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# Quality of Crisis Stabilization Units: Assessing the Treatment of Adolescents With Co-occurring Symptoms

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Abstract

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MA, Walden University, 2014

BS, Ashford University, 2008

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Clinical Psychology

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## Abstract

The purpose of this quantitative quasi-experimental one-group pretest/posttest design study was to evaluate the effectiveness of Las Vegas Valley crisis stabilization units (CSU) in treating adolescents with comorbid mental health disorders. The specific problem entailed examining the efficacy of CSUs in addressing comorbidities among adolescents when dual-diagnosis symptoms were present. Scholarly evidence in this regard was lacking. The quantitative examination included patient data from the Cross-Cutting Symptom Measure (CCSM). Baseline and outcome CCSM scores of the test required determining whether a statistically significant difference in CCSM scores occurred between the baseline and outcome. The sample was 120 adolescent patients with 2 or more psychiatric conditions, aged between 11 to 17. The baseline CCSM scores were compared to CCSM scores at discharge to determine whether scores or symptoms improved following CSU treatment. The study positively demonstrated the efficacy of treating comorbidities among adolescents by supplementing categorical diagnostics with dimensional assessments of mental health symptoms. CSUs were effective in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms were assessed. The results have social change implications for psychiatric practices, society, future researchers, and individuals. Future researchers should address prevailing and emerging clinical issues through recourse to evidence-based practices while filling existing literature gaps and practices through unutilized methods. Psychiatric practitioners should adopt the evidence-based approaches in this study to address comorbid mental health disorders among adolescents and other populations.

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# Dedication

To my beloved mother Sara, who passed away in April 2020, may she rest in peace. She gave me life and was an inspiration in all I have accomplished.

To my wife Mary, who unselfishly supported my quest to gain my Ph.D. Her encouragement and understanding were instrumental in me achieving my lifelong dream.

To my children for their steadfast belief in me and their constant encouragement.

To the many adolescents whose parents seek to improve their mental health through the CSU Program.

## Acknowledgment

My deepest gratitude goes to Dr. Abi Karam, owner of Human Behavior Institute (HBI), who allowed me to use archived Crisis Stabilization Unit (CSU) data to complete my study. This study result may contribute to a community-wide replication of the CSU to alleviate the need for mental health hospitalization in most cases.

Appreciation goes to the faculty and staff of Walden University for keeping me on track to complete my dissertation. A special thank you to my chair Dr. Michael Plasay and my co-chair Brandy Benson for their ongoing guidance to help push my thinking with their probing questions to reexamine the research questions from a scholarly perspective.

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# Chapter 1: Introduction to the Study

I examined a unique and missing component in the extant research regarding the efficacy of crisis stabilization units (CSUs) in treating adolescents with dual-diagnosis symptoms. Researchers have defined interventions employed in CSUs as an effective treatment for mental health problems (Hayes et al., 2017; Schmit et al., 2018), hence the interest in examining the utilization of CSU interventions. Aside from experiencing a mental health condition that reaches such an intensity that crisis stabilization is required, adolescents often require emergency mental health intervention in CSUs because of either a lack of knowledge of alternatives or a lack of access to alternatives (Narendorf et al., 2017). CSUs exist as a mental health crisis response that can be more effective and less costly than emergency care.

Although CSUs can be an effective response, research on CSU utilization by adolescents with comorbid mental health conditions is lacking. Adolescents requiring crisis stabilization assistance often experience several comorbid mental health conditions at the same time. Gattamorta et al. (2017) found that 88% of adolescents seeking mental health services had co-occurring psychiatric disorders (CODs). Therefore, intervention leaders addressing crisis stabilization must include features designed to support a robust mental health crisis response. This research may have positive social change where intervention may improve adolescents' mental health with comorbid disorders. The intervention is intensive and includes several procedures. If there is a statistically significant impact between baseline and outcome, then there is support for similar interventions among similar populations as the sample.

This chapter includes a background on CSU use by adolescents and treatment for adolescents with comorbid mental health conditions. The purpose of this quantitative, ex post facto research was to understand the efficacy of the intervention from baseline to the outcome. The chapter also includes the research question, hypothesis, and theoretical framework, where the research questions and hypotheses involve general systems theory as the theoretical framework of the study, followed by a discussion of the nature of the quantitative, ex post facto research and why other research methods and designs were not used. The chapter includes definitions, assumptions, delimitations, limitations, and the significance of the study, with a summary at the conclusion of the chapter.

## Background

CSUs have become an effective response for patients experiencing problems associated with mental health conditions (Mukherjee & Saxon, 2019). Leaders of the CSU fill a role in mental health-related emergency psychiatry. Problems common among patients in CSUs include suicide, violent behavior, and critical mental health conditions (Mukherjee & Saxon, 2019). For CSUs, a common theme of the activities performed is associated with emergency psychiatry, where individuals enter inpatient care because they cannot make decisions for themselves and may threaten themselves or people in the community. Although patients in CSUs often arrive voluntarily, referrals or involuntary commitment can occur because of the severity of mental health disorders and symptoms that a patient has at the time of admission into the hospital unit (McBee-Strayer et al., 2019). For patients with comorbid mental health conditions, CSUs can be an essential resource, supporting the avoidance of escalated mental health treatment. Although there

is much research supporting the role of CSUs, there is a lack of research on CSU use among adolescents, especially those with comorbid conditions.

Researchers of CSUs frequently feature interventions to examine the role of CSUs as influencers of mental health (Saxon et al., 2018). The CSU often includes several types of treatment: medications, electroconvulsive therapy, and psychotherapy interventions (Saxon et al., 2018). Practitioners offer medications in CSUs to address the mental health condition symptoms that result in a patient's admittance to a CSU (Saxon et al., 2018). Suppose a patient refuses medication and is involuntarily committed to the CSU. In that case, the patient may receive their medication involuntarily or intravenously to confirm that medication is administered to the patient (Saxon et al., 2018). Electroconvulsive therapy is a controversial form of therapy that involves applying electricity to treat medical conditions, particularly depressive conditions.

Psychotherapists can also attend to patients in the CSU as a response to a psychiatric emergency. Practitioners of brief psychotherapy interventions can support addressing acute conditions and immediate problems in the CSU. Psychotherapists depend on some conditions to obtain success (Mukherjee & Saxon, 2019). The patient must have an interest in positive change, and the objectives of the psychotherapy treatment must align with the conditions that the patient experiences. This research involved a psychotherapy intervention designed to respond to comorbid mental health conditions where dual-diagnosis symptoms existed.

Researchers have sought to understand the improvement of dual-diagnosis symptoms when focusing on the impact of CSUs. Welfare and Cook (2014) examined

changes made to depressive disorder, bipolar disorder, and schizophrenia, focusing on counseling to treat these conditions. They noted that changes to the definitions of these conditions would influence diagnostic practices for counselors assessing first-time and long-term patients. The researchers also noted the existence of dual-diagnosis symptoms among patients in the case examples used, finding that when changes occurred to the criteria and definition of mental health conditions, new instances of comorbidity and dual-diagnosis symptoms might occur; hence, there might be a higher likelihood that dual-diagnosis could exist. This researcher focused on treating adolescents experiencing dual diagnoses.

## Problem Statement

The specific problem of this research was that examination of the efficacy of CSUs as treatment units addressing comorbidities among adolescents when dual-diagnosis symptoms were present was lacking. Previous researchers supported further investigation of this problem (Saxon et al., 2018). This problem transitions beyond patients, becoming a problem for the surrounding community because of dependence on CSUs to treat patients' many healthcare problems. Staff at the CSU must remain prepared for mental health problems. Otherwise, other healthcare entities, such as emergency hospital care staff, must deal with problems, possibly resulting in poor treatment and more significant trauma for the patient than before (Shore et al., 2016).

In addition, Crawford et al. (2017) discussed quality improvements in mental health services, identifying patient outcome data and self-report assessments as crucial data to include in quality evaluation. The researchers noted that the comparison of self-

report assessments should occur at baseline and discharge to evaluate changes in patients' mental health conditions. Although Crawford et al. supported self-report assessments, researchers had yet to use measures, such as the Cross-Cutting Symptom Measure (CCSM), when examining CSUs treating adolescents. This dissertation included the CCSM.

This problem involved a distinction between adults and adolescents because of differences in service utilization. Narendorf et al. (2017) examined the issue of psychiatric crisis service use among young adults. The findings showed lower rates of outpatient service utilization than older adults. The researchers found that young adults utilized emergency services with higher frequency. The findings included a rationale for such differences. Young adults would seek treatment when symptoms escalated and after experiencing triggering events (Narendorf et al., 2017). These findings supported further examination of crisis service use focused on emergency use by younger individuals. Therefore, the population focused on in this research included adolescents as they used crisis service with higher frequency. Frequency was not the only driver for this research to focus on adolescents.

The severity of mental health problems was another factor supporting this research. McBee-Strayer et al. (2019) investigated suicidal ideation, behavior, and the role of CSUs in reducing levels of suicidal ideation and attempt frequency. The researchers noted that a lack of evidence existed regarding appropriate treatment and interventions for youth suicide. The findings supported the role of CSUs in reducing suicidal ideation, a statistically significant change in ideation, functioning, satisfaction,

and readiness for care after discharge. Also, mental health among adolescents becomes increasingly difficult for professionals when comorbid mental health conditions are present. Keyes et al. (2010) discussed the role of mental health and the lifestyles of adolescents. The researchers stated that when mental health conditions remained unaddressed, comorbidity would lead to problems worsening. However, when staff addresses mental health conditions, there is an improvement to conditions unfeatured in a patient's program. Still, a lack of research exists, despite the frequency and severity of adolescent mental health problems resulting in crisis service use.

The CSU remains an alternative healthcare solution that reduces the patient load in emergency rooms (Peters et al., 2016). Staff at the CSU also eliminate waste by being cost-effective, effective for inpatient triage, and less invasive for patients (Peters et al., 2016). Although Peters et al. (2016) established that the benefits for patients and healthcare institution staff from CSUs, the researchers did not discuss the efficacy of treatment performed in CSUs, particularly for adolescents. As 31% of patients screen for a co-occurring disorder (Atkinson, 2018a), and 88% of adolescents seeking mental health services have CODs (Gattamorta et al., 2017), CSU staff fill a vital role in patient care because of the frequency in which they are the most appropriate response to patient problems.

The general problem was that adolescents with comorbid disorders did not receive the quality of treatment that patients with isolated disorders received in CSUs. Treatment is crucial because there are greater maladaptation and symptom severity and worse treatment outcomes for adolescents with comorbid disorders than those with isolated

disorders (Gattamorta et al., 2017; Meaklim et al., 2018; Scott, 2019). However, there was a lack of research focused on treating younger patients with comorbid mental health conditions.

## Purpose Statement

The purpose of this quantitative quasi-experimental one-group pretest/posttest design study was to evaluate the effectiveness of a Las Vegas Valley CSU in treating adolescents with comorbid mental health disorders. The quantitative examination included patient data from the CCSM. I used baseline and outcome CCSM scores where the test required determining whether there was a statistically significant difference in CCSM score between baseline and outcome. The sample consisted of 54 adolescent patients meeting the inclusion criteria of two or more psychiatric conditions and aged 11 to 17. I compared the baseline CCSM scores to CCSM scores at discharge to determine whether scores or symptoms improved following CSU treatment.

Although the adolescent need for mental health intervention in CSUs is vital because of the frequency (Narendorf et al., 2017) and severity (McBee-Strayer et al., 2019), a dearth of research exists regarding the treatment of adolescents in CSUs. In addition, there is a paucity of research investigating the efficacy of treating comorbidities among adolescents by supplementing categorical diagnostics with dimensional assessments of mental health symptoms (Clarke & Kuhl, 2014; LeBeau et al., 2015). This research fills this gap and can contribute a social benefit where the findings may support an intervention that may improve adolescents' mental health with comorbid disorders.

## Research Questions and Hypotheses

RQ1: How effective are crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are assessed?

$H1_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

$H1_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are significant at $p < .05$.

RQ2: How effective are crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are assessed among patients of different genders?

SQ2a: How effective are crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are assessed?

$H2a_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

$H2a_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are significant at $p < .05$.

SQ2b: How effective are crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are assessed?

*H*2b$_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

*H*2b$_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are significant at $p < .05$.

## Theoretical Framework

The theoretical framework for this study was the general systems theory, focusing on the systems theory in healthcare. The seminal work on general systems theory was connected to von Bertalanffy's (1969) biological research. The focus involved understanding how the characteristics of systems interact to meet a distinct purpose (von Bertalanffy, 1969). The principles of general systems theory define systems as complex, interacting elements that interact with environments. The systems in the external environment and internal to an entity change one another as each either evolves or cease to exist because of a lack of adaptive capacity (von Bertalanffy, 1969). Leaders of systems must also engage in self-regulation as feedback comes through interactions with the environment. These interactions occur between different levels of systems: the microsystem, mesosystem, ecosystem, macrosystem, and chronosystem (Hayes et al., 2017). This research involved the interactions between the adolescent and the intervention program in the CSU; hence, the microsystem was the general system focused on in this study.

The general systems theory was utilized in this research to understand the complex nature of treatment provided by the CSU—a microsystem because there were recurring patterns of activity occurring in a particular place and time (see Aloi et al., 2019). The activity involved supplementing categorical diagnostics with dimensional assessments of mental health symptoms in a CSU. The general systems theory was a transdisciplinary theoretical framework; hence, the theory remained a strong fit for investigating interventions where the purpose of the research was to understand the significance of participants' impact. This theoretical framework supported investigating the impact of the CSU through the scope of the relationship between the patient and the CSU. The general systems theory is described in greater detail in Chapter 2 of this dissertation.

## Nature of the Study

The nature of this research involved a quantitative methodology with an ex-post-facto one-group pretest/posttest design. A quantitative methodology was applied because the purpose of the study involved understanding whether the intervention results indicated that a significant change occurred because of the intervention. Quantitative research involves collecting numerical data and statistics to infer the significance of impacts, relationships, and associations between variables (Campbell et al., 2016). I measured significance by statistical significance at $p < .05$, requiring a deductive reasoning approach. The research questions involved understanding the effectiveness of the intervention for patients with comorbid mental health conditions requiring assistance. Therefore, I determined the difference in measurement from the baseline to the outcome.

I used an ex post facto design in this research because the problem and purpose of the research involved understanding the impact of an intervention where conditions already exist. Ex post facto researchers study issues when conditions related to the research design already exist (Campbell et al., 2016). The patients in the CSU are in the unit because they have mental health conditions that require intervention—an appropriate condition that cannot be manipulated. Hence, an ex post facto design was appropriate.

I used this design to examine the efficacy of the intervention in treating comorbidities among adolescents. The intervention involved supplementing categorical diagnostics with dimensional assessments of mental health symptoms in a CSU. Staff at the CSU focused on teens/adolescents aged 11 to 17, where patients received intensive crisis intervention services and observation. The unit was beneficial because staff reduced the likelihood that the patient would require higher levels of care. The intervention included several activities. Staff at the CSU used a combination of group and individual counseling for skills training in a safe environment. The activities in the CSU included stress and anxiety management, depression coping skills, self-esteem building exercises, family/interpersonal conflict management, adjusting to significant life changes, behavior management, and weak decision-making correction. The two variables included the baseline and outcome scores for the CCSM. A baseline score was obtained by administering the CCSM to the patient, and the outcome was obtained by administering the CCSM once again. The CCSM administered was styled for children/adolescents. The CCSM was a self-rating measure published by the American Psychiatric Association (APA, 2013).

Other methods were considered for this research. A qualitative methodology was considered to explore how participants described the changes taking place through the intervention throughout the process. I focused on understanding how participants felt that the intervention improved their comorbid mental health conditions. The decision was made not to use a qualitative methodology because adolescents' feelings about how they believed the intervention helps would not have resulted in findings that would have supported or not supported the intervention as having a significant impact. A mixed methodology was also considered. A mixed-method study would have involved interviews and document review of a participant's progress through the intervention to understand how the intervention helped. The methodology would also have involved measuring differences in CCSM scores at the baseline and the outcome. A mixed methodology remained unselected because the degree of intervention could be too high for adolescents receiving an intervention to support overcoming comorbid mental health conditions.

Several types of quantitative research designs exist. These include descriptive, correlational, ex post facto, and experimental research (Leavy, 2017). Alternative quantitative research designs were considered. A descriptive research design was considered because the methodology could support describing the status of a variable (Leavy, 2017). The problem was that the research questions and hypotheses required understanding the significance of the change, which required using a variable. A descriptive research design would not require testing a hypothesis. Often, such research entails reporting univariate statistics. A descriptive design remained unused because it

could not align with the extent of analysis and testing required. I also considered a correlational research design, which involved understanding the relationship between variables (Leavy, 2017). In this research, a correlational design could conceivably have worked; however, it would have been a poor fit, and the findings would have inadequately supported hypotheses testing. With a correlational approach, I would have yielded an understanding of the significance of the relationship between the baseline and the outcome. The findings of such an analysis could have been helpful when attempting to understand whether baseline conditions were the factors influencing outcomes. However, I focused on understanding whether the impact of the intervention would result in a significant difference.

Experimental research would be quite similar to this research design; however, there would be more structure. Experimental researchers would determine a cause-and-effect relationship (Leavy, 2017), which fits the research questions. The critical limitation of completing experimental research in this study was that the intervention was in place. Finding research participants among the sample of adolescents available would have been complicated in terms of matching. Further, if there were a control group, some participants did not receive the intervention, which could have a detrimental impact on their mental health.

## Definitions

*Adolescent*: An adolescent is a young individual in the maturation process (Heinzle et al., 2016).

*Cross-cutting symptom measure*: A cross-cutting symptom measure assesses psychiatric symptomatology domains that cut across diagnostic boundaries in terms of symptoms that apply to more than one condition (Meaklim et al., 2018).

*Comorbidity*: Comorbidity refers to the simultaneous presence of several conditions (Valderas et al., 2009).

*Crisis stabilization unit*: Crisis stabilization unit refers to small inpatient facilities for patients whose mental health needs cannot be met outside the CSU setting (Saxon et al., 2018).

*Dual-diagnosis symptoms*: Dual-diagnosis symptoms include the co-occurrence of multiple conditions (Ishfaq & Kamal, 2019).

## Assumptions

This research included several assumptions. One crucial assumption was that the impact of the treatment program designed for the intervention could be measured accurately. This treatment plan could impact adolescents with comorbid mental health problems not yet understood; therefore, the actual efficacy of the program might require different measurements to determine. However, this issue was assumed as not the case in this research. Another assumption was that professionals implementing the intervention were trained and did not deviate from trained procedures. Otherwise, the findings would not be valid. Accurate self-reporting on the part of participants was assumed. Although English was the primary language spoken in Nevada, Spanish was spoken at home for 21.1% of families (see Cedar Lake Ventures, n.d.). Lingual differences that might occur

when delivering the CCSM to patients were assumed as not influencing patients' responses.

## Scope and Delimitations

This research was delimited to the practices of a CSA unit in Las Vegas, Nevada. The sampled population included only adolescents (ages 11 to 17) with comorbid mental health conditions. The scope of this research remained on mental health conditions; therefore, patients experiencing comorbid physiological health conditions were omitted. As noted, 21.1% of families in Nevada spoke Spanish at home (see Cedar Lake Ventures, n.d.); therefore, language differences must be addressed in delimitations. The CCSM was only delivered in English. In this research, I only investigated patients whose healthcare team treated comorbidities among adolescents by supplementing categorical diagnostics with dimensional assessments of mental health symptoms. Therefore, the study would be generalizable to adolescents living in large, urban cities located in the Southwestern United States experiencing comorbid mental health conditions.

## Limitations

Many limitations of the research existed—a limitation associated with the research design and data analysis was using a one-group pretest/posttest design. This design did not include a control group; hence, the findings could not conclusively support whether any changes for adolescent patients result from treatment in the CSU. Relatedly, sampling lacked random assignment or matching. Therefore, the generalizability of the findings might not be as strong as generalizability in experimental research. Data collection involved self-reporting data to the CCSM. The possibility existed that response

bias would distort the data, which might impact the findings. The final limitation of the research involved collecting data from adolescents. According to Dashiff (2001), unique challenges occur when collecting data from adolescents, creating problems with self-reporting measures. Therefore, a version of the CCSM aimed at children/adolescents was used. This research was also limited by the overall intervention's activities remaining unexamined to understand the extent of their effectiveness. The intervention was examined to measure the difference from the baseline to the outcome.

## Significance

This research may contribute to the scientific body of knowledge related to treating adolescents with comorbid mental health disorders and practice where effective interventions are essential to improve the mental health conditions of adolescents. The findings may support using an intense inpatient intervention, including several activities. For researchers, the findings may support further research on the benefits of inpatient treatment for adolescents, particularly those with comorbid mental health conditions. Practitioners may also benefit from this research. The findings may support including stress and anxiety management, depression coping skills, self-esteem building exercises, family/interpersonal conflict management, adjusting to significant life changes, behavior management, and poor decision-making correction.

Although the research was limited because the intervention did not include measurements to understand each activity's benefits, the intervention could be understood. If the findings include a significant impact, practitioners may adopt similar interventions in CSUs treating adolescents with comorbid mental health conditions. The

gap filled by this research may create social benefits, as the findings may show how the intervention can improve adolescents' mental health with comorbid disorders.

## Summary

Chapter 1 contained an introduction to an intensive intervention study at a CSU in Las Vegas, Nevada. The CSU was a unit in a healthcare institution where staff addressed mental health conditions to avoid escalating mental health problems in an inpatient setting to avoid more severe problems for the patient. The introduction included a discussion of CSU use with patients with comorbid mental health problems. The background contributed a further description of CSUs and the issues associated with adolescents' mental health conditions. Chapter 1 continued with the problem statement and purpose statement, expanding on the problem and combining previous research to describe the need for future research. The specific problem entailed examining the efficacy of CSUs as treatment units addressing comorbidities among adolescents when dual-diagnosis symptoms were present was lacking. The purpose statement included a discussion of the study's intent as an ex post facto study of the impact of an intervention where baseline scores for the CCSM are compared to outcome scores to understand whether the intervention has a statistically significant impact. Chapter 1 continued with the research question, hypothesis, and theoretical framework of the study, including both the null and alternative hypotheses. These involved assessing the effectiveness of CSUs in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms, with general systems theory as the theoretical framework supporting the study.

The nature of the study followed, with an expansion on the quantitative, ex post facto methodology and design of the study, with some description of alternative methods and designs considered and why they were not selected. Chapter 1 concluded with key definitions and the assumptions, delimitations, and limitations of the research, closing the chapter with a brief discussion of the significance of the study. Chapter 2 includes an exhaustive review of extant literature supporting this research. The literature discussed in Chapter 2 begins with a description of the literature search method applied, followed by a discussion of the general systems theory as a theoretical framework for this research and a synthesis of the current research.

# Chapter 2: Literature Review

The purpose of this quantitative quasi-experimental one-group pretest/posttest design study was to evaluate the effectiveness of a Las Vegas Valley CSU in treating adolescents between the ages of 11 to 17 with comorbid disorders based on patient outcome data from the CCSM. Roughly one-fifth of the population experiences mental health issues at some time in their lives (Atkinson, 2018a). In addition, the second-highest cause of death in people under 35 years is suicide. Despite this mental health situation, the U.S. mental health system leaders do not provide adequate care to these vulnerable members of the public (Atkinson, 2018a).

CODs are commonly found in adolescents who report mental health services (Gattamorta et al., 2017; Mestre-Pinto et al., 2015; Welsh et al., 2020). Co-occurring disorders include substance abuse disorder, anxiety, depression, suicidal ideation, attention deficit hyperactivity disorder (ADHD), or obsessive-compulsive disorder (OCD; Gattamorta et al., 2017; Welsh et al., 2017). The general problem was that adolescents with comorbid disorders did not receive adequate treatment (Scott, 2019). Thus, adolescents' symptoms may increase in severity with increased maladaptation and a greater possibility that treatment outcomes may be poorer than adolescents with isolated disorders (Gattamorta et al., 2017; Meaklim et al., 2018).

Poorer treatment outcomes result from ineffective diagnostic assessment and complex treatment interventions (Melton et al., 2016; Peters et al., 2016; Welsh et al., 2017). Treatment is based on diagnosis, and a failure to identify comorbid psychiatric disorders can lead to inappropriate treatment regimens as comorbid disorders influence

one another, changing symptom severity (Meaklim et al., 2018). Researchers found that comorbid disorders influenced treatment outcomes more than previously thought, especially for anxiety and mood disorders (Walczak et al., 2018). Medical comorbidities also influence treatment outcomes. For example, researchers associated comorbidity of Type 1 diabetes with psychiatric disorders, commonly found in children and adolescents, with poorer control of diabetes, indicating the need for effective diagnostic assessment and careful choice of treatment options and liaison with other service providers (Sildorf et al., 2018). Failure to evaluate and treat comorbidities effectively can perpetuate symptoms and worsen the condition being treated (Meaklim et al., 2018).

The APA (2013) published and regularly updated the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*), commonly used as a diagnostic tool. The previous iterations of the *DSM* (Editions 1 to 4) only included categorical assessment through which the presence or absence of a condition could be determined (APA, 2013). Due to the need for a dimensional indication of symptom severity and acknowledging co-occurring conditions, APA (2013) included a measurement scale to reflect dimensional assessment (LeBeau et al., 2015). Researchers can use the CCSM as an initial indication of the direction for further assessments and to measure symptoms during treatment and after treatment (LeBeau et al., 2015). Testing the effectiveness of the CCSM in identifying comorbid symptoms, Meaklim et al. (2018) studied patients with sleep disturbances. The researchers found that using the CCSM was effective in identifying comorbid conditions. In the current study, I compared the CCSM baseline scores to

CCSM scores at discharge to determine whether scores or associated symptoms improved following the CSU treatment.

In this chapter, the theoretical foundation, general systems theory, and how it relates to mental health systems are explored. This section is followed by a review of the key literature of three key areas: teenagers presenting with mental health symptoms with comorbidities, diagnosing the comorbid symptoms as a basis for determining treatment, and the treatment provided at the CSUs. Finally, a summary of the chapter is provided.

## Literature Search Strategy

Selected scholarly research articles related to assessing and treating comorbid psychiatric disorders and mental health service quality improvement are provided below. The key terms and phrases used to search for relevant research included *crisis stabilization units, comorbid psychiatric disorders, dual-diagnosis symptoms, evaluating mental health outcomes,* and *adolescent mental health screening*. The databases searched include EBSCOhost, ERIC, Google Scholar, SAGE Journals, and ProQuest. Preference was given to peer-reviewed articles published within the past 5 years (2016 to 2020). However, I consulted seminal works and documents published before 2016 when more recent publications could not be located.

## Theoretical Foundation

The general systems theory, first proposed by the biologist von Bertalanffy in 1969, served as the theoretical foundation for this study. Researchers used this theory as the foundation for several studies that focused on improving the quality of healthcare services (Anderson, 2016; Chughtai & Blanchet, 2017; Cordon, 2013; Petula, 2005;

Rusoja et al., 2018). Central to the systems theory is that an understanding of a system leads to the realization that it should not be dismantled into parts. The interrelations between the parts are equally important to understand; systems must be seen holistically (Anderson, 2016). Understanding how systems progress necessitates an understanding of systems' abilities to change (von Bertalanffy, 1969) and how interventions on one's behavioral patterns influence results (Anderson, 2016).

Different assumptions are in place when applying the theory: (a) People mostly endeavor to perform their work well; (b) different influencing factors may enhance or interfere with the work quality, which is both integrated into the system; and (c) system failure is unlimited to an isolated defect, requiring an ecological view of surrounding events or factors needed to determine what worked together toward the failure (Anderson, 2016). Researchers have associated systems thinking with a patient-centered approach (Rexhepi et al., 2015). Stakeholders require efficient and clear communication to ensure the smooth working of the system (Rexhepi et al., 2015).

In healthcare, staff must consider the biological, psychological, and sociological systems when diagnosing an illness, especially in mental health (Johnson et al., 2018). Although different systems work differently, there are similarities between systems as each functions by adhering to universal laws (Johnson et al., 2018). Although humans work and live in a complex array of systems, they also represent the complexity of systems by how their bodies, minds, and social lives function and interact with their environments (Johnson et al., 2018).

Choosing the systems theory as the theoretical framework was inspired by insights about systems and how it impacted service delivery within CSUs. Instead of the linear causality thinking often found in mental health settings, the systems theory includes relationships between elements within and outside the system. Furthermore, it makes provisions for different levels (e.g., in the CSU situation—the patient, family, stakeholders within the CSU, and the community; Shankardass et al., 2018). Such a complex situation is known as a *wicked problem* in the systems approach; users of systems thinking can provide unique conceptualization opportunities of healthcare problems, such as critical care for teenagers with mental health issues (Haynes et al., 2020).

This study focused on teenagers (11 to 17 years) with comorbid mental health needs. The dual-diagnosis symptoms necessitated a multidisciplinary approach. Neglecting to address some of the teenager's needs might cause an escalation of the symptoms leading to increased needs. The questions examined in the study were about the effectiveness of teenagers' treatment at CSUs. The treatment outcomes at CSUs might be influenced by various elements within the system, namely the teenager who presented with a crisis, CSU, parents, and community. In this study, the focus was on teenagers in crises and CSU treatment.

The patient is the center point of care in a systems design while the various health specialties involved work together during the healthcare process of the patient (Rexhepi et al., 2015). Anderson (2016) indicated that healthcare professionals studied the different parts of the human body and its functioning separately but intuitively recognized the

interlinked systems and behaviors' wholeness. Therefore, systems thinking is embedded in healthcare provision, albeit not always in the foreground. Anderson pointed to the culture of medicine where the focus was on the individual and argued it as an obstacle to further developing systems thinking in healthcare. By focusing on developing smarter systems, healthcare provision can become more efficient (Anderson, 2016). In this study, the focus entailed evaluating a mental healthcare system's effectiveness, namely CSUs.

In criticism of linear thinking in healthcare, Rusoja et al. (2018) discussed how systems thinking in healthcare equipped all stakeholders to address the healthcare challenges in the new millennium and development goals. Rusoja et al. asserted that these development goals should "work synergistically and dynamically toward equitable, sustainable improvements in wellbeing" (p. 1). In other words, the dynamic changing nature of systems must be understood and acknowledged, and the essence of systems as a complete entity with interrelationships between units must be used in developing service delivery models.

Jackson and Sambo (2020) also criticized healthcare practitioners, policymakers, and theorists for not fully acknowledging healthcare as a system, despite 25 years of research in this field. Instead of theorizing and critical thinking about systems and their application, Jackson and Sambo argued that these theorists should demonstrate practically the usefulness of their ideas in the field of health systems. Instead of equating healthcare systems with machines, Jackson and Sambo argued in favor of concepts, such as fuzzy boundaries, interconnectedness, co-development, and unpredictability. These metaphors are relevant in managing teenagers' mental health crises with the complexity

of diagnostic issues and contributing agents and different service providers and treatment options the CSU system faces.

Researchers utilized later, more narrowly focused versions of the general systems theory in studying mental health care in teenagers. Da Paz and Wallander (2017) used the family system theory in a narrative review to explore interventions for parents with children with autism spectrum disorders. Corcoran (2016) used a family systems approach as a framework in a study on teenage pregnancies and mental health. Corcoran found that depression and conduct disorder occurred most often in pregnant teenagers; the researcher described diagnosis and treatment options, such as family-involved intervention and multisystemic therapy. Based on the family systems theory, multisystemic therapists regard juvenile offenders as rooted in an environment of numerous and interrelated systems. Alfredsson et al. (2018) based their research on evaluating a parenting program's success using the family systems theory.

The ecological systems theory served as a theoretical foundation in a study by Wang et al. (2020) on the relationship between adverse events, neighborhood disorder, and child (5 to 15 years) externalizing and internalizing behaviors. Wang et al. found that being in disturbed neighborhoods significantly increased the likelihood of demonstrating externalizing and internalizing behaviors in the presence of adverse childhood events. Oja et al. (2020) conducted a systematic review on intervention to children whose parents were ill (e.g., cancer, drug abuse, or mental illness) and used an ecological systems perspective. The researchers used the ecological systems theory to study humans' growth within their changing environments. Oja et al. found that the reviewed studies indicated

links between parental illness and the child's experiences of being ill or depression. Family-based treatment options provided moderate outcomes in the child's and parent's ability to manage the situation. The literature search did not reveal studies regarding mental health assessment and treatment using a systems approach.

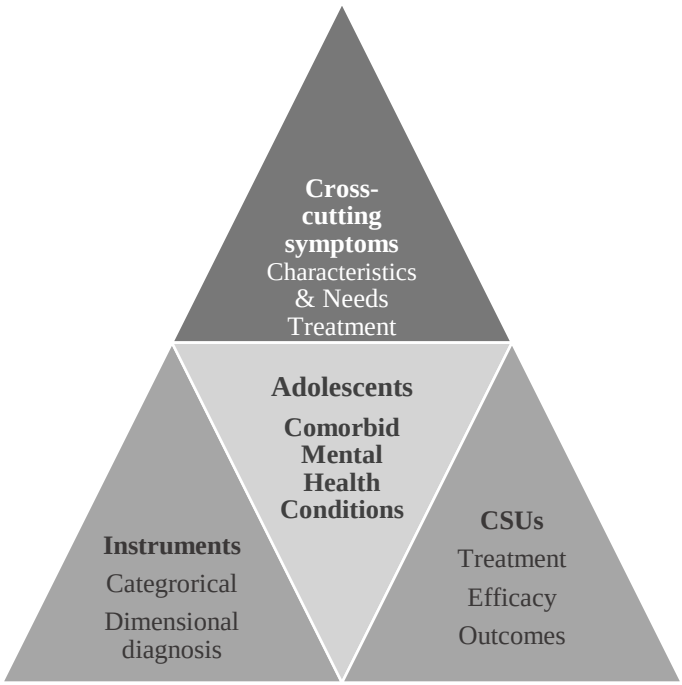
Researchers can use the systems theory to understand complex systems and fluctuating contexts involved (Shankardass et al., 2018). In this study, I used the systems theory as a theoretical foundation to understand the complexity of treatment provided at CSUs and the complex nature of teenagers' mental health issues and the social system in which they function. As such, the research questions guiding the study were developed using the systems theory.

## Literature Review Related to Key Variables

The literature review focuses on three key areas: teenagers presenting with mental health symptoms with comorbidities, diagnosing the comorbid symptoms as a basis for determining treatment, and the treatment provided at the CSUs. Meaklim et al. (2018) asserted that the bidirectional influence between disorders, where symptoms from one condition might elevate symptoms from another condition, making diagnosing comorbid disorders essential. Furthermore, staff at CSUs provide crisis intervention. Although some teenager patients may be stabilized to function in society, not all teenager patients will have such outcomes, as long-term treatment may be indicated. This issue does not constitute a failure of the CSU treatment, as the main aim of crisis stabilization is to veer off the crisis and stabilize the patient such that other treatment avenues may be followed. Figure 1 shows the three key areas explored in the literature review.

**Figure 1**

*Mind-Map of the Literature Review*




## Comorbid Mental Health Conditions

Feinstein first introduced comorbidity in 1970 (as cited in Mestre-Pinto et al., 2015). Comorbidity occurs concurrently with the disorders presenting simultaneously or successively, where one of the disorders occurs first. Comorbid disorders can occur by chance; thus, there is no identifiable reason for the co-occurrence. The presence of comorbidity has significant implications for treatment success for both substance abuse and mental health conditions as comorbidity elevates the severity of symptoms (Dauber et al., 2018).

### *Comorbidity*

Struzik et al. (2017) stated, “Comorbidity is a term defined as the presence of two or more conditions occurring either at the same time or having a close relationship to the same individual” (p. 623). Comorbid conditions commonly refer to psychiatric conditions with the added burden of substance use disorder (SUD, i.e., the misuse of one or more drugs or alcohol). Struzik et al. asserted that deinstitutionalization and community psychiatry results led to additional difficulties for patients, including unemployment and the dismantling of family structures. The etiology of comorbid disorders could also indicate causation; in other words, the presence of one disorder led to the development of a second disorder. Struzik et al.’s four models of causation included (a) direct causation—a direct link existed between the disorders; (b) associated factors—risk factors of the disorders correlated leading to the simultaneous occurrence; (c) heterogeneity—risk factors, although uncorrelated, could cause the comorbid disorder; and (d) distinct disease—diagnostic characteristics of the disorders coincided and related to a third disorder (Mestre-Pinto et al., 2015).

The European Monitoring Center for Drugs and Drug Addiction (as cited in Mestre-Pinto et al., 2015) reported higher hospitalizations and increased symptom severity among patients with comorbid conditions. The European Monitoring Center for Drugs and Drug Addiction expressed concern about the costly and complex treatment regimens for comorbid conditions associated with poor outcomes. Dauber et al. (2018) also noted that treatment success was influenced by comorbidity.

Comorbidity is not the only term used for this condition, as it is also known as dual diagnosis, while the World Health Organization (as cited in Mestre-Pinto et al., 2015) uses the term CODs. The Substance Abuse and Mental Health Service Administration (SAMHSA) noted that co-occurring disorders were used for more than 25 years. SAMHSA (2019) used co-occurring disorders "to indicate the presence of at least one mental disorder and at least one substance use disorder as defined by *DSM-5* [*Diagnostic and Statistical Manual of Mental Disorders*, 2013]" (p. 7).

Various substances linked with SUDs may co-occur with mental health diagnoses. These include substances such as alcohol, cannabis, opioids, cocaine, sedatives, and stimulants. Dauber et al. (2018), who conducted a study in Germany, found the most common substance abuse was alcohol, followed by cannabis, which had become increasingly popular. Dauber et al. linked specific SUDs with mental health disorders. Mood and anxiety disorders were commonly linked with the abuse of alcohol or sedatives, while schizophrenic disorder was associated with cannabis overuse. In early-onset schizophrenia (childhood or adolescence), psychotropic substances were more often used. Patients diagnosed with personality disorders tended to abuse cocaine or opioids. Linking the highest number of substance use with a psychiatric disorder did not imply that the substances and psychiatric disorders were linked as other combinations remained possible (Dauber et al., 2018). Researchers have studied comorbidities, such as depression and anxiety (Melton et al., 2016), depression and anxiety linked with physical complaints (Uddin et al., 2017), the combination of alcohol and cannabis abuse with comorbid psychiatric conditions (Aloi et al., 2019), and comorbid SUD and ADHD or

OCD (Ritter et al., 2017). The following subsection shows studies on different comorbid conditions.

### *Research on Comorbid Conditions*

**Anxiety and Depression**. There is a high level of comorbidity in depression and anxiety disorders in children (Fernández-Martínez et al., 2019). The co-existence of anxiety and depression tends to increase the symptomatology, higher rates of suicide ideation, and diminished success in treatment (Melton et al., 2016). Fernández-Martínez et al. (2019) reported that should these conditions not be successfully resolved in childhood, then the symptoms would remain with increased adolescent severity. Comorbidity of anxiety and affective disorders, such as depression, was the most prevalent combination (Dauber et al., 2018). Melton et al. (2016) asserted a high prevalence of comorbid anxiety and depression among children and adolescents. Other researchers reported the comorbidity of anxiety and depression with SUD at 25%, further complicating treatment (Toftdahl et al., 2016).

Melton et al. (2016) conducted a systematic review of literature on comorbid anxiety and depression in children and adolescents. Melton et al. found limited research on comorbid depression and anxiety in children and adolescents, hence the review. The presence of comorbid anxiety and depression in children and adolescents was linked with a high probability of SUD, poor academic achievement, and increased severity of symptoms. The poor scholastic achievement could be linked with a higher incidence of somatic symptoms and refusal to attend school. After reviewing 115 articles published between 1987 and 2015, the researchers concluded that comorbid anxiety and depression

occurred in the study group: (a) The group presented with increased severity of symptoms and unique symptom combinations, (b) treatment outcomes and prognosis were poor when compared to the peers with single conditions, (c) diagnosis and intervention should focus on the severity of symptoms, and (d) single diagnosis in children and adolescents showed two or more diagnoses commonly found. The researchers recommended that comprehensive dimensional assessments and multimodal evidence-based treatment were needed, given high disease severity.

Researchers have commonly linked social anxiety disorder (SAD), characterized by a fear of social involvement with possible scrutiny by other people, with psychiatric disorders (Garcia-Lopez et al., 2016). Garcia-Lopez et al. contended that comorbidity of SAD with other mental health conditions in adolescents was rather the rule than the exception (p. 574). SAD tends to disrupt functioning and considerably increase the possibility of comorbidity with suicide, SUD, school dropout linked with poor education completion, and being victimized. Gender differences were found small as the two sexes tended to share the same social fears. Garcia-Lopez conducted a quantitative study involving 424 Spanish-speaking adolescents (39.1% male and 60.9% female) with SAD diagnoses to address the gap in research on the comorbidity of SAD and other mental health conditions in adolescents. The Anxiety Disorders Interview Schedule for *DSM-IV: Child and Parent Version* was used to identify the presence of SAD in the participants. Nearly all the participants ($N$ = 409) were diagnosed with SAD, with 33.3% presenting comorbid conditions, ranging from one to four comorbid disorders. Nearly a quarter (22.5%) of participants presented with one comorbid disorder, 6.6% had two comorbid

disorders, 2.4% showed three, and 1.5% had four comorbid disorders. A limitation of this research included using only Spanish-speaking adolescents, limiting the generalizability of the results. Based on these results, the researchers advised that assessment routines in adolescents should include SAD assessments and checking for comorbidities.

Uddin et al. (2017) studied major depression linked to physical ailments, anxiety, and low socioeconomic factors with concomitant abuse and neglect. This debilitating disorder holds substantial impacts on public health; major depression affects about 16.6% of persons with SUD, costing the health system an estimated $98,9 billion annually. Major depression is commonly comorbid with physical ailments such as diabetes, asthma, and heart conditions which intensifies the already high burden of depression. The onset of depression is often during adolescence, mainly among girls. The World Health Organization predicted that depression would be the foremost cause of disability by 2030; it currently occupies second place worldwide (as cited in Uddin et al., 2017). Therefore, depression must be studied further to develop preventative measures to minimize the risk of developing depression (Uddin et al., 2017).

Adolescents living in low socioeconomic settings (SES) have a higher risk of developing major depression. Researchers linked low SES with changes in participating adolescents' DNA and methylation with expected changes in the amygdala reactivity, predicting a higher depression risk in adolescents (Swartz et al., 2017). Although the study of Swartz et al. (2017) was limited by DNA analysis methods and the possibility that other genes could contributed to the results, the researchers highlighted the usefulness of the field of neurogenomics (Uddin et al., 2017). There is currently no

conclusive evidence that low SES has an altering influence on adolescents' DNA; ongoing studies in this area may show this possibility.

Researchers have commonly linked disorders of mood (e.g., depression, bipolar disorder) and anxiety with SUDs (San et al., 2016). The reported prevalence of the two combined disorders ranges between 12% and 80%, depending on the study (Tirado-Muñoz et al., 2018). Various factors influence the wide reported range, including the substance involved (e.g., alcohol, cocaine, opiates), study sample, public or persons with SUDs, and diagnostic criteria and instruments used. In a scholarly article, Tirado-Muñoz et al. (2018), who studied comorbidity of SUD and major depression, showed symptom severity was increased due to the comorbid condition. Three possible reasons for the comorbidity of SUDs and depression included the following: (a) the two conditions result from common factors including stressful situations or emotional trauma, (b) neurobiological changes occur due to chronic substance abuse, and (c) the occurrence of the SUD results from initial use to relieve the depression (Tirado-Muñoz et al., 2018). The researchers asserted that integrated treatment to address both conditions concurrently is essential. Special care is needed when treating the dual pathology as depression medication may interfere with pharmacology for substance abuse. The next section includes research about different substances used in SUDs and comorbid psychiatric disorders in adolescents.

**Alcohol and Cannabis**. Miech et al. (2016) noted that adolescents most often misused alcohol and cannabis. Aloi et al. (2019) linked simultaneous use of alcohol and cannabis with unfavorable medical and psychiatric outcomes. Aloi et al. conducted an

experimental study with 150 adolescents using a Monetary Incentive Delay (MID) task to study the correlation between alcohol use disorder (AUD) or cannabis use disorder (CUD) scores and functional steadfastness of neuro-circuitries facilitating management of rewards and recognizing errors. The results showed that neurological processing is disturbed in the presence of more severe symptoms of AUD or CUD. The implications for treatment must still be determined.

Gimeno et al. (2017) conducted a meta-analysis of the treatment of comorbid AUD and anxiety. Anxiety disorders frequently co-occur with AUD, resulting in increased symptom severity and poor treatment outcomes. In addition, treatment of anxiety with pharmacological substances may increase alcohol uptake in active users, making treatment difficult. A careful differential diagnosis is needed to identify anxiety disorder as anxiety can result from active alcohol use or abstinence. More than a third of AUD patients exhibit CODs with a higher risk of mood disorders associated with AUD. For instance, the risk of anxiety and panic disorder is twice as high in patients, with them being four times higher at risk of developing anxiety disorder (Gimeno et al., 2017). Evidence-based pharmacological treatment should be followed carefully, considering symptom severity and individual patient needs (Gimeno et al., 2017).

Researchers have linked CUD with higher levels of mental illness (Smyth et al., 2020). Smyth et al. (2020) noted that cannabis use was significantly linked with school dropouts, poor academic performances, and unfavorable social outcomes, leading to mental health issues. A comprehensive study on the effects of cannabis use by the National Academies of Sciences, Engineering, and Medicine (2017) indicated increased

risks of developing SAD, depression, suicide ideation, schizophrenia, and psychoses. Gobbi et al. (2019) confirmed these findings through a systematic literature review, finding that CUD was significantly linked with depression and suicide ideation in adolescents. According to Gobbi et al., worldwide use of cannabis among adolescents marks it as the most common substance used by adolescents. Gobbi et al. concluded, because 3.8% of the global population reportedly misused cannabis and cannabinoids, CUD constituted a serious health and mental health concern worldwide.

**Neurodevelopmental Disorders**. ADHD and OCD are most found with varying comorbidity ranging from 10% to 50% (Ritter et al., 2017). Notably, these disorders present with dual-diagnosis symptoms of inattention, distractibility, isolation in families, and poor impulse control (Ritter et al., 2017). Researchers who studied comorbidity of ADHD and SUDs found significant links with alcohol and marijuana overuse (Bélanger et al., 2018; Brinkman et al., 2015; Carrellas et al., 2016; Miranda et al., 2016).

ADHD is a neurodevelopmental disorder affecting 3.4% of children worldwide (Bélanger et al., 2018). Of this population, ADHD symptoms remain in 60% of adults (Miranda et al., 2016). Comparing adults with ADHD and their unaffected peers, adults with ADHD reported increased rates of anxiety, behavioral and personality disorders, and mood disorders (Bélanger et al., 2018). Some researchers focused on the comorbidity of ADHD with SUDs (Carrellas et al., 2016). In their review of the literature on ADHD, Carrellas et al. (2016) found a higher risk of 25% to 40% of SUD adolescents with ADHD. The increased risk is unassociated with early pharmacological treatment of ADHD; as contrary to expectations, early medication treatment was linked with a lower

rate of tobacco use and SUDs. However, in adolescents and adults, researchers found a strong relationship between ADHD and SUDs (Bélanger et al., 2018). Brinkman et al. (2015) reported a 3- to a 5-fold increased likelihood of alcohol misuse in adolescents with ADHD. In comorbid ADHD-SUD, treatment programs were less likely to be completed, with a higher likelihood of SUD relapse (Miranda et al., 2016). Rosenbaum et al. (2020) also addressed the comorbidity of mental health disorders and SUDs and physical conditions, such as diabetes, obesity, and physical inactivity in adolescents.

**Chronic Physical Illnesses**. Comorbid chronic physical illnesses are common in persons with mental illness; diseases such as diabetes and obesity add to patients' risk of mortality (Rosenbaum et al., 2020). Illnesses, such as diabetes and cardio-vascular diseases, are strongly linked with an individual's lifestyle. As researchers have identified inactivity in people with mental illness, such researchers have suggested increased physical activity as part of the treatment regimen. Physical activity benefits physical health and is beneficial to mental health disorders, such as depression, anxiety, and psychosis. Rosenbaum et al. (2020) determined the Simple Physical Activity Questionnaire (SIMPAQ) reliability to measure physical activity in persons with mental health disorders. The researchers found that the 5-item SIMPAQ was a reliable instrument. The researchers found that 60% of the participants were obese, with the highest prevalence of physical inactivity and obesity in patients with schizophrenia, depression, and bipolar disease. Based on the outcomes of applying the tool on 1,010 participants from 23 countries, Rosenbaum et al. suggested a national campaign to promote physical activity as part of mental healthcare. Loewen et al. (2019) confirmed

this recommendation, finding that adolescents compliant with dietary and physical activity standards presented with significantly fewer mental health complaints. Similarly, Brokmeier et al. (2020) found that increased physical activity lessened the possibility of psychosis. Physical activity can be regarded as both a precautionary measure and treatment in mental disease.

Type 1 diabetes is associated with adverse mental outcomes (Sildorf et al., 2018). Sildorf et al. (2018) used archival national Danish data to study the possible co-occurrence of early-onset diabetes and possible diagnoses with mental health disorders within two years after diagnosis. The researchers included 4,725 participants, of whom 1,035 were diagnosed with mental health disorders. Metabolic deterioration due to Type 1 diabetes can lead to the early onset of associated pathology, such as retinopathy, nephropathy, and neuropathy, increasing the healthcare burden. Poor metabolic management of diabetes is linked with age and the peak of the condition in adolescence, a period of emotional sensitivity and physical growth, during which increased psychiatric conditions occur. Children and adolescents with diabetes present more often with psychiatric diagnoses compared to the public. Sildorf et al. found that children and adolescent patients with poor treatment outcomes for diabetes had an increased risk for psychiatric disorders. The researchers suggested routine screening for mental health conditions in this group of diabetic patients.

### *Barriers to Treatment Outcomes*

In the above discussion on comorbidity, researchers noted that treatment outcomes were poor in many instances (Aloi et al., 2019; Dauber et al., 2018; Gattamorta

et al., 2017; Gimeno et al., 2017; Meaklim et al., 2018; Welsh et al., 2017). Treatment is based on diagnostic outcomes, and ineffective diagnostic assessment can lead to poor treatment outcomes (Meaklim et al., 2018; Welsh et al., 2017). In addition, complex treatment interventions due to the presence of SUD can be linked with adverse outcomes due to medication use in mental health conditions not well tolerated in SUD treatments (Melton et al., 2016; Peters et al., 2016).

Difficulties in accurately diagnosing the multiple conditions present in adolescents with mental health conditions can lead to inaccurate treatment choices (Welsh et al., 2020). This issue is further influenced by few treatment options proven to be effective in this age group (Welsh et al., 2020). Bornstein (2017) asserted that evidence-based assessment psychological protocols did not receive much attention in the past. Despite the acknowledged need for effective diagnosis, specifically differential diagnosis, in mental health conditions (Welsh et al., 2017), and the identified need for accurate diagnoses in deciding on treatment options (Melton et al., 2016; Peters et al., 2016), routine screening for comorbidity is not general practice in all treatment facilities (Meaklim et al., 2018). One reason for insufficient diagnosis may be linked with the type of treatment facility; emergency department staff commonly receiving adolescents who attempted suicide, linked with comorbid psychiatric conditions and SUDs, do not all have access to suitably trained professionals to conduct assessments (Nordstrom et al., 2019).

More serious patient clinical presentation indicates a need for a longer length of stay or barriers to long-term outcomes. Symptoms include comorbidity, non-suicidal self-injury within the past month, reports of multiple suicide attempts across a lifetime, severe

bullying, the severity of symptoms reported upon admission, and discharge (Zambrowicz et al., 2019). Length of stay and inpatient treatment options have been revised in the face of reduced funding and the high costs associated with these treatment options. Deinstitutionalized community-based treatment, regarded as the least restrictive treatment option, has been established to manage patients' (adolescents') mental health needs in a patient-centered treatment approach. The treatment focus of community-based care is on crisis stabilization and incomplete recovery, as with in-patient treatment (Zambrowicz et al., 2019). Zambrowicz et al. (2019) indicated that externalizing conditions (e.g., ADHD, OCD, and SUD) and comorbid disorders yielded poor treatment outcomes in a short-term treatment setting. Zambrowicz et al. recommended that more research be conducted on the treatment outcomes of short-term treatment settings as research on this issue had been limited in the United States. This recommendation is important in the current study, where the focus is on treatment outcomes in a limited stay option, namely CSUs.

### *Dual-Diagnosis Symptoms*

APA (2013) introduced dual-diagnosis assessments to determine symptoms present in different types of mental illness (LeBeau et al., 2015). Therefore, these dual-diagnosis symptoms are not limited to a specific mental illness but cross over the margins of different disorders (Clarke & Kuhl, 2014). APA (2013) compiled the CCSM to enable supplementary empirical exploration of the dimensional qualities of mental health problems. The 23 symptoms included in the CCSM address the following domains: depression, anger, mania, anxiety, somatic symptoms, suicidal ideation, psychosis, sleep

problems, memory, repetitive thoughts and behaviors, dissociation, personality functioning, and substance use (Bravo et al., 2018).

Agnew et al. (2021) found high levels of comorbidities in insomnia patients. Insomnia is seemingly a single psychological problem but can be linked to various psychiatric conditions (Meaklim et al., 2018). Meaklim et al. (2018) evaluated the practicability of using the CCSM in a sleep clinic setting to explore comorbid conditions. A study of 50 insomnia patients revealed coexistent symptoms with sleep complaints in 86% of the participants. Half of the patients had coexistent physical ailments, and a quarter (26%) reported suicidal thoughts. Of patients with anxiety, depression, and anger, 64% to 66% reported sleep disturbances. Agnew et al. (2021) confirmed that sleep disturbances were commonly found in patients with diagnoses of anxiety and depression. Meaklim et al. (2018) found that the CCSM was easy to administer and practical in identifying coexistent psychiatric symptoms in patients presenting with insomnia. This finding was important in the current study as the CCSM was implemented to determine treatment success.

**Crisis Stabilization Units**

Different options within crisis stabilization services exist. A continuum of services included telephone support, mobile crisis services, short-term treatment, 23-hour crisis stabilization, the Living Room, CSUs, and hospitalization in a psychiatric setting (Saxon et al., 2018). The 23-hour CSU model consists of a limited number of beds, allowing patient observation and stabilization (Saxon et al., 2018). Crisis stabilization centers (CSC) are small inpatient facilities of less than 16 beds for people (adolescents) in

a mental health crisis whose needs cannot be met safely in residential service settings (National Alliance on Mental Illness [NAMI], 2020). According to the Netcare CSU website (www.netcareaccess.org/), CSUs offer an alternative to the hospitalization in psychiatric units by aiding moderate to high-risk patients. At Netcare, CSU patients may only stay 7 days while receiving multidisciplinary treatment from registered physicians, mental health specialists, and nurses. Staff at CSUs aim to stabilize patients and safely reintegrate them into society as soon as possible (NAMI, 2020).

Before the 1960s, psychiatric patients received care in specialist facilities, but that changed due to the deinstitutionalization of psychiatric care (Nordstrom et al., 2019). The Community Mental Health Act (1963; as cited in Saxon et al., 2018), signed by President Kennedy, inaugurated the deinstitutionalization of treatment to mental health patients. During the 1980s, the concept of managed care became prominent, resulting in transferring care from state facilities to inpatient or outpatient treatment or community-based facilities (Nordstrom et al., 2019). The number of beds allocated to psychiatric care became more limited with the managed care movement, which places the burden of care on emergency departments (EDs). These departments are often not well equipped for handling psychiatric patients who need specialized assessment and care. Psychiatric patients may have to wait in the waiting areas of EDs for long periods—known as ED boarding or psychiatric boarding (Fitton & Reagan, 2018; Nordstrom et al., 2019). Mental health patients may be discharged too soon and without support systems to alleviate the ED boarding situation, a situation known as “streeting” (Fitton & Reagan, 2018, p. 20).

Providing care to psychiatric patients places an extra burden on EDs, as case management takes about 42% longer (Nordstrom et al., 2019). Patients often need to be transferred to more appropriate facilities or the hospital's inpatient facilities; all take time and workers. The prevalence of psychiatric patients linked with a lack of diagnostic and treatment facilities may lead to an increased burden on EDs. Researchers have suggested various treatment options, including telehealth facilities and rapid treatment of agitation, possibly leading to over-sedation in the ED setting, rapid identification of comorbidities, observation, and active treatment while waiting in the ED setting (Nordstrom et al., 2019). Each of these options has its merits and challenges; suitable options must be implemented to lower the pressure on ED staff to manage psychiatric patients (Nordstrom et al., 2019).

Central to service provision in mental health care is crisis intervention (Shore et al., 2016). Shore et al. (2016) asserted that patients with mental health conditions might not know their status before a mental health crisis developed. The unavailability of suitable facilities for patients with mental health crises forces them to visit EDs, leading to overuse of EDs (Fitton & Reagan, 2018; Nordstrom et al., 2019; Shore et al., 2016). Facing high volumes of patients and insufficient staff and training to deal with mental health patients in crises often leads to these patients not receiving adequate treatment or waiting for hours until suitably trained staff arrive (Shore et al., 2016). Having to wait for hours and not receiving treatment may further traumatize the behavioral health patient. Nordstrom et al. (2019) and Shore et al. (2016) stressed the importance of rapid and effective diagnosis, treatment, and stabilization of ED patients with mental health

conditions. Behavioral health crisis center staff have tasks like EDs but focus on patients with behavioral health needs (Fitton & Reagan, 2018). Different state leaders have developed a continuum of crisis care (e.g., Michigan and Texas) to provide suitable care to patients with behavioral health crises (Fitton & Reagan, 2018; Shore et al., 2016). Psychiatric crisis care facilities are still emerging, and evidence-based care protocols are not firmly established (Fitton & Reagan, 2018).

Adolescents may prefer the more informal atmosphere of the CSUs (Peters et al., 2016). EDs can be overwhelming, possibly causing further traumatization (Doupnik et al., 2018). However, only 31% of CSUs screen for co-occurring disorders (Atkinson, 2018a), which may compromise the treatment outcomes. Adolescent CSUs offer services to teens aged 11 to 17 years by providing observation and intervention services. The intervention takes individual and group sessions covering management of stress, anxiety, life changes, behavioral issues, and decision-making. The staff of alternative options provides care in less restrictive settings with more comfortable stay facilities, such as beds or recliner chairs, making this process a more attractive option than the boarding situation at EDs.

### *23-Hour Stay Units*

The brief stay units are run as observation units within EDs, presenting another option for stabilizing behavioral health crisis patients before integrating patients into the community with community-based care (Saxon et al., 2018). Saxon et al. (2018) compiled a theoretical description of different short-stay options for mental health patients in crises. Saxon et al. found that CSCs provide successful services to behavioral

health patients to prevent suicide, stabilizing patients with behavioral health crises, and divert patients from assessing higher care levels.

Short stay CSUs offer the opportunity to observe the patient for 23 to 72 hours, depending on the model. Staff at these facilities aim to avoid unnecessary hospital stays and provide rapid stabilization to the patient (Usher et al., 2019). During this period, the patient is stabilized, with the crisis averted (Norotte et al., 2017). Two options exist after the short stay: Patients may be sufficiently stabilized to return to the community or be admitted to the psychiatric hospital. Norotte et al. (2017) found little research on the outcomes of these short-stay options, leading to a decision to evaluate the treatment outcomes of 225 patients at one unit in a retrospective study. One-hundred of the patients (39.2%) needed prolonged stays and were referred to an inpatient facility. Readmittance of patients mainly occurred in comorbid conditions, including personality disorders or conflict situations (Norotte et al., 2017).

The 23-hour crisis stabilization toolkit developed by the crisis intervention team (CIT) provided the following operations guidelines (Usher et al., 2019):

23-hour crisis receiving and stabilization programs:

1. Accept all referrals;
2. Do not require medical clearance prior to admission but will assess for and support medical stability while in the program;
3. Design their services to address mental health and substance use crisis issues;
4. Employ the capacity to assess physical health needs and deliver care for most minor physical health challenges:

5. Staff at all times (24/7/365), with a multidisciplinary team capable of meeting the needs of individuals experiencing all levels of crisis in the community; including:
    i. Psychiatrists or psychiatric nurse practitioners (telehealth may be used)
    ii. Nurses
    iii. Licensed and/or credential clinicians capable of completing assessments in the region; and
    iv. Peers with a lived experience similar to those of the population served.
6. Offer walk-in and first responder drop-off options;
7. Be structured in a manner that offers the capacity to accept all referrals, understanding that facility capacity limitations may result in occasional exceptions when full, with a no-rejection policy for first responders;
8. Screen for suicide risk and complete comprehensive suicide risk assessments and planning when clinically indicated;
9. Function as a 24 hour or less crisis receiving and stabilization facility;
10. Offer a dedicated first responder drop-off area;
11. Incorporate some form of intensive support beds into a partner program (could be own program or another provider) to support timely transitions to secure placement for individuals who need additional support;

12. Include beds within the real-time regional bed registry system operated by the crisis call center hub to support efficient connection to needed resources; and
13. Coordinate connection to ongoing care. (p. 50)

Staff at the Ann Arbor psychiatric emergency services at the University of Michigan offer walk-in and telephone crisis services. The staff keeps the center open at all hours throughout the year, assisting anyone with behavioral health needs. As part of the program, staff conduct screening assessments for drug use, mental health conditions, and inpatient psychiatric conditions. A shift in patients' demographics has occurred as children now represent about 40% compared to the 10% in 2008 (Atkinson, 2018b).

A facility option that provides a warmer and welcoming atmosphere is the community respite program, known as the Living Room. Heyland et al. (2013) offered a description of the Living Room facility in Illinois 1 year after its inception. Guests (behavioral health patients) visiting the Living Room represented a 93% deflection rate from Eds, with cost savings of $550,000; a high percentage of guests did not have Medicaid or any other insurance. The guests stabilized on 84% of the visits so that they consequently decided to return to their communities. Due to the treatment received, the guests who independently decided to leave the facility scored 2.13 points lower on the Subjective Units of Distress Scale, marking its first year of operation a successful alternative in dealing with behavioral health patients' crises. This descriptive study focused on a single facility and treatment method. Further research on this model may provide more insight into the success rate of this treatment model.

In Virginia, special care was taken to develop a statewide continuum of mental health care for children and adolescents in mobile response and stabilization services (MRSS; Manley et al., 2018). The researchers established mental health services for children and adolescents known to everyone, providing one point of access linked with a mobile crisis care option to support the child and families before the crisis became unmanageable. The comprehensive service included screening, assessment, crisis stabilization, consultations with specialists' services when indicated, referrals, and coordinated continued care (Manley et al., 2018). Research data on the MRSS showed high success rates in treatment and cost savings. Similar facilities with equal success rates were established in other states, such as Texas and Arizona (Manley et al., 2018).

Services typically offered by the MRSS vary in different states but commonly include the following:

- the caller defines the crisis;
- services are available 24 hours a day, 7 days a week;
- they can serve children and families in their natural environments, for example, at home or in school;
- they include specialized child and adolescent trained staff and do not rely on predominantly adult-oriented crisis response workers;
- they build on natural support structures and reduce reliance (and therefore costs) on hospitals and formal crisis response systems; and
- they connect families to follow-up services and supports, including a transition to needed treatment services. (Manley et al., 2018, p. 11)

Embedded in a public health approach to service provision, staff at the MRSS provides "timely, appropriate, family- and youth-driven, individualized response to a crisis is key to effective de-escalation and stabilization" (Manley et al., 2018, p. 18). According to Manley et al. (2018), staff at the MRSS provides clinically and cost-effective services to youths and their families.

### *Evaluating Treatment Success*

Crisis care facilities use symptom self-rating systems for patients or their caregivers. One of the barriers to collecting outcome ratings from patients after discharge is the lack of suitable and reliable rating scales (Crawford et al., 2017). Ratings of symptoms by adolescents and psychologists differ more at admission than discharge from an inpatient setting (Lee et al., 2018). It is unknown how the ratings of adolescents attending an outpatient facility compare with that of their psychologists. This finding had implications when using self-assessments to decide if treatment outcomes were satisfactory.

As noted, crisis stabilization care may take different forms. Balkin and Russo (2020) studied crisis stabilization outcomes with a sample of 20 adolescent males aged 16 to 18 years with SUD in a single location. The stabilization treatment spanned 10 days, like the CSUs' 6 to 16 days. Self-reported data were collected on well-being, crisis stabilization, and perceptions of the severity of the SUD. Considering working alliance, changes were not significant, nor with wellbeing and crisis stabilization. There were therapeutic gains associated with reduced problem severity and processing factors linked to chronic abuse.

Creed et al. (2018) conducted a retrospective cohort study on centers providing crisis stabilization of behavioral health patients. The researchers access archival medical records of 226 patients to retrieve data on length of stay, diagnosis, patient characteristics, and 30-day readmission. This sample size was too small to generalize the study's findings; however, the trends noted could be further explored. Common diagnostic characteristics included SUDs, suicidal thoughts, or self-harming behaviors. Of the 226 patients, 18% received crisis stabilization care and returned to their homes. The rest were admitted to psychiatric hospitals or received further diagnostic assessments. The average length of stay at the facility was 12 hours, with 27% of patients being readmitted within 30 days, significantly less than patients treated at EDs. The researchers concluded that patients with behavioral health conditions who experienced a crisis are successfully stabilized to return to their communities. Both the length of stay and 30-day readmission rates were significantly better compared to EDs. Dedicated psychiatric CSUs are successful in the crisis management of patients. Creed et al. suggested that such programs should be implemented on a larger scale to relieve the pressure on EDs.

Evaluating and enhancing mental health service using patient outcome data often fail due to insufficient patient outcome data (Crawford et al., 2017). Data collection and analysis are essential in providing quality care to all patients. In the United Kingdom, the clinician-rated Health of the Nation Outcome Scales (HoNOS) was used for 20 years, gathering data on different outcomes-related aspects after patients were released from in-patient care facilities. The HoNOS was originally intended for use on adults with severe

mental health conditions but was later adapted for use with adults over the age of 65, children and adolescents, persons with intellectual disability, or persons with acute brain injury (Crawford et al., 2017). Clinicians and researchers have recently become interested in using these data to improve their service provisions to patients. Crawford et al. (2017) discussed two cases where these data were used to inform practice—not yet a widespread practice. Although there could be challenges to conduct research using this archival data, it is well worth it. Changing treatment from the bottom up (patient or clinician informing policy change) may prove more feasible. Evaluating and enhancing treatment quality effectively can be done using patient outcome data and self-report assessments taken at baseline and discharge (Crawford et al., 2017; Shore et al., 2016). This archival study made use of data collected by different service providers after the patient was discharged. There was no manner to determine the authenticity and objectivity of the data. The researchers could not discuss the data with the service providers who completed the assessments; they had to accept the data as objective and true. This limitation of the study was offset by the size and long period of data collection.

I established treatment outcomes of CSUs dealing with adolescent patients with comorbid conditions who experienced a crisis. Studies with the same focus seemed limited. Dauber et al. (2018) studied comorbid mental health and SUD conditions in SUD treatment facilities in Germany. The researchers used archival data of a large sample ($N$ = 194,406), finding that comorbid conditions were present in 4.6% outpatients than 50.7% inpatients. The most common mental health disorders included mood and anxiety disorders in outpatient and inpatient conditions (Dauber et al., 2018). Dauber et al. (2018)

concluded that preknowledge of comorbidity influenced decisions on treatment, underlining the importance of pretreatment screening. The sample size and that the sample was obtained from different facilities were strengths in this research. The research outcomes showed findings of studies done in the United States, even though this study occurred in Germany.

Studies on the short-term treatment outcomes of adolescents with mental health conditions in the United States are limited (Zambrowicz et al., 2019). Zambrowicz et al. (2019) studied 777 adolescents (13 to 19 years) in inpatient facilities admitted for acute depression, anxiety, and suicidal thoughts. The average length of stay at the inpatient facility was 13 days. Zambrowicz et al. explored the moderating effect of psychosocial or clinical elements moderated treatment outcomes, conducting clinical interviews on the severity of symptoms before and after treatment and implementing self-reporting instruments. Data collected were part of the inpatient assessment and treatment program; therefore, no additional data collection was undertaken. The researchers found discharge data showed a significant reduction of symptom severity in depression, anxiety, and suicidal thoughts. Patients with more severe symptoms at admission, including non-suicidal self-injury in the past month, comorbid conditions, severe bullying, and suicide attempts, might have benefitted less from the short stay as symptom severity was still high discharge. Thus, the researchers recommended that greater symptom severity should be met with a longer length of stay. The researchers argued that the higher initial costs would be offset by preventing a further economic burden and psychosocial outcomes at a later stage.

Sveticic et al. (2019) studied a short-stay program for psychiatric patients in Australia, the Short Stay Pathway (SSP), where persons in mental health crisis were admitted for 3 days maximum. Readmission of 10.6% within 28 days compared favorably to a diagnostically matched control group (18.4 %) admitted to an acute care mental health facility. In cases where a follow-up was conducted 7 days after discharge, the readmissions rate was significantly lower in both groups. The SSP is aimed at adult mental health patients (18+ years) who experience a psychiatric crisis linked with increased risks of unfavorable outcomes. Patients are commonly discharged after 72 hours; the SSP beds are integrated into the psychiatric care system. In-depth assessment and need identification in collaboration with all the service providers forms an important initial step in SSP, followed by short psychological treatment where the patient transitions to supported care in the community. Sveticic et al. followed a quasi-experimental design with a relatively large sample, making the study robust. In the literature review on readmissions following short-stay options in mental health, Sfetcu et al. (2017) found that the quality and available options in community care significantly influenced the successful integration of short-stay patients into the community. Community support of excellent quality was needed for best results in short-stay programs (Sfetcu et al., 2017; Svetici et al., 2019).

Another short stay option is the single session model. Schleider et al. (2021) explored the treatment outcomes of the single-session intervention (SSI). In the United States, approximately 80% of adolescents with mental health needs do not have access to intervention, and the remaining 20% do not receive sufficient care (Schleider et al.,

2021). SSIs may present an affordable and accessible option for adolescents with mental health needs. SSIs are systematized programs, taking one session with one service provider only, either stand-alone or part of clinical services.

The number of adolescents needing mental health services has increased significantly over the past years; insufficient facilities and professionals result in poor service delivery to this group. A radical change in the service delivery model is needed to address the backlog; SSI represents an option in addressing this need (Schleider et al., 2021). Youths attending mental health interventions mostly complete an average of 3.6 sessions and most often only one session. The SSI approach may optimize treatment outcomes. The success rate of SSIs with anxiety and conduct disorders is high but not with depression, which seems to require a different approach. Schleider et al. (2021) used a case study approach linked with a theoretical description of the SSI approach, presenting a thorough and transparent presentation of cases with in-depth descriptions. The SSI remains in a development phase, which makes the exposure that Schleider et al. provided valuable. Schleider et al. recommended that further research and adaptations of SSI be done as it seemed like a viable approach in addressing adolescents' mental health needs.

## Diagnosis and Instruments

### *Screening*

Screening for comorbid or CODs is an essential first step toward successful treatment (SAMHSA, 2019). Screening precedes a more in-depth diagnostic process focused on the areas of need identified through the screening assessment. Insufficient

screening or neglecting to screen for CODs can lead to diminished success in treatment, insufficient planning of treatment, relapse or increased use of illegal substances, the reappearance of mental health issues, and repeated use of community or crisis care resources, which represents increased expenses (Peters et al., 2012; Peterson et al., 2014).

Juvenile delinquents in the juvenile justice system must be screened for co-occurring disorders at the first entry point because of the high incidence of juveniles with co-occurring disorders in the juvenile justice system (SAMHSA, 2019). Early identification of comorbidity can lead to effective treatment, and this knowledge is needed during sentencing and decisions on placement and parole (SAMHSA, 2019). In the juvenile justice system, staff can use the outcomes of psychological screening when developing treatment plans. Differential diagnosis using APA's (2013) dimensional assessment is important in correctional services, as the leading disorder needs to be determined for placement decision-making purposes. SAMHSA (2019) recommended that screening for comorbid conditions be done as early as possible to influence sentencing, placement, treatment, and parole decisions.

Different researchers pointed to the need for screening for comorbid conditions (Gimeno et al., 2017; Gobbi et al., 2019; Mestre-Pinto et al., 2015). The main reason for the screening is that failure to evaluate and treat comorbidities effectively can perpetuate symptoms and worsen conditions being treated (Meaklim et al., 2018; Welsh et al., 2017). Comorbid conditions do not only imply psychiatric illnesses and SUDs, as chronic physical ailments may also be present, emphasizing the need for adequate consideration of physical conditions (Johnson et al., 2018).

**Categorical Diagnosis and Dimensional Assessment.** The *DSM* diagnosis serves to categorize symptoms as present or not (APA, 2013). Clarke and Kuhl (2014) discussed the long-debated issue about the need for dimensional assessment data. APA (2013) introduced dimensional assessment as providing the ability to rate the severity of symptoms through the dimensional scale. Melton et al. (2016) pointed to the need for dimensional assessment in which the severity of the symptoms was measured, which would be important in developing a treatment plan. By integrating categorical and dimensional diagnoses, specialists can distinguish between conditions and focus treatment options to address patients' needs (Clarke & Kuhl, 2014).

An APA (2013) task group focused on developing dimensional assessment to augment the categorical *DSM-4* assessments (Clarke & Kuhl, 2014). APA (2013) developed the *DSM-5* to include dimensional assessments. In the *DSM-5*, APA requested that clinicians used dimensional assessments in practices and research, providing feedback on their usefulness. Several researchers implemented the dimensional assessment (CCSM Level 1; Bastiaens & Galus, 2018; Bravo et al., 2018; Mahoney et al., 2020; Meaklim et al., 2018).

**Cross-Cutting Symptom Measure.** APA (2013) created the fifth edition of the *DSM* to assist practitioners in diagnosing comorbidity and coinciding symptoms among mental health conditions (Clarke & Kuhl, 2014). For this reason and meeting the need for a dimensional assessment tool, the CCSM Level 1 was developed. The CCSM has two self-report versions: one for adults (with 23 items) and one for adolescents/children (25 items). In addition, a self-report version for caregivers or parents is available. Apart from

the questions on suicide, which take a Yes/No answer, the other items have a 5-point Likert scale, ranging from *none or never* (0) to *severe or about daily* (5). The higher scores indicate a higher frequency or more intense severity (Clarke & Kuhl, 2014). Level 1 CCMS was developed so that practitioners would implement it for all patients as part of routine screening and clinical visits to determine treatment progress before visiting the clinician (Clarke & Kuhl, 2014). Using this tool regularly was foreseen to help the clinician establish treatment success and note symptom severity and symptom changes across treatment.

The CCSM is convenient and easy to administer because of its self-assessment nature using the following two options: pen-and-paper and electronic versions (Bravo et al., 2018; Clarke & Kuhl, 2014). Bravo et al. (2018) used the CCSM to determine comorbid conditions in college students, finding the instrument reliable and valid. In contrast, Bastiaens and Galus (2018) used the CCSM Level 1 on a sample of 150 inmates at a correctional facility. The CCSM measurements yielded false-positive answers, although the lowest thresholds on anxiety, depression, and mania correlated with the data from the other instruments used in the research. The small sample size of Bastiaens and Galus might be responsible for the fluctuations in the data. In addition, only one correctional facility was involved in the study, which further limited the generalizability of the findings. Researchers used CCSM Level 1 as an initial screener, following up with Level 2 instruments to provide more in-depth information and point further diagnostic instruments to be used (APA, 2013; Ishfaq & Kamal, 2019; King, 2014). The CCSM Level 2 instruments provide a more in-depth assessment for some domains addressed in

Level 1 (Bravo et al., 2018). Clinicians can use Level 2 assessments as part of a differential diagnosis.

Practitioners can use the CCSM throughout treatment as a discharge instrument, making it a valuable companion to treating psychologists/psychiatrists (Meaklim et al., 2018). Meaklim et al. (2018) found the CCSM feasible in measuring levels of coexistent psychiatric symptomatology in patients presenting for insomnia treatment. The CCMS Level 1 was used in a sample of college students to test its validity in this population group (Bravo et al., 2018). The researchers drew a large sample of 7,217 participants from 10 different U.S. higher education institutions. Bravo et al. (2018) found that the CCSM was reliable and practicable to use in a college health setting. Although a high incidence of mental health issues was found among college students, students seldom sought help. The American College Health Association (2017) reported that of college students, two-thirds used alcohol during the previous month, with 20% of students acknowledging marijuana use during the previous month. In addition, nearly a third of the students received professional intervention or diagnoses for psychiatric disorders, such as anxiety or depression.

Komaromy et al. (2019) used the CCSM to measure treatment outcomes in groups of patients treated in rural settings and found it effective and reliable in determining treatment progress. Mahoney et al. (2020) used the CCSM as a screening tool to identify normal participants to participate in psychology research. Mahoney et al. found that the CCSM reliably identified normal participants. Mahoney et al. presented a novel application of the CCSM. De Carvalho and Garner (2018) used the CCSM Level 1 as a

decision-making tool in determining treatment. They explored self-injurious behaviors in relation to other mental health conditions. Patients with SUDs did not report any self-injurious behaviors; however, adolescents with psychosis or somatoform disorder were identified as possible self-injurious behaviors. These findings have implications for intervention and case management to prevent self-injury, including suicide (de Carvalho & Garner, 2018).

## Summary and Conclusions

The theoretical framework for this study was the systems theory of von Bertalanffy (1969), who asserted that an understanding of how systems progress is was on an understanding of systems' ability to change. In the center of the systems theory, an understanding of a system would lead to the realization that it should not be dismantled into its parts as the interrelations between the parts were equally important to understand; systems must be seen holistically (Anderson, 2016). In the medical field, the tendency is to study sections of the body as different specializations focus on aspects of the human body. This approach was followed in establishing healthcare facilities where different service providers worked toward restoring a patient's health. Even with the more recent systems approach, medical fraternities do not all implement systems thinking (Anderson, 2016). By adopting a patient-centered systems approach to healthcare, more effective healthcare services can be provided. In this study, the focus was on evaluating a mental healthcare system's effectiveness, namely CSUs. The systems theory was used as a theoretical foundation to understand the complexity of treatment provided at CSUs, the

complex nature of teenagers' mental health issues, and the social system in which they functioned.

The notion of comorbid disorders refers to a situation where more than one condition is present in a patient. Comorbid disorders can occur by chance, meaning that there is no identifiable reason for the co-occurrence or in succession where the one condition may lead to a second condition (Dauber et al., 2018). In mental health, comorbid conditions commonly refer to psychiatric conditions with the added burden of SUDs (Struzik et al., 2017). The presence of comorbidity has significant implications for treatment success for both substance abuse and mental health conditions as comorbidity elevates the severity of the symptoms (Dauber et al., 2018). Various substances linked with SUDs may co-occur with mental health diagnoses, such as alcohol, cannabis, opioids, cocaine, sedatives, and stimulants (Dauber et al., 2018). Different combinations of comorbid conditions typically occur. Researchers studied comorbidities, such as depression and anxiety (Melton et al., 2016), depression and anxiety linked with physical complaints (Uddin et al., 2017), combined alcohol and cannabis abuse with comorbid psychiatric conditions (Aloi et al., 2019), and comorbid SUD and ADHD or OCD (Ritter et al., 2017).

Melton et al. (2016) found limited research on comorbid depression and anxiety in children and adolescents. When these two conditions are linked with SUDs, the treatment is further complicated, limiting treatment success (Toftdahl et al., 2016). Tirado-Muñoz et al. (2018) asserted that integrated treatment for mental health and SUDs concurrently was essential. Special care is needed when treating the dual pathology as

depression medication may interfere with pharmacology for substance abuse. Researchers discussed comorbidity and noted that treatment outcomes were poor in many instances (Aloi et al., 2019; Dauber et al., 2018; Gattamorta et al., 2017; Gimeno et al., 2017; Meaklim et al., 2018; Welsh et al., 2017). Treatment is based on assessment, and ineffective diagnostic assessment can lead to poor treatment outcomes (Meaklim et al., 2018; Welsh et al., 2017). Furthermore, complex treatment interventions in the presence of SUD can be linked with adverse outcomes as medication used in mental health conditions may not be well tolerated in SUD treatments (Melton et al., 2016; Peters et al., 2016).

Dual-diagnosis symptoms are not limited to a specific mental illness but rather cross over the margins of different disorders (Clarke & Kuhl, 2014). APA (2013) compiled the CCSM to enable supplementary empirical exploration of the dimensional qualities of mental health problems. The 23 symptoms included in the CCSM address the following domains: depression, anger, mania, anxiety, somatic symptoms, suicidal ideation, psychosis, sleep problems, memory, repetitive thoughts and behaviors, dissociation, personality functioning, and substance use (Bravo et al., 2018). APA (2013) requested that clinicians and researchers should use the CCSM to test its reliability and validity. Different researchers used the CCSM to establish its validity. Agnew et al. (2021) and Meaklim et al. (2018) found the CCSM easy to administer and provided reliable and valid results. There is a need to screen for comorbid conditions and conduct differential diagnoses as symptoms may overlap (Gimeno et al., 2017; Gobbi et al., 2019;

Mestre-Pinto et al., 2015). The self-administered CCSM Level 1 was found useful as an instrument for screening purposes.

Crises are common in peoples' lives with mental health conditions or SUDs. Depending on the nature of the crisis, urgent attention may be needed to prevent suicide or avert a dangerous situation. Deinstitutionalization of mental health services and decreased funding lead to less treatment options; when in crisis, many go to EDs. Staff at EDs cannot always deal with mental health patients' crises, and patients may wait for hours or days to be treated. Such a situation may further aggravate the situation, and alternatives are needed.

Different options within crisis stabilization services exist. A continuum of services is available, including telephone support, mobile crisis services, short-term treatment, 23-hour crisis stabilization, the Living Room, CSUs, and hospitalization in a psychiatric setting (Saxon et al., 2018). The 23-hour CSU model contains a limited number of beds allowing for patient observation and stabilization (Saxon et al., 2018). CSCs are small stand-alone inpatient facilities of less than 16 beds for people (adolescents) in a mental health crisis whose needs cannot be met safely in residential service settings (NAMI, 2020). Determining treatment success is important, and staff at some facilities use questionnaires to establish patient satisfaction combined with a dimensional assessment of symptoms. Studies on the short-term treatment outcomes of adolescents with mental health conditions in the United States are limited (Zambrowicz et al., 2019). Thus, Zambrowicz et al. (2019) recommended that more studies be conducted on treatment outcomes for adolescents in abbreviated stay facilities. The literature review

did not yield studies focusing on adolescents with comorbid conditions who received treatment in a short-term facility. The current study was unique because I addressed a gap in the literature regarding the efficacy of treating comorbidities among adolescents by supplementing categorical diagnostics with dimensional assessments of mental health symptoms—a new approach to conceptualizing and treating mental health disorders (Clarke & Kuhl, 2014; LeBeau et al., 2015). The next chapter includes the research methodology and design, together with data collection and analysis in detail.

# Chapter 3: Research Method

The purpose of this quantitative quasi-experimental one-group pretest/posttest design study was to evaluate the effectiveness of a Las Vegas Valley CSU in treating adolescents with comorbid mental health disorders. The quantitative examination included patient data from the CCSM. Baseline and outcome CCSM scores were used, where the test required determining whether there was a statistically significant difference in CCSM score between baseline and outcome. The sample consisted of 54 adolescent patients meeting the inclusion criteria of having two or more psychiatric conditions and being aged between 11 to 17. The baseline CCSM scores were compared to CCSM scores at discharge to determine whether scores or symptoms improved following CSU treatment.

Although the adolescent need for mental health intervention in CSUs was essential because of the frequency (Narendorf et al., 2017) and severity (McBee-Strayer et al., 2019), a dearth of research existed regarding the treatment of adolescents in CSUs. In addition, there was a paucity of research investigating the efficacy of treating comorbidities among adolescents by supplementing categorical diagnostics with dimensional assessments of mental health symptoms (Clarke & Kuhl, 2014; LeBeau et al., 2015). This research fills this gap and can contribute a social benefit where the findings may support an intervention that may improve adolescents' mental health with comorbid disorders.

Chapter 3 includes the research method and design used in this dissertation, beginning with a description of the research design and rationale. This section includes a

discussion of the CCSM and the demographic variables in this quantitative, ex post facto study; an expansion of the nature of the study in Chapter 1, where the alignment between the research questions and research design is explained; an explanation of resource constraints placed on this study; and a defense of the intervention. Chapter 3 continues with a discussion of the methods employed, beginning with the population and sample of the study. The determination of the sample size involved a priori power analysis. The chapter continues with a description of the recruiting procedures in the CSU, how participants were selected for participation and methods of data collection at baseline and outcome. This research involved an intervention; thus, a thorough description of that intervention is included. Chapter 3 also includes a description of the instrumentation and operationalization. The CCSM was used as the measure for the baseline and outcome and the data analysis plan, including identifying the description and inferential statistics utilized in this study. The chapter concludes with a discussion of the threats to external, internal, and construct validity in this study; ethical procedures utilized, and a summary. The ethical procedures in this research remained intensely crucial because the research involved adolescents experiencing comorbid mental health conditions.

## Research Design and Rationale

This research involved a quantitative, ex post facto research method and design. Ex post facto researchers study a lack of manipulation of independent variables to support a possible causal relationship. A change in conditions may result in a significant difference from the beginning to end of the study (Gray et al., 2016). An ex post facto research design was consistent with the research questions for this dissertation. It entailed

examining how effective CSUs were in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms were assessed. This research question required understanding the effectiveness of a treatment where participants in the study could not be randomly assigned to different groups. The conditions that preceded treatment were already present in the patient. An experimental research design would be the preferred research design to understand the effectiveness of the intervention if the conditions of the study did not make random assignment of participants impossible and participants entered the study with the conditions that required treatment. Ex post facto research had quasi-experimental elements, such as a lack of random assignment and pre-existing conditions that cannot be manipulated; therefore, the research was performed after accepting that some conditions would make the research a true experiment.

In addition to missing conditions that would make the research a true experiment, other constraints existed. These constraints were associated with time and resources dedicated to the research design employed in this research. The intervention entailed several activities that adolescents must participate in as part of the program. A key constraint to the study was the issue of time. Completing the several activities in the CSU required several weeks; however, the timeline for data collection in this dissertation included a few months. Therefore, the focus remained on finding enough participants to meet the minimum sample size for the dissertation as expeditiously as possible, and accomplishing this process required approaching a high percentage of adolescents with comorbid conditions early as possible to determine interest and to speak with their guardians once the determination was made that they were interested in the research.

Time also presented a constraint because participants could only be identified during a limited number of hours a day. Patients might arrive at any time. Therefore, remaining open to receiving communication and rapidly responding was essential. The research required measurement at both baseline and outcome; therefore, the intervention had to be complete before data collection could conclude for each participant.

Some resource constraints were notable as well. One key resource restraint involved resources available for the intervention. The budget for the CSU had not been increased to address the changes associated with the intervention. Therefore, the intervention could not increase the cost of running the CSU. Another constraint involved the human capital in the unit. Although the CSU professionals had knowledge, skill, ability, and experience to support successful crisis stabilization, there was a lack of staff with a background in implementing this type of intervention. Further, there was a lack of staff with expert knowledge or extensive experience dealing with the many activities involved in the intervention.

There was one variable in this research. Measurement of this variable was performed at two separate points: at the baseline and the outcome periods. The baseline was when the participant and their guardian agreed to participate in the research. This period was applied before the intervention. The outcome was the period when the intervention was complete. The outcome measurement occurred after treatment. The variable was measured to determine the impact of the intervention by way of the difference in score between the baseline and treatment scores. The variable in this study

involved the dual-diagnosis symptoms of participants. The dual-diagnosis symptoms were measured in this research by the CCSM.

An ex post facto research design was the optimal research method for this dissertation to advance knowledge related to the treatment of patients experiencing dual-diagnosis symptoms. Patients experiencing dual-diagnosis symptoms already required intervention; therefore, there was nothing for me to manipulate when applying an intervention. Therefore, a true experiment would have been impossible. Through an ex post facto research design, the critical limitation caused by the patient's pre-existing condition was accepted, and the determination of the possibility of a causal relationship between the intervention and a statistically significant CCSM score was possible. Establishing the possible presence of a causal relationship between the treatment and improvement to dual-diagnosis symptoms could advance knowledge where this intervention was found useful with similar populations as those in which the sample was derived. The findings can also support the performance of future research on the specific activities present in the intervention.

The intervention for this research was the treatment for adolescents experiencing dual-diagnosis symptoms admitted to a CSU. The goal of the CSU was to stabilize individuals experiencing a mental health crisis through counseling that focused on several specific factors supporting mental health and skills supporting mental health self-management. Mental health interventions designed to support managing stress and anxiety, depression coping, self-esteem improvement, conflict management, life change coping, and decision-making included several activities that could improve a patient's

mental health conditions and reduce symptoms. Therefore, the expectation was that this mental health intervention would significantly improve the dual-diagnosis symptoms of the patient.

## Methodology

The methodology of this dissertation includes a discussion of the study procedures, including the intervention employed, data collected, and data analyzed. This quantitative, ex post facto research focused on collecting data from adolescent patients in an in-patient CSU located in Las Vegas, Nevada. A convenience sampling approach was used to collect data from participants. The recruiting involved approaching patients and the guardians of patients at intake. Data at baseline and outcome were collected through paper surveys distributed to participants to measure dual-diagnosis symptoms at the baseline and outcome of the intervention. The intervention was designed to improve the status of dual-diagnosis symptoms in patients experiencing comorbid mental health conditions. Measurement of changes to dual-diagnosis symptoms involved using the CCSM—measuring 12 distinct domains of mental health condition symptoms (Ishfaq & Kamal, 2019). The analysis of findings included descriptive and inferential statistics, with paired-samples *t*-tests used to measure the impact of the intervention on the adolescents included in the intervention.

### Population

The population included in this research was adolescents (ages 11 to 17) experiencing comorbid mental health conditions and living in the Las Vegas, Nevada area. There were no other demographic characteristics for the population of this research

from the overall population, other than age and location. Research on population or mental health conditions did not include an exact number or an estimate of adolescents experiencing comorbid mental health conditions like in the Las Vegas, Nevada area. Therefore, the number of individuals that fit the criteria was estimated. The City of Las Vegas Economic and Urban Development Department & Redevelopment Agency (2020) data indicated limited insight to support this estimation. The population of Las Vegas, Nevada, for 2018 was 644,664, and the proportion of individuals between the ages of 10 to 19 living in Las Vegas, Nevada, during this period was 14% (City of Las Vegas Economic and Urban Development Department & Redevelopment Agency, 2020). Census data and data from alternative sources did not include the age range of 11 to 17; therefore, 14% represented an approximate estimation of the number of adolescents living in Las Vegas, Nevada (City of Las Vegas Economic and Urban Development Department & Redevelopment Agency, 2020). Therefore, approximately 90,253 individuals aged 10-19 lived in Las Vegas, Nevada, in 2018.

According to the National Institute of Mental Health (n.d.), the overall prevalence of mental illness was 18.9% among the U.S. population. The age group with the highest prevalence of mental illness was individuals in the 13 to 18 age range, with 49.5% of individuals having mental health conditions. There was a lack of available research describing the frequency of comorbid mental health conditions for individuals in an adolescent-focused age range; however, based on the findings of the City of Las Vegas Economic and Urban Development Department and Redevelopment Agency (2020) and

the National Institute of Mental Health (n.d.), the population of adolescents in Las Vegas, Nevada with a mental health disorder was estimated as 44,676.

**Sampling and Sample Procedures**

I used a sampling strategy known as convenience sampling. Convenience sampling is a sampling method utilized when participants are selected from a group that the researcher can reach (Campbell et al., 2016). A convenience sampling method was the preferred method for this dissertation because the research depended on participants who required crisis stabilization assistance to visit the CSU. When participants visited the CSU, they were asked about their interest in participating in the research, as were their guardians. A convenience sampling method was the simplest and most appropriate sampling method to achieve the objective of assembling a sample for the research. The sample was drawn from adolescents checking into the CSU by receiving the adolescent and their guardian's agreement. The inclusion and exclusion criteria included the participant being an adolescent between the ages of 11 to 17; being a resident of Las Vegas, Nevada; having comorbid mental health conditions, and being a patient receiving treatment at the CSU.

A priori power analysis was used to determine the minimum sample size for the research. The tool used for the a priori power analysis was G*Power (Version 3.1.9.2). The input parameters for the a priori power analysis were set for two tails, an effect size of 0.50, an α error probability of 0.05, and a power set at 0.95. The effect size was set for 0.50 because 0.50 represented a moderate effect size, and there were no specific estimates for the expected effect size. The α error probability was set for 0.05, as the most common

α error probability for research related to psychology topics (Campbell et al., 2016). The power was set for 0.95 to ensure a low margin for error as the confidence interval was 95%. Based on these input parameters, the suggested total sample size was 54, with an actual power of 95.02%.

**Procedures for Recruitment, Participation, and Data Collection**

Data were collected from adolescents checking into the CSU and adolescents who recently checked in and who had not begun any intervention for mental health assistance—recruiting began by introducing the research project to adolescents entering the CSU for treatment. The unit of analysis in this research was individuals, and these individuals were between the ages of 11 to 17. Therefore, the data collected were not archive data and came from participants. Approval from Walden University's Institutional Review Board (IRB) was necessary. The setting of this research was a CSU. Hence, staff at the setting could provide counseling if items on the survey caused emotional distress. APA (2013) described the CCSM as a measure to assess mental health domains. The measure was used to identify the areas that would be important to a patient's treatment and prognosis (see APA, 2013).

The adolescents in the research were asked if they were willing to participate in the research. The objective and specific elements of the intervention were then described. If the adolescent agreed, then their guardian was asked for permission. The guardian was told the objective of the research and elements of the intervention. If the guardian agreed, then the adolescent received the informed consent form. The adolescent was required to sign to indicate informed consent. Their guardian was then required to do so, as well. The

participant then completed the baseline version of the survey. The baseline survey included items related to the demographics of the participant, followed by the CCSM. Demographic data included gender, age, education level, marital status of parents, and sexual orientation. The outcome version of the survey included CCSM only. Data collection did not occur during the intervention process. The survey itself was delivered in paper format. If participants wished to exit the study early, they were free to exit at any time. Participants were told that they could exit at any time during the survey and intervention process. There were no follow-up procedures for data collection.

The intervention in this research was structured as a treatment plan for adolescents experiencing a crisis. The crisis stabilization intervention was designed to support adolescents by educating and counseling them on managing mental health problems and improving decision-making and interpersonal relationship skills. The CSU addressed crises for adolescents aged 11 to 17. The program staff functioned daily with crisis intervention services and observation of participants to monitor whether higher levels of care were necessary. Participants in the CSU program participated in several activities in both group and individual counseling settings. Patients focused on several activities, including managing stress and anxiety, coping with depression, building self-esteem, coping with family/interpersonal conflict, dealing with significant life changes or adjustments, and dealing with major behavioral problems and poor decision making. By operating the intervention in a small group and individual counseling format, close interaction with participants facilitated effective interventions and skills training. The

staff of the CSU administered the intervention in the healthcare facility located in Las Vegas, Nevada.

## Instrumentation and Operationalization of Constructs

There was only one instrument utilized in this study: the CCSM (Appendix A). The CCSM was a measure of dual-diagnosis symptoms for mental health, including 25 items of 12 distinct mental health domains. The CCSM was appropriate for this research because the tool was utilized to measure mental health symptoms. The published version of APA's (2013) CCSM was available for use by researchers without permission. The objective of the intervention was to improve dual-diagnosis mental health systems; hence, by using the CCSM as an instrument in this research at baseline and outcome, I could determine the significance of the difference caused by the intervention.

Previous researchers have measured the reliability and validity of the CCSM. For example, Kraemer et al. (2012) measured the test-retest reliability of the test. The results supported the CCSM as holding good or excellent reliability for adult, parent, and child respondents. Ishfaq and Kamal (2019) measured the CCSM to understand the instrument's construct validity based on prisoners in India. The results supported the instrument as valid to measure the comorbidity of 13 domains. Based on the findings of both studies, the use of the CCSM was supported.

### *Operationalization*

This research involved one variable measured at the beginning and end of the intervention: dual-diagnosis symptoms—the CCSM measured for dual-diagnosis symptoms of mental health conditions. The operational definition of dual-diagnosis

symptoms was mental health conditions that occurred comorbidly for patients in a CSU in the past two weeks. The variable was scored with a 5-point scale, with anchors ranging from 0 = *not at all* to 4 = *nearly every day*. An example item measuring depression was the following: “Little interest or pleasure in doing things?”

***Data Analysis Plan***

Data collection required a paper survey used in this study. Therefore, the data analysis process’s first step involved converting collected data from paper surveys to a spreadsheet file. Data from surveys were keyed into a Microsoft Excel 2020 spreadsheet document. The spreadsheet included rows for cases and columns for items from the survey. The spreadsheet document was reviewed to determine if errors occurred during the data entry process or if incomplete data were present. Errors were fixed, and incomplete responses were removed. The spreadsheet document was saved and exported to Statistical Package for Social Sciences (SPSS) for quantitative data analysis. The survey items for demographics included categorical data; therefore, the descriptive statistics included modes and frequencies. The CCSM score was treated as a continuous variable; hence, the descriptive statistics for the CCSM score at baseline and outcome included meanings, standard deviations, skewness, kurtosis, and ranges.

The statistic test used to test the hypothesis in this study was a paired sample *t*-test. Four statistical assumptions accompany this test: The level of measurement was numeric and continuous, observations were independent, there was a normal distribution of the data, and outliers did not exist (see Leavy, 2017). Responses collected from the CCSM were treated as continuous data, satisfying the first assumption. Like the

assumption of the level of measurement, the assumption of independence remained untested but was assumed because of the research conditions. The assumption of independence was reasonable in this dissertation because the adolescents were independent.

The third assumption, the assumption of normality, was addressed in more than one way. First, the data for the CCSM at baseline and outcome were illustrated by histograms to determine visually if there was the presence of symmetry and a bell curve in the distribution of data. The Shapiro-Wilk test for normality was used to examine the normality assumption further. If $p < .05$, then the result would indicate a non-normal distribution of data, and a non-parametric test was used. The discussion of results for this assumption included the descriptive results for skewness, kurtosis, histograms, and the results of the Shapiro-Wilk test for the baseline and outcome measurements.

The fourth assumption was that there were no outliers. Boxplots were used to determine if outliers existed. If few outliers existed, these were removed. If several existed, then a nonparametric test, such as the Wilcoxon-Signed Rank Test, was considered. Removing several outliers could cause bias and the loss of valuable data. It could even cause the *n* to fall under the sample size determined by the priori power analysis, creating a critical limitation related to the power in the quantitative analysis (Leavy, 2017). Assuming a normal distribution with few-to-no outliers, a paired-sample *t*-test was used to examine the data, testing the statistical significance of the difference in the mean score between the baseline and outcome of the intervention. Statistical

significance was measured at $p < .05$. The paired sample *t*-test tested the following hypotheses:

RQ1: How effective are crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are assessed?

$H1_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

$H1_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are significant at $p < .05$.

RQ2: How effective are crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are assessed among patients of different genders?

SRQ2a: How effective are crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are assessed?

$H2a_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

$H2a_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are significant at $p < .05$.

SRQ2b: How effective are crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are assessed?

$H2b_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

$H2b_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are significant at $p < .05$.

## Threats to Validity

Multiple threats to validity existed in this research. Some threats were mitigated; however, others could not be avoided. These threats were mentioned in the limitations of this research. Construct, internal, and external validity were three essential threats to validity that must be considered. Regarding external validity, there were multiple issues. One was population validity. Population validity involved the ability to generalize the findings of this study (see Edmonds & Kennedy, 2016).

The capacity to generalize these findings successfully was somewhat poor. These findings could not be generalized beyond adolescents and people experiencing comorbid mental health problems. Generalizability is strongest among adolescents living in the Las Vegas area, related to ecological validity, where the ability to generalize findings depends on conditions in the real world (Edmonds & Kennedy, 2016). Further, because this ex post facto research was not a true experiment, demographic characteristics did not

support generalizing findings. Several specific threats to external validity existed related to the effect of the intervention. The possibility that behavior would change during interventions because participants who joined the study might have influenced outcomes, multiple tests might have influenced anxiousness. The sample might not have represented the population.

Several factors threatened external validity. The experimenter effect can impact external validity, where behaviors or characteristics of counselors can impact the study (Edmonds & Kennedy, 2016). An effort to reduce the chance of this issue occurring was to ensure that counselors were trained in the intervention activities. The Hawthorne effect was another possible threat to external validity, occurring when participants changed behaviors because they were being studied (see Edmonds & Kennedy, 2016). Although the participants were not studied during an intervention, knowing that they joined a study could impact how they approached the intervention. I attempted to reduce the Hawthorne effect's chance by informing participants they were not studied during the intervention activities. The testing effect could occur, as well. The testing effect happens when the administration of both pre- and post-tests impacts outcomes because of lower levels of apprehension or anxiety (Edmonds & Kennedy, 2016). Efforts to prevent this included randomization of items for the CCSM. Last, there was the possibility of sampling bias. Sampling bias occurs when the sample does not represent the population (Leavy, 2017). Although the sample must represent the population with mental health conditions present and that participants were within the predetermined age cohort, there was no way to prevent other demographic characteristics from not matching adolescents in Las Vegas,

Nevada; obtaining acceptance permission would likely require selecting entirely at convenience.

Some threats to internal validity existed. One threat to internal validity was testing effects. When there is repeated measurement of participants, they may recall responses, leading to participants selecting similar responses (Leavy, 2017). A similar issue was the instrumentality. Instrumentality becomes a problem for internal validity when the instrument primes the participant unconsciously for the intervention (Edmonds & Kennedy, 2016). There was also the possibility of survivorship bias. Different attrition can result in different results because aspects of the intervention result in losing outcomes that may lead to different findings (Edmonds & Kennedy, 2016). External validity in this study represented methodological constraints of this research that could not be planned or substantially mitigated in the methodology. Construct validity was associated with the capacity of a scale to measure what it was selected or designed to measure. I addressed the measurement of dual-diagnosis symptoms, and APA (2013) suggested using the scale for measuring dual-diagnosis symptoms. Therefore, threats to construct validity appeared minimal.

## Ethical Procedures

Currently, there is an agreement in place with the healthcare facility that operates the CSU for support, where access is offered to identify participants and collect data. Counselors working in the CSU know about this project and experience working in the intervention employed in this study. Counselors were approached to inform them that this

research would occur to request their assistance by informing them that new patients had arrived in the CSU to support identifying participants in the study.

IRB standards for Walden University guided the treatment of human participants in this study. These standards supported the ethical concerns associated with data collection and any materials used in the recruiting process. The recruiting materials included a script and a sheet summarizing the purpose of this research, the entirety of the data required, and the nature of the intervention. One critical ethical concern for this study entailed prioritizing the mental health of the patient over participation. The judgment of whether the patient was fit to participate in the intervention preceded an offer to participate in the study. Data collection was another ethical concern for this research. Participants could have felt uncomfortable disclosing their mental health condition statuses through the CCSM instrument; hence, they might have exited the research prematurely.

Further, participants might have exited the study during the intervention. The participants must understand that this aspect was entirely acceptable, as made clear to both the participant and their guardians. A private number was given to participants to call if they experienced an adverse effect from the intervention or even the survey process.

The treatment of data was another ethical concern in this study. Data collected from participants must remain confidential and anonymous. Participants included adolescents; hence, minors' data should be treated with extra due care. Personal identifying information was not directly recorded on surveys. Once data collection was

complete, data from paper surveys were transferred to an MS Excel spreadsheet file. The paper surveys were placed in a large manila envelope and locked in a file cabinet. The data entered from paper surveys into the MS Excel spreadsheet were imported into SPSS for analysis. Files for the MS Excel spreadsheet and the SPSS datasheet were saved on an encrypted thumb drive. The thumb drive was locked inside the cabinet with the paper surveys. The paper surveys and the thumb drive will remain in the cabinet for 5 years because of the possibility that a third party will request to audit the data file. Further, the data may be used for future research. The thumb drive and paper surveys will be destroyed once 5 years have passed.

## Summary

Chapter 3 included a comprehensive discussion of the research method and design utilized in this dissertation. Chapter 3 began by reiterating the purpose of this quantitative, ex post facto research and the objective of the study to understand the effectiveness of a mental health intervention for adolescents experiencing comorbid conditions in a CSU. The chapter continued with a concise description of the research design and rationale that included defining the CCSM as a measure at baseline and outcome, along with a description of the research design's connection to research questions and a brief defense of the relatively robust intervention employed. The chapter continued with a description of the methodology of the study. The description of the methodology included a definition of the population and the sample. There was no exact number for the target population size. However, the target population was defined as adolescents between the ages of 11 to 17 with comorbid mental health conditions living

in the Las Vegas, Nevada geographic proximity. Sampling entailed a convenience sampling of patients at a CSU located in Las Vegas, Nevada. A priori power analysis supported the establishment of a minimum sample size for the study.

Chapter 3 continued with the procedures for recruitment, participation, and data collection, which included a description of the process by which potential participants were identified and approached, a description of informed consent, and how data were collected at baseline and outcome. This section included information related to the intervention as well. The chapter describes the instrumentation and operationalization of constructs, threats to validity, and ethical considerations. Instrumentation entailed using APA's (2013) CCSM and some items related to the demographics of participants. The CCSM was a measure that was a frequent part of scholarly research and used by practitioners; hence, the tool was supported by prior research.

Further discussion of the intervention followed, with information on the program. Operationalization followed with a description of the operational definition included in the research. The section included a subsection for the data analysis plan, where preparing and analyzing the data was given. The inferential test utilized in this study was a paired-samples *t*-test. A discussion of the threats to external, internal, and construct validity and the ethical considerations closed the chapter. Extra care was given to ethical considerations, considering the population included adolescents with comorbid mental health conditions.

Chapter 4 follows this discussion of the methods used in the research performed for this dissertation. Chapter 4 includes descriptive statistics and hypotheses testing for

this study. The data analysis plan outlined in Chapter 3 shows the statistics included in the quantitative data analysis. Chapter 4 begins with a brief description of the profile characteristics of the participants. The chapter continues with descriptive statistics. Chapter 4 concludes with a test of the hypotheses involving the effectiveness of CSUs in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are present.

# Chapter 4: Results

The purpose of this quantitative quasi-experimental one-group pretest/posttest design study was to evaluate the effectiveness of a Las Vegas Valley CSU in treating adolescents with comorbid mental health disorders. The quantitative examination included patient data from the CCSM. Baseline and outcome CCSM scores were used, where the test required determining whether there was a statistically significant difference in CCSM score between baseline and outcome. The sample consisted of 120 adolescent patients meeting the inclusion criteria of two or more psychiatric conditions and between ages 11 to 17. The baseline CCSM scores were compared to CCSM scores at discharge to determine whether scores or symptoms improved following CSU treatment. The following research questions were used to guide this study:

RQ1: How effective are crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are assessed?

$H1_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

$H1_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are significant at $p < .05$.

RQ2: How effective are crisis stabilization units in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are assessed among patients of different genders?

SRQ2a: How effective are crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are assessed?

*H*2a$_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

*H*2a$_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms are significant at $p < .05$.

SRQ2b: How effective are crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are assessed?

*H*2b$_o$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are not significant at $p < .05$.

*H*2b$_a$: The effectiveness of crisis stabilization units in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms are significant at $p < .05$.

This chapter provides a review of the data collection procedures used in this study. Additionally, I discuss the fidelity of the intervention. Finally, the results of the descriptive and statistical analyses are presented and organized according to the research question.

## Data Collection

Data were collected from adolescents checking into the CSU and adolescents who had recently checked in and had not begun any intervention for mental health assistance—recruiting began by introducing the research project to adolescents entering the CSU for treatment. The unit of analysis in this research was individuals, and these individuals were between the ages of 11 to 17. Therefore, the data were not archive data but came from participants. Approval from Walden University's IRB was necessary. The setting of this research was a CSU. Hence, the setting was equipped with staff and the capability to provide counseling if items on the survey caused emotional distress. APA (2013) described the CCSM as a measure that assesses mental health domains. The measure was used to identify the areas that would be important to the patient's treatment and prognosis (APA, 2013).

The adolescents, who were the participants in the research, were asked if they were willing to participate in the research. I then described the objective and specific elements of the intervention. If the adolescent agreed, then their guardians were asked for permission. The guardian was told the objective of the research and the specific elements of the intervention. If the guardian agreed, then the adolescent received the informed consent form. The adolescent and their guardian were both required to sign to indicate informed consent. The participant then completed the baseline version of the survey, which included items related to the participant's demographics, followed by the CCSM. Demographic data included gender, age, education level, marital status of parents, and sexual orientation. The outcome version of the survey included CCSM only. Data

collection did not occur during the intervention process. The survey was delivered in a paper format. If participants wished to exit the study early, they could exit at any time. Participants were told that they could exit at any time during the survey and intervention process. There were no follow-up procedures for data collection.

## Intervention Fidelity

The intervention in this research was structured as a treatment plan for adolescents experiencing a crisis. The crisis stabilization intervention was designed to support adolescents by educating and counseling them on managing mental health problems and improving decision-making and interpersonal relationship skills. The CSU addressed the crisis for adolescents aged 11 to 17. The program staff functioned daily with crisis intervention services and observation of participants to monitor whether higher levels of care were necessary. Participants in the CSU program participated in several activities. These activities were in both group and individual counseling settings. They focused on several activities, including managing stress and anxiety, coping with depression, building self-esteem, coping with family/interpersonal conflict, dealing with significant life changes or adjustments, and dealing with major behavioral problems and poor decision making. By operating the intervention in a small group and individual counseling formats, close interaction with participants facilitated effective interventions and skills training. The staff of the CSU administered the intervention in the healthcare facility located in Las Vegas, Nevada.

# Results

This section first shows the results of the descriptive statistical analyses. The descriptive analyses include the means, standard deviation, skewness, kurtosis, and range of the pretest and posttest CCSM scores. Additionally, the descriptive analyses show frequencies in demographics, including gender, age, education, ethnicity, marital status, and current occupation.

## Descriptive Statistics

Of the 120 participants, 96 cases were obtained. Twenty-four cases were eliminated for not having completed either the pre-or post-test CCSM. The mean pretest CCSM score was 36.56, and the mean posttest CCSM score was 26.99 (see Table 1). Table 2 provides the frequencies for the demographic questions related to gender, age, education, ethnicity, marital status, and current occupation.

**Table 1**

*Descriptive Statistics for Pretest and Posttest Cross-Cutting Symptom Measure*

| Category | | | Statistic | Std. error |
|---|---|---|---|---|
| Pretest/CCSM | Mean | | 36.56 | 1.610 |
| | 95% confidence interval for mean | Lower bound | 33.37 | |
| | | Upper bound | 39.76 | |
| | 5% trimmed mean | | 36.64 | |
| | Median | | 36.50 | |
| | Variance | | 248.817 | |
| | Std. Deviation | | 15.774 | |
| | Minimum | | 4 | |
| | Maximum | | 75 | |
| | Range | | 71 | |
| | Interquartile range | | 25 | |
| | Skewness | | -.012 | .246 |
| | Kurtosis | | -.471 | .488 |
| Posttest/CCSM | Mean | | 26.99 | 1.497 |
| | 95% confidence interval for mean | Lower bound | 24.02 | |
| | | Upper bound | 29.96 | |
| | 5% trimmed mean | | 26.77 | |
| | Median | | 25.00 | |
| | Variance | | 215.105 | |
| | Std. deviation | | 14.666 | |
| | Minimum | | 1 | |
| | Maximum | | 70 | |
| | Range | | 69 | |
| | Interquartile range | | 24 | |
| | Skewness | | .208 | .246 |
| | Kurtosis | | -.577 | .488 |

**Table 2**

*Participant Demographics*

| Category | *N* | % |
|---|---|---|
| Age | | |
| 11 | 10 | 10.4% |
| 12 | 18 | 18.8% |
| 13 | 13 | 13.5% |
| 14 | 20 | 20.8% |
| 15 | 17 | 17.7% |
| 16 | 11 | 11.5% |
| 17 | 6 | 6.3% |
| Gender | | |
| Male | 27 | 28.1% |
| Female | 69 | 71.9% |
| Race/Ethnicity | | |
| Asian-Pacific Islander | 4 | 4.2% |
| African American | 8 | 8.3% |
| Hispanic | 34 | 35.4% |
| Caucasian | 27 | 28.1% |
| Other | 23 | 24.0% |
| Education | | |
| Preschool to 8$^{th}$ grade | 51 | 53.1% |
| Some HS, no diploma | 44 | 45.8% |
| HS graduate, diploma, or GED | 1 | 1% |
| Marital status | | |
| Single | 96 | 100% |
| Current occupation | | |
| Student | 96 | 100% |

## Statistical Assumptions

The statistical assumptions for paired-samples *t*-tests included the independence of observations. The levels of measurement were numerical and continuous, the data were normally distributed, and there was homogeneity of variances. Responses collected from the CCSM were treated as continuous data, satisfying the first assumption. The assumption of independence, like the assumption of the level of measurement, was not tested but assumed based on the research conditions. The assumption of independence was reasonable in this dissertation because the adolescents participating in the study were

independent. Normality was assessed using the Kolmogorov-Smirnov test for normality (see Table 3). The significance level for pretest CCSM scores was $p = .20$, and the significance level for posttest CCSM scores was $p = .08$, indicating that the assumption for normality was not violated. Finally, the assumption for homogeneity of variances was measured using Levene's statistic (see Table 4). The pretest CCSM scores' significance was $p = .91$, and the significance of the posttest CCSM scores was $p = .43$, indicating that the assumption for homogeneity of variances was not violated.

**Table 3**

*Tests of Normality*

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | *df* | Sig. | Statistic | df | Sig. |
| pretest/CCSM | .042 | 96 | .200* | .990 | 96 | .719 |
| posttest/CCSM | .086 | 96 | .080 | .971 | 96 | .029 |

*Note*. * This is a lower bound of the true significance.
[a.] Lillefors Significance Correction.

**Table 4**

*Tests of Homogeneity of Variances*

| | | Levene statistic | *df1* | *df2* | Sig. |
|---|---|---|---|---|---|
| Pretest/CCSM | Based on mean | .012 | 1 | 94 | .912 |
| | Based on median | .044 | 1 | 94 | .834 |
| | Based on median and with adjusted df | .044 | 1 | 84.609 | .834 |
| | Based on trimmed mean | .002 | 1 | 94 | .965 |
| Posttest/CCSM | Based on mean | .623 | 1 | 94 | .432 |
| | Based on median | .326 | 1 | 94 | .569 |
| | Based on median and with adjusted *df* | .326 | 1 | 80.623 | .570 |
| | Based on trimmed mean | .498 | 1 | 94 | .482 |

**Research Question 1**

Research Question 1 asked how effective CSUs treated comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms were assessed. The null

hypothesis was that the effectiveness of CSUs in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms were not significant at $p < .05$. The alternative hypothesis was that the effectiveness of CSUs in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms were significant at $p < .05$. A paired-samples *t*-test was used to answer this research question. There was a statistically significant decrease in CCSM scores from baseline ($M = 36.56$, $SD = 15.77$) to post-intervention ($M = 26.99$, $SD = 14.66$; see Table 5); $t(95) = 7.64$, $p < .001$ (two-tailed; see Table 6). The mean decrease in CCSM scores was 9.57, with a 95% confidence interval ranging from 7.09 to 12.06. The Cohen's *d* effect size of the difference was .78, which was considered strong (see Table 7). According to the results, the null hypothesis was rejected, and the alternate hypothesis was retained.

**Table 5**

*Paired Samples Statistics*

| | | Mean | *N* | Std. deviation | Std. error mean |
|---|---|---|---|---|---|
| Pair 1 | pretest/CCSM | 36.56 | 96 | 15.774 | 1.610 |
| | Posttest/CCSM | 26.99 | 96 | 14.666 | 1.497 |

**Table 6**

*Paired-Samples t-test for Full Sample*

| | | Paired differences | | | | | *t* | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 95% confidence interval of the difference | | | | |
| | | Mean | Std. deviation | Std. error mean | Lower | Upper | | | |
| Pair 1 | Pretest/CCSM-posttest-CCSM | 9.573 | 12.275 | 1.253 | 7.086 | 12.060 | 7.641 | 95 | < .001 |

**Table 7**

*Paired Samples Effect Sizes*

| | | | | | 95% confidence interval | |
|---|---|---|---|---|---|---|
| | | | Standardizer[a] | Point estimate | Lower | Upper |
| Pair 1 | Pretest/CCSM-posttest/CCSM | Cohen's d | 12.275 | .780 | .550 | 1.007 |
| | | Hedges' correction | 12.323 | .777 | .547 | 1.003 |

*Note*. [a.] The denominator is used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference. Hedges's correction uses the sample standard deviation of the mean difference, plus a correction factor.

**Subquestion 2a**

Subquestion 2a asked how effective CSUs treated comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms were assessed. The null hypothesis was that the effectiveness of CSUs in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms were not significant at $p < .05$. The alternative hypothesis was that the effectiveness of CSUs in treating comorbid psychiatric disorders among male adolescents when dual-diagnosis symptoms were significant at $p < .05$. A paired-samples *t*-test was used to answer this research question. There was a statistically significant decrease in CCSM scores from baseline ($M = 30.26$, $SD = 16.41$) to post-intervention ($M = 22.70$, $SD = 16.33$; see Table 8); $t(26) = 3.55$, $p = .001$ (two-tailed; see Table 9) for females. The mean decrease in CCSM scores was 7.56, with a 95% confidence interval ranging from 3.19 to 11.92. The Cohen's *d* effect size of the difference was .68, considered strong (see Table 10). According to the results, the null hypothesis was rejected, and the alternate hypothesis was retained.

**Table 8**

*Paired Samples Statistics*

| | | Mean | *N* | Std. deviation | Std. error mean |
|---|---|---|---|---|---|
| Pair 1 | Pretest/CCSM | 30.26 | 27 | 16.410 | 3.158 |
| | Posttest/CCSM | 22.70 | 27 | 16.333 | 3.143 |

**Table 9**

*Paired Sample t-Test for Males*

| | | Paired differences | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 95% confidence interval of the difference | | | | |
| | | Mean | Std. deviation | Std. error mean | Lower | Upper | *t* | df | Sig. (2-tailed) |
| Pair 1 | Pretest/CCSM-posttest-CCSM | 7.556 | 11.047 | 2.126 | 3.186 | 11.925 | 3.554 | 26 | .001 |

**Table 10**

*Paired Samples Effect Sizes for Males*

| | | | | | 95% confidence interval | |
|---|---|---|---|---|---|---|
| | | | Standardizer[a] | Point estimate | Lower | Upper |
| Pair 1 | Pretest/CCSM-posttest/CCSM | Cohen's *d* | 11.047 | .684 | .259 | 1.099 |
| | | Hedges's correction | 11.209 | .674 | .255 | 1.083 |

*Note*. [a.] The denominator is used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference. Hedges's correction uses the sample standard deviation of the mean difference, plus a correction factor.

**Subquestion 2b**

Subquestion 2b asked how effective CSUs treated comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms were assessed. The null hypothesis was that the effectiveness of CSUs in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms were not significant at $p < .05$.

The alternative hypothesis was that the effectiveness of CSUs in treating comorbid psychiatric disorders among female adolescents when dual-diagnosis symptoms were significant at $p < .05$. A paired-samples *t*-test was used to answer this research question. There was a statistically significant decrease in CCSM scores from baseline ($M = 39.03$, $SD = 14.92$) to post-intervention ($M = 28.67$, $SD = 13.72$; see Table 11); $t(68) = 6.77$, $p < .001$ (two-tailed; see Table 12) for males. The mean decrease in CCSM scores was 10.36, with a 95% confidence interval ranging from 7.31 to 13.42. The Cohen's *d* effect size of the difference was .81, considered strong (see Table 13). According to the results, the null hypothesis was rejected, and the alternate hypothesis was retained.

**Table 11**

*Paired Samples Statistics*

| | | Mean | *N* | Std. deviation | Std. error mean |
|---|---|---|---|---|---|
| Pair 1 | Pretest/CCSM | 39.03 | 69 | 14.923 | 1.797 |
| | posttest/CCSM | 28.67 | 69 | 13.725 | 1.652 |

**Table 12**

*Paired Samples* t-*Test for Females*

| | | Paired differences | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 95% confidence interval of the difference | | | | |
| | | Mean | Std. deviation | Std. error mean | Lower | Upper | *t* | *df* | Sig. (2-tailed) |
| Pair 1 | Pretest/CCSM-posttest-CCSM | 10.362 | 12.712 | 1.530 | 7.309 | 13.416 | 6.771 | 68 | < .001 |

**Table 13**

*Paired Samples Effect Sizes for Females*

| | | | | | 95% confidence interval | |
|---|---|---|---|---|---|---|
| | | | Standardizer[a] | Point estimate | Lower | Upper |
| Pair 1 | Pretest/CCSM-posttest/CCSM | Cohen's *d* | 12.712 | .815 | .540 | 1.086 |
| | | Hedges's correction | 12.782 | .811 | .537 | 1.080 |

*Note*. [a.] The denominator is used in estimating the effect sizes. Cohen's *d* uses the sample standard deviation of the mean difference. Hedges's correction uses the sample standard deviation of the mean difference, plus a correction factor.

## Summary

Paired samples *t*-tests were used to answer the research questions. First, a *t*-test was used to identify the efficacy of the intervention based on pre-and post-test CCSM scores for the full sample of 96 participants. Then, *t*-tests were conducted separately for males ($n$ = 27) and females ($n$ = 69). The null hypothesis was that the effectiveness of CSUs in treating comorbid psychiatric disorders among adolescents with dual-diagnosis symptoms was not significant for the full sample of males and females. All null hypotheses were rejected.

# Chapter 5: Discussion, Conclusions, and Recommendations

## Introduction

The literature on the treatment of mental health issues in CSUs illustrates that CSUs are an effective, evidence-based treatment approach. Researchers addressed various issues, including dual-diagnosis symptoms, the interventions used, cost implications, and the effectiveness of CSUs in addressing mental health problems. However, there was a dearth of scholarly and practice evidence regarding the treatment of adolescents with comorbid mental health conditions in CSUs, hence my interest in examining the utilization of CSU interventions among adolescents, especially those with comorbid conditions. Inadequate treatment of adolescents with comorbid disorders results in significant maladaptation and symptom severity and negative treatment outcomes (Gattamorta et al., 2017; Meaklim et al., 2018; Scott, 2019). Moreover, adolescents utilize emergency services more frequently than older adults (Narendorf et al., 2017), indicating the need to examine further crisis service use focused on emergency use by younger individuals. In addition, CSUs have been shown as cost-effective. According to Peters et al. (2016), CSUs eliminate waste by being cost-effective, offering effective inpatient triage, and less invasive, lessening the patient load in emergency rooms, as staff of CSUs offer alternative healthcare solutions emergency rooms.

These statistics demonstrate the essence of a critical understanding of the efficacy and utilization of CSUs in treating adolescents with comorbid disorders, as literature in this regard is scarce. Accordingly, I used this quantitative, quasi-experimental, one-group pretest/posttest design study to address the gap in the literature and practice evidence by

evaluating a psychotherapy intervention designed to respond to comorbid mental health conditions dual-diagnosis symptoms exist. According to Mukherjee and Saxon (2019), the psychotherapy intervention can be used in the CSU to respond to a psychiatric emergency. I also employed the CCSM by evaluating baseline and outcome CCSM scores to determine whether there was a statistically significant difference in CCSM scores between baseline and outcome. This approach was influenced by Crawford et al. (2017), who supported using self-report assessments in CSU interventions. However, although Crawford et al. supported using self-report assessments in CSU interventions, CCSM scores had not been used before in research studies addressing CSUs treating adolescents. Hence, I took a novel approach to CSU assessments and treatment by relying on CCSM scores as the primary data source.

This study comprised a sample of 120 adolescents who met the inclusion criteria of two or more psychiatric conditions and were aged between 11 to 17 years. I evaluated the effectiveness of a Las Vegas Valley CSU in treating adolescents with comorbid mental health disorders. Patient data from the CCSM were quantitatively examined. The baseline CCSM scores were compared to CCSM scores at discharge to determine whether scores or symptoms improved following CSU treatment. I sought to fill the gap in research regarding the efficacy of treating comorbidities among adolescents by supplementing categorical diagnostics with dimensional assessments of mental health symptoms, which presently exists (Clarke & Kuhl, 2014; LeBeau et al., 2015). This study's findings can contribute to significant social and health benefits because the

findings may support an intervention that may improve adolescents' mental health with comorbid disorders.

Paired samples *t*-tests were used to answer the research questions. I found a statistically significant decrease in CCSM scores from baseline to postintervention on all study participants, disproving the null hypotheses and supporting the alternative hypotheses. The mean decrease in CCSM scores was 9.57, with a 95% confidence interval ranging from 7.09 to 12.06. These findings confirmed the alternative hypothesis: The effectiveness of CSUs in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms were present was significant at $p < .05$. The findings also disproved the null hypothesis: The effectiveness of CSUs in treating comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms were not significant at $p < .05$. Paired samples *t*-test answers showed a statistically significant decrease in CCSM scores from baseline to post-intervention for males. The mean decrease in CCSM scores was 7.56, with a 95% confidence interval ranging from 3.19 to 11.92. Likewise, similar results were obtained for the female participants. The paired samples *t*-test answers showed a statistically significant decrease in CCSM scores from baseline to post-intervention. The mean decrease in CCSM scores was 10.36, with a 95% confidence interval ranging from 7.31 to 13.42. Hence, I positively demonstrated the efficacy of treating comorbidities among adolescents by supplementing categorical diagnostics with dimensional assessments of mental health symptoms. Thus, CSUs effectively treat comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are assessed.

## Interpretation of the Findings

This research's specific problem was examining the efficacy of CSUs in addressing comorbidities among adolescents when dual-diagnosis symptoms are present. Scholarly evidence in this regard is lacking. Hence, this study's findings can contribute to social benefits where the findings may support an intervention that may improve adolescents' mental health with comorbid disorders. The findings may also extend the knowledge in practice, as effective interventions are essential to improve the mental health conditions of adolescents. This study's findings established a statistically significant decrease in CCSM scores from baseline to post-intervention on all study participants. Thus, the CSU interventions effectively treat comorbid psychiatric disorders among adolescents when dual-diagnosis symptoms are significant. The findings support similar interventions among similar populations as the sample, which is inadequately addressed in previous studies. Accordingly, the findings confirm and extend knowledge in this discipline compared with existing literature, particularly by building on different studies' findings regarding disparate issues regarding crisis intervention, comorbidity treatment, and effectiveness. These issues are outlined below.

Holistic diagnoses and treatment of adolescent mental health disorders are central to the realization of positive health outcomes. Accordingly, I implemented multiple psychotherapy interventions, including supplementing categorical diagnostics with dimensional assessments of mental health symptoms in a CSU and educating and counseling adolescents on ways to manage mental health problems and improve decision-making and interpersonal relationship skills. These approaches were specifically designed

to respond to the comorbid mental health disorders presented, as scholarly literature indicates that various psychotherapy approaches are often used in the CSU, with significant positive results (Mukherjee & Saxon, 2019). Furthermore, the approaches correspond to the systems theory framework adopted in this study, which prescribes that improving the quality of healthcare services requires that the treatment systems be utilized holistically (Anderson, 2016). The psychotherapy interventions proved effective, as illustrated by the study findings, corroborating the systems theory's usefulness in informing service delivery within CSUs. Besides, the sample population's dual-diagnosis symptoms necessitated a multidisciplinary approach. According to Haynes et al. (2020), systems thinking offers unique conceptualization opportunities for care delivery, including critical care for teenagers with mental health problems. Hence, using various psychotherapy interventions was appropriate for the study population, contributing to the positive results.

Furthermore, one can use the systems approach to accommodate different actors, such as the patient, family, CSU stakeholders, and the community, contributing to its effectiveness (Shankardass et al., 2018). Accordingly, I employed the systems approach by engaging the patients in different group and individual counseling settings, which proved effective. Study participants were engaged in several activities, including managing stress and anxiety, coping with depression, building self-esteem, coping with family/interpersonal conflict, dealing with significant life changes or adjustments, and dealing with major behavioral problems and poor decision making. The group and individual interventions approach facilitated close interaction with participants and

enabled effective interventions and skills training. The literature on the systems theory and usefulness of different psychotherapy interventions in the CSU supported the methodology used and the findings of this study. Hence, I confirmed the current psychiatric and healthcare quality knowledge regarding effective and ineffective treatment approaches in the CSU and other care settings.

Adolescents requiring crisis stabilization assistance often experience several comorbid mental health conditions at the same time. Hence, addressing the comorbid mental health conditions requires, first, an accurate, effective diagnostic assessment, followed by a careful choice of treatment options and liaison with pertinent service providers (Sildorf et al., 2018). Failure to assess comorbidities effectively can result in significant negative health outcomes, including perpetuating symptoms and deteriorating the condition being addressed (Meaklim et al., 2018). Research indicates that comorbidities present noteworthy implications for treatment success for substance abuse and mental health problems, as comorbidity elevates the severity of the symptoms (Dauber et al., 2018). A significant problem with comorbid disorders is that adolescents often do not receive adequate treatment (Scott, 2019).

Consequently, the adolescents' symptoms may become more severe with increased maladaptation and greater possibility for poor treatment outcomes than adolescents with isolated disorders (Gattamorta et al., 2017; Meaklim et al., 2018). Moreover, although the need for accurate diagnostic assessment is well established, specifically differential diagnosis, in mental health conditions (Welsh et al., 2017) and the need for a careful choice of treatment options (Melton et al., 2016; Peters et al.,

2016), staff at some treatment settings do not observe routine screening (Meaklim et al., 2018). Accordingly, poor treatment outcomes prevail due to ineffective diagnostic assessments and complex treatment interventions (Melton et al., 2016; Peters et al., 2016; Welsh et al., 2017). Since comorbid disorders influence one another, changing symptom severity (Meaklim et al., 2018), accurate diagnosis and treatment choice are paramount. One reason for insufficient diagnosis is the treatment facility's incapacity. For instance, EDs receiving adolescents who attempted suicide, coupled with comorbid mental health problems and SUDs, lack adequately trained professionals to conduct assessments (Nordstrom et al., 2019), paving the way for inaccurate treatment options and subsequent negative mental health outcomes.

Noting the problems above, I ensured that participant screening was prompt and done at the point of checking into the CSU. Other participants who had recently checked in and had not begun any mental health intervention were included. Moreover, the CSU setting was equipped with staff who could provide counseling. The crisis stabilization intervention was also designed to support adolescents by educating and counseling them on managing mental health problems and improving decision-making and interpersonal relationship skills. Hence, the results obtained from the study were positively correlated to accurate assessments, appropriate treatment interventions, and the availability of staff with the knowledge, skill, ability, and experience, which supported successful crisis stabilization to carry out the assessments and administer the interventions. All were geared toward ensuring that the interventions were in accord with evidence-based

practices to avoid the known adverse consequences of inaccurate and inappropriate interventions.

Moreover, this study expanded the knowledge presented by the highlighted scholarly evidence by addressing an overlooked area: treating CSU of adolescents with comorbid disorders. The study's design is predicated on the evidence-based practices described above but takes a novel approach. The findings supplement the existing knowledge.

Comprehensive dimensional assessments and multimodal evidence-based treatment are needed in addressing adolescents with comorbid mental health disorders. Comprehensive dimensional assessments require the use of suitable measurement criteria designed to assess the existence and severity of symptoms. APA (2013) compiled the CCSM to facilitate supplementary empirical exploration of the dimensional qualities of mental health problems. The *DSM-5* (APA, 2013) version contains a measurement scale to address dimensional assessments (LeBeau et al., 2015). This CCSM can be used to inform initial assessments and treatment choices, direct further evaluations and determine the intervention's success at the end of treatment (LeBeau et al., 2015). According to Meaklim et al. (2018), the CCSM was easy to administer and practical in identifying coexistent psychiatric symptoms in patients presenting with insomnia. Based on Meaklim et al.'s (2018) findings, researchers can use the CCSM to identify coexisting psychiatric symptoms in patients presenting with other symptoms listed by APA (2013). These symptoms include depression, anger, mania, anxiety, somatic symptoms, suicidal

ideation, psychosis, sleep problems, memory, repetitive thoughts and behaviors, dissociation, personality functioning, and substance use (Bravo et al., 2018).

Furthermore, Meaklim et al. (2018) determined that the CCSM effectively-identified comorbid symptoms when studying patients with sleep disturbances. These findings informed using the CCSM in the current study, even though it had not been used before in research examining CSUs treating adolescents. In the current study, the CCSM baseline scores were compared to CCSM scores at discharge, showing that the scores or associated symptoms improved following the CSU treatment. Hence, the CCSM proved that the psychotherapy interventions used in this study led to successful treatment. This study's findings regarding CCSM's efficacy confirm existing knowledge in psychotherapy interventions and expand the knowledge by illustrating that the CCSM can be effectively used as a component of psychiatric evaluation and treatment of adolescents in the CSU comorbid mental health disorders.

## Limitations of the Study

The generalizability, reliability, and validity of this study's findings were affected by the design and methodology employed regarding data collection and interpretation of the findings. One of the notable limitations of this study was the small sample size. The study's findings were based on results from 120 adolescents (age 11 to 17) experiencing comorbid mental health conditions and living in the Las Vegas, Nevada area. There were no other demographic characteristics that distinguished the population of this research from the overall population other than age and location. The homogeneity in this study population implies that the results are not generalizable across a wider demographic,

involving other factors, such as ethnicity, the onset of symptoms, treatment history, and social backgrounds, which may have notable implications for treatment outcomes. The study population was a crucial factor in determining the external validity. Statistical studies, such as the present one, require a larger sample population to ensure the results offer a representative distribution of similar demographics to whom the findings will be transferred.

Secondly, the design and methodology of a study influenced the findings' internal and external validity. Research shows that "a well-conducted, randomized controlled trial is considered to be the most powerful tool for evaluating interventions" (Akobeng, 2008, p. 277). Such trials evaluate treatment outcomes among a larger sample of participants, noting the intervention results compared to a measured response (Edmonds & Kennedy, 2016). The present study was a quantitative, ex post facto research, measuring one intervention among a convenience sample of adolescents that require crisis stabilization assistance in the CSU, having two or more psychiatric conditions and being age between 11-17. Although this limitation was a notable limitation, the design employed in this study was appropriate because it addressed the research question and intervention effectiveness; the participants in the study could not be randomly assigned to different groups. The conditions that preceded treatment were already present in the patient. Hence, the study findings are not generalizable to a broader population.

Thirdly, this study was limited by time constraints and resource availability. First, time was a critical factor because the different intervention activities in which the adolescents were required to engage required several weeks; however, the timeline for

data collection in this study was a few months. Consequently, I remained constrained in ensuring that they found enough participants to meet the minimum sample size, obtained the requisite consents, completed the initial assessment, and ascertained adequate administration of the intervention. Secondly, human resources availability was a critical limitation. Administering the interventions required professionals with the skill, ability, and experience that supported successful crisis stabilization. There was a lack of enough professionals with these capabilities, especially staff with expert proficiency in dealing with the various intervention activities. Lastly, financial constraints inhibited carrying on of this trial. The CSU did not receive additional budgets to cater to the intervention needs. In conducting the studies recommended later in this dissertation, future researchers should, to the best of their ability, mitigate these limitations as each poses significant threats to the validity, generalizability, and reliability of the findings by lowering the quality of interventions and other research procedures.

## Recommendations

This study's findings illustrate that CSU interventions for adolescents with comorbid mental health conditions where dual-diagnosis symptoms exist are effective. A holistic, multi-disciplinary treatment approach involving various individual and group-based psychotherapy interventions proved effective, as was shown by the statistically significant decrease in CCSM scores from baseline to post-intervention on all study participants. Therefore, the findings illustrate that comorbid mental health disorders can be treated successfully with adequate, holistic, systems-based methods. Accordingly, future research regarding various mental health disorders may adopt this approach to

determine the effectiveness of different treatment methods, premised on holistic, comprehensive dimensional assessments and multimodal evidence-based treatment.

Research indicates that comorbidity treatments often result in poor outcomes, especially because comorbidity severity influences treatment success (Dauber et al., 2018). Hence, treating comorbid disorders requires accurate, effective diagnostic assessments, as ineffective diagnostics can lead to negative health outcomes (Meaklim et al., 2018; Welsh et al., 2017). Various studies addressing comorbid disorders, such as depression and anxiety (Melton et al., 2016), depression and anxiety linked with physical complaints (Uddin et al., 2017), the combination of alcohol and cannabis abuse with comorbid psychiatric conditions (Aloi et al., 2019), comorbid SUD and ADHD or OCD (Ritter et al., 2017), showed that the treatment approaches used in most care settings were inadequate, comprising poor diagnosis and/or ineffective holistic treatments addressing the comorbid conditions. For instance, although evidence-based pharmacological treatment is effective, it should be followed with careful consideration of symptom severity and individual patient needs to augment treatment success (Gimeno et al., 2017).

The treatment deficiencies noted in most comorbidity cases may be linked to the paucity of research on treating comorbid disorders, as Melton et al. (2016) observed. Furthermore, treating comorbid disorders is arguably a sensitive issue due to the multiple competing factors, including the patient, family, healthcare institutions' capabilities, severity of the symptoms, and/or unique symptom combinations. Therefore, though holistic treatment should be employed, it should not be too complex. Complex treatment interventions can be linked with adverse outcomes due to medication use in mental health

conditions not well tolerated in comorbid problems treatments (Melton et al., 2016; Peters et al., 2016). Even though the treatments utilized in CSUs include medications, electroconvulsive therapy, and psychotherapy interventions, care must be employed. Some treatments (e.g., electroconvulsive therapy) may be counterproductive. Also, future studies should assess the treatment outcomes in short-term treatment settings as research on this issue has been limited in the United States (Zambrowicz et al., 2019). Because comorbid disorders' treatments entail multiple factors, some conditions require long-term treatments. Zambrowicz et al. (2019) indicated that externalizing conditions (e.g., ADHD, OCD, SUD) and comorbid disorders yielded poor treatment outcomes in a short-term treatment setting. Future researchers should assess the factors incidental to short-term treatment settings and propose viable recommendations. This recommendation matches the current study's approach, focusing on treatment outcomes in a limited stay option, namely CSUs.

Accordingly, borrowing from this study, future researchers should address comorbid disorders through alternative, holistic, evidence-based treatment options, which may prove efficient: This study showed that multiple psychotherapy interventions, including supplementing categorical diagnostics with dimensional assessments of mental health symptoms, could be effectively used as treatment approaches for teenagers, supplementing other evidence-based treatment approaches. Likewise, redesigning care settings may influence treatment outcomes. According to Heyland et al. (2013), a facility option that provides a warmer and welcoming atmosphere is the community respite program, known as the Living Room, which showed substantial positive health outcomes

among the patients. Patients visiting the facility were sufficiently stabilized on 84% of the visits. They consequently decided to return to their communities after showing 2.13 points score lower on the Subjective Units of Distress Scale. The results indicated that the facility was a successful alternative in dealing with patients with behavioral health crises.

Similarly, Schleider et al. (2021) assessed the short-stay option's utility, the single session model. They found that SSIs were effective treatment options, both in positive health outcomes and cost-effectiveness. The SSI is still in its nascent stages and needs further inquiry to determine its usefulness in addressing adolescents' mental health problems. The present study focused on a single facility and treatment method. Hence, future studies should evaluate the success rate of these alternative treatment models.

Lastly, future researchers should assess the possibility of employing new data collection, data analysis, and/or evaluation criteria in their studies. For instance, although the CCSM had not been used in research examining CSUs treating adolescents, this study included the CCSM, with positive results. Future studies should also evaluate suitable, previously unused, or inadequately utilized phenomena, such as the CCSM. For instance, in the United Kingdom, the clinician-rated HoNOS, previously used on adults with severe mental health conditions to gather data on different outcomes-related aspects after patients were released from in-patient care facilities, was later adapted to be used on children and adolescents, persons with intellectual disability, or acute brain injury (Crawford et al., 2017). The HoNOS proved efficacious, augmenting the clinicians' collection and utilization of patient outcome data and fostering this wealth of data to

improve their service provision to patients. As such, future researchers should assess possible, novel uses of various data collection and analysis.

## Implications

This study's findings have significant implications for positive social change on various levels. The primary goal of this research was to determine the efficacy of CSUs as treatment units addressing comorbidities among adolescents when dual-diagnosis symptoms are present. There was a dearth of literature addressing this issue. The comorbidities in mental health problems cannot be overlooked because it presents significant implications regarding treatment outcomes, deterioration of patients' symptoms, and possible adverse consequences to patients' health and well-being. Severe symptoms may predict or exacerbate harmful occurrences, such as suicidal ideations and behavior and substance abuse disorders, among others.

Furthermore, research indicates that adolescents needing crisis stabilization often present with comorbid disorders (Gattamorta et al., 2017). Despite the existence and breadth of information and knowledge on issues incidental to comorbid mental health conditions, the treatment of adolescents with dual diagnosis is scarce, leading to ineffective assessments, inappropriate treatment choices by caregivers, and, subsequently, poor treatment outcomes. I sought to fill this gap by assessing the efficacy of treating comorbidities among adolescents by supplementing categorical diagnostics with dimensional assessments of mental health symptoms, a new approach to conceptualizing and treating mental health. Therefore, this study can contribute to positive social change

by prescribing an intervention that may improve adolescents' mental health with comorbid disorders.

**Practice Implications**

The psychiatric practice primarily relies on using various evidence-based interventions to address different mental health disorders. These interventions originate from findings of critical trials on multiple phenomena. For instance, there is a wealth of scholarly evidence illustrating that CSUs effectively treat mental health problems (Hayes et al., 2017; Schmit et al., 2018). Likewise, evidence regarding suitable and unsuitable intervention approaches, evaluation criteria, and treatment settings are plenty. Conspicuously absent in these research studies is the efficacy of psychotherapy approaches involving supplementing categorical diagnostics with dimensional assessments of mental health symptoms in a CSU and educating and counseling adolescents on managing mental health problems and improving decision-making and interpersonal relationship skills. This study found a statistically significant difference in CCSM score between baseline and outcome when employing the interventions mentioned above. Hence, psychiatrists and other mental health professionals may be guided by these findings and adopt the treatment strategies utilized in this study to inform their clinical and medical practices.

**Implications for Individual Health and Well-being**

Research indicates that a significant problem with comorbid disorders is that adolescents often do not receive adequate treatment (Scott, 2019). Inadequate treatment infers an accurate, effective diagnostic assessment, inappropriate treatment options, and

the lack of cooperation with pertinent service providers (Sildorf et al., 2018). These failures lead to poor treatment outcomes, including perpetuating symptoms, deteriorating the condition being addressed (Meaklim et al., 2018), and elevating the severity of the symptoms (Dauber et al., 2018). Therefore, practitioners should ascertain that their interventions are grounded on sound, evidence-based methods, such as those employed in this study, as they lead to positive health outcomes. I demonstrated that using the CCSM to determine symptom severity effectively informed initial assessments and treatment choices, direct further evaluations, and determined the intervention success at the end of treatment (LeBeau et al., 2015). According to Meaklim et al. (2018), the CCSM was easy to administer and practical in identifying coexistent psychiatric symptoms in patients presenting with insomnia. Furthermore, following the guidance of the CCSM, the psychotherapy interventions used in this study proved efficacious, resulting in a statistically decrease in symptom severity at the end of treatment. Therefore, psychiatric practitioners should adopt the study findings and implement comprehensive dimensional assessments and multimodal evidence-based treatment in addressing adolescents with comorbid mental health disorders, as this study illustrated that each is effective.

**Implications on Society**

The individual and group psychotherapy interventions administered in this study contributed significantly to the positive results observed at the end of the intervention. This study conducted these interventions to promote close interaction with participants and facilitate effective interventions and skills training. This approach was based on the systems theory, which prescribes addressing treating interventions holistically, observing

individual, society, organizational, and healthcare stakeholders' needs to bolster positive mental health outcomes. Accordingly, the findings indicated that society was an essential part of the comprehensive dimensional assessments and multimodal evidence-based treatment and should be utilized in treating adolescents with comorbid mental health problems.

## Conclusion

I confirmed that CSUs effectively treat adolescents with comorbid mental health disorders when multiple psychotherapy interventions, including supplementing categorical diagnostics with dimensional assessments of mental health symptoms, are adequately used as treatment approaches for teenagers, supplementing other evidence-based treatment approaches. This systems theory approach was predicated on addressing mental health treatment holistically, observing the needs of the patient, family, CSU stakeholders, and the community, contributing to its effectiveness. This approach also factored patients' unmet intervention needs, including accurate initial assessments, appropriate choice of treatment, care setting, and healthcare practitioners' professional capabilities, which, as previous studies indicated, significantly affected the treatment of patients presenting comorbid mental health disorders including adolescents. Hence, I demonstrated that the right assessments, coupled with appropriate interventions, result in statistically significant decreases in symptom severity among adolescents with comorbid mental health problems when treated in the CSU.

Research regarding CSU treatment of comorbid mental health disorders among adolescents is scarce, even though the CSUs have effectively addressed mental health

problems. I contributed to filling this gap in the literature by illustrating that multiple psychotherapy interventions within the CSU produced statistically significant decreases in symptom severity, proving that CSU can adequately be utilized to address adolescents' comorbid mental health disorders. Accordingly, the positive results have notable implications for psychiatric practice, society, future research, and individuals. Psychiatric practice should adopt the evidence-based approaches utilized in this study to address comorbid mental health disorders among adolescents and other populations.

This study also showed that societal involvement in interventions contributed to their success, including group counseling settings. Individuals can benefit from the positive mental health outcomes derived from evidence-based treatment approaches. Such approaches included the psychotherapy interventions highlighted in this study.

Lastly, future researchers should address prevailing and emerging clinical issues through recourse to evidence-based practices while filling existing literature gaps and practice through often-unutilized methods. For instance, I illustrated that the CCSM, though previously unused to assess the efficacy of treating adolescents with comorbid disorders in CSUs, could be effectively used to inform initial assessments and treatment choices, direct further evaluations, and determine the intervention success at the end of treatment. Hence, future researchers should adopt similar approaches and test viable treatment alternatives, such as HoNOS and SSIs, whose utility is yet to be exhaustively assessed.

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