilized PAF because it is more resistant to moderate deviations from normality than PAC or ML (Kalkbrenner 2021c; Mvududu & Sink, 2013; Watson, 2017).

Factor Retention

We utilized four criteria to determine how many factors to retain (Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017), including the Kaiser criterion, meaningful variance accounted for ($\geq 5\%$), scree plot, and a parallel analysis (Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017). The initial factor extraction based on the Kaiser criterion (Eigen values > 1) revealed a five-factor solution, which accounted for 58.16% of the total variance. However,

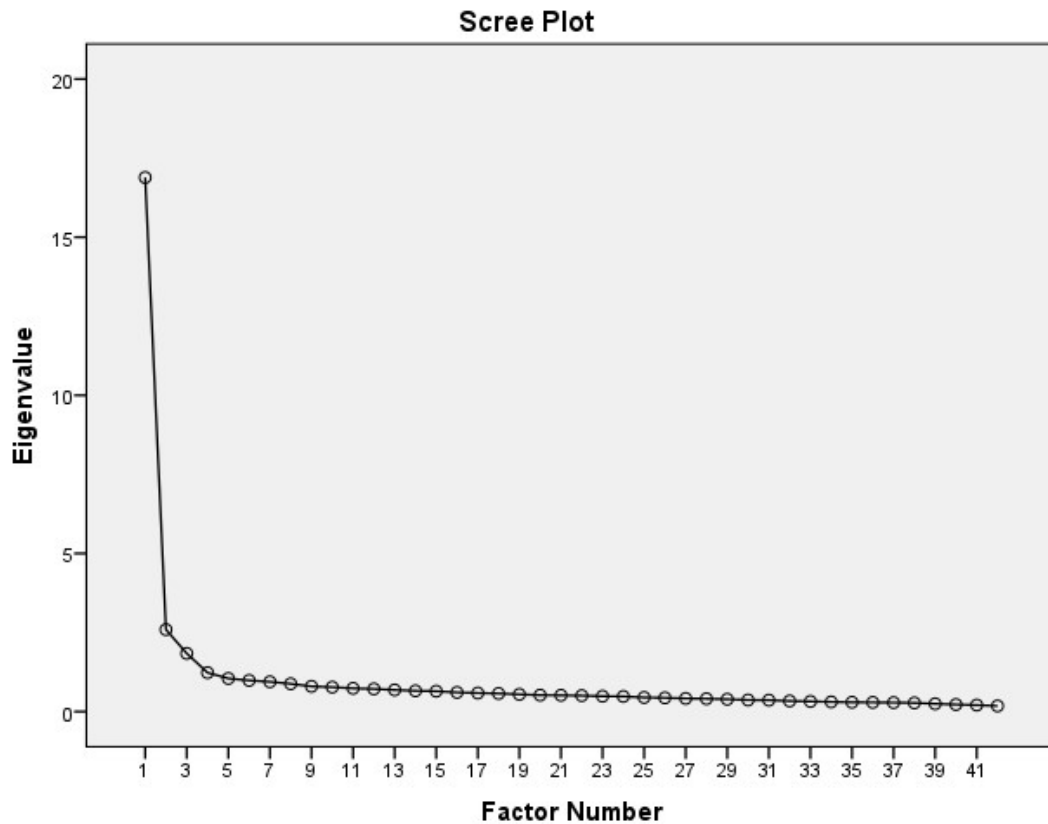
the Kaiser criterion tends to overestimate the number of factors in the model (Yong & Pearce, 2013), thus we moved forward to the other three criteria: meaningful variance accounted for (See figure 4.2), Scree plot (See figure 4.3), and parallel analysis (Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017). It is not uncommon for factor extraction criteria to reveal more than one retainable factor solution in an EFA, as EFA is only the first step in internal structure validity testing. Accordingly, we retained three factor solutions: a 2-factor solution based on meaningful variance accounted for, a 3-factor solution based on the parallel analysis, and a 4-factor solution based on the Scree plot.

Table 4.6

Total Variance Explained

Factors	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative	Total	% of Variance	Cumulative
1	16.89	40.2%	40.2%	16.41	39.1%	39.1%
2	2.59	6.2%	46.4%	2.14	5.1%	44.2%
3	1.84	4.4%	50.8%	1.33	3.2%	47.3%
4	1.23	2.9%	53.7%	0.78	1.8%	49.2%
5	1.05	2.5%	56.2%	0.53	1.3%	50.5%

Note $N = 450$. Extraction Method: Principal Axis Factoring

Figure 4.1*Scree Plot***Factor Rotation**

After factor retention, we began factor rotation to explore how items loaded to certain factors (Kalkbrenner, 2021c; Watson, 2017). To help find simple structure, factors were rotated on vectors (Kalkbrenner, 2021c; Mvududu & Sink, 2013). We utilized oblique rotation methods because they are more appropriate for studies where factors are correlated. Factors were rotated using IBM SPSS. For each factor solution retained, we evaluated the commonality values (h^2) of each item. If the item had an h^2 value between .30 and .99 we retained it (Kalkbrenner, 2021c; Watson, 2017). Those with h^2 values of less than .30 were removed (Kalkbrenner, 2021c; Watson, 2017). We removed items one at a time in order from lowest item number to highest

item number and recalculated the EFA after each removal. For the two-factor solution, we removed items 6, 10, and 29. For the three-factor solution, we removed items 10 and 29. We removed item 29 from the four-factor solution.

We reviewed the pattern matrices and structure matrices for produced by oblique factor rotation for each factor solution and interpreted the pattern matrix, as it showed the clearest evidence of simple structure (Kalkbrenner, 2021c; Mvududu & Sink, 2013). If items did not show a factor loading of $\geq .40$, we deleted them. An item with factor loadings $> .35$ on at least two factors was indicative of cross-loading (Beavers et al., 2013; Kalkbrenner, 2021c; Mvududu & Sink, 2013; Watson, 2017). Cross-loading items were also deleted. We deleted items one at a time and recalculated the EFA will after each deletion.

Two-Factor Solution

The two-factor solution (See Table 4.7) was retained due to meaningful variance accounted for. Based on commonality values (h^2) $< .30$, items 6, 10, and 29 were eliminated. Items 34, 41, 7, 25, and 32 were eliminated because they either cross-loaded or did not load. Factor one of the two-factor solution was made of 17 items and total Eigenvalues of 14.25. Items on factor one made up for 41.92% of the total variance. For factor one, $\alpha = .94$, and $\omega = .94$. Factor two was also made up of 17 items. Total Eigenvalues for factor 2 2.32 and items on factor two accounted for 6.84% of the total variance. For factor two, $\alpha = .92$ and $\omega = .92$. Ultimately, factor one and two of the two-factor solution accounted for 48.76% of total variance. Factor correlations for the two-factor solution are presented below (See Table 4.8).

Naming the Two-Factor Solution. A research team member and I each created several names for each of the factors in the two-factor solution. When we met, we reviewed all options. We noted that factor one items were related to the use of diagnostic tools such as the assessment

measures, the *DSM*, and diagnostic guidelines (e.g., assigning severity, coding diagnoses). Thus, we decided to name this factor *Utilization of Diagnostic Tools*. When we explored factor two items, we found the items explored activities related to gathering information directly from the client and applying it in the diagnostic process. Thus, we named this factor *Information Gathering and Application*.

Table 4.7

Two-Factor Solution

DSES Item	Factor 1	Factor 2	<i>h</i> ²
	<i>Utilization of Diagnostic Tools</i>	<i>Information Gathering and Application</i>	
	Loadings		
42. Can adjust a diagnostic code for diagnosis specifier?	.89	-.15	.63
40. Can adjust a diagnostic code for diagnostic severity?	.76		.56
30. Identify differential diagnoses?	.75		.48
38. Can assign appropriate diagnostic codes?	.73		.50
36. Can identify the appropriate specifier for a diagnosis?	.72		.52
27. Accurately interpret the results of diagnostic assessment measures?	.70		.47
33. Assign a provisional diagnosis when appropriate?	.65		.50
1. Accurately diagnose a client's mental health condition?	.64	.11	.53
23. Use assessment instruments to aid with making a diagnosis?	.64		.36
35. Assess the severity of a diagnosis?	.63	.15	.54
39. Can order diagnoses according to treatment needs when multiple diagnoses are present?	.62	.	.47

DSSES Item	Factor 1	Factor 2	h^2
	<i>Utilization of Diagnostic Tools</i>	<i>Information Gathering and Application</i>	
	Loadings		
28. Accurately use the results of a psychological report in making a diagnosis?	.62	.11	.48
26. Accurately interpret findings of a mental status exam?	.60	.17	.52
24. Apply information gathered from outside sources in diagnosis?	.58	.15	.48
37. Can compare information gathered in the diagnostic process against DSM diagnostic criteria to determine if those criteria are met?	.52	.20	.44
4. Apply information regarding medical conditions experienced by the client in diagnosis?	.51	.16	.40
31. Explain why you assigned a certain diagnosis?	.43	.32	.48
18. Proficiently use questions to gather information about family history?		.77	.52
19. Proficiently use questions to gather information about socioeconomic status?		.69	.51
12. Ask open-ended questions to gather information?		.68	.41
11. Create an empathic environment to promote client comfort to gather information?	-.17	.67	.33
17. Proficiently use questions to gather information about environmental factors?		.67	.53
16. Proficiently use questions to gather information about religious and/or spiritual beliefs?		.65	.43

DSES Item	Factor 1	Factor 2	<i>h²</i>
	<i>Utilization of Diagnostic Tools</i>	<i>Information Gathering and Application</i>	
	Loadings		
22. Move appropriately from question to question during and intake interview?		.64	.43
15. Proficiently use questions to gather information about cultural factors?		.60	.39
21. Conduct an Intake Interview?		.56	.37
20. Proficiently use questions to gather information about medical concerns?	.11	.54	.39
8. Apply information about cultural factors (e.g., attitudes, values, beliefs) experienced by the client in diagnosis?	.14	.54	.41
2. Apply information about a client's environmental factors (e.g., housing conditions) in diagnosis?	.21	.53	.47
13. Ask closed-ended questions to gather specific information?		.51	.32
14. Proficiently use questions to gather information about relational dynamics?	.21	.50	.43
9. Appy information about socioeconomic factors (e.g., lack of financial resources) experienced by the client in diagnosis?	.20	.46	.38
3. Apply information about the client's family history in diagnosis?	.32	.43	.48
5. Apply information about relational dynamics (e.g., family conflict) in diagnosis?	.26	.41	.38
Eigenvalues	14.25	2.32	
% of variance	41.9%	6.8%	

Note. $N = 450$. The extraction method was principal axis factoring with an oblique (Oblimin with Kaiser Normalization) rotation. Factor loadings above .40 are in bold. Blank cells represent factor loadings less than .10.

Table 4.8
Two-Factor Solution Factor Correlation Matrix

	Factor 1	Factor 2
Factor 1	1.00	.68
Factor 2	.68	1.00

Note. The extraction method was principal axis factoring with an oblique (Oblimin with Kaiser Normalization) rotation.

Three-Factor Solution

The three-factor solution (See Table 4.9) was retained based on the results of a parallel analysis. Based on commonality values (h^2) $< .30$, items 10 and 29 were eliminated. Items 32, 25, 14, 4, 17, 5, and 20 were eliminated because they either cross-loaded or did not load. The total eigenvalue for factor one was 13.87. The 18 items on factor one accounted for 42.0% of total variance. For Factor one, $\alpha = .95$ and $\omega = .95$. The total eigenvalue for factor two was 2.38. The six items on factor two accounted for 7.2% of total variance. For factor two, $\alpha = .84$ and $\omega = .84$. For the third factor in this solution, the eigenvalue total was 1.72. The nine items made up for 5.2% of the total variance. For factor three, $\alpha = .89$ and $\omega = .89$. Ultimately, factors one, two, and three of the three factor-solution made up 54.4% of the total variance. Factor correlations for the three-factor solution are presented below (See Table 4.10).

Naming the Three-Factor Solution. When the research team member and I reviewed factor one of the three-factor solution, we found that the items were very similar to the items that loaded onto factor one in the two-factor solution. We opted to use the same name for this factor, *Utilize Diagnostic Tools*. The factor two items for this solution were directly related to information gathering skills. We named this factor *Utilize Information Gathering Skills*. Finally, the items on the third factor were related to gathering information about social and cultural factors and applying

this information in the diagnostic process. We named this factor *Gather and Integrate Sociocultural Information*.

Table 4.9

Three-Factor Solution

DSES Item	Factor 1 <i>Utilize Diagnostic Tools</i>	Factor 2 <i>Utilize Information Gathering Skills</i>	Factor 3 <i>Gather and Integrate Sociocultural Information</i>	h^2
	Loadings			
42. Can adjust a diagnostic code for diagnosis specifier?	.93		.10	.70
41. Can adjust a diagnostic code for diagnostic subtype?	.85			.61
34. Distinguish between different diagnostic subtypes?	.82			.61
40. Can adjust a diagnostic code for diagnostic severity?	.77			.58
38. Can assign appropriate diagnostic codes?	.74			.54
36. Can identify the appropriate specifier for a diagnosis?	.72			.55
30. Identify differential diagnoses?	.71			.49
33. Assign a provisional diagnosis when appropriate?	.62		-.10	.50
1. Accurately diagnose a client's mental health condition?	.60	.16		.52
35. Assess the severity of a diagnosis?	.59		-.14	.54
27. Accurately interpret the results of diagnostic assessment measures?	.59		-.13	.44
23. Use assessment instruments to aid with making a diagnosis?	.57			.34
39. Can order diagnoses according to treatment needs when multiple diagnoses are present?	.57		-.12	.46

DSES Item	Factor 1	Factor 2	Factor 3	<i>h²</i>
	<i>Utilize Diagnostic Tools</i>	<i>Utilize Information Gathering Skills</i>	<i>Gather and Integrate Sociocultural Information</i>	
	Loadings			
26. Accurately interpret findings of a mental status exam?	.54	.17	-.12	.52
28. Accurately use the results of a psychological report in making a diagnosis?	.50		-.25	.47
24. Apply information gathered from outside sources in diagnosis?	.49		-.24	.47
37. Can compare information gathered in the diagnostic process against DSM diagnostic criteria to determine if those criteria are met?	.49	.18		.44
31. Explain why you assigned a certain diagnosis?	.44	.30		.50
12. Ask open-ended questions to gather information?		.70		.51
11. Create an empathic environment to promote client comfort to gather information?		.66		.41
22. Move appropriately from question to question during and intake interview?	.10	.62		.50
18. Proficiently use questions to gather information about family history?		.62	-.17	.53
21. Conduct an Intake Interview?	.14	.59		.46
13. Ask closed-ended questions to gather specific information?	.21	.55		.40
8. Apply information about cultural factors (e.g., attitudes, values, beliefs) experienced by the client in diagnosis?			-.75	.57
2. Apply information about a client's environmental factors (e.g., housing conditions) in diagnosis?			-.68	.57

DSES Item	Factor 1	Factor 2	Factor 3	<i>h²</i>
	<i>Utilize Diagnostic Tools</i>	<i>Utilize Information Gathering Skills</i>	<i>Gather and Integrate Sociocultural Information</i>	
	Loadings			
7. Apply information about client's spiritual beliefs (which can include but are not limited to religion) in diagnosis?	.10	-.12	-.68	.47
6. Apply information about the sociopolitical climate (e.g., extremism in political views) experienced by client in diagnosis?	.13	-.15	-.65	.44
9. Apply information about socioeconomic factors (e.g., lack of financial resources) experienced by the client in diagnosis?			-.64	.49
16. Proficiently use questions to gather information about religious and/or spiritual beliefs?		.25	-.55	.47
15. Proficiently use questions to gather information about cultural factors?		.20	-.53	.42
19. Proficiently use questions to gather information about socioeconomic status?		.33	-.46	.50
3. Apply information about the client's family history in diagnosis?	.25	.13	-.42	.48
Eigenvalues	13.87	2.38	1.72	
% of Variance	42.0%	7.2%	5.2%	

Note. $N = 450$. The extraction method was principal axis factoring with an oblique (Oblimin with Kaiser Normalization) rotation. Factor loadings above .40 are in bold. Blank cells represent factor loadings less than .10

Table 4.10*Three-Factor Solution Factor Correlation Matrix*

Factor	1	2	3
1	1.00	.51	-.62
2	.51	1.000	-.52
3	-.62	-.52	1.000

Note. The extraction method was principal axis factoring with an oblique (Oblimin with Kaiser Normalization) rotation.

Four-Factor Solution

The four-factor solution (see Table 4.11) was retained based on the Scree plot. Only item 29 was eliminated based on a commonality value (h^2) < .30. Items 31, 25, 1, 19, 37, 39, 17, 14, 32, 5, 3, 20, 4, 10, and 24 were eliminated because they either cross-loaded or did not load onto any factors. Factor one of the four-factor solution was made of 9 items and had a total Eigenvalue of 10.74. It accounted for 41.3% of the total variance. For factor one, $\alpha = .92$ and $\omega = .92$. Factor two was made up of 6 items and had a total Eigenvalue of 2.23. It accounted for 8.6% of the total variance. For factor two, $\alpha = .84$ and $\omega = .84$. Factor three was made up of 7 items and had a total Eigenvalue of 1.66. It accounted for 6.4% of the total variance. For factor three, $\alpha = .86$ and $\omega = .86$. Finally, Factor four was made up of 4 items and had a total Eigenvalue of 1.09. It accounted for 4.2% of the total variance. For factor four, $\alpha = .82$ and $\omega = .82$. Ultimately, factors one, two, three, and four of the four factor-solution made up 60.4% of the total variance. Factor correlations for the four-factor solution are presented below (See Table 4.12).

Naming the Four-Factor Solution. Finally, the research team member and I named the factors for the four-factor solution. Factor one items were related to labeling and coding

diagnoses, so we named this factor *Code and Label Diagnoses*. Factor two items centered around counseling skills used to gather information, so we named factor two *Utilize Information Gathering Skills*. Like the items on factor three of the three-factor solution, the items on factor three in this solution revolved around gathering and applying social and cultural information. Thus, factor three was named *Gather and Integrate Sociocultural Information*. Four items loaded onto factor four. These items were related to diagnostic measures and assessments. We named this factor *Utilize Assessments and Measures*.

Table 4.11*Four-Factor Solution*

DSES	Factor 1 <i>Code and Label Diagnoses</i>	Factor 2 <i>Utilize Information Gathering Skills</i>	Factor 3 <i>Gather and Integrate Sociocultural Information</i>	Factor 4 <i>Utilize Assessments and Measures</i>	h^2
Loadings					
42. Can adjust a diagnostic code for diagnosis specifier?	.89				.75
41. Can adjust a diagnostic code for diagnostic subtype?	.84				.67
36. Can identify the appropriate specifier for a diagnosis?	.78		-.11	-.11	.62
40. Can adjust a diagnostic code for diagnostic severity?	.74				.61
34. Distinguish between different diagnostic subtypes?	.70			.12	.63
38. Can assign appropriate diagnostic codes?	.64	.10			.54
30. Identify differential diagnoses?	.50			.23	.49
33. Assign a provisional diagnosis when appropriate?	.45		-.11	.19	.49

DSES	Factor 1 <i>Code and Label Diagnoses</i>	Factor 2 <i>Utilize Information Gathering Skills</i>	Factor 3 <i>Gather and Integrate Sociocultural Information</i>	Factor 4 <i>Utilize Assessments and Measures</i>	<i>h²</i>
Loadings					
35. Assess the severity of a diagnosis?	.44	.11	-.17	.15	.53
12. Ask open-ended questions to gather information?		.69			.51
22. Move appropriately from question to question during and intake interview?		.65			.52
11. Create an empathic environment to promote client comfort to gather information?		.64			.40
18. Proficiently use questions to gather information about family history?		.63	-.12		.53
21. Conduct an Intake Interview?		.59		.17	.46
13. Ask closed-ended questions to gather specific information?	.22	.55			.41
8. Apply information about cultural factors (e.g., attitudes, values, beliefs) experienced by the client in diagnosis?			-.77		.61
6. Apply information about the sociopolitical climate (e.g., extremism in political views) experienced by client in diagnosis?	.11	-.14	-.66		.46
7. Apply information about client's spiritual beliefs (which can include but are not limited to religion) in diagnosis?			-.65		.47
2. Apply information about a client's environmental factors (e.g., housing conditions) in diagnosis?			-.60	.19	.54

DSES	Factor 1 <i>Code and Label Diagnoses</i>	Factor 2 <i>Utilize Information Gathering Skills</i>	Factor 3 <i>Gather and Integrate Sociocultural Information</i>	Factor 4 <i>Utilize Assessments and Measures</i>	<i>h</i>²
Loadings					
9. Appy information about socioeconomic factors (e.g., lack of financial resources) experienced by the client in diagnosis?			-.58	.16	.47
16. Proficiently use questions to gather information about religious and/or spiritual beliefs?		.26	-.57		.50
15. Proficiently use questions to gather information about cultural factors?		.20	-.54		.44
27. Accurately interpret the results of diagnostic assessment measures?				.65	.57
23. Use assessment instruments to aid with making a diagnosis?	.11			.61	.46
26. Accurately interpret findings of a mental status exam?		.20		.61	.61
28. Accurately use the results of a psychological report in making a diagnosis?			-.18	.59	.55
Eigenvalues	10.74	2.23	1.66	1.09	
% of Variance	41.3%	8.6%	6.4%	4.9%	

Note. $N = 450$. The extraction method was principal axis factoring with an oblique (Oblimin with Kaiser Normalization) rotation. Factor loadings above .40 are in bold. Blank cells represent factor loadings less than .10

Table 4.12*Four-Factor Solution Factor Correlation Matrix*

Factor	1	2	3	4
1	1.00	.45	-.54	.67
2	.45	1.00	-.50	.39
3	-.54	-.50	1.00	-.50
4	.67	.39	-.50	1.00

Note. The extraction method was principal axis factoring with an oblique (Oblimin with Kaiser Normalization) rotation.

Conclusion

In this Chapter, I presented the results of this study. I provided the descriptive data related to the demographic information of participants, the descriptive data results of the perceived diagnostic competence survey, the results of the preliminary data analyses, and the results of the EFA. The EFA results included information about the factor extraction, retention, rotation, and naming processes. The EFA process resulted in the retention of three retainable factor solutions. EFA often results in multiple retainable factor solutions. The second step in internal structure validity testing, CFA, will reveal which factors are confirmed by a second sample. CFA can also directly test for superiority of fit between multiple factor solutions (Kalkbrenner 2021a). I plan to complete CFA for the DSES in a future study. In the next chapter, I will discuss the results presented in this chapter and my interpretation of them.

CHAPTER FIVE

DISCUSSION

In this chapter, I interpret and discuss the results presented in Chapter 4. First, I review the summary of the problem and the research questions. Next, I discuss the results of the EFA and examine the responses from of the perceived diagnostic competence survey. Then, I explore the implications of this information for counselors, counselor supervisors, and counselor educators. Finally, I examine the limitations of this study and areas for future research.

Summary of the Problem

For counselors, diagnosis is an important, often mandatory, task (Eriksen & Kress, 2006; Neukrug, 2019) that requires the counselor to utilize a variety of clinical and critical thinking skills (Schwitzer & Rubin, 2014). Diagnosis helps counselors conceptualize clients, develop plans for treatment, and communicate with others (APA, 2013; Eriksen & Kress, 2006; First, 2010; Neukrug, 2019, 2022; Peterson, 2015, Schwitzer & Rubin, 2014). Diagnosis has become ingrained in the identity of mental health counselors (Dailey et al., 2014). This is largely related to requirements of third-party payers and the role diagnosis plays in the treatment process. While counselors may work from theoretical orientations that do not emphasize or require diagnosis, counselors will often find they still have to assign a diagnosis for billing purposes or coordination of care (Eriksen & Kress, 2006; Neukrug 2019, 2022). For these reasons, it is critical that counselors are able to accurately assign mental health diagnoses, regardless of their theoretical orientation or beliefs about the diagnostic process.

Bandura (1997, 2006) notes that self-efficacy is a critical component of successful task completion. Notably, researchers found in a study of diagnostic variance that counselors reported a lack of perceived self-competence when diagnosing mental health disorders (Hayes et al.,

2009). Many of the counselors also reported a desire to allow “more competent” professional to diagnose (Hayes et al., 2009, p.10). When considering Bandura’s assertion that self-efficacy is critical to successful task completion along with Hayes et al.’s (2009) findings related to counselors’ lack of perceived competence when diagnosing, it is critical to further explore the diagnostic self-efficacy of counselors. Identifying specific tasks or diagnostic categories where counselors possess less self-efficacy could help counselor supervisors and educators create opportunities to build diagnostic self-efficacy. The counseling and self-efficacy literature lacks an instrument which measures the construct of diagnostic self-efficacy. Through this study, I aimed to address this gap by developing and validating scores on an instrument which measures the diagnostic self-efficacy of counselors, the DSES. I also gathered information about which diagnostic categories counselors were most and least confident diagnosing. I answered the following research questions (RQ):

- What is the underlying factor structure of the DSES?
- Which *DSM-5* diagnostic categories do a sample of clinical mental health counselors report being most and least confident diagnosing?

RQ # 1: The Underlying Factor Structure of the DSES

Through this study, I began to establish the internal structure validity of the DSES through exploratory factor analysis (EFA). The methodologist and I completed three preliminary tests to determine if the scores on the DSES were appropriate for EFA, and the results on all three tests were satisfactory. We were then able to conduct the factor extraction, retention, and rotation. We retained three factor solutions: a two-factor solution based on maximum likelihood variance, a three-factor solution based on parallel analysis, and a four-factor solution based on the Scree plot. Each of the three factor-solutions we retained indicated that the DSES measured

the intended construct (diagnostic self-efficacy) while items also grouped onto subscales (factors).

There were some similarities across all three factor solutions. As we evaluated h^2 values, there was one common item that was eliminated for each of the three factor solutions. This was item 29 (*set aside your own biases when assigning diagnosis*). When eliminating items that cross loaded or did not load, items 25 (*complete a biopsychosocial examination*) and 32 (*review research literature to better understand a diagnosis*) were discarded from each of the factor solutions. We also found that across factor solutions, the items loaded onto factors in similar ways.

There were also similarities when remapping the items to new theoretical blueprints. The initial blueprint changed significantly over the course of instrument development, particularly with the deletion of the “confidence in knowledge and understanding” domain. The factors for each factor solution made up the new content areas. When considering the self-efficacy domains for the new theoretical blueprints, it seemed that the items could be considered as either confidence in ability or skill obtaining information or confidence in ability to apply or integrate the obtained knowledge. This seems to speak to the importance of both factual and procedural knowledge (Bandura, 1997) in diagnostic self-efficacy and the complex nature of diagnosis. The counselor must be able to obtain the information (factual knowledge) and then be able to apply it (procedural knowledge). This differs from the original blueprint, because the original “confidence in knowledge/understanding” domain items asked if counselors were confident in their knowledge, not if they were confident in their ability to obtain information needed to form a diagnosis. The Despite some similarities in the new blueprints, item removal, and factor loadings, each retained factor solution was unique, and I explore each in more detail here.

Two-Factor Solution

The two-factor solution that emerged maintained the largest number of items and grouped them into two large factors. The first factor, *Utilize Diagnostic Tools*, was made up of items related to the use of the *DSM-5* diagnostic criteria and diagnostic coding and labeling process (APA, 2013; Neukrug, 2022; Neukrug & Fawcett, 2020) the use of assessment instruments and measures (APA, n.d.; Karg & Wiens, 2005; Mears, 2015), and the use of outside information (e.g., medical information, psychological reports). Items related to the use of counseling skills in information gathering (e.g., questions, creating an empathic environment) and the use of information gathered to conceptualize the client during the diagnostic process (APA, 2013; Eriksen & Kress, 2005, 2006; Neukrug, 2022; Neukrug & Fawcett, 2020) loaded onto factor two, *Information Gathering and Application*.

While these factors are broad, there is a clear distinction between the factors. Factor one items are more rooted in knowing how to utilize tools or outside resources to gather and utilize information, while factor two seems more related to using direct counseling skills to gather information and using that information to conceptualize the client. When mapping this back into a theoretical blueprint (See Figure 5.1), the factors are the content areas. The domain areas are confidence in ability to obtain information and confidence in ability to applying/integrating information.

Figure 5.1*Two-Factor Solution Theoretical Blueprint for The Diagnostic Self-Efficacy Scale*

	Confidence in Ability to Obtain Information	Confidence in Ability to Apply/Integrate Information	Total
Utilize Diagnostic Tools	2	15	17
Information Gathering and Application	12	5	17
Total	14	20	34

Reliability of the Two-Factor Solution

I explored the internal consistency reliability of the two-factor solution by using coefficient alpha and coefficient omega (Kalkbrenner, 2021b). For factor one, $\alpha = .94$ and $\omega = .94$. For factor two, $\alpha = .92$ and $\omega = .92$. For attitudinal scales such as the DSES, an alpha coefficient of $>.85$ and a omega coefficient of $>.80$ are tentatively indicative of strong reliability evidence (Kalkbrenner, 2021b). Both factors meet this criterion for tentative strong reliability evidence. Both factors have alpha coefficients of $>.90$, which can also indicate some redundancy between items (Kalkbrenner, 2021b).

Three-Factor Solution

The three-factor solution that emerged maintained 33 items. Factor one, *Utilize Diagnostic Tools*, was made up of 18 items and was almost identical to factor one of the two factor-solution. Items that loaded to factor two, *Utilize Information Gathering Skills*, were directly related to the use of information gathering skills (e.g., conduct an intake interview, ask closed ended questions to gather specific information). Items related to gathering and applying

information related to sociocultural factors loaded onto factor three, *Gather and Integrate Sociocultural Information*.

In the theoretical framework and initial blueprint I proposed for the DSES, I included the content area *Gather Information Through Appropriate Assessment Tools, Questions, and Measures*, based on existing literature. The three-factor structure provides a reorganization the items and provides further distinction between the information gathering items. Information gathering skills that involve tools or outside sources (e.g., assessments, psychological reports) were grouped together with items from the original content areas of *coding and labeling* and *consider the DSM-5 diagnostic criteria*. This in line with the literature, as the *DSM-5*, it's coding and labeling guidelines, and diagnostic criteria are all diagnostic tools (APA, 2013). In the original content areas, items related to sociocultural information gathering skills were included in the *Gather Information Through Appropriate Assessment Tools, Questions, and Measures*, but items related to the application of this information was included in the *Assessment of the Whole Person* content area. The three-factor solution indicates these items form their own subscale together, which is distinct from other information gathering and integration skills. When considering an updated theoretical blueprint for the three-factor solution (See Figure 5.2), the domain areas are confidence in ability to obtain information and confidence in ability to applying/integrating information.

Figure 5.2*Three-Factor Solution Theoretical Blueprint for The Diagnostic Self-Efficacy Scale*

	Confidence in Ability to Obtain Information	Confidence in Ability to Apply/Integrate Information	Total
Utilize Diagnostic Tools	2	16	18
Utilize Information Gathering Skills	6	0	6
Gather and Integrate Sociocultural Information	3	6	9
Total	11	22	33

Reliability of the Three-Factor Solution

I explored the internal consistency reliability of the three-factor solution by using coefficient alpha and coefficient omega (Kalkbrenner, 2021b). For factor one, $\alpha = .95$ and $\omega = .95$. This indicates tentative strong reliability evidence with the possibility for some redundancy between some items (Kalkbrenner 2021b). For factor two, $\alpha = .84$ and $\omega = .84$. The alpha coefficient indicates a tentative acceptable reliability evidence, and the coefficient omega indicates a tentative strong reliability evidence (Kalkbrenner, 2021b). For factor three, $\alpha = .89$ and $\omega = .89$. The coefficient alpha and coefficient omega both indicate a tentative strong reliability evidence (Kalkbrenner, 2021b).

Four-Factor Solution

The four-factor solution maintained the smallest number of items, 26, and produced the most distinct factors. Factor one, *Diagnostic Coding and Labeling*, consisted of items related to diagnostic coding (e.g., can adjust a diagnostic code for diagnosis specifier) and labeling diagnoses (e.g., assign a provisional diagnosis when appropriate, can identify the appropriate

specifier for a diagnosis). It included items that were originally placed in the content areas of consider diagnostic criteria (APA, 2013; Neukrug & Fawcett, 2020), and code and order assigned diagnoses (APA, 2013; Neukrug & Fawcett, 2020). The items that loaded onto factor two, *Utilize Information Gathering Skills*, were identical to the items that loaded to factor two of the three factor solution. Factor three, *Gather and Integrate Sociocultural Information*, included items related to gathering and applying sociocultural information. Factor four, *Utilize Assessments and Measures*, was made up of four items related to the use of assessment instruments, the MSE findings, and psychological reports results in the diagnostic process. When considering an updated theoretical blueprint for the four-factor factor solution (See Figure 5.3), the domain areas are confidence in ability to obtain information and confidence in ability to applying/integrating information.

Figure 5.3

Four-Factor Solution Theoretical Blueprint for The Diagnostic Self-Efficacy Scale

	Confidence in Ability to Obtain Information	Confidence in Ability to Apply/Integrate Information	Total
Diagnostic Coding and Labeling	1	8	9
Utilize Information Gathering Skills	6	0	6
Gather and Integrate Sociocultural Information	2	5	7
Utilize Assessments and Measures	1	3	4
Total	10	16	26

Reliability of Four-Factor Solution

I checked the internal consistency reliability of the four-factor solution by using coefficient alpha and coefficient omega (Kalkbrenner, 2021b). For factor one, $\alpha = .92$. and $\omega = .92$. This indicates tentative strong reliability evidence with the possibility for some redundancy between some items (Kalkbrenner 2021b). For factor two, $\alpha = .84$ and $\omega = .84$. The alpha coefficient indicates a tentative acceptable reliability evidence, and the coefficient omega indicates a tentative strong reliability evidence (Kalkbrenner, 2021b). For factor three, $\alpha = .86$ and $\omega = .86$. The coefficient alpha and coefficient omega both indicate a tentative strong reliability evidence (Kalkbrenner, 2021b). For factor four, $\alpha = .82$ and $\omega = .82$. The alpha coefficient indicates a tentative acceptable reliability evidence, and the coefficient omega indicates a tentative strong reliability evidence (Kalkbrenner, 2021b).

RQ #2: Perceived Competence Diagnosing DSM-5 Diagnostic Categories

I utilized descriptive data from the perceived diagnostic competence survey to answer the second research question. In this survey, participants rated their confidence when diagnosing mental health disorders in each of the *DSM-5* diagnostic categories. I reviewed the data to determine which diagnostic categories had the highest and lowest mean confidence scores.

Highest Perceived Confidence

The *DSM-5* diagnostic category with the highest mean confidence score was anxiety disorders ($\bar{x} = 6.34$). This was closely followed by depressive disorders ($\bar{x} = 6.26$). Trauma and stressor disorders trauma and stressor related disorders ($\bar{x} = 6.09$) rounded out the top three. Participants on average also reported being slightly confident to confident diagnosing substance-related and addictive disorders ($\bar{x} = 5.43$), bipolar and related disorders ($\bar{x} = 5.35$), and obsessive-compulsive and related disorders ($\bar{x} = 5.28$). These results help establish face validity for the

perceived diagnostic competence survey, because these are the diagnostic categories most frequently used (Schwitzer & Rubin, 2014). Since these are the most frequently used diagnostic categories, it is reasonable to assume counselors have had the opportunity to engage in more self-efficacy building experiences around these disorders. These experiences might include mastery experiences (e.g., opportunities to diagnosis these disorders), social modeling (e.g., observing others diagnosing these disorders), and social persuasion (e.g., receiving feedback about diagnosing these disorders).

Lowest Perceived Competence

The *DSM-5* diagnostic category with the lowest mean confidence score was medication-induced movement disorders and other adverse effects of medication ($\bar{x} = 3.26$). This group of disorders is included in the *DSM-5* diagnostic categories because it is important in medication management and differential diagnosis, but the *DSM-5* specifically states these are not mental disorders (APA, 2013). A medical workup with laboratory tests is needed for the diagnosis of these disorders. When considering this information, it is understandable that counselors would report the lowest confidence levels diagnosing these disorders, as it is likely outside their scope of practice.

Paraphilic disorders was the diagnostic category with the second lowest mean confidence score ($\bar{x} = 3.42$). Disorders within this category can sometimes be considered criminal offenses (APA, 2013). Clients are often not forthcoming with information related to paraphilic disorders (Seligman & Hardenburg, 2000). They may be fearful of legal consequences, especially if they are court referred. This reluctance to share openly could make it difficult to diagnose these disorders. Counselors may have personal beliefs about paraphilic

disorders that impact attitudes towards these disorders. These factors may influence a counselors confidence related to diagnosing disorders in this category.

There were 4 other diagnostic categories in which the mean confidence score was less than neutral ($\bar{x} = 4$): elimination disorders ($\bar{x} = 3.58$), sleep-wake disorders ($\bar{x} = 3.73$), sexual dysfunctions ($\bar{x} = 3.94$), neurocognitive disorders ($\bar{x} = 3.98$). Many of the disorders in these categories require the consideration of a variety of biological factors. Disorders in these categories often require specific medical examination as part of the diagnostic process (APA, 2013). This could be a contributing factor to the low rates of confidence reported by participants.

The six diagnostic categories in which participants reported lower than neutral diagnostic self-efficacy are categories that counselors may see less frequently, may require collaboration with other professionals, or may be outside the counselor's scope of practice. This may limit the opportunities for mastery experiences, social modeling, and social persuasion. Thus, it may be difficult to find opportunities to develop diagnostic self-efficacy related to these diagnostic categories unless they are working in environments where they are frequently exposed to the disorders.

Implications for the Counseling Field

The diagnosis of mental health disorders is not a new concept (APA, 2013; Horwitz, 2020; Schwitzer & Rubin, 2014). The diagnostic process and its role within the counseling field has evolved over time. Despite the complex nature of diagnosis, the literature was lacking an instrument that measured the diagnostic self-efficacy of counselors. With this study, I developed and began to establish the internal structure validity on an instrument measuring diagnostic self-efficacy, the DSES. Through exploratory factor analysis, I determined that the DSES measures the intended central construct, diagnostic self-efficacy, and that items group together to form

distinct subscales. I was also able to gather information about counselors' diagnostic category specific diagnostic self-efficacy with a perceived diagnostic competence survey. This study has the potential to have significant implications for counselor educators and supervisors, practitioners, professional stakeholders, and consumer stakeholders.

Implications for Counselor Educators and Supervisors

Both the DSES and the data obtained from the perceived confidence survey have the potential to have significant implications for counselor educators and supervisors. Each could be significant in shaping counselor education and training.

DSES

Counselor educators and supervisors aim to prepare counselors in training (CIT) and counselors to successfully complete counseling tasks. Self-efficacy impacts a person's motivation, resilience, and perseverance related to task completion and is a vital component of successful task completion (Bandura, 1997, 2006; Bandura et al., 2003). Since increased self-efficacy is a factor in successful task completion, higher levels of diagnostic self-efficacy would likely lead to increased rates of successful diagnosis. Mastery experiences, social modeling, and social persuasion are three major ways self-efficacy is developed (Bandura, 1997; Bandura et al., 2003). Counselor educators and supervisors are in a unique position to help facilitate these experiences and the DSES has the potential to be an important tool in this process.

For example, the DSES could be administered to classes, supervision groups, or individuals to identify specific diagnostic tasks they are less confident completing. This can help facilitate group or one-on-one conversation about diagnosis as a complex process. For instance, a counselor educator may ask the class what tasks are involved in the diagnostic process before the DSES. Then after taking the DSES, the class can engage in group discussion about the diagnostic

tasks outlined in the DSES. This could help increase student insight into the variety of counseling and critical thinking skills needed to make a diagnosis. Results on the DSES could then help counselor educators and supervisors pinpoint specific diagnostic tasks to focus on with mastery experiences, modeling, or persuasion interventions.

The idea of counselor educators implementing mastery experiences, social modeling, or social persuasion into their course work is in line with the social constructivist approach to teaching diagnosis and treatment planning as described by Kress and Eriksen (2010). Counselor educators could utilize constructivist learning activities targeted towards specific diagnostic tasks based on DSES scores. Counselor educators might also consider giving the DSES at the beginning and end of the diagnostic course, practicum, and or internship courses to gauge whether students report being more confident in their diagnostic abilities after completing the course(s). This could also help the counselor educator assess whether coursework, learning activities, and teaching methods were effective or might need to be adjusted.

Counselor educators may also opt to use the DSES in a slightly broader pre/posttest capacity. It could be administered to students at the start of the program, at the end of the program, and, if possible, at a set amount of time post-graduation. In this capacity, the data obtained from the DSES can be used to determine whether there are tasks multiple students and graduates consistently report being less confident performing or more confident performing. This information could be utilized to continue and build upon learning activities related to the high confidence tasks while incorporating new or enhancing old learning activities related to low confidence tasks.

Counselor supervisors have the opportunity to engage in social modeling and social persuasion with supervisees (Johnson & Stuart, 2008). A supervisee's results on the DSES could

help supervisors pinpoint goals related to specific diagnostic tasks to focus on in supervision. The DSES can then be used at later points in supervision to gauge progress related to the goals. The supervisor can be intentional in their use of social modeling and social persuasion around the goal. For example, a supervisee who reports low diagnostic self-efficacy on the DSES item related to the proficient use of questions to gather information about cultural factors. The supervisor and the supervisee can set a specific goal for supervision around that item. The supervisor can model the use of questions to gather information about cultural factors through role-plays or video examples. The supervisor can engage in social persuasion by providing feedback to the supervisee. The supervisor might also encourage mastery experiences by having the client engage in the task in live supervision or in a recorded session.

It is important for counselor educators and supervisors utilizing the DSES to remember that, sometimes, individuals do not know what we do not know (Kruger & Dunning, 1999). The DSES may highlight areas where the supervisee may be over or under-confident in their diagnostic abilities. If the supervisor finds the supervisee is under-confident in a task or in diagnosing a specific group of diagnoses, they can utilize social persuasion by providing specific, supportive feedback when they observe the client completing this task successfully. If the supervisor finds that the supervisee is overconfident, they may find ways to address this. The DSES can provide a roadmap supervisors and counselor educators can use to help supervisees develop diagnostic self-efficacy, which would likely result the supervisee successfully completing the diagnostic process with clients. The results of the perceived diagnostic competence survey also have the potential to impact counselor educators and supervisors.

Perceived Diagnostic Competence Survey Results

The results of the perceived diagnostic competence survey provides counselor educators and supervisors insight into counselor's diagnostic self-efficacy. This insight can help inform how counselor educators and supervisors approach diagnostic training.

The six diagnostic categories counselors reported being most confident diagnosing disorders from are also the most frequently utilized *DSM-5* diagnostic categories (Schwitzer & Rubin, 2014). Since disorders from these categories are diagnosed more frequently, counselors probably have more exposure to these disorders. This aligns with the idea that opportunities for mastery experiences, social modeling, and social persuasion can increase self-efficacy (Bandura, 1997; Bandura et al., 2003). Counselor educators and supervisors can reflect on the learning activities they are utilizing to teach these disorders to continue to enhance these practices and to consider ways to incorporate these practices when teaching about disorders counselors reported less confidence diagnosing.

Knowledge about which disorders counselors are least confident diagnosing provides counselor educators and supervisors a chance to be intentional in building opportunities for mastery experiences, social modeling, and social persuasion. Since the disorders counselors reported being less confident diagnosing are used less frequently, counselors may not have a chance to have these experiences organically. Counselor educators and supervisors can bridge this gap by providing learning exercises specifically related to these disorders to increase client exposure. This could include activities such as role-plays and case studies (Kress & Eriksen, 2010) specifically incorporating disorders from within these categories.

Since many of the disorders counselors reported being least confident diagnosing also had required collaboration with a medical provider for diagnosing (APA, 2013), counselor

educators and supervisors could develop learning activities around how to collaborate with other professionals in the diagnostic process. This finding may be especially pertinent for integrated behavioral health (IBH) training within CACREP-accredited programs. For example, site supervisors at an IBH practicum site might work with clients to recognize signs and symptoms of these disorders and how to communicate with medical professionals to communicate and collaborate about suspected diagnoses.

Implications for Practitioners

In addition to the implications for counselor educators and supervisors, both the DSES and the results of the perceived diagnostic competence survey has implications for counselors.

DSES

The DSES has the potential to be a useful tool for counselors. It encourages reflection about one's diagnostic abilities. Counselors can opt to take this scale for a guided reflection related to their diagnostic self-efficacy. The DSES allows counselors the opportunity to identify areas for growth and areas of strength in the diagnostic process. Their answers on the DSES could help them pinpoint areas within the diagnostic process they may wish to seek more training or supervision. This could lead to increased diagnostic self-efficacy. Increased self-efficacy leads to increased motivation, perseverance, and resilience when faced with tough tasks (Bandura, 1997, 2006; Bandura et al., 2003). This means practitioners who utilize the DSES and seek out training or supervision to increase their self-efficacy, will likely experience increased motivation, resilience and perseverance when faced with the complex task of diagnosis.

Perceived Diagnostic Competence Survey Results

For counselors, the results of the perceived diagnostic competence survey could have several implications. First, this knowledge can help counselors reflect on which diagnostic

categories they are most confident diagnosing so they can seek training and opportunities for consultation. The knowledge that others also have less confidence with diagnosing disorders from certain diagnostic areas may help counselors feel more comfortable sharing their own confidence levels with peers and supervisors.

Implications for Professional Stakeholders

Counselor educators, counselor supervisors, and counselors are not the only professionals who could be impacted by this study. Other professional stakeholders, such as third party-payers and mental health agencies, could benefit from this study.

DSES

While the implications of the DSES for counselor educators, supervisors, and practitioners may seem more obvious, the implications for stakeholders are no less important. Enhanced training and increased self-efficacy from the use of the DSES by counselors, counselor supervisors, and counselor educators would likely have a ripple effect. This would potentially impact mental health agencies, schools, third-party payers, and licensure boards.

Accurate diagnosis is an important factor in clients receiving the appropriate treatment (APA, 2013; Eriksen & Kress, 2006; First, 2010; Neukrug, 2019, 2022; Peterson, 2015; Schwitzer & Rubin, 2014) and benefits (Neukrug & Fawcett 2020). Clients who are receiving the wrong or less effective treatment, may face longer treatment times. Thus, accurate diagnosis could reduce treatment times. For mental health agencies, this could mean serving more people because their resources are made available. For school administrators and teachers, this accurate diagnosis could help ensure students are receiving the appropriate support services and aid in the selection of targeted interventions for support plans. Since accurate diagnosis can help others understand the experience of the client (Eriksen & Kress, 2005, 2006), increased rates of

accurate diagnosis may help teachers and school administrator better understand students with diagnoses and their need for support. For third-party payers, accurate diagnosis means reduced cost because they are less likely to be paying for the client to receive services that are not effective.

Data from the DSES could help state licensure boards make decisions about content requirements for continuing education. Increased rates of accurate diagnosis and the resulting positive impact could also lend credibility to the counseling profession as other providers recognize that their clients receive accurate diagnosis and appropriate treatment or treatment referrals, the other providers. This could potentially help with advocacy for the profession, including licensure portability.

Perceived Diagnostic Competence Survey Results

The data from the perceived diagnostic competence survey could also have implications for other professional stakeholders. Mental health agencies could use this data to inform what types of training they bring in or purchase for employees related to diagnosis. This could be particularly important for specialized mental health agencies who need their counselors to be confident diagnosing certain types of disorders. For example, one of the diagnostic categories with low mean confidence scores was paraphilic disorders. An agency that specializes in treating these disorders might look at this information and realize they cannot assume counselors are confident diagnosing these disorders. Thus, they may opt to offer a training in the diagnosis of paraphilic disorders during the first month of employment.

Companies that provide continuing education can also use these results to inform their course offerings. They could design specific trainings around the diagnostic categories where counselors reported low or mid-range confidence scores. This could increase exposure to these

disorders and provide counselors an opportunity to engage in learning activities outside of a school or supervision environment.

This information could also increase the collaboration between counselors and other professionals. As counselors receive more training in how to diagnosis or begin to recognize signs of disorders that require medical testing, they may find themselves working with medical professionals more frequently to ensure the client is receiving the appropriate diagnosis and care.

Implications for Consumer Stakeholders

As counselors, counselor educators, and counselor supervisors, it is important to consider the impact our research has on clients and their loved ones. Both the DSES and the results of the perceived diagnostic competence survey have the potential to have significant implications for consumer stakeholders.

DSES

Ultimately, the ripples from the use of the DSES to inform counselor training would likely impact clients as well. If counselors' diagnostic skills are enhanced through training and education informed by these tools, clients and their families would benefit from the increase in accurate diagnosis. Clients could receive appropriate treatment sooner, likely resulting in reduced treatment time and costs. Families and clients could receive appropriate psychoeducation to help them understand the diagnosis and the client's experiences, helping to reduce shame and stigma. Rates of misdiagnosis are higher for individuals from oppressed groups (Neukrug, 2022). Improved training related to the DSES and perceived diagnostic competence survey could help reduce rates of misdiagnosis for this group. This could improve their treatment experiences, reduce stigma, and increase treatment engagement for individuals who have experienced oppression. Overall, the DSES and perceived competence survey could

help clients experience the benefits of accurate diagnosis and avoid the negative consequences of misdiagnosis.

Perceived Diagnostic Competence Survey Results

For consumers, the data collected from the perceived diagnostic competence scale could help them receive better treatment. If counselor educators, supervisors, counselors, and other professional stakeholders utilize this information to improve diagnostic training, this should result in increased diagnostic self-efficacy for counselors. For clients, this would mean they are more likely to receive an accurate diagnosis and receive the treatment they need. This information could also empower consumers to make an informed decision about their provider. If they realize that counselors have varying levels of diagnostic self-efficacy related to certain diagnostic categories, they may seek out counselors that indicate they have knowledge about certain disorders.

Limitations

This study had several potential limitations. Time constraints impacted my ability to conduct CFA. Three potential factor structures emerged for the DSES. In the future, I plan to conduct CFA to determine which is the best fit and further establish validity of scores on the DSES (Kalkbrenner, 2021c). I also hope to conduct convergent validity testing to further establish the validity of scores on the DSES (Kalkbrenner 2021a).

The use of only one research team member in consensus item creation may have limited the number/diversity of DSES items. I used non-probability convenience and snowball sampling in this study, which can result in participants who share characteristics and may miss others who also meet participant criteria (Rue et al., 2016). There may be limits to the generalizability to the study because I did not use random or probability sampling. Human bots and bots posed were a

further limitation to the sampling process. I tried to minimize the impact of bot or human bot responses by erring on the side of caution and removing any response that exhibited warning signs (Yarrish et al., 2019). In attempting to remove suspected bot or human bot responses, I may have removed legitimate participant responses. I may also have included some bot or human bot responses that should have been excluded. I also included one response where the participant indicated their graduation year was prior to the year CACREP began accrediting programs. The inclusion was unintentional; however, it is possible that the program was accredited by ACEs, which was the precursor to CACPEP accreditation (CACREP, 2022) or that the program was later accredited by CACREP, and the participant considered themselves a graduate of a CACREP accredited program. Social desirability bias is another possible limitation (Morris & Wester, 2018; Rue et al., 2016).

The release of the *DSM-5 Text Revision* in March 2022 posed another limitation. There are multiple noted changes to the manual, but when this study was initially being conducted the updated version had not been released (Moran, 2021). It was unclear when use of the new manual would be widespread among counselors. Thus, I proceeded with the study using the *DSM-5* as the current edition.

Finally, it is important to note that while a person's self-efficacy is a factor in successful task completion (Bandura 1997, 2006), it is not necessarily indicative of their actual ability. Kruger and Dunning (1999) noted that individuals often over-estimate their abilities. This is a limitation I hope to address in future research.

Future Research

The construct of diagnostic self-efficacy, the DSES, and the perceived diagnostic competence survey lend themselves to a variety of avenues for future research. I developed the

DSES with the hope it could be easily adapted to future editions of the *DSM*. Future research could include updating the instrument as needed based on the recent release of the *DSM-5 (TR)*. Further areas for future research include conducting CFA and convergent validity testing, validating scores on the DSES with other counseling specialties areas, mixed-methods studies, and developing instruments that assess observed diagnostic competence.

CFA and Convergent Validity Testing

At its core, confirmatory factor analysis (CFA) is a theory-testing strategy for examining the factor structure identified during EFA to see if it fits with a different sample (Kalkbrenner, 2021c; Mvududu & Sink, 2013). CFA is a critical step in establishing internal structure validity evidence of scores, as CFA is a more stringent test than EFA. CFA evaluates “goodness of fit” (GOF) and produces GOF indices (Mvududu & Sink, 2013, p. 91). There are three categories of fit indices in CFA (Kalkbrenner, 2021c). Absolute fit indices examine how the hypothesized model fits with the data from the new sample. Parsimonious fit indices test whether model fit is improved by the creation of a simpler model. Incremental fit indices compare the fit between the independence model and the hypothesized model (Kalkbrenner, 2021c).

In a future study, I plan to explore absolute fit and incremental fit indices. From the absolute fit indices, I will evaluate chi-square (CMIN or χ^2), comparative fit index (CFI), root measure square error of approximation (RMSEA), and standardized root mean square residual (SRMR; Kalkbrenner, 2021c). I will also evaluate comparative fit index (CFI) and normed fit index (NFI), both of which are incremental fit indices. Each index has its own thresholds for evaluating model fit indicating either strong fit, acceptable fit, or poor fit. Both NFI and CI have the same thresholds for model fit: strong fit $\geq .97$, acceptable fit = .95 to .90, and poor fit = $< .90$ (Kalkbrenner, 2021c). When evaluating CMIN, a “p-value of greater than .05 or χ^2 to $df \leq 1$ ”

indicates a strong fit, “ χ^2 to $df \leq 2$ or 3” indicates an acceptable fit, and “ χ^2 to $df > 3$ ” indicates a poor fit (Kalkbrenner, 2021b, p. 274). RMSEA thresholds for evaluating model fit are as follows: $< .05$, report confidence interval for strong fit, .06 to .08 for acceptable fit, .081 to .10 may indicate a somewhat acceptable fit, and $> .10$ for poor fit. Finally, SRMR thresholds for model fit are less than .05 for strong fit, .06 to .08 for acceptable fit, and greater than .08 for poor fit. Overall, CFA is a more rigorous test of internal structural validity than EFA and can help identify which of the three retained factor structures is the best fit. I also hope to utilize convergent validity testing in a future study. This would help further demonstrate the construct validity of the DSES (Kalkbrenner, 2021a).

Validation and Use with Different Populations

For this study, I focused on validating the scores of the DSES with counselors who hold a master’s degree in clinical mental health counseling. Because individuals with degrees in other counseling specialty areas also diagnose mental health conditions, it is important to validate this scale with those populations as well. I could also validate scores on this scale with counselors in training, counselor supervisors, and educators to determine their levels of diagnostic self-efficacy. Determining which groups have the highest diagnostic self-efficacy could help identify specific learning activities or experiences (e.g., course work, supervision, field experience) that increase diagnostic self-efficacy. Using the perceived diagnostic competency survey with these groups could also provide insight into which diagnostic categories these groups feel most confident diagnosing.

Mixed Methods Studies

While the DSES and the perceived diagnostic competence survey provide information about levels of diagnostic self-efficacy, neither provide more detailed descriptive information,

such as information about how diagnostic self-efficacy was developed. Pairing the DSES and perceived diagnostic competence survey with a semi-structured interview could help provide more detailed information, such as what professional and personal experiences have impacted diagnostic self-efficacy levels.

It could be beneficial to determine if different groups exhibit different levels of diagnostic self-efficacy. Counselors with different theoretical orientations often view diagnosis differently (Eriksen & Kress, 2006; Neukrug 2019, 2022). Important information about the relationship between diagnostic self-efficacy and counselor theoretical approach could be gathered in a future study using the DSES, the perceived diagnostic competence survey, and a semi-structured interview. Individuals from oppressed groups have often had negative experiences and consequences related to diagnosis (Neukrug, 2022). A mixed methods study could also be utilized to explore the diagnostic self-efficacy of counselors from oppressed groups. This could provide insight into their experience of the diagnostic process.

Observed Competence

Self-efficacy is a critical component of successful task completion (Bandura, 1997; 2006). However, Kruger and Dunning (1999) highlight that belief in ability does not always translate to actual ability. It would be important to create an instrument that could be paired with the DSES to measure observed competence. The counselor or counselor in training could take the DSES, and the supervisor or counselor educator could take instrument that measures observed skill. This would allow comparison between what the counselors perceives their ability to be versus what their supervisor observes as their ability. These instruments could then be utilized together during a counselor's education (e.g., practicum, internship) and residency.

Conclusion

In this study, I aimed to develop and validate the scores of mental health counselors on the Diagnostic Self-Efficacy Scale. I used EFA to identify the underlying factor structure of the DSES. I found three retainable factor solutions, which will be further examined with CFA in a future study to determine which factor solution will be the best fit. The results of this study indicate the DSES is a valid and reliable instrument for measuring Diagnostic Self-Efficacy, but more rigorous validity testing is required to further determine the best factor solution and more fully establish validity. I also gathered information about this sample's perceived diagnostic competence when diagnosing disorders from specific DSM-5 Diagnostic categories, which can help inform counselor training. I discussed the implications of this study for counselors, counselor supervisors, and counselor educators. I explained the limitations of this study. Finally, I explored areas for future research.

References

- American Counseling Association. (2022). *Knowledge center: Overview of state licensing of professional counselors*. <https://www.counseling.org/knowledge-center/licensure-requirements/overview-of-state-licensing-of-professional-counselors>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association.
- American Psychiatric Association. (2020). *DSM history*.
<https://www.psychiatry.org/psychiatrists/practice/dsm/history-of-the-dsm>
- American Psychiatric Association. (n.d.). Online assessment measures.
<https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures>
- Bandalos, D. L., & Finney, S. J. (2019). Factor analysis: Exploratory and confirmatory. In G. R. Hancock, L. M. Stapleton, & R. O. Mueller (Eds.), *The reviewer's guide to quantitative methods in the social sciences* (2nd ed., pp. 98–122). Routledge.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. <https://doi-org.proxy.lib.odu.edu/10.1037/0033-295X.84.2.191>
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28, 117–148. https://doi-org.proxy.lib.odu.edu/10.1207/s15326985ep2802_3
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.
- Bandura, A., Davidson, H. F., & Davidson, J. (2003). *Bandura's social cognitive theory: An introduction* [Video/DVD]. Davidson Films.

<https://video.alexanderstreet.com/watch/bandura-s-social-cognitive-theory-an-introduction>

Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.) *Self-efficacy beliefs of adolescents* (pp.307-337). Information Age Publishing.

<http://dx.doi.org.proxy.lib.odu.edu/10.1002/j.1556-6676.1992.tb02145.x>

Bardhoshi, G., & Erford, B. (2017). Processes and procedures for estimating score reliability and precision. *Measurement and Evaluation in Counseling and Development*. 50(4), 256–263. <https://doi.org/10.1080/07481756.2017.1388680>

Beavers, A. a., Lounsbury, J. W., Richards, J. K., Huck, S. W., Skolits, G. J., & Esquivel, S. L. (2013). Practical considerations for using exploratory factor analysis in educational research. *Practical Assessment, Research & Evaluation*, 18(5/6), 1-13.

<https://doi.org/10.7275/qv2q-rk76>

Blaine, Bruce E. (2018). *Winsorizing*. In B. Frey (Ed.), *The SAGE encyclopedia of educational research, measurement, and evaluation*, pp. 1817-1818. SAGE.

<https://dx.doi.org/10.4135/9781506326139>

Challacombe, F. L. & Wroe, A. L., (2013). A hidden problem: consequences of the misdiagnosis of obsessive-compulsive disorder. *British Journal of General Practice*. 63(610), 275-276.

10.3399/bjgp13X667376

Council for Accreditation of Counseling and Related Educational Programs [CACREP]. (2016).

2016 CACREP standards. <https://www.cacrep.org/for-programs/2016-cacrep-standards/>

Dailey, S. F., Gill, C. S., Karl, S. L., & Barrio Minton, C. A. (2014). *DSM-5 learning companion for counselors*. American Counseling Association.

DeVellis, R. F. (2017). *Scale development: Theory and applications* (4th ed.). Sage.

<https://doi.org/10.1177/0748175610373459>

- Dumont, F., & Lecomte, C. (1987). Inferential process in clinical work: Inquiry into logical errors that affect diagnostic judgements. *Professional Psychology: Research and Practice*, 18, 433-438. <https://doi-org.proxy.lib.odu.edu/10.1037/0735-7028.18.5.433>
- Eriksen, K. & Kress, V. E. (2005). *Beyond the DSM story: Ethical quandaries, challenges, and best practices*. SAGE.
- Eriksen, K. & Kress, V. E. (2006). The DSM and the professional counseling identity: bridging the gap. *Journal of Mental Health Counseling*, 28(3) 202- 217. <https://doi-org.proxy.lib.odu.edu/10.17744/mehc.28.3.4f39a6wrln3fceb2>
- First, M. B. (2010). Clinical utility in the revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM). *Professional Psychology: Research and Practice*, 41(6), 465-473. 10.1037/a0021511
- Hays, D. G., McLeod, A. L., & Prosek, E. (2009). Diagnostic variance among counselors and counselor trainees. *Measurement and Evaluation in Counseling and Development*, 42(1), 3-14. 10.1177/0748175609333559
- Horwitz, A. V. (2021). *DSM: History of psychiatry's bible*. Johns Hopkins University Press.
- Houts, A. C. (2000). Fifty Years of psychiatric nomenclature: Reflections on the 1943 War Department Technical Bulletin, Medical 203. *Journal of Clinical Psychology*, 56, 935-967. [https://doi-org.proxy.lib.odu.edu/10.1002/1097-4679\(200007\)56:7<935::AID-JCLP11>3.0.CO;2-8](https://doi-org.proxy.lib.odu.edu/10.1002/1097-4679(200007)56:7<935::AID-JCLP11>3.0.CO;2-8)
- Ikart, E. (2019). Survey questionnaire survey pretesting method: An evaluation of survey questionnaire via expert reviews technique. *Asian Journal of Social Science Studies*, 4(2), 1-17. 10.20849/ajsss.v4i2.565

- Karg, R. S. & Wiens, A.N. (2005). Improving diagnostic and clinical interviewing. In G. P. Koocher, J. C. Norcross, & S. S. Hill, (Eds.), *Psychologists Desk Reference* (2nd ed., pp.13-15). Oxford University Press.
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31–36.
<https://doi.org/10.1007/BF02291575>
- Kalkbrenner, M. T. (2021a). A practical guide to instrument development and score validation in the social sciences: The MEASURE approach. *Practical Assessment, Research, and Evaluation*, 26(1), 1-18. <https://doi.org/10.7275/svg4-e671>
- Kalkbrenner, M.T. (2021b): Alpha, omega, and H internal consistency reliability estimates: Reviewing these options and when to use them, *Counseling Outcome Research and Evaluation*, 1-12. <https://doi.org/10.1080/21501378.2021.1940118>
- Kalkbrenner, M. T. (2021c). Enhancing assessment literacy in professional counseling: A practical overview of factor analysis. *The Professional Counselor* 11(3), 267-284.
 10.15241/mtk.11.3.267
- Kress, V.E., & Eriksen, K.P. (2010). Teaching the diagnosis and treatment planning course. In G. J. McAuliffe, K. Eriksen, & ACES (Eds.). *Handbook of counselor preparation: Constructivist, developmental, and experiential approaches*. 13-15. SAGE.
- Kruger, J., & Dunning, D., (1999). Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, 77(6), 1121-1134. 10.1037/0022-3514.77.6.1121
- Larson, L. M. and Daniels, J. A. (1998). Review of the counseling self-efficacy literature. *The Counseling Psychologist*, 26(2), 179-218.
<https://psycnet.apa.org/doi/10.1177/0011000098262001>

- Larson, L. M., Suzuki, L. A., Gillespie, K. N., Potenza, M. T., Bechtel, M. A., & Toulouse, A. L. (1992). *Counseling self-estimate inventory*. APA PsychTests. <https://dx.doi.org/10.1037/t02887-000>
- Lent, R. W., Hill, C. E., & Hoffman, M. A. (2003). Development and validation of the counselor activity self-efficacy scales. *Journal of Counseling Psychology*, 50(1), 97-108. <https://doi-org.proxy.lib.odu.edu/10.1037/0022-0167.50.1.97>
- Loeb, D. F., Crane, L. A., Leister, E., Bayliss, E. A., Ludman, E., Binswanger, I. A., Kline, D. M., Smith, M., deGruy, F. V., Nease, D. E., & Dickinson, L. M. (2017a). Development and initial validation of primary care provider mental illness management and team-based care self-efficacy scales. *General Hospital Psychiatry*, 45, 44-50. 10.1016/j.genhosppsych.2016.12.005
- Loeb, D. F., Crane, L. A., Leister, E., Bayliss, E. A., Ludman, E., Binswanger, I. A., Kline, D. M., Smith, M., deGruy, F. V., Nease, D. E., & Dickinson, L. M. (2017b). *Mental illness management scale (MIM)*. APA PsycTests. <https://dx.doi.org/10.1037/t61706-000>
- Mascari, J. B., & Webber, J. (2013). CACREP accreditation: A Solution to license portability and counselor identity problems. *Journal of Counseling and Development: JCD*, 91(1), 15-25. <http://dx.doi.org.proxy.lib.odu.edu/10.1002/j.1556-6676.2013.00066.x>
- Mears, G. (2015). Conducting an intake interview. p. 83-86 In M. A. Stebnicki (Ed.). *The professional counselor's desk reference* (2nd ed., pp. 83-86). Springer Publishing Company.
- Menold, J., Jablokow, K., Purzer, S., Ferguson, D., & Ohland, M. (2015). Using an instrument blueprint to support the rigorous development of new surveys and assessments in engineering education. *ASEE Annual Conference and Exposition, Conference*

Proceedings, 122. American Society for Engineering Education.

https://www.researchgate.net/publication/283128734_Using_an_instrument_blueprint_to_support_the_rigorous_development_of_new_surveys_and_assessments_in_engineering_education

Moran, M. (2021, December 28). Updated DSM-5 text revisions to be released in March.

Psychiatric News. <https://doi.org/10.1176/appi.pn.2022.1.20>

Mvududu, N. H., & Sink, C. A. (2013). Factor analysis in counseling research and practice.

Counseling Outcome Research and Evaluation, 4(2), 75-98.

<https://doi.org/10.1177/2150137813494766>

Neukrug, E. (2019). *Counseling and helping skills: Critical techniques to becoming a counselor*.

Cognella Academic Press.

Neukrug, E. (2022). *The world of the counselor*. Cognella Academic Press.

Neukrug, E., & Fawcett, R. (2020). *Essentials of testing and assessment for counselors,*

psychologists, and social workers (3rd ed., enhanced version). Cognella Academic Press.

Peterson, D. (2015). Diagnostic assessment in clinical counseling. In M. A. Stebnicki (Ed.). *The*

professional counselor's desk reference (2nd ed., pp. 311-319). Springer Publishing

Company.

Qualtrics Sample Services [Online sampling service service]. (2022).

https://www.qualtrics.com/lp/survey-platform/?utm_source=google&utm_medium=ppc&utm_campaign=US-Brand-Qualtrics-Brand+Plus&utm_keyword=qualtrics%20survey&MatchType=e&adid=351559587267&utm_content=351559587267&adgroupid=44757955347&campaignid=755409792&Target=&targetid=kwd-

[297939377458&Device=c&devicemodel=&loc_physical_ms=9008586&network=g&adp
osition=&gclid=CjwKCAiA0KmPBhBqEiwAJqKK4_2uDqmlkJOSfg-
Bq3L8ejRdGg4gKCZCS8-6rHe4mV-oVdxT4KSrVxoCvAgQAvD_BwE](https://doi.org/10.1080/07481756.2017.1336931)

- Ruel, E., Wagner, W. E., & Gillespie, B. J. (2016). *The practice of survey research*. SAGE.
- Schwitzer, A.W., & Rubin, L.C. (2014). *Diagnosis and treatment planning skills: A popular culture casebook approach, DSM-5 update* (2nd ed.). SAGE.
- Sheu, H.-B., & Lent, R. W. (2007). *Multicultural Counseling Self-Efficacy Scale—Racial Diversity Form*. <https://dx.doi.org/10.1037/t04291-000>
- Sheu, H.-B., Rigali-Oiler, M., & Lent, R. (2012). Multicultural counseling self-efficacy scale – racial diversity form: Factor structure and test of a social cognitive model. *Psychotherapy Research*, 22(5), 527–542. <https://doi-org.proxy.lib.odu.edu/10.1080/10503307.2012.683344>
- Seligman, L., & Hardenburg, S. A. (2000). Assessment and treatment of paraphilias. *Journal of Counseling and Development*, 78(1), 107-113. <https://doi.org/10.1002/j.1556-6676.2000.tb02567.x>
- Vagias, W. M. (2006). *Likert-type scale response anchors*. Clemson International Institute for Tourism & Research Development, Department of Parks, Recreation and Tourism Management. Clemson University
- Watcher Morris, C. A. & Wester, K. L. (2018). *Making research relevant: Applied research designs for the mental health practitioner*. Routledge.
- Watson, J. C. (2017). Establishing evidence for internal structure using exploratory factor analysis. *Measurement and Evaluation in Counseling and Development*, 50(4), 232–238. <https://doi.org/10.1080/07481756.2017.1336931>

- Watt, H. M. G., Ehrich, J., Stewart, S. E., Snell, T., Bucich, M., Jacobs, N., Furlonger, B., & English, D. (2019). Development of the psychologist and counsellor self-efficacy scale. *Higher Education, Skills and Work-Based Learning*, 9(3), 485-509. 10.1108/HESWBL-07-2018-0069
- Yarrish, C., Groshon, L., Mitchell, J. D., Appelbaum, A., Klock, S., Winternitz, T., & Friedman-Wheeler, D. G. (2019). Finding the signal in the noise: Minimizing responses from bots and inattentive humans in online research. *The Behavior Therapist*, 42(7), 235-242.
- Yong, A.G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, 29, 79-94. 10.20982/tqmp.09.2.p079

APPENDIX A

Initial Diagnostic Self-Efficacy Scale Item List for Expert Review

Intended Construct of Measurement: Diagnostic self-efficacy, which is defined as one's belief in their ability to accurately diagnose a mental health disorder using the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Please respond to the following items using a scale of 1 to 5: 1= Not Confident at All, 2= Slightly Confident 3=Moderately Confident, 4= Confident and 5= Extremely Confident

Overall diagnostic ability: Please respond to the following items on a scale of one to five

“Currently, how confident are you that you ...”

1. Know how to utilize the Diagnostic and Statistical Manual (DSM) in the diagnostic process?
2. Know how to accurately diagnose a client?
3. Can accurately diagnose a client's mental health condition?
4. Can effectively use the DSM in the diagnostic process?

Assessment of the Whole Person: Please respond to the following items on a scale of one to five

“Currently, how confident are you that you ...”

5. Understand how family history may affect a client's current presentation?
6. Understand how medical conditions can mimic mental health symptoms?
7. Understand how environmental factors may impact a client's presentation?
8. Understand how relational dynamics may affect a client's presentation?
9. Understand how the sociopolitical climate may impact a client's presentation?
10. Understand how spiritual beliefs may impact a client's presentation?
11. Understand how cultural factors may impact a client's presentation?

12. Understand how socioeconomic factors may impact a client's presentation?
13. Can apply information obtained about environmental factors experienced by the client in diagnosis?
14. Can apply information obtained about the client's family history in diagnosis?
15. Can apply information obtained regarding medical conditions experienced by the client in diagnosis?
16. Can apply information obtained about relational dynamics in diagnosis?
17. Can apply information obtained about the sociopolitical climate experienced by the client in diagnosis?
18. Can apply information obtained about a client's spiritual beliefs in diagnosis?
19. Can apply information obtained about cultural factors experienced by the client in diagnosis?
20. Can apply information obtained about socioeconomic factors experienced by the client in diagnosis?

Gather Information Through Appropriate Assessment Tools, Questions, and Measures:

“Currently, how confident are you that you ...”

21. Know appropriate ways to gather information about medical history?
22. Can gather information about a client's medical history?
23. Can consult with medical professionals regarding a client's symptoms?
24. Can make appropriate referrals to rule out medical conditions as the cause of a symptom?
25. Can assess for relational concerns which may impact presentation?

26. Can create a warm, empathic environment to promote client comfort to gather information?
27. Understand how a mental status exam informs diagnosis?
28. Can ask open-ended questions to gather information?
29. Can ask closed-ended s to gather specific information?
30. Know what questions to ask to gather information about relational dynamics?
31. Know what questions to ask to gather information about cultural factors?
32. Know what questions to ask to gather information about spiritual beliefs?
33. Know what questions to ask to gather information about environmental factors?
34. Know what questions to ask to gather information about family history?
35. Know what questions to ask to gather information about socioeconomic status?
36. Know what questions to ask to gather information about medical concerns?
37. Know how to conduct an intake interview?
38. Know how to move appropriately from question to question during an intake session?
39. Know what diagnostic assessments are available through the DSM?
40. Know what diagnostic assessments are available in addition to those provided by the DSM?
41. Know how to pick the appropriate diagnostic assessment?
42. Can ask appropriate questions to gather information about relational dynamics?
43. Can ask appropriate questions to gather information about cultural factors?
44. Can ask appropriate questions to gather information about spiritual beliefs?
45. Can ask appropriate questions to gather information about environmental factors?
46. Can ask appropriate questions to gather information about family history?

47. Can ask appropriate questions to gather information about socioeconomic status?
48. Can ask appropriate questions to gather information about medical concerns?
49. Can conduct an intake interview?
50. Can move appropriately from question to question during an intake interview?
51. Can use diagnostic assessments available through the DSM?
52. Can use diagnostic assessments other than those provided by the DSM?
53. Can pick the appropriate diagnostic assessment?
54. Understand the importance of gathering information from outside sources?
55. Can gather information from outside sources?
56. Can apply information gathered from outside sources in diagnosis?
57. Understand the purpose of a biopsychosocial assessment?
58. Can complete a biopsychosocial examination?
59. Are able to interpret findings of a mental status exam?
60. Can interpret the results of diagnostic assessment measures?

Consider Diagnostic Criteria:

“Currently, how confident are you that you ...”

61. Understand your own biases in the diagnostic process?
62. Can bracket your own biases when assigning diagnosis?
63. Are able to consider all diagnostic possibilities?
64. Understand the concept of differential diagnosis?
65. Can identify possible differential diagnoses?
66. Can rule-out differential diagnoses?
67. Understand why you are assigning a certain diagnosis?

68. Can explain why you assigned a certain diagnosis?
69. Understand how to conduct research to better understand a diagnosis?
70. Can conduct research to better understand a diagnosis?
71. Understand what a provisional diagnosis is?
72. Can assign a provisional diagnosis when appropriate?
73. Understand the purpose of diagnostic subtypes?
74. Can distinguish between different diagnostic subtypes?
75. Understand how to assess for symptom severity?
76. Can assess the severity of a diagnosis?
77. Are able to identify the appropriate specifier for a diagnosis?
78. Understand the purpose of diagnostic specifiers?
79. Can assign appropriate diagnostic specifiers?
80. Can identify the appropriate diagnosis subtype?
81. Understand the purpose diagnosis subtypes?
82. Can compare information gathered against diagnostic criteria to determine if criteria are met?
83. Understand how to access the diagnostic criteria for a specific diagnosis?

Code and Order Diagnoses:

“Currently, how confident are you that you ...”

84. Understand the purpose of diagnostic codes?
85. Can assign diagnostic codes?
86. Understand the meaning of principal diagnosis?
87. Can order diagnoses according to treatment needs when multiple diagnoses are present?

- 88. Understand how to code for billing/insurance purposes?
- 89. Understand how to adjust a diagnosis code for diagnostic specifiers?
- 90. Understand how to adjust a diagnostic code for symptom severity?
- 91. Can adjust a diagnostic code for diagnostic severity?
- 92. Can adjust a diagnostic code for diagnostic subtype?
- 93. can adjust a diagnostic code for diagnosis specifier?

DATE: _____

NA=Not applicable 1=Strongly disagree 2=Disagree 3=Neither agree/nor disagree
4=Agree 5=Strongly agree

- | | | | | | | |
|---|-----|---|---|---|---|---|
| 8. The length of the instrument is appropriate. | N/A | 1 | 2 | 3 | 4 | 5 |
|---|-----|---|---|---|---|---|

Comments:

9. The scale on the instrument is clear.

N/A 1 2 3 4 5

Comments:

10. The directions for participants on the instrument are clear.

N/A 1 2 3 4 5

Comments:

Please use the space below for any additional comments about this instrument. **Please also consider making comments directly about the questions using track changes.** Use as much space as you need.

APPENDIX C

IRB Exemption Letter



OFFICE OF THE VICE PRESIDENT FOR RESEARCH



Physical Address

4111 Monarch Way, Suite 203
Norfolk, Virginia 23508

Mailing Address

Office of Research
1 Old Dominion University
Norfolk, Virginia 23529
Phone(757) 683-3460
Fax(757) 683-5902

DATE: June 2, 2022

TO: Edward Neukrug, Ed.D.

FROM: Old Dominion University Education Human Subjects Review Committee

PROJECT TITLE: [1911613-1] The Development and Validation of Scores on the Diagnostic Self-Efficacy Scale

REFERENCE #:

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE:

REVIEW CATEGORY: Exemption category #2

Thank you for your submission of New Project materials for this project. The Old Dominion University Education Human Subjects Review Committee has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact John Baaki at (757) 683-5491 or jbaaki@odu.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Old Dominion University Education Human Subjects Review Committee's records.

APPENDIX D

Pilot Study Materials

Pilot Study Recruitment Letter

Hello,

My name is Erin Swanson, and I am a doctoral candidate in the Counselor Education and Supervision program at Old Dominion University. I would like to invite you to participate in the pilot study for my dissertation on “The Development and Validation of Scores on the Diagnostic Self-Efficacy Scale.” This pilot study is conducted under the direction of my dissertation chair, Dr. Ed Neukrug. The Old Dominion University Education Human Subjects Review Committee has reviewed this study [1911613-1].

The purpose of this study is to obtain feedback on how confident clinical mental health counselors are in diagnosing mental health disorders. You are eligible to participate if you are a:

- current student in a counseling master’s degree program,
- counselor educator, or
- counselor.

Participation consists of completion of (a) a demographic questionnaire, (b) a rating scale of perceived competence of diagnosing DSM-5 diagnostic areas, (c) the Diagnostic Self-Efficacy Scale (DSES), and (d) a few optional follow-up questions regarding your experience of the DSES. Participation will take approximately 15 minutes to 20 minutes.

If you are interested in participating, please follow this link:

https://odu.co1.qualtrics.com/jfe/form/SV_eJw9kYRKCTrF1BA

Thank you for your time and consideration!

Erin Swanson, LPC (VA)

Eswan002@odu.edu

Doctoral Candidate

Old Dominion University

Dr. Ed Neukrug, Professor

eneukrug@odu.edu

Counseling and Human Services

Old Dominion University

INFORMED CONSENT DOCUMENT

OLD DOMINION UNIVERSITY PROJECT TITLE: The Development and Validation of Scores on the Diagnostic Self-Efficacy Scale -Pilot Study

INTRODUCTION

The purposes of this form are to give you information that may affect your decision whether to say YES or NO to participation in this research pilot study, and to record the consent of those who say YES. This is the pilot study for the study titled “The Development and Validation of the Diagnostic Self-Efficacy Scale. This pilot study will be conducted entirely virtually.

RESEARCHERS

Principal Investigator: Dr. Edward Neukrug, Department of Counseling & Human Services

Investigator: Erin Swanson MS, LPC (VA), Department of Counseling & Human Services

DESCRIPTION OF RESEARCH PILOT STUDY

Several studies have explored the subject of self-efficacy, or one’s belief they are able to complete an identified task. Instruments have been created to measure the self-efficacy of counselors related to a variety of counseling tasks, however the literature is lacking an instrument which explores the self-efficacy of clinical mental health counselors related to specific diagnostic tasks. This pilot study seeks to gain feedback on the Diagnostic Self-Efficacy Scale (DSES), an instrument being developed to bridge this gap. This instrument has the potential to identify growth areas in counselor education and supervision related to diagnosis and inform future training.

If you decide to participate, then you will join a pilot study involving questions about your self-efficacy related to the process of diagnosing mental health disorders. This means you will participate in a demographic questionnaire, a rating scale of your perceived competence of

diagnosing DSM-V diagnostic areas, and the DSES. There will be space after each DSES question to provide optional, item specific feedback. You will then be asked to provide overall feedback about the DSES. All items will be completed through the electronic survey platform Qualtrics. If you say YES, then your participation will last for 15 to 20 minutes and will be entirely online. Approximately 40 counselors, counselor educators, and counselors in training will be participating in this pilot study.

EXCLUSIONARY CRITERIA

You should be a counselor, counselor educator, or a student in a counseling master's degree program. You should not be under 18 years old.

RISKS AND BENEFITS

RISKS: If you decide to participate in this pilot study, then you may face a risk of discomfort from questions asked. The researcher tried to reduce these risks by de-identifying all data. As with any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS: The main benefit to you for participating in this pilot study is your contribution to the fields of counseling and counselor education.

COSTS AND PAYMENTS

The researchers want your decision about participating in this study to be absolutely voluntary. They recognize that your participation may pose some inconvenience due to time requirements (approximately 15 to 20 minutes). The researchers are unable to give you any payment for participating in this pilot study and no course credit will be given.

NEW INFORMATION

If the researchers find new information during this pilot study that would reasonably change your

decision about participating, then they will give it to you.

CONFIDENTIALITY

The researchers will take reasonable steps to keep private information, such as demographic information and instrument responses, confidential. The researcher will remove identifiers from all identifiable private information collected. Identifiers might be removed and the de-identified information used for future research without additional informed consent from the subject. The results of this pilot study may be used in reports, presentations, and publications; but the researcher will not identify you. Of course, your records may be subpoenaed by court order or inspected by government bodies with oversight authority.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the pilot study at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled. The researchers reserve the right to withdraw your participation in this pilot study, at any time, if they observe potential problems with your continued participation.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm arising from this pilot study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact Erin Swanson at 804-370-9927, John Baaki the current Human Subject Review Committee chair at 757-683-5491 at Old Dominion University, or the Old Dominion University Office of Research at 757-683-3460 who will be glad to review the

matter with you.

VOLUNTARY CONSENT

By selecting “yes, I agree”, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research pilot study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them: Dr. Edward Neukrug at 757-683-6497 or Erin Swanson 804-370-9927.

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call John Baaki, the current Human Subject Review Committee chair, at 757-683-5491, or the Old Dominion University Office of Research, at 757-683-3460. And importantly, by selecting “yes, I agree” below, you are telling the researcher YES, that you agree to participate in this study. You should print a copy of this form for your records.

Pilot Study Demographic Questionnaire

1. **Please State Your age in years:** (Write in)

2. **Which best describes your current role?**
 - ☐ Counseling Student
 - ☐ Counselor
 - ☐ Counselor Educator
 - ☐ Other (please specify):

3. **What is your gender?** (Multiple Choice)
 - ☐ Fluid/Genderfluid
 - ☐ Gender Non-Conforming/Genderqueer
 - ☐ Man
 - ☐ Non-Binary
 - ☐ Transgender Man/ Trans Man
 - ☐ Transgender Woman/ Trans Woman
 - ☐ Woman
 - ☐ Not Listed (please specify):
 - ☐ Prefer not to answer

4. **Which of the following categories describe you?** (Multiple Choice)
 - ☐ American Indian or Alaska Native
 - ☐ Asian or Asian American
 - ☐ Black or African American
 - ☐ Hispanic, Latinx, or Spanish origin
 - ☐ Middle Eastern or North African
 - ☐ Multiple ethnic identities (please specify): ____
 - ☐ Native Hawaiian or Other Pacific Islander
 - ☐ White or European American
 - ☐ Another race, ethnicity, or origin (please specify) ____
 - ☐ Rather not answer

5. **If your master's degree is not in/will not be in clinical mental health counseling, please specify specialty area:** (Write in)

6. **Please indicate the state where you received/will receive your master's degree:** (Drop Down: All 50 states)

7. **Year of master's degree completion (or indicate you are a student: last item):** (Drop Down: 1960-2022, I am a student)

8. **What is your current counseling licensure status?** (Multiple Choice)
 - ☐ Fully licensed to practice in your state independently
 - ☐ Under post-graduate supervision
 - ☐ Other (please specify):_____

- 9. Licensure/practice state?** (Drop Down: all 50 states and option for “licensed/practicing in multiple states”, not applicable)
- 10. Years of active post-graduation counseling practice (or indicate you are a student: last option):** (Drop Down: 1-70, I am a student)

Perceived Competence of Diagnosing DSM-5 Diagnostic Areas

Please rate your confidence in diagnosing disorders in each of the *DSM-5* diagnostic categories using the following scale:

1	2	3	4	5	6	7
Extremely Confident	Not Extremely Confident	Slightly Not Confident		Neither Not Confident	Slightly Confident	
Not Confident				Or Confident		

1. Neurodevelopmental Disorders
2. Sleep Wake Disorders
3. Schizophrenia Spectrum and Other Psychotic Disorders
4. Sexual Dysfunctions
5. Bipolar and Related Disorders
6. Gender Dysphoria
7. Depressive Disorders
8. Disruptive, Impulse Control, and Conduct Disorders
9. Anxiety Disorders
10. Substance-Related and Addictive Disorders
11. Obsessive-Compulsive and Related Disorders
12. Neurocognitive Disorders
13. Trauma and Stressor Related Disorders
14. Dissociative Disorders
15. Somatic Symptom and Related Disorders
16. Feeding and Eating Disorders
17. Medication-Induced Movement Disorders and Other Adverse Effects of Medications
18. Paraphilic Disorders
19. Personality Disorders
20. Elimination Disorders
21. Other Mental Disorders
22. Other Conditions That May Be a Focus of Clinical Assessment

Diagnostic Self-Efficacy Scale Pilot Study Item List

Intended Construct of Measurement: Diagnostic self-efficacy is defined as one's belief in their ability to effectively diagnose a mental health disorder using the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Please respond to the following items using a scale of 1 to 5: 1= Not Confident at All, 2= Slightly Confident 3=Neither Confident or Not Confident, 4= Confident, and 5= Extremely Confident

“Currently, how confident are you that you can ...”

1. Accurately diagnose a client's mental health condition?

Optional Feedback:

2. Apply information about a client's environmental factors (e.g., housing conditions) in diagnosis?

Optional Feedback:

3. Apply information about the client's family history in diagnosis?

Optional Feedback:

4. Apply information regarding medical conditions experienced by the client in diagnosis?

Optional Feedback:

5. Apply information about relational dynamics (e.g., family conflict) in diagnosis?

Optional Feedback:

6. Apply information about the sociopolitical climate (e.g., extremism in political views) experienced by the client in diagnosis?

Optional Feedback:

7. Apply information about a client's spiritual beliefs (which can include but are not limited to religion) in diagnosis?

Optional Feedback:

8. Apply information about cultural factors (e.g., attitudes, values, beliefs) experienced by the client in diagnosis?

Optional Feedback:

9. Apply information about socioeconomic factors (e.g., lack of financial resources) experienced by the client in diagnosis?

Optional Feedback:

10. Consult with medical professionals regarding a client's symptoms?

Optional Feedback:

11. Create an empathic environment to promote client comfort to gather information?

Optional Feedback:

12. Ask open-ended questions to gather information?

Optional Feedback:

13. Ask closed-ended questions to gather specific information?

Optional Feedback:

14. Proficiently use questions to gather information about relational dynamics?

Optional Feedback:

15. Proficiently use questions to gather information about cultural factors?

Optional Feedback:

16. Proficiently use questions to gather information about religious and/or spiritual beliefs?

Optional Feedback:

17. Proficiently use questions to gather information about environmental factors?

Optional Feedback:

18. Proficiently use questions to gather information about family history?

Optional Feedback:

19. Proficiently use questions to gather information about socioeconomic status?

Optional Feedback:

20. Proficiently use questions to gather information about medical concerns?

Optional Feedback:

21. Conduct an intake interview?

Optional Feedback:

22. Move appropriately from question to question during an intake interview?

Optional Feedback:

23. Use assessments instruments to aid with making diagnosis?

Optional Feedback:

24. Apply information gathered from outside sources in diagnosis?

Optional Feedback:

25. Complete a biopsychosocial examination?

Optional Feedback:

26. Accurately interpret findings of a mental status exam?

Optional Feedback:

27. Accurately interpret the results of diagnostic assessment measures?

Optional Feedback:

28. Accurately use the results of a psychological report in making a diagnosis?

Optional Feedback:

29. Set aside your own biases when assigning diagnosis?

Optional Feedback:

30. Identify differential diagnoses?

Optional Feedback:

31. Explain why you assigned a certain diagnosis?

Optional Feedback:

32. Review research literature to better understand a diagnosis?

Optional Feedback:

33. Assign a provisional diagnosis when appropriate?

Optional Feedback:

34. Distinguish between different diagnostic subtypes?

Optional Feedback:

35. Assess the severity of a diagnosis?

Optional Feedback:

36. Can identify the appropriate specifier for a diagnosis?

Optional Feedback:

37. Can compare information gathered in the diagnostic process against DSM diagnostic criteria to determine if those criteria are met?

Optional Feedback:

38. Can assign appropriate diagnostic codes?

Optional Feedback:

39. Can order diagnoses according to treatment needs when multiple diagnoses are present?

Optional Feedback:

40. Can adjust a diagnostic code for diagnostic severity?

Optional Feedback:

41. Can adjust a diagnostic code for diagnostic subtype?

Optional Feedback:

42. Can adjust a diagnostic code for diagnosis specifier?

Optional Feedback:

Pilot Study Feedback:

Using the scale below, please select the option that most accurately reflects your view by **bolding (or highlighting)** a number on the scale.

**NA=Not applicable 1=Strongly disagree 2=Disagree 3=Neither agree/nor disagree
4=Agree 5=Strongly agree**

- | | | | | | | |
|--|-----|---|---|---|---|---|
| 1. The items on the instrument read smoothly. | N/A | 1 | 2 | 3 | 4 | 5 |
| 2. The scale on the instrument is clear. | N/A | 1 | 2 | 3 | 4 | 5 |
| 3. The directions for participants on the instrument are clear. | N/A | 1 | 2 | 3 | 4 | 5 |
| 4. The items on the instrument effectively measure diagnostic self-efficacy. | N/A | 1 | 2 | 3 | 4 | 5 |

Additional Feedback/Comments:

APPENDIX E

Recruitment Letter

Hello Mental Health Counselor,

My name is Erin Woods, and I am a doctoral candidate in the Counselor Education and Supervision program at Old Dominion University. I would like to invite you to participate in my dissertation study titled “The Development and Validation of Scores on the Diagnostic Self-Efficacy Scale.” I am conducting this study under the direction of my dissertation chair, Dr. Ed Neukrug. The Old Dominion University Education Human Subjects Review Committee has reviewed this study [1911613-1].

The purpose of this study is to develop and validate scores on an instrument which measures how confident professional mental health counselors are in their ability to diagnose mental health disorders, referred to as a counselor’s diagnostic self-efficacy. I am seeking participants who meet both of the following criteria:

- Master’s level counselor
- Obtained a master’s degree from a CACREP accredited clinical mental health counseling program

Participation in this study consists of completion of (a) a demographic questionnaire, (b) a rating scale of perceived competence of diagnosing *DSM-5* diagnostic areas, (c) the Diagnostic Self-Efficacy Scale (DSES Participation will take approximately 15 minutes to 20 minutes). All participants who meet eligibility criteria and complete the demographic questionnaire, the rating scale, and DSES can opt to be entered into a drawing for one of five \$20.00 Amazon gift cards.

If you are interested in participating, please follow this link: https://odu.co1.qualtrics.com/jfe/form/SV_7QD3dXDkNugZ2XY

Please feel free to pass this information along to other potential participants. Thank you for your time and consideration!

Erin Woods, LPC (VA)

Eswan002@odu.edu

Doctoral Candidate

Old Dominion University

Dr. Ed Neukrug

eneukrug@odu.edu

Counseling and Human Services

Old Dominion University

APPENDIX F

Informed Consent Document

PROJECT TITLE: The Development and Validation of Scores on the Diagnostic Self-Efficacy Scale

INTRODUCTION

The purposes of this form are to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. The study titled “The Development and Validation of the Diagnostic Self-Efficacy Scale” will be conducted entirely virtually.

RESEARCHERS

Principal Investigator: Dr. Edward Neukrug, Department of Counseling & Human Services

Investigator: Erin Woods, MS, LPC (VA), Department of Counseling & Human Services

DESCRIPTION OF RESEARCH STUDY

Several studies have explored the subject of self-efficacy, or one’s belief they are able to complete an identified task. Instruments have been created to measure the self-efficacy of counselors related to a variety of counseling tasks, however the literature is lacking an instrument which explores the self-efficacy of clinical mental health counselors related to specific diagnostic tasks. This study seeks to develop the Diagnostic Self-efficacy Scale (DSES) and to validate scores on this instrument. The DSES has to potential to identify growth areas in counselor education and supervision related to diagnosis and inform future training.

If you decide to participate, then you will join a study involving research of your self-efficacy related to the process of diagnosing mental health disorders. This means you will participate in a demographic questionnaire, a rating scale of your perceived competence of diagnosing *DSM-5*

diagnostic areas, and the DSES. All items will be completed through the electronic survey platform Qualtrics. If you say YES, then your participation will last for 15 to 20 minutes and will be entirely online. Approximately 420 professional clinical mental health counselors will be participating in this study.

EXCLUSIONARY CRITERIA

You should be a master's level counselor whose master's degree was obtained from a CACREP accredited clinical mental health counseling program. You should not be under 18 years old or still enrolled in a clinical mental health counseling master's degree program as that would keep you from participating in this study.

RISKS AND BENEFITS

RISKS: If you decide to participate in this study, then you may face a risk of discomfort from questions asked. The researcher tried to reduce these risks by de-identifying all data. As with any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS: The main benefit to you for participating in this study is your contribution to the fields of counseling and counselor education. Participants who meet study eligibility requirements and complete demographic questionnaire and DSES will be given the option of being entered in a drawing to win one of five \$20.00 Amazon gift cards.

COSTS AND PAYMENTS

The researchers want your decision about participating in this study to be absolutely voluntary. Yet they recognize that your participation may pose some inconvenience due to time requirements (approximately 15 to 20 minutes). In order to help defray your costs you will receive no payment, but upon completion of the survey you will be given the option of being

entered in a drawing for one of five \$20.00 Amazon gift cards.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

The researchers will take reasonable steps to keep private information, such as demographic information and instrument responses, confidential. The researcher will remove identifiers from all identifiable private information collected. Identifiers might be removed and the de-identified information used for future research without additional informed consent from the subject. The results of this study may be used in reports, presentations, and publications; but the researcher will not identify you. Of course, your records may be subpoenaed by court order or inspected by government bodies with oversight authority.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled. The researchers reserve the right to withdraw your participation in this study, at any time, if they observe potential problems with your continued participation.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any

research project, you may contact Erin Woods at 804-370-9927, John Baaki the current Human Subject Review Committee chair at 757-683-5491 at Old Dominion University, or the Old Dominion University Office of Research at 757-683-3460 who will be glad to review the matter with you.

VOLUNTARY CONSENT

By selecting “yes, I agree,” you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them: Dr. Edward Neukrug 757-683-6497, Erin Woods 804-370-9927. If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call John Baaki, the current Human Subject Review Committee chair, at 757-683-5491, or the Old Dominion University Office of Research, at 757-683-3460. And importantly, by selecting “yes, I agree,” you are telling the researcher YES, that you agree to participate in this study. You should print a copy of this form for your records.

Appendix G

Demographic Questionnaire

- 1. Please State Your age in years: (Write in)**

- 2. What is your gender? (Multiple Choice)**
 - ☐ Fluid/Genderfluid
 - ☐ Gender Non-Conforming/Genderqueer
 - ☐ Man
 - ☐ Non-Binary
 - ☐ Transgender Man/ Trans Man
 - ☐ Transgender Woman/ Trans Woman
 - ☐ Woman
 - ☐ Not Listed (please specify):
 - ☐ Prefer not to answer

- 3. Which of the following categories describe you? (Multiple Choice)**
 - ☐ American Indian or Alaska Native
 - ☐ Asian or Asian American
 - ☐ Black or African American
 - ☐ Hispanic, Latinx, or Spanish origin
 - ☐ Middle Eastern or North African
 - ☐ Multiple ethnic identities (please specify): _____
 - ☐ Native Hawaiian or Other Pacific Islander
 - ☐ White or European American
 - ☐ Another race, ethnicity, or origin (please specify) _____
 - ☐ Rather not answer

- 4. If your master's degree is not in clinical mental health counseling, please specify specialty area: (Write in)**

- 5. Please indicate the state where you received your master's degree: (Drop Down: All 50 states and other)**

- 6. Year of master's degree completion: (Drop Down: 1960-2022)**

- 7. What is your current counseling licensure status? (Multiple Choice)**
 - ☐ Fully licensed to practice in your state independently
 - ☐ Under post-graduate supervision
 - ☐ Other (please specify): _____

- 8. Licensure/practice state? (Drop Down: all 50 states and option for "licensed/practicing in multiple states")**

- 9. Years of active post-graduation counseling practice: (Drop Down: 1-70)**

APPENDIX H

Perceived Competence of Diagnosing *DSM-5* Diagnostic Areas

Using the following scale, please rate your confidence in diagnosing disorders in each of the *DSM-5* diagnostic categories:

[illegible]

APPENDIX I

Diagnostic Self-Efficacy Scale Item List

Intended Construct of Measurement: Diagnostic self-efficacy is defined as one's belief in their ability to effectively diagnose a mental health disorder using the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Please respond to the following items using a scale of 1 to 5: 1 = Not Confident at All, 2 = Slightly Confident, 3 = Neither Confident or Not Confident, 4 = Confident, and 5 = Extremely Confident

“Currently, how confident are you that you can ...”

1. Accurately diagnose a client's mental health condition?
2. Apply information about a client's environmental factors (e.g., housing conditions) in diagnosis?
3. Apply information about the client's family history in diagnosis?
4. Apply information regarding medical conditions experienced by the client in diagnosis?
5. Apply information about relational dynamics (e.g., family conflict) in diagnosis?
6. Apply information about the sociopolitical climate (e.g., extremism in political views) experienced by the client in diagnosis?
7. Apply information about a client's spiritual beliefs (which can include but are not limited to religion) in diagnosis?
8. Apply information about cultural factors (e.g., attitudes, values, beliefs) experienced by the client in diagnosis?
9. Apply information about socioeconomic factors (e.g., lack of financial resources) experienced by the client in diagnosis?
10. Consult with medical professionals regarding a client's symptoms?

11. Create an empathic environment to promote client comfort to gather information?
12. Ask open-ended questions to gather information?
13. Ask closed-ended questions to gather specific information?
14. Proficiently use questions to gather information about relational dynamics?
15. Proficiently use questions to gather information about cultural factors?
16. Proficiently use questions to gather information about religious and/or spiritual beliefs?
17. Proficiently use questions to gather information about environmental factors?
18. Proficiently use questions to gather information about family history?
19. Proficiently use questions to gather information about socioeconomic status?
20. Proficiently use questions to gather information about medical concerns?
21. Conduct an intake interview?
22. Move appropriately from question to question during an intake interview?
23. Use assessments instruments to aid with making diagnosis?
24. Apply information gathered from outside sources in diagnosis?
25. Complete a biopsychosocial examination?
26. Accurately interpret findings of a mental status exam?
27. Accurately interpret the results of diagnostic assessment measures?
28. Accurately use the results of a psychological report in making a diagnosis?
29. Set aside your own biases when assigning diagnosis?
30. Identify differential diagnoses?
31. Explain why you assigned a certain diagnosis?
32. Review research literature to better understand a diagnosis?
33. Assign a provisional diagnosis when appropriate?

34. Distinguish between different diagnostic subtypes?
35. Assess the severity of a diagnosis?
36. Can identify the appropriate specifier for a diagnosis?
37. Can compare information gathered in the diagnostic process against DSM diagnostic criteria to determine if those criteria are met?
38. Can assign appropriate diagnostic codes?
39. Can order diagnoses according to treatment needs when multiple diagnoses are present?
40. Can adjust a diagnostic code for diagnostic severity?
41. Can adjust a diagnostic code for diagnostic subtype?
42. Can adjust a diagnostic code for diagnosis specifier?

Appendix J

Gift Card Drawing Survey

Thank you for your participation! If you would like to be entered in a drawing for one of five \$20.00 amazon gift cards, please select “Yes, I would like to participate in the drawing” and enter your first name and email address below. Winners will be notified via email after the drawing occurs. If you do not wish to be entered in the drawing, simply select “opt out of drawing.”

- Yes, I would like to participate in the drawing (please write first name and email address):
- Opt out of drawing

APPENDIX K

Descriptive Statistics for Year of Master's Degree Completion

Descriptive Statistics for Year of Master's Degree Completion

	<i>N</i>	%
1973	1	0.2%
1988	1	0.2%
1994	4	0.9%
1997	4	0.9%
1998	1	0.2%
1999	4	0.9%
2000	1	0.2%
2001	4	0.9%
2002	7	1.6%
2003	2	0.4%
2004	8	1.8%
2005	2	0.4%
2006	3	0.7%
2007	9	2.0%
2008	12	2.7%
2009	6	1.3%
2010	12	2.7%
2011	11	2.4%

	<i>N</i>	%
2012	20	4.4%
2013	21	4.7%
2014	25	5.6%
2015	25	5.6%
2016	37	8.2%
2017	27	6.0%
2018	47	10.4%
2019	38	8.4%
2020	41	9.1%
2021	33	7.3%
2022	44	9.8%
Total	450	

APPENDIX L

Descriptive Statistics for State Where Master's Degree Was Obtained

Descriptive Statistics for State Where Master's Degree Was Obtained

State	N	%
Alabama	6	1.3%
Alaska	2	0.4%
Arizona	5	1.1%
Arkansas	5	1.1%
California	36	8.0%
Colorado	12	2.7%
Connecticut	3	0.7%
Florida	19	4.2%
Georgia	9	2.0%
Hawaii	1	0.2%
Illinois	22	4.9%
Indiana	12	2.7%
Iowa	5	1.1%
Kansas	1	0.2%
Kentucky	6	1.3%
Louisiana	6	1.3%
Maine	2	0.4%
Maryland	8	1.8%
Massachusetts	18	4.0%
Michigan	12	2.7%
Minnesota	21	4.7%
Mississippi	2	0.4%
Missouri	7	1.6%
Montana	1	0.2%
Nebraska	9	2.0%
New Hampshire	4	0.9%
New Jersey 27	10	2.2%
New Mexico	1	0.2%
New York	21	4.7%
North Carolina	21	4.7%
North Dakota	1	0.2%

State	<i>N</i>	%
Ohio	18	4.0%
Oklahoma	8	1.8%
Oregon	5	1.1%
Pennsylvania	29	6.4%
Rhode Island	1	0.2%
South Dakota	1	0.2%
Tennessee	12	2.7%
Texas	33	7.3%
Utah 40	4	0.9%
Vermont	2	0.4%
Virginia	30	6.7%
Washington	8	1.8%
Wisconsin	9	2.0%
Other	2	0.4%
Total	450	100.0

APPENDIX M
Descriptive Statistics Licensure/Practice State

Descriptive Statistics Licensure/Practice State

State	<i>N</i>	%
Alabama	5	1.1%
Alaska	1	0.2%
Arizona	2	0.4%
Arkansas	6	1.3%
California	35	7.8%
Colorado	10	2.2%
Connecticut	8	1.8%
Florida	20	4.4%
Georgia	11	2.4%
Hawaii	2	0.4%
Idaho	2	0.4%
Illinois	13	2.9%
Indiana	9	2.0%
Iowa	7	1.6%
Kansas	1	0.2%
Kentucky 16	3	0.7%
Louisiana	5	1.1%
Maine	3	0.7%
Maryland	6	1.3%
Massachusetts	14	3.1%
Michigan	11	2.4%
Minnesota	11	2.4%
Mississippi	3	0.7%
Missouri	7	1.6%
Montana	2	0.4%
Nebraska	5	1.1%
Nevada	2	0.4%
New Hampshire	3	0.7%
New Jersey	8	1.8%
New Mexico	1	0.2%
New York	22	4.9%
North Carolina	25	5.6%
North Dakota	1	0.2%
Ohio	22	4.9%
Oklahoma	6	1.3%

State	<i>N</i>	%
Oregon	7	1.6%
Pennsylvania	26	5.8%
Rhode Island	2	0.4%
South Carolina	2	0.4%
South Dakota	1	0.2%
Tennessee	10	2.2%
Texas	35	7.8%
Utah	3	0.7%
Vermont	1	0.2%
Virginia	31	6.9%
Washington	8	1.8%
Wisconsin	11	2.4%
Wyoming	1	0.2%
Total	450	100.0

VITA**ERIN ELIZABETH WOODS**

Old Dominion University
Department of Counseling and Human Services
1226 W 43rd St Norfolk, VA 23508

EDUCATION

Ph.D. in Education, Concentration in Counseling Old Dominion University, Norfolk, VA	December 2022
M.A. in Substance Abuse and Clinical Counseling East Carolina University, Greenville NC	May 2014
B. S. in Sociology, Concentration in Crime and Deviance Virginia Polytechnic Institute and State University, Blacksburg, VA	December 2011