INTEGRATED VERSUS NON-INTEGRATED TREATMENT FOR PATIENTS WITH A DUAL DIAGNOSIS: A SYSTEMATIC REVIEW

by

Ashley Chetty

Student number: 15223532

Submitted in partial fulfilment of the requirements for the degree of

MASTERS OF ARTS in CLINICAL PSYCHOLOGY

in the

DEPARTMENT OF PSYCHOLOGY

FACULTY OF HUMANITIES

at the

UNIVERSITY OF PRETORIA

Supervisor: Prof T. Guse

Co-supervisor: Dr M. Malema

Submitted: December 2021

DECLARATION

The author, whose name appears on the title page of this dissertation, has obtained, for the research described in this document, the applicable and necessary research ethics approval. The author declares that she has observed the ethical standards required in terms of the University of Pretoria's Code of Ethics for researchers and the Policy Guidelines for responsible research.

Ashley Chetty

Student number: 15223532

Signature:  Date: 6 December 2021

ACKNOWLEDGEMENTS

There are several people I would like to acknowledge for their ongoing support and encouragement throughout the undertaking of this mini-dissertation. First, my family and friends for their unwavering love and patience in this endeavour. Second, my initial research supervisor, Dr Nishola Rawatlal, for her guidance in this study's conception and proposal submission. Third, my current research supervisors, Prof Tharina Guse and Dr Mosa Malema, for graciously stepping in to assist in the completion of this research project and for generously sharing their time and knowledge with me. Last, I would like to extend my appreciation to the Departmental Research Committee at the University of Pretoria, particularly Dr Linda Blokland and Prof Claire Wagner, for their feedback and assistance in the early stages of this research project.

SUMMARY

The treatment of patients with a dual diagnosis is a well-established and evolving field of research. The incidence of substance use disorders (SUD) and co-occurring mental disorders are widespread. However, they vary widely in permutation and combination and thus require specific and empirically supported interventions. The literature has identified two broad intervention categories for treating patients with a dual diagnosis: non-integrated and integrated treatment. *Non-integrated treatment* refers to the separate treatment and case management of co-occurring conditions in the context of patients with a dual diagnosis. The treatment of an individual's SUD and psychiatric disorder is isolated and usually conducted by different clinicians or treatment facilities with little to no coordination. In contrast, *integrated treatment* simultaneously treats an individual's SUD and psychiatric disorder. In this instance, treatment is carried out by the same clinician or multidisciplinary team to ensure co-ordinated interaction between service providers.

This study intended to explore current literature on the integrated and non-integrated treatment outcomes for patients with a dual diagnosis. Therefore, a systematic review was carried out, critically appraising the best available and relevant randomised control trials of integrated and non-integrated interventions in treating patients with a dual diagnosis. A total of 11 studies were reviewed, and five key descriptive themes were synthesised and grouped under two broad analytical themes: "treatment outcomes" and "reported strengths and limitations of dual diagnosis treatment".

Overall, when assessed across all treatment outcomes (i.e., psychiatric symptomatology, substance use symptomatology, and treatment retention), the results provided insufficient evidence to support the enhanced efficacy of either integrated or non-integrated treatment over the other in treating patients with a dual diagnosis. However, the results suggested that effectively treating patients with a dual diagnosis was not about *how*

the treatment was delivered but was rather concerned with *what* was delivered. Specifically, interventions informed by a cognitive behavioural therapy (CBT) framework proved effective in treating patients with a dual diagnosis.

Therefore, the recommendations proposed to inform the clinical psychological service delivery of dual diagnosis treatment in South Africa included: incorporating a combination of CBT-informed principles (e.g., mindfulness, self-regulatory skills, cognitive restructuring, and motivational interviewing); maintaining strong lines of communication between service providers; fostering engaging and culturally sensitive therapeutic relationships; and conducting treatment in structured settings such as in-patient and residential programmes.

TABLE OF CONTENTS

DECLARATION I

ACKNOWLEDGEMENTS II

SUMMARY III

TABLE OF CONTENTS V

LIST OF TABLES VIII

LIST OF FIGURES IX

Chapter 1: Introduction, Background to the Study and Research Aims 1

1.1. Introduction 1

1.2. Background to the study 1

1.3. Research question and aims of the study 3

1.4. Key concepts 4

1.5. Outline of the dissertation 5

Chapter 2: Literature Review 6

2.1. Introduction 6

2.2. Defining dual diagnosis 6

2.3. Prevalence of dual diagnosis 10

2.4. Prognosis associated with dual diagnosis 11

2.5. Aetiological models for dual diagnosis 12

2.5.1. Common factors model 13

2.5.2. Secondary substance use disorder models 14

2.5.2.1. Psychosocial risk factor models 14

2.5.2.2. The supersensitivity model 15

2.5.3. Secondary psychiatric illness model 16

2.5.4. Bidirectional model 17

2.6. Treatment models for dual diagnosis 18

2.6.1. Non-integrated treatment 18

2.6.1.1. Sequential treatment 19

2.6.1.2. Parallel treatment 20

2.6.2. Integrated treatment 22

2.7. Conclusion 25

Chapter 3: Methodology 27

3.1. Introduction 27

3.2. Research question and aims of the study 27

3.3. Research design 27

3.4. Search strategy and eligibility criteria 28

3.5. Study selection 31

3.6. Quality assessment 34

3.7. Data extraction 35

3.8. Data analysis 36

3.9. Ethical considerations 38

3.10. Conclusion 38

Chapter 4: Results 39

4.1. Introduction 39

4.2. Characteristics of studies 39

4.3. Quality of included studies 48

4.4. Findings 49

4.4.1. Theme one: Treatment outcomes 49

4.4.1.1. Psychiatric symptomatology 52

4.4.1.1.1. PTSD 52

4.4.1.1.2. Anxiety and depression 55

4.4.1.1.3. Psychosis 56

4.4.1.1.4. Eating disorder 57

4.4.1.2. Substance use symptomatology 58

4.4.1.3. Treatment retention 61

4.4.2. Theme two: Reported strengths and limitations of dual diagnosis treatment *64*

4.4.2.1. Facilitators of change 64

4.4.2.1.1. Therapeutic characteristics 64

4.4.2.1.2. Study setting characteristics 66

4.4.2.2. Barriers to change 67

4.5. Conclusion 68

Chapter 5: Discussion and Conclusion 70

5.1. Introduction 70

5.2. Summary of results in relation to the research question and aims 70

5.2.1. Treatment outcomes for patients with a dual diagnosis 70

5.2.2. Strengths and limitations of dual diagnosis-focused treatment 72

5.2.3. Evidence-based recommendations to inform the clinical psychological service delivery of dual diagnosis-focused treatment in South Africa 74

5.3. Limitations of the study and directions for future research 75

5.4. Conclusion 77

References 79

Appendices 93

Appendix A: Certificate of language editing and proofreading 93

Appendix B: Ethical approval from The Research Ethics Committee 94

LIST OF TABLES

Table 1: DSM-V Criteria for a SUD Diagnosis 8

Table 2: Characteristics of Included Studies 42

Table 3: Hierarchy of Evidence 51

LIST OF FIGURES

Figure 1: Flow Diagram of the Search Procedure 33

Chapter 1: Introduction, Background to the Study and Research Aims

1.1. Introduction

As defined by *Kaplan and Sadock's Synopsis of Psychiatry*, dual diagnosis refers to the incidence of a severe mental disorder with a co-occurring substance use disorder (SUD) in the same person (Sadock et al., 2015). Patients with a dual diagnosis are reportedly challenging to treat. Research shows a poor long-term prognosis and several associated adverse outcomes (e.g., greater psychiatric morbidity, reduced functionality, and impaired quality of life) (McCallum et al., 2015; Morojele et al., 2012). Therefore, to implement effective treatment strategies, it becomes increasingly important for practitioners to possess an in-depth understanding of various perspectives of the phenomenon and appreciate the current evidence (Hamilton, 2014).

This chapter presents a general overview of the present study by introducing the research context and exploring the background to the topic, presenting the research question and subsequent aims, highlighting the definitions of key concepts, and providing an outline of the dissertation to follow.

1.2. Background to the study

Co-occurring SUDs and severe mental disorders are a common and widely acknowledged phenomenon. The prevalence of substance-related disorders among patients with a pre-existing psychiatric diagnosis has been observed since the 1980s (Hamilton, 2014; Tiet & Mausbach, 2007). Research indicates that individuals diagnosed with a SUD are more likely to develop a co-occurring mental disorder than those without a SUD, with this rate increasing for individuals involved in illicit drug use (Morisano et al., 2014). Temmingh et al. (2018) estimated that up to 75% of patients with a severe mental illness have also been diagnosed with a SUD. Additionally, 60% of adult patients with a SUD were found to be diagnosed with at least one sever mental illness (Temmingh et al., 2018). Specifically, the

Substance Abuse and Mental Health Services Administration (SAMHSA) found that 40.7% of US adults had co-occurring mental health disorders, of which 19.2% had a mental health disorder within the past year and met the criteria for a SUD (Morisano et al., 2014). On the other hand, the South African Community Epidemiology Network on Drug Use (SACENDU, 2021) found that as of December 2019, 15% of the total sample presented with dual diagnosis at treatment admission.

However, despite the steady recognition of the growing prevalence of patients with dual diagnoses, establishing effective treatment programmes remains a challenge (Constantino et al., 2020; Morojele et al., 2012). Multiple morbidities result in more complex clinical profiles that often warrant the need for specific and empirically supported treatment (Kay-Lambkin et al., 2004; Moore et al., 2018). Moreover, this clinical population's heightened psychosocial vulnerability suggests the need for additional environmental support structures that assist and maintain their rehabilitation and recovery (Drake et al., 2008; Drake & Wallach, 2000; Fantuzzi & Mezzina., 2020; Horsfall et al., 2009). Additionally, research has observed significantly poor engagement, low retention rates, high drop-out rates and non-compliance when treating patients with dual diagnoses (Priester et al., 2016; Moore et al., 2018; Morisano et al., 2014). Consequently, these factors negatively impact the potential efficacy of treatment and the prognosis and outcomes for patients. Therefore, it becomes increasingly difficult for treatment programmes to address these patients' diverse needs sufficiently.

In light of these challenges, a growing field of research has emerged over the last two decades dedicated to (a) mandating treatment development, (b) improving service delivery, and (c) refining public policy (Drake & Wallach, 2000). Moreover, the past decade has seen rapid development in dual diagnosis-centric treatment programmes tailored to appreciate the complex relationship and interplay between SUDs and mental disorders (Cleary et al., 2009;

De Witte et al., 2014; Drake & Wallach, 2000; Fantuzzi & Mezzina, 2020). However, despite these efforts, there remain few validated treatment options and limited evidence to support the effectiveness of the various treatment interventions (Kay-Lambkin et al., 2004).

In lieu of the vast and virtually inexhaustible amount of research available on the topic globally, it becomes increasingly pertinent to keep abreast of the current trends and status of knowledge as it relates locally. A comprehensive epidemiological study regarding the prevalence of patients with a dual diagnosis has yet to be conducted in South Africa. In addition, there is a lack of published studies that extensively explore or empirically evaluate what dual diagnosis-centric care is available in South Africa. Consequently, there is significant value in conducting a systematic review to determine the corpus of knowledge regarding dual diagnosis treatment and further contribute to a greater understanding of current clinical practices. Therefore, this study will add to the existing knowledge on treating patients with a dual diagnosis in the South African healthcare system and further inform the related clinical psychological service delivery.

1.3. Research question and aims of the study

The broad research question that this study aims to address is:

What does the current literature report on the integrated and non-integrated treatment outcomes for patients with a dual diagnosis?

In order to answer the research question, these specific research aims were identified:

1. To summarise the treatment outcomes of integrated and non-integrated interventions for patients with a dual diagnosis.
2. To provide a summary of the strengths and limitations of integrated and non-integrated treatment for patients with a dual diagnosis.
3. To propose evidence-based recommendations to inform the clinical psychological service delivery of dual diagnosis-focused treatment in South Africa.

1.4. Key concepts

The following constructs are central to the study and will be defined accordingly. First, the term *dual diagnosis* specifies the incidence of a severe mental disorder with a co-occurring SUD (Sadock et al., 2015). Second, a *SUD* refers to a cluster of cognitive, behavioural, and physiological symptoms resulting from the continued use of a substance, despite experiencing significant substance-related problems (American Psychiatric Association [APA], 2013).

The literature has identified two broad intervention categories for treating patients with a dual diagnosis: non-integrated and integrated treatment. *Non-integrated treatment* generally describes the separate and isolated treatment of co-occurring conditions in the context of patients with a dual diagnosis (Alsuhaibani et al., 2021; Morisano et al., 2014). On the other hand, *integrated treatment* simultaneously treats an individual's SUD and psychiatric disorder and is carried out by the same clinician or multidisciplinary team to ensure co-ordinated interaction between service providers (Alsuhaibani et al., 2021; Cleary et al., 2009; Drake & Wallach, 2000; Horsfall et al., 2009; Morisano et al., 2014; Ness et al., 2014; Savic et al., 2017; Sinha et al., 2018; Sterling et al., 2011; Torchalla et al., 2012).

Further, non-integrated treatment can be divided into two approaches, namely, parallel and sequential treatment. *Sequential treatment* manages patients with a dual diagnosis by systematically addressing one condition at a time, usually in an attempt to efficiently focus efforts and resources towards long-term recovery and rehabilitation (Horsfall et al., 2009; Morisano et al., 2014; Sterling et al., 2011; Torchalla et al., 2012). *Parallel treatment* allows for the treatment of both the SUD and mental disorder; however, by utilising different service providers for each disorder and having them work in an isolated, unco-ordinated fashion (Horsfall et al., 2009; Morisano et al., 2014; Sterling et al., 2011; Torchalla et al., 2012).

1.5. Outline of the dissertation

This mini-dissertation is structured into five chapters which include the following: Chapter one presents a general overview of the present study by describing the research context and background to the topic, exploring the significance of the study, introducing the research question and subsequent aims, and lastly, providing the overall outline of the dissertation. Chapter two describes the available and relevant literature published concerning the key variables of this study, namely, dual diagnosis and integrated and non-integrated treatment models. Chapter three discusses the chosen research design and recounts the search strategy and inclusion/exclusion criteria. Additionally, this chapter describes the study selection procedure, data extraction and analysis method, and the necessary ethical considerations.

Chapter four describes the characteristics of the selected studies and presents the analytic themes generated from these studies' main findings. Finally, Chapter five explores the significance of the extracted themes in relation to the larger research question and locates it in the context of current literature. This chapter presents evidence-based recommendations informing the clinical psychological service delivery of dual diagnosis-centric treatment in South African hospitals. Lastly, this chapter concludes with the limitations of the present study, and the relevant research gaps and potential directions for future research.

Chapter 2: Literature Review

2.1. Introduction

The occurrence of SUDs in the context of other mental disorders is common and presents a wide range of expressions (Kay-Lambkin et al., 2004). As a result, the past two decades have seen rapid development in dual diagnosis-centric treatment (Cleary et al., 2009; Drake & Wallach, 2000). However, although well-established treatment services are required to meet the diverse needs of patients with a dual diagnosis, there remain few validated treatment options and limited evidence to support the efficacy of various interventions (Kay-Lambkin et al., 2004).

Treatment providers are vital collaborators in adopting contemporary, innovative clinical approaches to interventions (Adams et al., 2016). Therefore, effective treatment relies on treatment providers understanding the various challenges associated with treating patients with a dual diagnosis and appreciating the relevant evidence (Adams et al., 2016; Hamilton, 2014). Therefore, while maintaining a comprehensive understanding of the current status of knowledge regarding dual diagnosis-centric treatment is challenging, it is also essential. Subsequently, implementing effective treatment strategies is both a complex and necessary task.

2.2. Defining dual diagnosis

The term “dual diagnosis” emerged in the early 1980s and gained formal recognition later in the same decade (Drake & Wallach, 2000). Before this, patients with a SUD and co-occurring mental disorder were described as “mentally ill chemical abusers” or “substance-abusing mentally ill persons” (Drake & Wallach, 2000). However, the inclusion of the term dual diagnosis in the subject index of *Hospital and Community Psychiatry* in 1989, and its subsequent medical designation, encouraged medical practitioners to start considering both the biological and psychosocial factors associated with substance misuse among individuals

with severe mental illnesses (Cleary et al., 2009; Drake & Wallach, 2000). Furthermore, the term's diagnostic recognition was intended to acknowledge the complexities of the relationship between SUDs and severe mental disorders and encourage the development of appropriate treatment geared towards these concerns (Drake & Wallach, 2000).

Historically, comorbidity and dual diagnosis have been used interchangeably (Morojele et al., 2012). Significantly, however, these terms are, by definition, conceptually different from each other. *Comorbidity* usually refers to the occurrence of two or more diseases or disorders and specifies an association in time (Morisano et al., 2014). On the other hand, the definition of *dual diagnosis* specifies the incidence of a SUD within the context of a co-occurring mental disorder (Drake & Wallach, 2000; Sadock et al., 2015). Therefore, terms such as "concurrent" and "co-occurring" are suitable alternatives as they reflect, similarly to dual diagnosis, a temporal relationship and speak to the complex interplay between the disorders (Morisano et al., 2005). Notwithstanding, the term dual diagnosis has been widely criticised for being overly simplistic, potentially stigmatising, and misleading as it implies an individual has been formally diagnosed with "dual diagnosis" (Hamilton, 2014; Morojele et al., 2012). Consequently, the lack of conceptual clarity and difficulty in defining dual diagnosis has led to inconsistent and ambiguous responses related to its recognition, diagnosis, and effective treatment (Morojele et al., 2012).

Considering that SUDs form one conceptual half of dual diagnosis, defining this particular cluster of disorders becomes relevant to understanding the relationship between co-occurring SUDs and mental disorders. According to the Diagnostic and Statistical Manual for Mental Disorders, fifth edition (DSM-V), a *SUD* is evidenced by a cluster of cognitive, behavioural and physiological symptoms that persist due to an individual's continued use of a substance despite significant substance-related problems (APA, 2013). SUDs can be separated into nine different, although not entirely distinct, classes: alcohol; cannabis;

hallucinogens; inhalants; opioids; sedatives, hypnotics and anxiolytics; stimulants; tobacco; and other (or unknown) substances. The diagnosis of a SUD is assessed over a 12-month period, and the severity of the substance use is dependent on the number of symptoms present (APA, 2013). The complete set of criteria is detailed in Table 2.1.

Table 1

DSM-V Criteria for a SUD Diagnosis

A. A problematic pattern of substance use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within 12-month period:
Impaired control
1. The substance is often taken in larger amounts or over a longer period than was originally intended**.**
2. The individual expresses a persistent desire to cut down or regulate substance use and report multiple unsuccessful efforts to decrease or discontinue use.
3. The individual spends a great deal of time obtaining and using the substance or recovering from its effects.
4. Craving is manifested by an intense desire or urges for the substance.
Social impairment
5. Recurrent substance use results in a failure to fulfil major role obligations at work, school, or home.
6. Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance**.**
7. Important social, occupational, or recreational activities are given up or reduced because of substance use.
Risky use
8. Recurrent substance use in situations in which it is physically hazardous.
9. Continued substance use despite knowledge of having a persistent or recurrent physical or psychological problem likely caused or exacerbated by the substance.
Pharmacological criteria
10. Tolerance is signalled by either of the following:
a. A need for a markedly increased dose of the substance to achieve the desired effect.

b. A markedly reduced effect when the usual dose is consumed.

11. Withdrawal, as manifested by either of the following:

a. The characteristic withdrawal syndrome (i.e. a syndrome that occurs when blood or tissue concentration of a substance declines in an individual who has maintained prolonged heavy use of the substance).

b. The substance is taken to relieve or avoid withdrawal symptoms.

Specify if:

In early remission: After full criteria for a substance use disorder were previously met, none of the criteria for a substance use disorder has been met for at least three months but for less than 12 months (with the exception that Criterion A4 may be met).

In sustained remission: After full criteria for a substance use disorder were previously met, none of the criteria for a substance use disorder has been met at any time during a period of 12 months or longer (with the exception that Criterion A4 may be met).

Specify if:

In a controlled environment: This additional specifier is used if the individual is in an environment where access to the substance is restricted.

Specify current severity:

Mild: Presence of 2-3 symptoms

Moderate: Presence of 4-5 symptoms

Severe: Presence of 6 or more symptoms

From *American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders (5th edition).*

There are significant, insidious changes that occur to the brain due to continued and excessive substance use, which has a detrimental effect on behaviour (APA, 2013). For instance, substance use directly activates the brain's reward system, over time with excessive use, changing how this system typically functions. These changes reinforce substance-related behaviours and can contribute to the incidence of repeated relapses and intense substance

cravings. Furthermore, considering the global impact of prolonged substance use on an individual's level of functioning, it is apparent how complex the clinical profile becomes when that same individual is diagnosed with a co-occurring mental disorder.

2.3. Prevalence of dual diagnosis

Reporting on the prevalence of dual diagnosis remains a challenge. The lack of a clear, consistent and accepted definition of dual diagnosis has resulted in a number of different ways in which the phenomena can be observed, and results are reported. For example, Hamilton (2014) identified three major factors that skew the estimates presented on the incidence of dual diagnosis. Primarily, (a) studies utilise different instruments and investigate differing populations, (b) there is an over-reliance on investigating individuals known to healthcare, and (c) substance use is highly under-reported by individuals suffering from severe mental disorders. Moreover, there are significantly different variations in the reported prevalence of dual diagnosis from the mental health versus substance addiction populations (Hamilton, 2014).

As discussed in the previous chapter, research shows that individuals diagnosed with a SUD are more likely to develop a psychiatric disorder than those without (Green et al., 2015; Morisano et al., 2014). Internationally, the national survey conducted by SAMHSA in 2012 found that 40.7% (8.4 million) of US adults had co-occurring mental health disorders, of which 19.2% had a mental health disorder within the past year and met the criteria for a SUD (Morisano et al., 2014). In South Africa, the lifetime prevalence of SUDs is reported at an estimated 13.3% of the general population (Pasche et al., 2015). Additionally, the South African Stress and Health (SASH) study, conducted between 2002 and 2004, determined that 21.3% of those with a lifetime SUD also suffered from a psychiatric disorder diagnosis (Saban et al., 2014). In particular, substance users, opposed to non-substance users, were

more likely to have a lifetime or 12-month anxiety or depressive disorder irrespective of their choice of substance (Saban et al., 2014; Williams et al., 2004).

Moreover, SACENDU (2021), providing public health surveillance of substance-use trends across the country, found that as of December 2019, 15% of the total sample presented with dual diagnosis at treatment admission. However, despite this growing trend, a comprehensive epidemiological study regarding the prevalence of patients with a dual diagnosis has yet to be conducted in South Africa. In addition, there is a lack of published studies that extensively explore what dual diagnosis-centric care is available in South Africa. Therefore, it remains unclear to what extent the existing literature has informed current practices for treating patients with a dual diagnosis across South Africa. Furthermore, these gaps in the literature illustrate the need for specific research that operationalises the most recent findings on dual diagnosis treatment for the South African context.

2.4. Prognosis associated with dual diagnosis

Patients with a dual diagnosis present with significantly more complex clinical profiles than individuals with single morbidities (McCallum et al., 2015). As a result, dual diagnosis has been associated with a poorer long-term prognosis (Kay-Lambkin et al., 2004). Specifically, dual diagnosis has been linked to several adverse outcomes, such as increased psychiatric morbidities, reduced functionality, and impaired quality of life (McCallum et al., 2015; Morojele et al., 2012). Furthermore, when compared to patients with single morbidities, patients with a dual diagnosis present with higher rates of treatment non-compliance and relapse (Horsfall et al., 2009), lower levels of motivation to change, increased difficulties with treatment engagement, and a lack of adaptive coping skills (Priester et al., 2016).

Moreover, patients with a dual diagnosis face several administrative, structural, and financial barriers in their search for effective treatment (Drake & Wallach, 2000; Drake et al.,

2008; Horsfall et al., 2009). For example, the barriers to treatment are often related to accessibility and availability of treatment services, service location and operational hours, and the configuration of service providers (Priester et al., 2015). Specifically, patients identified difficulties such as the lack of affordable treatment options, the lack of adequate insurance cover, poor transportation, prevailing stigmatising attitudes of their surrounding community, and a lack of knowledge about where to receive suitable treatment (Mojtabai et al., 2014). Similarly, Weich and Pienaar (2009) highlight the adverse effects of limited training on practitioners' abilities to effectively treat patients with a dual diagnosis and develop comprehensive, contemporary treatment options.

Notably, there is substantial empirical support for co-ordinating mental health services and post-intervention support services to facilitate the recovery journey; however, poor alignment between these streams of care persists (Brouselle et al., 2010). It appears that patients are particularly vulnerable post-intervention, and managing this time is an essential factor in maintaining recovery (Horsfall et al., 2009; Priester et al., 2015). For example, integrating housing programmes, vocational training (Brousselle et al., 2010), peer support groups, family psycho-education, and social work (Drake et al., 2004) into treatment programmes have shown significant long-term improvement in the prognosis of patients with dual diagnosis. However, as evidenced in the literature, there remains a lack of treatment programmes that meaningfully integrate and co-ordinate with post-intervention services social services.

2.5. Aetiological models for dual diagnosis

The high prevalence of patients with SUDs and co-occurring mental disorders has been well documented (Morisano et al., 2014; Pasche et al., 2015; Saban et al., 2014). This clinical population is characteristically heterogeneous and challenging to treat (Brady & Sinha, 2005). Effective treatment relies on mental healthcare practitioners acquiring an

understanding of the origins and causes of dual diagnosis and an appreciation of the current evidence (Hamilton, 2014). One of the overarching areas of concern remains the nature of the interaction between mental disorders and SUDs. Mueser et al. (1998) suggests that no single model can account for the heterogeneity of patients with a dual diagnosis. Thus several frameworks have emerged that offer differing insights into the potential connections.

2.5.1. Common factors model

The common factors model suggests that high prevalence in the occurrence of SUDs with co-occurring mental disorders is explained by the shared vulnerabilities of both disorders (Mueser et al., 1998). In addition, this model explores the extent to which specific factors can independently increase the risk of developing both disorders, such as genetic vulnerability, socio-economic status, and level of cognitive functioning. Therefore, dual diagnosis is understood as an expression of underlying genetic vulnerabilities, such as a predisposition or liability for substance dependency, which leaves individuals more susceptible to developing SUDs (Morisano et al., 2014).

In addition, the DSM-V considers how individuals with lower self-control possess poor inhibitory mechanisms, predisposing them to develop SUDs (APA, 2013). In particular, Mueser et al. (1998) discuss the influence of genetic factors, as determined by family history, and the extent to which genetic vulnerability to one disorder increases the risk of developing another disorder. For example, Caspi et al. (2005) suggested that genetic vulnerability and substance misuse can interact in dangerous ways, increasing the likelihood of developing primary psychosis. Similarly, Mueser et al. (1998) discussed how childhood conduct disorder and subsequent antisocial behaviours make patients vulnerable to developing a SUD, particularly during the pre-psychotic phase of schizophrenia.

2.5.2. Secondary substance use disorder models

Secondary SUD models assume that being diagnosed with a severe mental disorder increases a patient's vulnerability to developing a co-occurring SUD. This category of models can be broadly divided into two different, although not entirely distinct, types, primarily: the psychosocial risk factor model and the supersensitivity model.

2.5.2.1. Psychosocial risk factor models

The psychosocial risk factor models can be separated into two types: the self-medication and alleviation of dysphoria model (Drake & Wallach, 2000; Mueser et al., 1998). First, the self-medication model was first proposed by Edward Khantzian, where he posited that patients with severe mental disorders use substances to alleviate pain (Khantzian, 1985). Khantzian's hypothesis implied that treating the underlying psychiatric disorder will improve or resolve the substance-related problems (Lembke, 2012). Furthermore, psychopathology increases the risk of developing a dependence on substances (Mueser et al., 1998). However, despite being widely held, it has received little to no empirical support (Laudet et al., 2004; Mueser et al., 1998).

Second, the alleviation of dysphoria model proposes that patients with severe mental disorders are prone to experiencing bouts of intense dysphoria, making them more susceptible to using substances to alleviate their debilitating emotional state (Mueser et al., 1998). However, research acknowledges the role of underlying, indirect mechanisms in facilitating this relationship between SUDs and co-occurring mental disorders. For example, social isolation, poor interpersonal skills, poor cognitive functioning, lack of employment, low socio-economic status, poor social support, and a sense of responsibility (Mueser et al., 1998). Schumm and Gore (2016) suggest that SUDs can develop in response to post-traumatic stress disorder (PTSD) symptoms, and as a result, understand substance use as an attempt to "self-medicate". Therefore, by addressing the psychiatric condition first, the

substance misuse-related behaviours will cease. This observation appears to be consistent for patients with PTSD. These patients tend to utilise avoidance strategies due to their persistent desire to escape the intrusive and debilitating thoughts and behaviours associated with their severe mental illness (Schumm & Gore, 2016).

Both the self-medication and alleviation of dysphoria model have been widely influential in our understanding of dual diagnosis-centric care; however, its hypotheses tend to promote ineffective treatment interventions that fail to recognise the presence of a SUD (Lembke, 2012). Instead, they suggest that the "underlying" psychiatric disorder be treated while the substance misuse is ignored. Additionally, patients' psychological distress is interpreted as originating solely from the "underlying" psychiatric disorder, opposed to being a consequence of the effects of substance misuse or withdrawal syndrome. Subsequently, these models underplay the negative impact of substance misuse and neglect the benefit of behavioural change in pursuit of recovery (Lembke, 2012).

2.5.2.2. The supersensitivity model

The supersensitivity model explores how stress can influence psychological vulnerability (Meuser et al., 1998). That is, how the interaction between a patient's psychological vulnerability, as determined by a combination of their genetics and early environmental factors, and environmental stress that can trigger the onset of a mental disorder or relapse (Brady & Sinha, 2005; Mueser et al., 1998). Notably, this model posits that patients with severe mental disorders are more sensitive to stress and thus prone to experience adverse outcomes from lower amounts of substance use than members of the general public (Mueser et al., 1998).

For instance, Drake and Wallach (1993) conducted a longitudinal study exploring the long-term consequences of moderate drinking among two samples of patients diagnosed with a severe mental disorder. The study found that at follow-up, less than 5% of the total sample

(n = 243) managed to sustain moderate alcohol consumption without experiencing adverse consequences and substance misuse-related symptoms. These results were presented in contrast to approximately 50% of the general public who drink alcohol in moderate quantities over time and do not develop a SUD. Therefore, the study highlights how patients suffering from severe mental disorders are at risk of developing SUDs and thus the need to monitor the level of access and exposure to substances in their environments.

However, the generalisability of the research conducted on this model is limited. Many studies focused predominantly on patients with schizophrenia and neglected to research the model's hypothesis with bipolar disorder and related affective disorder. Nevertheless, the model remains relevant to our understanding of dual diagnosis. It is further supported by the (a) observably low levels of substance use and adverse consequences experienced by patients diagnosed with a mental disorder, and (b) the increased prevalence of SUDs among patients with mental disorders (Mueser et al., 1998).

2.5.3. Secondary psychiatric illness model

The secondary psychiatric illness model proposes that substance misuse increases the risk of developing psychopathology (Morisano et al., 2014; Mueser et al., 1998). This model considers that a patient with a SUD becomes vulnerable to developing a severe mental disorder as minor symptoms of mental illness become exacerbated until diagnosable (Morisano et al., 2014). These particular presentations are usually understood to be substance-induced mental health disorders; however, this model holds that they are merely a subgroup of individuals with co-occurring disorders (Morisano et al., 2014). Namely, two types of research have been conducted to evaluate the secondary psychiatric disorder model: prospective follow-up studies of patients with SUDs and comparison studies of patients who develop SMI following substance abuse with patients with severe mental disorders but no SUD (Mueser et al., 1998).

However, there remains limited evidentiary support of this model's explanation and a lack of contemporary research that indicates SUDs as a risk factor for developing a subsequent mental disorder. For example, a National Comorbidity Survey conducted among participants between 15 and 54 years old diagnosed with co-occurring SUD and mental disorder indicated that 89% of the respondents developed a mental disorder. In contrast, only 9% developed a SUD first (Kessler et al., 1994).

2.5.4. Bidirectional model

Last, the bidirectional model suggests that dual diagnosis is maintained by a consistent and ongoing interaction between the severe mental disorder and SUD (Morisano et al., 2014; Mueser et al., 1998). In addition, the model explores the existence of a positive feedback cycle which interlinks the SUD with the co-occurring mental disorder (Morisano et al., 2014; Prior et al., 2017). Therefore, one disorder serves to worsen or maintain the other, and vice versa. For example, a SUD can be triggered in a patient with a severe mental disorder, as they are particularly biologically vulnerable, and this vulnerability is maintained by continued substance use (Mueser et al., 1998).

For instance, Kronenberg et al. (2014) conducted a qualitative study that explored the nature of this bidirectional relationship between co-occurring disorders. The study consisted of 23 participants with either a co-occurring attention-deficit/hyperactivity disorder and SUD (ADHD + SUD) or a co-occurring autism spectrum disorder and SUD (ASD + SUD). The results found that in response to feeling overwhelmed by their thoughts and emotions, participants with ADHD + SUD experienced intense periods of agitation and impulsivity, while participants with ASD + SUD experienced passivity and melancholia. Consequently, both groups used substances to ameliorate these symptoms; however, they reported experiencing more significant problems subsequently, such as difficulties creating and maintaining structure in their daily lives due to a lack of planning (ADHD + SUD) or due to a

lack of initiative (ASD + SUD). As a result, participants found that substance use disorganised their lives and impaired their ability to create a sense of structure. Subsequently, an absence of structure contributed to continued substance use, leaving participants stuck in a vicious feedback loop that needs to be addressed through effective treatment (Kronenberg et al., 2014).

Over the past decade, the bidirectional model has gained steady recognition (Brady & Sinha, 2005; Morisano et al., 2014; Mueser et al., 1998). In addition, researchers have commended the degree to which the model acknowledges the interactional nature of the relationship between co-occurring SUDs and mental disorders. That said, this model requires further exploration and empirical evidentiary support as it is largely theoretical at this time (Mueser et al., 1998).

2.6. Treatment models for dual diagnosis

As the above discussion illustrates, there are several explanations that speak to the origins of dual diagnosis and the subsequent relationship between SUDs and severe mental disorders. Similarly, over the past two decades, a continuum of care has evolved from which multiple treatment models have been developed. The literature has identified two broad intervention categories for treating patients with a dual diagnosis: non-integrated and integrated treatment.

2.6.1. Non-integrated treatment

Following the medical designation of the term “dual diagnosis” in the late 1980s, non-integrated treatment dominated the recovery literature and clinical practice of patients with a dual diagnosis (Ness et al., 2014). This treatment category generally describes the separate treatment of co-occurring conditions in the context of patients with a dual diagnosis (Morisano et al., 2014). Non-integrated treatment maintains a clear delineation of professional boundaries and relies on little to no co-ordination between service providers

(Brouselle et al., 2012; Morisano et al., 2014). Non-integrated treatment can be differentiated into two approaches; sequential and parallel treatment.

2.6.1.1. Sequential treatment

Sequential treatment manages patients with a dual diagnosis by systematically addressing one condition at a time, usually in an attempt to efficiently focus efforts and resources towards long-term recovery and rehabilitation (Horsfall et al., 2009; Morisano et al., 2014; Sterling et al., 2011; Torchalla et al., 2012). Sequential treatment operates on the premise that once participants gain insight and observe the change in one disorder, this will lead to a greater sense of agency and increased motivation to effectively address the second disorder (Green et al., 2015). However, the sequence in which the disorders are treated remains up for debate. For example, some argue that it is imperative first to address a patient's mental disorder, prioritise the development of adaptive coping strategies, and then address their substance misuse (Morisano et al., 2014). However, others suggest it is better first to address the SUD to manage the substance use and assure greater psychotherapeutic and pharmacological compliance moving forward (Morisano et al., 2014). For instance, with a sample of participants who have PTSD and a co-occurring SUD, their SUD would be treated first, and trauma-focused work delayed until a period of abstinence, usually 3 to 6 months, has been sustained. Thus, when the patient follows up on their PTSD treatment after completing treatment for their SUD, treatment is provided by a different practitioner at a separate treatment facility (McCauley et al., 2012).

Furthermore, Green et al. (2015) conducted a qualitative analysis as part of an exploratory mixed-methods study with a sample of 177 participants who have a severe mental disorder and substance-related problems. The study broadly explored differing paths to recovery and identified three overarching themes among the participants' journeys. Namely, (a) learning about the effects of substances increased participants' motivation to

abstinence, (b) achieving abstinence further motivated participants to engage meaningfully in addressing their mental health concerns, and (c) maintaining their abstinence increased participants' self-confidence, sense of agency, and level of functioning. Additionally, the study's results suggest that irrespective of the chosen pathway to recovery, ceasing or significantly limiting their substance use was essential to further managing and initiating participants' mental health journeys.

However, one of the biggest criticisms of the sequential treatment model is the lack of attention directed towards the management of the "second disorder", which increases the risk of relapse in the disorder that the patient was initially treated for (Morisano et al., 2014; Ness et al., 2014). Additionally, the sequential treatment model relies heavily on its patients to initiate and maintain their recovery journey. Yet, patients with a dual diagnosis reportedly present with poor motivation to change and low levels of insight. As a result, this treatment model reports poor follow-up on referrals to other facilities for treatment (Ness et al., 2014; Priester et al., 2016).

2.6.1.2. Parallel treatment

Parallel treatment allows for the treatment of both the SUD and mental disorder; however, by utilising different service providers for each disorder and having them work in an isolated, unco-ordinated fashion (Horsfall et al., 2009; Morisano et al., 2014; Sterling et al., 2011; Torchalla et al., 2012). The parallel treatment model attempts to acknowledge the complex interaction between a patient's SUD and psychiatric disorder and the need for simultaneous treatment, however, to defer to the expertise of separate service providers (Morisano et al., 2014). There is limited research published on the outcomes of parallel treatment programmes. The existing literature suggests there are mixed results regarding the effectiveness of this model, and perhaps it would better serve as a stepping stone for

institutions attempting to transition into integrated treatment (Abou-Saleh, 2004; Mangrum et al., 2006).

Mangrum et al. (2006) conducted a study involving 216 participants with co-occurring severe mental disorders and SUDs assigned to a parallel or integrated treatment condition. The results suggest that the integrated group experienced greater reductions in psychiatric hospitalisation and arrest frequency than the parallel condition. Moreover, the parallel group reported increases in these measures, indicating the enhanced effectiveness of integrated treatment and suggesting that integrated treatment actively reduces this clinical population's need for crisis-oriented care (Mangrum et al., 2006).

Comparatively, Randall et al. (2001) studied a sample of patients diagnosed with a social anxiety disorder (SAD) and an alcohol use disorder (AUD), where they compared non-integrated treatment with integrated treatment. The control group underwent non-integrated treatment of CBT targeted at their AUD. On the other hand, the treatment group received integrated treatment of CBT to address both their AUD and SAD. Following twelve individual sessions, the results indicated that, from baseline, both groups experienced improvements in their alcohol misuse behaviours and social anxiety symptoms. However, the treatment group's recovery trajectory proved more challenging than the control group. Notably, the treatment group's participants were found, at post-treatment, to be drinking more frequently and with heavier drinking days than the control group participants. Thus, the results question the effectiveness of integrated treatment and its ability to treat and account for multiple intersecting disorders significantly.

Despite the mixed results, parallel treatment has been criticised for reinforcing the differences between substance misuse and psychiatric care systems, further isolating the patient in their search for help (Sterling et al., 2011). As a result, parallel treatment runs the risk of ignoring the influence of context-specific factors (e.g., socio-economic status, level of

education, and employment status). Furthermore, there are several procedural, financial and organisational limitations to non-integrated treatment, which is exacerbated by factors such as (a) the clinical context in which treatment takes place (e.g., in-patient versus out-patient), and (b) the treatment-seeking behaviour of mental healthcare users (Ness et al., 2014). For example, carrying out non-integrated treatment in an out-patient context, comparatively worsens the co-ordination and communication difficulties patients encounter with their service providers (Cleary et al., 2009; Green et al., 2015; Morisano et al., 2001). Therefore, practitioners report problematically low retention rates as it becomes increasingly challenging to navigate the various service systems while being responsible for selecting and initiating their recovery journey (Ness et al., 2014; Sterling et al., 2011; Torrens et al., 2012).

As it stands, the non-integrated treatment model, although initially popular, appears to have lost favour among researchers in the field. This approach yielded mixed results regarding its effectiveness, and its structure reportedly falls short of meeting the diverse needs of patients with a dual diagnosis. Moreover, regardless of whether treatment occurs sequentially or simultaneously, patients struggle to negotiate these unco-ordinated systems of care. Therefore, the integrated treatment model was introduced to address the difficulties associated with non-integrated care.

2.6.2. Integrated treatment

Integrated treatment simultaneously treats an individual's SUD and psychiatric disorder and ensures co-ordinated interaction between service providers (Cleary et al., 2009; Drake & Wallach, 2000; Horsfall et al., 2009; Morisano et al., 2014; Ness et al., 2014; Savic et al., 2017; Sinha et al., 2018; Sterling et al., 2011; Torchalla et al., 2012). In addition, integrated treatment is usually carried out by the same clinician or multidisciplinary team of clinicians and encourages the sharing of knowledge and expertise to enhance the effectiveness of treatment (Harrison et al., 2017; Morisano et al., 2014; Ness et al., 2014).

Integrated treatment was developed in response to the poor outcomes associated with non-integrated care when treating patients with a dual diagnosis. As a result, the last decade has seen the development of integrated treatment programmes that are tailored to accommodate the complexities of dual diagnosis and address the complex interaction between SUDs and co-occurring mental disorders (De Witte et al., 2014; Ness et al., 2014; Torrens et al., 2012).

In the past, practitioners have relied on addressing a patient's psychological distress as a product of biological and genealogical factors. However, research suggests that attention be turned towards developing programmes that constructively improve the environmental and social context in which these mental disorders occur (Drake & Wallach, 2000). Lachman et al. (2012) discuss how the need for integrated treatment rests on its ability to address the influence of environmental risk factors on a patient's psychological presentation, such as psychosocial adversity and exposure to abuse, violence and illicit substances.

For instance, Back et al. (2019) evaluated the efficacy of an integrated, exposure-based treatment programme that concurrently treated PTSD and SUD (COPE) compared to a relapse prevention programme (RP) targeted at SUDs alone. In comparison with RP, the results indicated that COPE participants reported higher rates of PTSD diagnostic remission and greater reductions in their Clinician-Administered PTSD Scale (CAPS) scores and PTSD Checklist - Military version (PCL-M). Additionally, at 6-months follow-up, COPE participants reported significantly fewer drinks per drinking day than the RP group. Similarly, Wolff et al. (2015) examined the implementation and effectiveness of integrated group therapy for patients with PTSD and co-occurring SUD. The sample consisted of 230 incarcerated men randomly assigned to two integrated programmes; Seeking Safety (SS) and Male-Trauma Recovery Empowerment Model (M-TREM). Overall, M-TREM was found to improve the severity of PTSD symptoms, while SS evidenced improvement in psychological

functioning. Moreover, SS and M-TREM performed better, compared to no treatment, on PTSD severity, self-esteem, and self-efficacy.

In general, integrated treatment is considered the preferred model in that the outcomes associated with this category of treatment generally outperform that of non-integrated treatment (De Witte et al., 2014; Drake et al., 2008; Gielen et al., 2014; Mojtabai et al., 2014; Priester et al., 2016; Sinha et al., 2018). However, there remains reservation regarding the feasibility and effectiveness of integrated treatment. For example, Cleary et al. (2009) conducted a comprehensive review of 25 randomised controlled trials (RCTs) comparing psychosocial interventions for substance misuse in patients with a substance abuse problem and severe mental illness. No significant advantages were found between the integrated and non-integrated treatment with regards to substance misuse. However, the study suggested that effective treatment relies on addressing a patient's sense of personal control, self-confidence, place of belonging, and commitment to change and hope for their future. The researchers did identify high drop-out rates that needed to be considered when interpreting the results.

Nonetheless, literature does suggest that fully integrated treatments programmes may threaten the flexibility of treatment and limit a patient's choice in their journey to recovery (Green et al., 2015). In addition, Abou-Saleh (2004) highlighted that integrated treatment, when compared to parallel or sequential treatment, may not provide the same intensity of treatment and rigour for SUDs as is afforded to the psychiatric disorder. Therefore, although patients have access to co-ordinated treatment services, there is a level of expertise and training required for practitioners to work with dual diagnoses and effectively execute treatment plans. However, this level of expertise and training is often expensive and time-consuming for service providers to obtain, further complicating the ability of institutions to adopt an integrated treatment model. Moreover, attempting to shift from a historical separation of substance abuse services and psychiatric care to an integrated model of care

would require significant financial investment and extensive systemic change (Pasche et al., 2015; Weich & Pienaar, 2009).

As evidenced herein, both non-integrated and integrated treatment models have their respective strengths and limitations. Additionally, this field of literature continues to grow and, similarly, the challenge of staying abreast of all the relevant published studies on this topic. Unfortunately, however, there are a limited number of published reviews summarising the current corpus of knowledge on dual diagnosis treatment, and even less aimed at assisting service delivery in developing countries such as South Africa.

2.7. Conclusion

The occurrence of co-occurring SUDs and severe mental disorders is a well-documented and growing phenomenon (Kay-Lambkin et al., 2004; Morisano et al., 2014; Pasche et al., 2015; Saban et al., 214; SACENDU, 2021). However, there are prevailing difficulties in recognising dual diagnosis due to its lack of conceptual clarity (Morojele et al., 2012). Moreover, despite the enduring prevalence of patients with dual diagnoses, establishing effective treatment programmes remains a challenge (Morojele et al., 2012). Patients with a dual diagnosis present with more severe clinical profiles and, as a result, poorer prognosis when compared to individuals suffering from single morbidities. (McCallum et al., 2015; Morojele et al., 2012).

As the above discussion illustrates, several aetiological models account for the prevalence of dual diagnosis and speak to the complex nature of the interaction between mental disorders and SUDs (Drake & Wallach, 2000; Mueser et al., 1998; Morisano et al., 2014). Furthermore, the literature broadly suggests that integrated treatment is the preferred intervention model; however, there remains some debate about its feasibility and absolute superiority over non-integrated treatment. Similarly, the non-integrated treatment model appears to have lost favour among researchers; however, it remains a widely utilised model

and manages to produce more significant improvement in patients with a dual diagnosis than no treatment at all. For example, many existing healthcare systems, such as South Africa's, are built to accommodate the separation of psychological services and thus continue to utilise this form of treatment (Pasche et al., 2015; Weich & Pienaar, 2009). Yet, few validated treatment options remain, and limited evidence supports the efficacy of specific psychological interventions (Kay-Lambkin et al., 2004).

Considering effective treatment relies on treatment providers understanding the various challenges associated with treating patients with a dual diagnosis and appreciating the relevant evidence (Adams et al., 2016; Hamilton, 2014). Therefore, in lieu of the vast and virtually inexhaustible amount of research available on the topic globally, it becomes increasingly pertinent to keep abreast of the current trends and status of knowledge as it relates locally. Consequently, there is significant value in conducting a systematic review to determine the corpus of knowledge regarding dual diagnosis treatment and further contribute to a greater understanding of current clinical practices. The next chapter explicates the research approach followed in this study.

Chapter 3: Methodology

3.1. Introduction

This chapter will provide an outline of the study's research methodology. Primarily, a description of the research design, search strategy, and quality assessment tools will be provided. Additionally, the study selection procedure will be discussed, and the data extraction and analysis method will be presented. Lastly, the relevant ethical considerations will be identified, and the implications thereof accounted for.

3.2. Research question and aims of the study

The broad research question that this study aims to address is:

What does the current literature report on the integrated and non-integrated treatment outcomes for patients with a dual diagnosis?

In order to answer the research question, these specific research aims were identified:

1. To summarise the treatment outcomes of integrated and non-integrated interventions for patients with a dual diagnosis.
2. To provide a summary of the strengths and limitations of integrated and non-integrated treatment for patients with a dual diagnosis.
3. To propose evidence-based recommendations to inform the clinical psychological service delivery of dual diagnosis-focused treatment in South Africa.

3.3. Research design

A research design is a strategic framework that guides the researcher's actions towards executing the appropriate data collection and analysis techniques to answer the research question (Terre Blanche & Durrheim, 2006). The present study followed a descriptive research question determined to explore the current status of knowledge regarding the integrated and non-integrated treatment outcomes for patients with a dual diagnosis. A descriptive research question aims to describe the characteristics of an existing phenomenon

(Elliott & Timulak, 2005). Therefore, in order to meaningfully answer this research question, a systematic review was conducted. According to Gough et al. (2012), a systematic review is based on predetermined criteria whereby evidence is systematically identified, critically appraised and summarised. Thus, a systematic review provides a solid basis for interpreting new primary research. Moreover, this type of review presents a comprehensive evaluation of both current and previous research which helps inform researchers undertaking new primary research in the field (Gough et al., 2012).

The Preferred Items for Systematic Reviews and Meta-Analyses (PRISMA) was used to instruct the presentation of this systematic review and improve the reliability and applicability of its findings (Page et al., 2021). The PRISMA is an evidence-based framework that consists of a 27-item guideline and a four-phase flow diagram. These tools were used to (a) inform the identification, selection, appraisal, and synthesis of the relevant studies and (b) advise the discussion of results to answer the research question under investigation.

3.4. Search strategy and eligibility criteria

A non-probability purposeful search strategy was utilised in the selection of studies for inclusion in this review. The sample of this review was purposive rather than exhaustive as the aim of the study was to present interpretive explanations for the phenomenon under investigation and not prediction (Thomas & Harden, 2008). This criterion-based search strategy allowed the intentional selection of studies to meet a predetermined criterion of characteristics (Ritchie et al., 2014). Additionally, a purposive search strategy ensured that information-rich studies were selected. This approach ultimately deepened the discussion around dual diagnosis care and strengthened the evaluative capacity of the study (Gough et al., 2012). Considering that systematic reviews require an iterative search strategy, the sample size depended on when the point of saturation was met, that being the stage at which no further studies contribute new concepts to the review (Gough et al., 2012). The search

procedure was practically constrained by the selected databases and the studies accessible thereof. Therefore, it was the researcher's responsibility to find a balance between retrieving a high number of studies while working from a focused inclusion and exclusion criterion.

Specifically, this study intended to review RCTs that investigated the treatment of patients with a dual diagnosis. This research design generates highly reliable evidence due to the methodological safeguards implemented to minimise systematic error and provide additional quality assurance (Bhide et al., 2018; Hariton & Locascio, 2018). Furthermore, RCTs lend themselves well to systematic reviews as they offer a solid foundation to synthesise evidence-based clinical practices (Bhide et al., 2018). In turn, systematic reviews can be used to improve patient outcomes and service delivery. Therefore, synthesising the outcomes of RCTs enhances the reliability and applicability of this review.

For the purpose of this study, an RCT is defined as a prospective, comparative, experimental research design performed under controlled conditions, aimed at evaluating the effectiveness of one or more interventions in which participants are randomly allocated to one of usually two groups (i.e., experimental and control group) (Bhide et al., 2018; Sibeko & Stein, 2019). It is essential for the RCTs included in this review to explicitly indicate the use of at least one control group to minimise the influence of any confounding variables and enhance the reliability of the results (Bhide et al., 2018; Lin et al., 2012). Without a control condition, studies cannot guarantee that the observed changes or improvements are not due to outside factors. Usually, the control group receives no treatment, a standard intervention, treatment as usual (TAU), or a placebo (Bhide et al., 2018).

Furthermore, the review focused on studies published between 2009 and 2018 to ensure that the results of this review, and the subsequent service delivery recommendations are inclusive and temporally relevant. Moreover, it was decided that studies included in this review must have samples of adult participants aged 18 years or older. This criterion was

motivated by findings from SACENDU (2021) which noted that their treatment sites across the country were admitting persons of an average age of 26 to 30 years old. However, significant age differences were noted for specific substances. For example, persons whose primary substance of use was alcohol, crack/cocaine, cannabis/mandrax or over-the-counter prescription medications were substantially older (> 30 years old) than persons having other primary substances of use (SACENDU, 2021). By contrast, persons whose primary substances of use were inhalants and cannabis tended to be younger (< 30 years old) than those with cannabis/mandrax as their primary drug of use. Therefore, to not limit the breadth of this review and accommodate for the heterogeneous nature of this clinical population, a broader age restriction was implemented.

Additionally, the dual diagnosis status of the studies' participants (i.e., the incidence of a severe mental disorder with a co-occurring SUD) was informed and verified by the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM). The DSM is a standard reference for clinical practice in the mental health field. Considering that this review was interested in studies published between 2009 and 2018, the equivalent diagnostic terminologies of the DSM, fifth edition (DSM-V) and fourth edition (DSM-IV) were considered when screening studies for inclusion in this review.

The inclusion criteria specified that studies must be:

- Published between 2009 and 2018.
- Published internationally and locally (i.e., South Africa)
- Original, peer-reviewed and in full-text journal article format.
- Published in English.
- Conducted with adults who were 18 years or older.

- Conducted with participants who met the full diagnostic criteria for a dual diagnosis, as defined by this review (i.e., the incidence of a severe mental disorder with a co-occurring SUD).
- Only RCTs, as defined in this review (i.e., performed under controlled conditions, randomly allocated participants, and the presence of at least one control group).

The exclusion criteria specified that:

- Multiple eligible studies from the same data set were excluded

3.5. Study selection

Informed by the PRISMA guidelines, an exhaustive literature search of the available studies was undertaken. All studies were retrieved through online electronic copies, and where inaccessible, the psychology subject librarian at the University of Pretoria was consulted. Studies were sourced from EbscoHost (including APA PsycARTICLES), Scopus, ScienceDirect, and Google Scholar. Each research platform was electronically searched using the following search terms: “dual diagnosis”, “co-occurring disorders”, “integrated treatment/intervention”, “non-integrated treatment/intervention”, “sequential treatment/intervention”, “parallel treatment/intervention”, “randomised control trial”, and “adult”. In addition, boolean operators and specific limiters were utilised to enhance the search procedure.

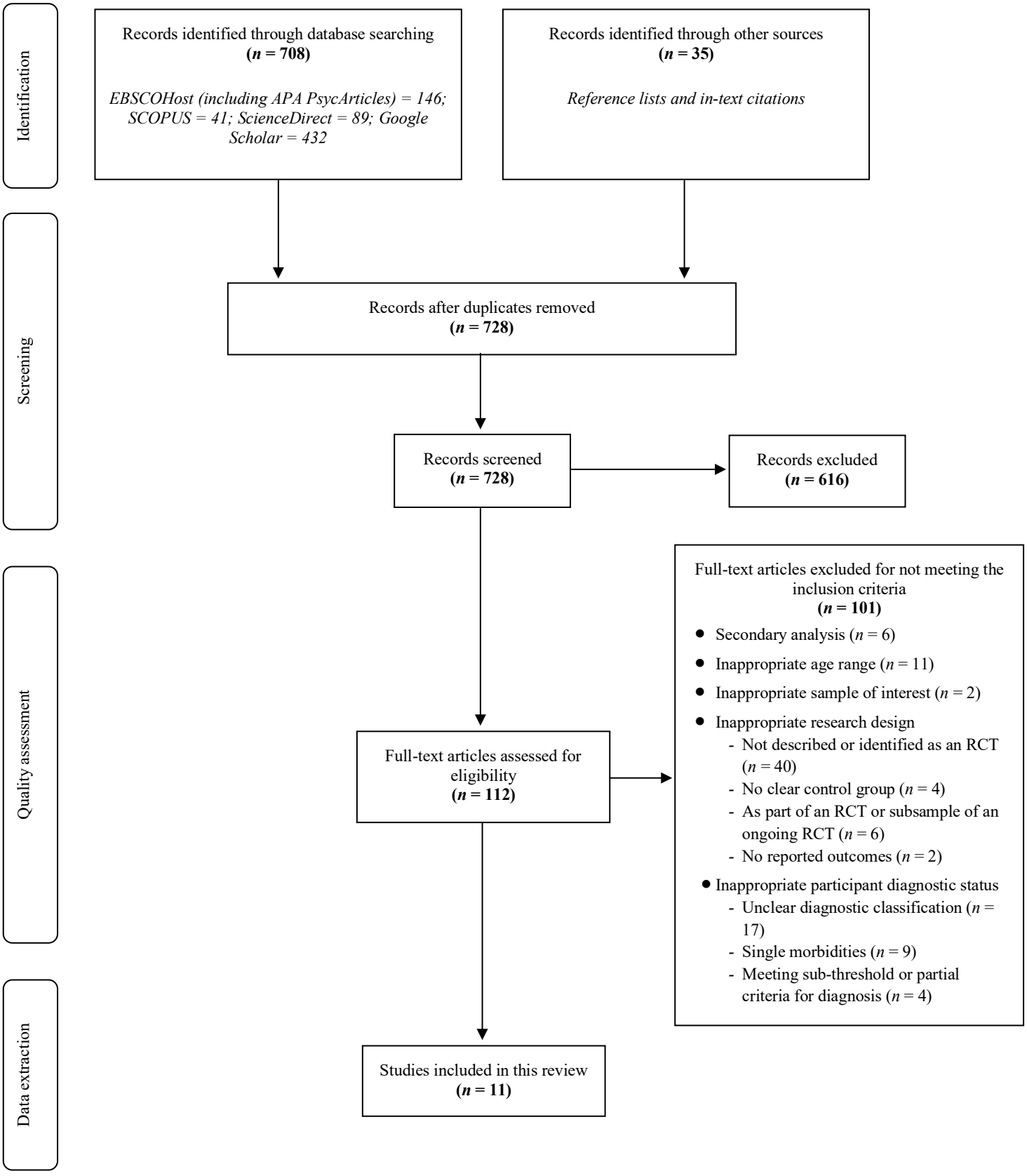
An initial search of the databases was conducted on 18 June 2021, yielding 708 potentially relevant studies which were included in the initial screening phase. In addition, the researcher perused the reference lists of the various articles to collect more relevant studies that may not have surfaced during the initial search. This resulted in a total of 743 studies, of which 15 duplicates were removed, and the remaining studies were then subjected to a primary screening phase. The primary screening process saw the researcher examine the various studies’ titles and abstracts to assess their relevance to this review.

Subsequently, 616 studies were excluded for being methodologically or contextually unrelated to the research question. Following this, 112 studies remained. The full-text articles were obtained and subjected to a secondary screening phase. A more in-depth reading was conducted to establish their eligibility according to the predetermined inclusion/exclusion criteria. At this stage of the study selection procedure, alongside the first reviewer (i.e., the researcher), a second reviewer (i.e., the researcher's main supervisor) was consulted to assist in screening and evaluating the remaining studies to determine their eligibility for inclusion in the present study.

Additionally, these studies were subjected to a quality appraisal tool (detailed in the following section), which resulted in a total of 101 studies being excluded for the following reasons: (a) inappropriate age range (n = 11); (b) inappropriate sample of interest (n = 2); (c) inappropriate research design, specifically not being described or identifying itself as an RCT (n = 40), not indicating a clear control group (n = 4) and not reporting any outcomes (n = 2); and lastly, (d) indicating the inappropriate diagnostic status of the participants, specifically participants possessing an unclear diagnostic classification (n = 17), single morbidity (n = 9), and meeting sub-threshold or partial criteria for diagnosis (n = 4). Moreover, 12 studies were excluded for the following reasons: (a) being a secondary analysis of an RCT data set; (b) studies as part of a larger RCT or utilising sub-samples of ongoing RCTs (n = 6); and (c) being carried out as part of larger RCTs (n = 6). In these instances, the researcher located the original, primary RCT for consideration for inclusion in this review. In the end, 11 studies met the primary inclusion criteria and were included in this review for qualitative synthesis. A flow diagram, adapted from the PRISMA flow diagram, detailing the study selection procedure can be seen in Figure 1.

Figure 1

Flow Diagram of the Search Procedure



3.6. Quality assessment

The quality assessment phase was concerned with (a) critically appraising the eligible studies based on the reliability of their research design, (b) the validity of their analysis method and (c) their ability to answer the research question meaningfully. By virtue of performing the quality assessment phase before data extraction, the researcher extracted data from the best and most relevant available evidence (Gough et al., 2012).

To assess the quality of the eligible studies, the Critical Appraisal Skills Programme (CASP, 2020) checklist for RCTs was used during the study selection procedure. This quality assessment tool was used to determine whether the prospective studies' research designs were (a) valid and methodologically sound to be considered an RCT and (b) whether the reported outcomes were reliable and locally applicable (CASP, 2020). This appraisal tool required the researcher to complete a form for each eligible study in which they answer "yes", "no", or "cannot tell" to a series of questions that highlight the pertinent issues to consider when classifying RCTs. The tool consisted of three separate sections. Section A included screening questions to determine the validity of the primary study design. Section B assessed the reliability of the study design. Sections C and D appraised the generalisability of the results.

Additionally, alongside the first reviewer (i.e., the researcher), a second reviewer (i.e., the researcher's main supervisor) was consulted to screen and evaluate the eligibility of the remaining studies for inclusion in the present study. The second reviewer's involvement and continued supervision allowed for a scientifically rigorous procedure that resulted in a selection of studies that maintained a high degree of reliability and trustworthiness. Consequently, the quality assessment phase resulted in 101 studies being excluded and the retention of 11 studies for inclusion in the data extraction phase. These 11 studies formed the dataset on which the researcher conducted full-text reviews.

3.7. Data extraction

When it comes to synthesising qualitative studies, deciphering what constitutes “data” and “findings", and thus the focus of abstraction, is a challenge (Thomas & Harden, 2008). For the purpose of this review, the term *data* was used to denote the individual sentences of each study. The term *findings* were used to indicate the implications of those sentences in relation to each study’s aims. The data extraction process required that the researcher first become familiar with the full-text articles of each study to identify the relevant data relative to the research question. Following multiple readings, the detailed characteristics of the final 11 studies were extracted and documented according to the following components of each study: (a) the authors and country of publication, (b) the study’s objectives, (c) the study’s setting, (d) the type of dual diagnosis under investigation, (e) a brief description of the sample participants, (f) the respective study design, and (g) the main findings reported in the studies.

Following this, the researcher extracted specific data segments by systematically analysing every sentence of each study in terms of their potential relevance to the research question. The relevance of each sentence was considered in relation to its applicability to the main concepts of this systematic review: dual diagnosis, SUDs, integrated and/or non-integrated treatment (i.e., parallel and sequential treatment). This part of the data extraction process was conducted over the course of two weeks. The researcher extracted an abundance of descriptive data, which formed the basis for the subsequent qualitative synthesis required to answer this research question. The descriptive data were combined to form descriptive themes that were translated into analytic themes through a method of thematic synthesis (detailed in the following section). These analytic themes served as the results of this systematic review and were analysed to propose recommendations for the service delivery of dual diagnosis-centric treatment in South Africa.

3.8. Data analysis

Data analysis took place through the framework provided by thematic synthesis. Thematic synthesis is conducted with primary qualitative research. This method of data analysis attempts to preserve the results of primary studies, often lost in the traditional process of synthesis, and encourage researchers to generate novel interpretive constructs or explanations (Thomas & Harden, 2008). The synthesis procedure was guided by three separate, although somewhat overlapping, stages. Stage one required the researcher to become familiar with the descriptive data gathered in the data extraction phase. Overall, this stage was completed over the course of one week. Stage two involved coding the text line-by-line according to their meaning and content to generate "free codes". Stage two took a further two weeks to complete. During this stage, the research question was put aside temporarily, and the focus was on initially conducting a thematic analysis of each study and their findings. Therefore, instead of imposing an established framework (i.e., the review question) on the data extraction process, this stage allowed for the most appropriate framework to emerge (Thomas & Harden, 2008).

These free codes were populated by the information available in the dataset. They required the researcher to identify the similarities and differences between these codes, and organise them into descriptive themes that formed a hierarchical structure. Before progressing, all the text labelled with a given code was re-examined to determine whether additional levels of coding were required. Following this, stage three was primarily concerned with "translating" these emerging key concepts (i.e., descriptive themes) into analytic themes. That is, engaging in an iterative process of taking descriptive themes from one study and recognising comparable concepts in another study (Thomas & Harden, 2008). Subsequently, analytic themes are developed by placing these descriptive themes in the context of an external framework (i.e., the review's research question).

Therefore, pulling together the corroborating descriptive themes allows for the development of an explanation or "a line of argument" that goes beyond the content of the original studies and answers the research question. At this point in the data analysis phase, the researcher had to determine (a) whether these analytic themes remained faithful to the data from which they were extracted, and (b) whether any factors explain why an interpretation gained in one study cannot be transferred to another.

It is essential to note that descriptive themes usually remain relatively similar to the primary studies themselves. The analytic themes tends to represent the researcher's interpretation beyond the primary studies' findings (Thomas & Haden, 2008). Therefore, thematic synthesis is an inherently subjective process that acknowledges the central role of the researcher in the analysis and interpretation of the data. However, the process of translation (i.e., the development of descriptive and analytic themes) can be conducted rigorously and transparently (Thomas & Harden, 2008). Therefore, the development of themes has been explicitly documented in Chapter 4 (Tables 2 and 3) to enhance the reliability of this review's methodology and subsequent results. Moreover, to account for any potential bias, the researcher operated under the guidance of two supervisors who are experienced senior psychologists and thus subjected this review's results to a rigorous and objective evaluation.

In this review, key descriptive themes were synthesised and grouped under two broad analytical themes: "treatment outcomes" and "reported strengths and limitations of dual diagnosis treatment". The first analytic theme consisted of three descriptive themes: (a) psychiatric symptomatology, (b) substance use symptomatology, and (c) treatment retention. The second analytic theme consisted of two descriptive themes: (a) facilitators of change and (b) barriers to change. These identified themes will be described in the following chapter and discussed further concerning their relevance to the research question of this study.

3.9. Ethical considerations

The nature of this systematic review required the researcher to consult published and available literature, consequently regarded to be in the public domain. Therefore, obtaining legal access to the appropriate databases and corresponding documents was achieved because the researcher was a registered student at the University of Pretoria. Moreover, this review's research design and the proposed data extraction and analysis method were ethically approved by the Faculty of Humanities Research Ethics Committee (see Appendix B). Therefore, the study would remain subject to the University of Pretoria's Humanities Faculty Research Ethics Committee's approval and was conducted according to the institution's ethical code of conduct.

3.10. Conclusion

This chapter outlined the descriptive research question under investigation and the research design, a systematic review, utilised in this study. The non-probability purposeful search strategy and the inclusion and exclusion criteria used to guide the search procedure were presented. Following this, the study selection, as informed by the PRISMA guidelines and flow diagram, was described, and the method of data extraction and analysis, namely thematic synthesis, was explored further. The chapter concluded with a discussion pertaining to the relevant ethical considerations and the safeguards used to address these concerns. The next chapter will describe the characteristics and quality of the selected studies and discuss the results.

Chapter 4: Results

4.1. Introduction

This chapter presents the results of the systematic review. Specifically, this chapter will describe the characteristics and quality of the 11 included studies. Following that, the findings of this review will be presented according to the analytic themes generated based on the thematic synthesis that was conducted. Key descriptive themes were synthesised and grouped under two broad analytical themes: "treatment outcomes" and "reported strengths and limitations for dual diagnosis treatment". The first analytic theme consisted of three descriptive themes: (a) psychiatric symptomatology, (b) substance use symptomatology, and (c) treatment variables. The second analytic theme consists of two descriptive themes: (a) facilitators of change and (b) barriers to change. Each theme will be defined and discussed in relation to the descriptive themes that informed them and the reported outcomes that highlight their prevalence among the selected studies in this review.

4.2. Characteristics of studies

Over the 10 year period (between 2009 and 2018), a total of 11 studies provided insight into outcomes of integrated and non-integrated treatment for patients with a dual diagnosis. All 11 studies carried out valid RCTs, which specifically implemented one or more experimental condition relative to one control condition. Of the 11 studies that were retrieved, four studies conducted standard RCTs (36.4%), one performed a matched RCT, one a single-blind RCT, two pragmatic RCTs (18.2%), one stage I phase III RCT, and one three-group repeated measure RCT. A majority of the studies (n = 9, 81.8%) were considered explanatory trials aimed at testing the efficacy of an intervention by determining whether it produces the expected result under ideal circumstances. The remaining two studies were pragmatic trials aimed at testing the effectiveness of an intervention by measuring the degree of beneficial effect in a more generalisable setting.

Regarding the settings in which these studies were conducted, two studies were carried out in the context of in-patient treatment centres. In comparison, eight studies (72.7%) were carried out in out-patient treatment facilities and the remaining study incorporated both in-patient and out-patient care into their study design. Moreover, six studies' (54.5%) interventions were based within mental health/psychiatric services, while four studies (36.4%) were based within substance abuse/addiction services. The one remaining study's intervention was based within specialised dual diagnosis services. Three studies provided integrated care based within specialised dual diagnosis programmes. Additionally, of the 11 studies included in the review, nine studies (81.8%) compared integrated treatment with non-integrated treatment. In these studies, integrated treatment typically served as the experimental condition/s and non-integrated treatment as the control condition, usually indicated by "standard care" or "treatment as usual" (TAU). On the other hand, one study compared integrated treatment with integrated treatment and the remaining study compared non-integrated treatment with non-integrated treatment.

The study participants were predominantly male (54.5%), white (45.5%), and their mean age ranged between 25 and 42.73 years old. Furthermore, all 11 studies used standard diagnostic criteria, primarily the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV), to establish their participants' diagnostic status (i.e., dual diagnosis). PTSD (54.5%) was the most prominent psychiatric diagnosis, followed by schizophrenia, schizophreniform, or schizoaffective disorder (18.2%), and then one study each accounting for depressive and/or anxiety disorders, eating disorders (EDs), and an array of "psychiatric disorders". Additionally, non-specific SUDs were the most prominent substance-related diagnoses, followed by alcohol dependence/use disorder (36.4%). Lastly, the majority of studies (54.5%) were conducted in the United States of America. In contrast, two studies were conducted in Australia, one in the United Kingdom, one study in Germany,

Table 2

Characteristics of Included Studies

Study	Objectives	Study setting	Type of dual diagnosis	Sample description	Study design	Main findings
Coffey et al. (2016) USA[a]	To evaluate the efficacy of mPE[b], relative to the traditional TSF[c], for treating PTSD[d] in participants with co-occurring substance dependence.	Community residential SUD[e] treatment facility, in-patient.	PTSD + alcohol dependence	*n* = 126 $\bar{x}$ age = 34 years Gender: M[f] – 53.97%; F[g] – 46.03% Race/ethnicity: W[h] – 79.4%; B[i] – 19%; O[j] – 1.6%	Randomised controlled trial **Experiment:** mPE + MET-PTSD[k] + TAU[l], *integrated* **Experiment:** mPE + TAU, *integrated* **Control:** HLS[m] + TAU, *non-integrated*	Both the mPE and mPE + MET-PTSD conditions achieved significantly better PTSD outcomes than the control condition. The mPE + MET-PTSD and mPE conditions did not differ from one another on PTSD symptoms at the end of treatment, three-, or six-month follow-up. Substance use outcomes did not differ between groups. Clinically significant improvement in trauma symptoms, 75.8% of the mPE participants, 60% of the mPE + MET-PTSD participants, and 44.4% of the HLS participants at the end-of-treatment.
Courbasson et al. (2012) USA	To examine the preliminary efficacy of adapted DBT[n], relative to TAU, for treating patients with a co-occurring ED[o] and SUD.	Specialised substance use and mental health clinic, out-patient.	ED (binge eating d/o[p], bulimia nervosa and anorexia nervosa) + SUD (both substance abuse and/or dependence, excluding nicotine)	*n* = 25 $\bar{x}$ age = 32.53 years Gender: F – 100% Race/ethnicity: W – 100%	Matched randomised controlled trial **Experiment:** DBT, *integrated* **Control:** TAU, *integrated*	DBT condition evidenced a superior retention rate relative to the TAU condition at various study time points, including post-treatment (80% versus 20%) and follow-up (60% versus 20%). DBT condition revealed that the intervention had a significant positive effect on behavioural and attitudinal features of disordered eating, substance use severity and use, negative mood regulation and depressive symptoms. Increases in participants' perceived ability to regulate and cope with negative emotional

						states were significantly associated with decreases in emotional eating and increases in confidence levels to resist urges for substance use.
Foa et al. (2013) USA	To compare the efficacy of an evidence-based treatment for alcohol dependence and an evidence-based treatment for PTSD, their combination, and supportive counselling.	Center for the Treatment and Study of Anxiety and the Philadelphia Veterans Affairs Hospital, out-patient.	PTSD + alcohol dependence	*n* = 165 x̄ age = 42.73 years Gender: M – 65.5; F – 34.5% Race/ethnicity: W – 30.4%; B – 63.6%; H [q] – 4.2%; NA [r] – 0.6%; O – 1.2%	Single-blind, randomised controlled trial **Experiment:** PTSD exposure therapy + naltrexone, *non-integrated* **Experiment**: PTSD exposure therapy + pill placebo, *non-integrated* **Experiment:** Supportive counselling + naltrexone, *non-integrated* **Control:** Supportive counselling + pill placebo, *non-integrated*	Participants in all four treatment groups had significant reductions in the percentage of days drinking. However, those who received naltrexone had lower percentages of days drinking than those who received a placebo. There was also a reduction in PTSD symptoms in all four groups, but the main effect of prolonged exposure therapy was not statistically significant. Six months after the end of treatment, participants in all four groups had increases in the percentage of drinking days. However, those in the prolonged exposure therapy plus naltrexone group had the smallest increases.
Garland et al. (2016) USA	To compare the effectiveness of MORE [s], relative to CBT [t] and TAU, for treating previously homeless men residing in a	Modified therapeutic community programme in an urban area, out-patient.	Psychiatric d/o + SUD	*n* = 180 x̄ age = 37.63 years Gender: M – 100% Race/ethnicity: W – 42.2%; B – 44.5%; O – 13.3%	Pragmatic randomised controlled trial **Experiment:** MORE, *integrated* **Experiment:** CBT, *integrated*	From pre- to post-treatment, MORE was associated with modest yet significantly more significant improvements in substance craving, post-traumatic stress, and negative affect than CBT, and more significant improvements in post-traumatic stress and positive affect than TAU.

	therapeutic community.				**Control:** TAU, *non-integrated*	A significant indirect effect of MORE on decreasing craving and post-traumatic stress by increasing dispositional mindfulness was observed.
Gouzoulis-Mayfrank et al. (2015) Germany	To evaluate the efficacy of a long-term, trans-sector integrated treatment programme relative to TAU for treating dual diagnosis patients with a follow-up period of 12 months under standard treatment conditions.	Large psychiatric hospital, in-patient and out-patient.	Schizophrenia, schizophreniform, or schizoaffective d/o + substance misuse or dependence	*n* = 100 $\bar{x}$ age = 30.97 years Gender: M – 84%; F – 16% Race/ethnicity: Not indicated	Randomised controlled trial **Experiment:** InT [u], *integrated* **Control:** TAU, *non-integrated*	The patients in the intervention group developed higher abstinence motivation than those in the control group and transiently reduced their substance use to a greater extent. Their global functioning and retention rate were also higher, but these differences did not reach significance.
Graham et al. (2016) UK [v]	To assess the effectiveness and feasibility of a BIMI [w], relative to TAU, for improving engagement in drug and alcohol misuse treatment.	Acute mental health hospital, in-patient.	Schizophrenia, schizoaffective or delusional d/o; bipolar affective d/o + alcohol and/or drug abuse/dependence	*n* = 59 $\bar{x}$ age = 38.6 years Gender: M – 84.75%; F – 15.25% Race/ethnicity: W – 47.6%; B – 25.35%; A [x] – 16.95%; M [y] – 10.05%	Randomised controlled trial **Experiment:** BIMI, *non-integrated* **Control:** TAU, *non-integrated*	85% of participants were retained in the study at follow-up and 70% of participants engaged in the BIMI with a good level of exposure to it Both groups remained in the "low" readiness to change category for alcohol and drugs at follow-up. Assessment of motivation to change indicated that both groups at baseline similarly rated the importance to change their substance use. Both groups reduced the number of days they used by more than half. However, the effect was not significant. No evidence of a treatment effect on HADS [z] Anxiety. The HADS Depression, although not significant, was in line with a modest effect on

						that outcome suggesting that the TAU had higher depression scores.
McGovern et al. (2011) USA	To determine the potential efficacy of ICBT [aa], relative to IAC [ab].	Community addiction treatment programmes, out-patient.	PTSD + SUD	*n* = 53 $\bar{x}$ age = 37.3 years Gender: M – 41.65%; F – 58.35% Race/ethnicity: W – 91.35%; O – 8.65%	Stage I phase III randomised controlled trial **Experiment:** ICBT, *integrated* **Control:** IAC, *non-integrated*	ICBT was more effective than individual addiction counselling in reducing PTSD re-experiencing symptoms and PTSD diagnosis. IAC was comparably effective to ICBT in substance use outcomes and on other measures of psychiatric symptom severity. Participants assigned to IAC with severe PTSD were less likely to initiate and engage in the therapy than those assigned to ICBT. In general, participants with severe PTSD were more likely to benefit from ICBT.
McGovern et al. (2015) USA	To assess the efficacy of ICBT, relative to IAC and standard care alone, on substance use and PTSD symptoms.	Addiction treatment agencies, out-patient.	PTSD + SUD	*n* = 221 $\bar{x}$ age = 35.3 years Gender: M – 40.7%; F – 59.3% Race/ethnicity: W – 95.5%; O – 4.5%	Single-blind, three-group, repeated measure, parallel-group, randomised controlled trial **Experiment:** ICBT + SC [ac], *integrated* **Experiment:** IAC + SC, *non-integrated* **Control:** SC only, *non-integrated*	PTSD symptoms reduced in all conditions with no difference between them. ICBT produced more favourable outcomes on toxicology than IAC or SC and had a more significant reduction in reported drug use than SC. ICBT patients had better therapy continuation versus IAC.
Mills et al. (2012) Australia	To evaluate the efficacy of COPE [ad], relative to TAU for substance	Substance use treatment services, out-patient.	PTSD + substance dependence	*n* = 103 $\bar{x}$ age = 33.7 years Gender: M – 37.9%; F – 62.1%	Randomised controlled trial **Experiment:** COPE + TAU, integrated	From baseline to nine-month follow-up, significant reductions in PTSD symptom severity were found for both the treatment group and the control group.

	dependence, to achieve greater reductions in PTSD and substance dependence symptom severity.			Race/ethnicity: AB [ae] – 84.5%; Ab [af] – 5.8%	**Control:** TAU only, non-integrated	However, the treatment group demonstrated a significantly greater reduction in PTSD symptom severity. No significant between-group difference was found concerning improvement in the severity of substance dependence, nor were there any significant between-group differences concerning changes in substance use, depression, or anxiety.
Sannibale et al. (2013) Australia	To assess the efficacy of ICBT, relative to CBT for AUD only, for patients with PTSD and co-existing AUD.	Mental health clinics, out-patient.	PTSD + AUD [ag]	*n* = 62 $\bar{x}$ age = 41.18 yrs. Gender: M – 47%; F – 53% Race/ethnicity: Not indicated	Randomised controlled trial **Experiment:** IT [ah] for PTSD + AUD, *integrated* **Control:** AS [ai], *non-integrated*	Reductions in PTSD severity were evident in both groups. IT participants who had received one or more exposure therapy sessions exhibited a twofold greater rate of clinically significant change in CAPS [aj] severity at follow-up than AS participants. AS participants exhibited more significant reductions than IT participants in alcohol consumption, dependence and problems within the context of greater treatment from other services during follow-up.
Wüsthoff et al. (2014) Norway	To investigate the effectiveness of IT, relative to TAU, for patients with SUD with co-occurring anxiety and/or depression.	Community mental health centres, out-patient.	Anxiety and/or depression (with or without a personality d/o) + d/o of abuse or dependence from drugs and alcohol	*n* = 76 $\bar{x}$ age = 37.25 years Gender: M – 52.6%; F – 47.4% Race/ethnicity: N [ak] – 95.8%; O – 4.2%	Pragmatic, group randomised controlled trial **Experiment:** IT, *integrated* **Control:** TAU, *non-integrated*	Both groups reduced their alcohol and substance use during the trial, while there was no change in psychiatric symptoms in either group. However, the intervention group had a more significant increase in motivation for substance use treatment after 12 months than had the control group.

[a] United States of America.

[b] Modified Prolonged Exposure.

[c] Twelve-Step Facilitation Therapy.

[d] Posttraumatic Stress Disorder.

[e] Substance Use Disorder.

[f] Male.

[g] Female.

[h] White.

[i] Black.

[j] Other.

[k] Modified Prolonged Exposure + Trauma-Focused Motivational Enhancement.

[l] Treatment as Usual.

[m] Health Information-Based Control Condition.

[n] Dialectical Behavioural Therapy.

[o] Eating Disorder.

[p] Disorder.

[q] Hispanic.

[r] Native American.

[s] Mindfulness-Oriented Recovery Enhancement.

[t] Cognitive Behavioural Therapy.

[u] Integrated Treatment.

[v] United Kingdom.

[w] Brief Integrated Motivational Intervention.

[x] Asian.

[y] Mixed.

[z] Hospital Anxiety and Depression Scale.

[aa] Integrated Cognitive Behavioural Therapy.

[ab] Individual Addiction Counselling.

[ac] Standard Care.

[ad] Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure.

[ae] Australian-Born.

[af] Aboriginal or Torres Strait Islander.

[ag] Alcohol Use Disorder.

[ah] Integrated Treatment.

[ai] Cognitive Behavioural Therapy for Alcohol Use Disorder + supportive counselling.

[aj] Clinician-Administered Posttraumatic Stress Disorder Scale.

[ak] Norwegian.

and the remaining study in Norway. Table 2 provides a layout of the articles according to these characteristics.

4.3. Quality of included studies

The quality assessment of the included studies occurred before the data extraction phase to ensure that only studies with an acceptable degree of relevance and appropriate scientific rigour were retained for data analysis and synthesis in this review. A total of 11 studies met the primary inclusion criteria and were included following a rigorous study selection procedure. The appraisal of these studies was conducted with the assistance of the main research supervisor. In addition, the Preferred Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist was used to inform the systematic and empirical identification, selection, appraisal, and synthesis of prospective studies. Moreover, the CASP checklist ensured that the included studies met the criteria to be considered an RCT and that their results were valid and methodologically sound.

Furthermore, all 11 studies used a treatment fidelity measure to ensure that their study, and the chosen interventions, were conducted in a reliable and trustworthy fashion. Moreover, each study utilised numerous empirically validated clinician or self-reported measures to assess their outcomes (e.g., Diagnostic and Statistical Manual of Mental Disorders (DSM), Structured Clinical Interview (SCID); Clinician-Administered PTSD Scale (CAPS); Post-traumatic Stress Diagnostic Scale (PDS); Beck Depression Inventory (BDI); Alcohol Use Disorders Identification Test (AUDIT)). Therefore, the remaining studies were of a moderate to high level of (a) relevance to the context of the review's research question and (b) scientific quality in relation to each study's reported results and methodological procedures (i.e., sampling, data collection, and data analysis). This indicates that the included studies provided a comprehensive and in-depth analysis of the information relevant to this review study.

4.4. Findings

Following the process of data extraction and analysis, key descriptive themes were synthesised and grouped under two broad analytical themes, namely: “what are the treatment outcomes” and “what are the reported strengths and limitations of dual diagnosis treatment”. These analytic themes were formulated through an iterative process of thematic analysis and qualitative synthesis to summarise and interpret the content of the dataset while maintaining the breadth and depth of the extracted data. These themes were inductively generated and therefore represented a descriptive synthesis of the dataset. Moreover, descriptive themes relate to the descriptive data, while analytic themes relate to the research question and the primary constructs of this review. Table 3 details the full breakdown of the theme development process and the hierarchy of evidence based on these results. Each analytic theme will be defined and discussed in relation to the appropriate descriptive themes that informed them in this section.

4.4.1. Theme one: Treatment outcomes

The first analytic theme refers to the variables by which treatment efficacy is evaluated and influenced by the participants that take part in these selected studies. This theme consists of three descriptive themes, namely: (a) psychiatric symptomatology, (b) substance use symptomatology, and (c) treatment retention. Overall, when considering the results of all 11 studies included in this review, the general trend found that integrated treatment outperformed non-integrated treatment in significantly improving the psychiatric symptomatology for participants with a dual diagnosis. On the other hand, integrated and non-integrated treatment predominantly reported similar reductions in substance use symptomatology for participants with a dual diagnosis, with no statistically significant between-group differences observed. Similarly, there were mixed results concerning treatment retention, engagement and completion. There were no significant differences

Table 3

Hierarchy of Evidence (analytic themes, descriptive themes and subthemes)

Treatment outcomes			**Reported strengths and weaknesses of dual diagnosis treatment**	
Psychiatric symptomatology	Substance use symptomatology	Treatment retention	Facilitators of change	Barriers to change
PTSD - Integrated treatment superiority (Coffey et al., 2016; Garland et al., 2016; McGovern et al., 2011; Mills et al., 2012; Sannibale et al., 2013) - Non-integrated treatment superiority (Foa et al., 2013) - No difference between treatment models (McGovern et al., 2015) *Anxiety and depression* - Integrated treatment superiority (Coffey et al., 2016; Courbasson et al., 2012; Garland et al., 2016) - No difference between treatment models (Graham et al., 2016; Mills et al., 2012; Wüsthoff et al., 2014) *Psychosis* - No difference between treatment models (Gouzoulis-Mayfrank et al., 2015)	- Integrated treatment superiority (Courbasson et al., 2012; Garland et al., 2016; McGovern et al., 2015) - Non-integrated treatment superiority (Foa et al., 2013; Sannibale et al., 2013) - No difference between treatment models (Coffey et al., 2016; Gouzoulis-Mayfrank et al., 2015; Graham et al., 2016; McGovern et al., 2011; Mills et al., 2012; Wüsthoff et al., 2014)	Retention (Coffey et al., 2016; Courbasson et al., 2012; Gouzoulis-Mayfrank et al., 2015; Graham et al., 2016; McGovern et al., 2011) Engagement (Graham et al., 2016; McGovern et al., 2015) Contact (Courbasson et al., 2012) Completion (Coffey et al., 2016; McGovern et al., 2011) Dropout (Courbasson et al., 2012)	- Therapeutic characteristics (Coffey et al., 2016; Courbasson et al., 2012; Garland et al., 2016; Graham et al., 2016; Wüsthoff et al., 2014) - Setting characteristics (Coffey et al., 2016; Garland et al., 2016; Mills et al., 2012)	- Therapeutic characteristics (Coffey et al., 2016) - Setting characteristics (Coffey et al., 2016)

ED - Integrated treatment superiority (Courbasson et al., 2012)				
11	11	6	6	1

observed between integrated and non-integrated treatment when examining retention rates for participants with a dual diagnosis; however, non-integrated treatment produced superior completion rates compared to integrated treatment.

4.4.1.1. Psychiatric symptomatology

Psychiatric symptomatology was a shared reported outcome for all of the studies included in this review (Coffey et al., 2016; Courbasson et al., 2013; Foa et al., 2012; Garland et al., 2016; Gouzoulis-Mayfrank et al., 2015; Graham et al., 2016; McGovern et al., 2011; McGovern et al., 2015; Mills et al., 2012; Sannibale et al., 2013; Wüsthoff et al., 2014). Psychiatric symptomatology refers to the presence of a diagnosable mental disorder and the associated behavioural, cognitive and affective features/symptoms (APA, 2013; Sadock et al., 2015). Due to the heterogeneous collection of dual diagnoses present among the 11 studies in this review, the descriptive theme of "psychiatric symptomatology" was further broken down into (i) PTSD, (ii) anxiety and depression, (iii) psychosis and (iv) ED.

4.4.1.1.1. PTSD

A majority of studies (45.5%) found that when compared to non-integrated treatment, integrated treatment produced significantly greater reductions in PTSD symptoms for patients with a dual diagnosis (Coffey et al., 2016; Garland et al., 2016; McGovern et al., 2011; Mills et al., 2012; Sannibale et al., 2013). For example, Coffey et al. (2016) evaluated the efficacy of modified Prolonged Exposure therapy (mPE) relative to Twelve-Step Facilitation Therapy (TSF) for treating PTSD in participants with co-occurring substance dependence. The mPE and Modified Prolonged Exposure plus trauma-focused Motivational Enhancement (mPE + MET-PTSD) achieved significantly better PTSD outcomes than the non-integrated control condition. In addition, compared to the 44.4% of participants in the HLS control group, 75.8% of the mPE participants and 60.0% of the mPE + MET-PTSD participants experienced clinically significant improvement in trauma symptoms at the end of treatment. Therefore,

the results suggested that mPE, with or without a MET-PTSD session, can effectively treat PTSD in participants with co-occurring PTSD and substance dependence.

Moreover, Garland et al. (2016) assessed the efficacy of Mindfulness-Oriented Recovery Enhancement (MORE) therapy, relative to CBT and TAU, in the treatment of previously homeless men residing in a therapeutic community. The study found that MORE outperformed non-integrated treatments such as CBT and TAU and was associated with modest yet statistically significant improvements in PTSD symptoms from baseline to post-treatment. Consequently, the study found that an integrative therapy such as MORE, which significantly improved participants' self-regulatory capacities, evidenced promise as a treatment for patients with a dual diagnosis.

Furthermore, McGovern et al. (2011) evaluated the potential efficacy of integrated cognitive behavioural therapy (ICBT) relative to individual addiction counselling (IAC) in treating patients with PTSD and co-occurring SUDs. Ultimately, ICBT proved more effective than IAC in reducing PTSD re-experiencing symptoms and the overall prevalence of PTSD diagnoses at the end of treatment. Moreover, Mills et al. (2012) determined the efficacy of COPE, relative to TAU for substance dependence, to achieve improvement in symptom severity for patients with PTSD and co-occurring substance dependence. From baseline to nine-month follow-up, COPE demonstrated significantly greater reductions in PTSD symptom severity. Similarly, the findings observed that the integrated approach of COPE plus TAU significantly improved PTSD symptom severity for participants with PTSD and co-occurring substance dependence.

Lastly, Sannibale et al. (2013) assessed the efficacy of ICBT, relative to CBT for AUD only, for patients with PTSD and co-existing AUD. Reductions in PTSD severity were evident in both groups; however, compared with those in the non-integrated control group, participants in the integrated group who had received one or more exposure therapy sessions

evidenced a twofold greater rate of clinically significant change in PTSD symptom severity at follow-up. Thus, compared to its non-integrated counter-part, greater benefits were evidenced for participants with PTSD and co-existing AUD in the integrated treatment option, which incorporated exposure therapy, in PTSD symptom severity.

On the other hand, only one study found that non-integrated treatment demonstrated superior PTSD-related outcomes (Foa et al., 2013). However, this particular study compared four non-integrated treatments against each other. Thus, in this instance, it cannot be asserted that non-integrated treatment outperformed that of integrated treatment. Foa et al. (2013) compared the efficacy of an evidence-based treatment for alcohol dependence and evidence-based treatment for PTSD, their combination, and supportive counselling. Notably, all four groups evidenced a significant reduction in PTSD symptoms during treatment. Nonetheless, there was no increased improvement in PTSD symptoms from prolonged exposure therapy compared with supportive counselling.

One study found no significant between-group differences in PTSD symptom severity when comparing integrated treatment with non-integrated treatment (McGovern et al., 2015). This study was concerned with assessing the efficacy of ICBT, relative to IAC and standard care alone, for treating patients with PTSD and co-occurring SUD. The results indicated that PTSD symptoms were reduced in all three arms of the study; however, there was no significant difference between the groups in relation to this reduction.

Overall, integrated treatment appeared to have the upper hand with regard to non-integrated treatment in significantly reducing PTSD symptom severity for participants with PTSD and co-occurring substance dependence or SUD. Therefore, irrespective of the treatment model utilised, the interventions that had the most significant impact on reducing PTSD symptoms, such as DBT, MORE, ICBT, and COPE, shared several common therapeutic factors. For example, the programmes mentioned above were primarily based on

CBT principles and incorporated techniques such as mindfulness training, emotional regulation and distress tolerance, motivational interviewing, and cognitive flexibility. Thus, these similarities go beyond the results themselves and highlight the elements behind the interventions themselves that may have been facilitators to change.

4.4.1.1.2. Anxiety and depression

Two studies (18.2%) found that when compared to non-integrated treatment, integrated treatment produced superior reductions in anxiety and depressive symptoms for participants with a dual diagnosis (Coffey et al., 2016; Garland et al., 2016). Specifically, Coffey et al. (2016) found that mPE significantly improved depressive symptoms compared to the non-integrated control group. However, this was not evidenced in the other integrated treatment mPE + MET-PTSD. Moreover, Garland et al. (2016) found that MORE was associated with modest yet statistically significant improvements in positive and negative affect, as well as symptoms of anxiety and depression.

Three studies (27.3%) found no differences between integrated and non-integrated treatment in reducing anxiety and depressive symptoms for participants with a dual diagnosis (Graham et al., 2016; Mills et al., 2012; Wüsthoff et al., 2014). For example, Graham et al. (2016) assessed the effectiveness and feasibility of a Brief Integrated Motivational Intervention (BIMI) relative to TAU to improve engagement in participants with a dual diagnosis. The study discovered that both non-integrated treatments, BIMI and TAU, did not affect the severity of participants' anxiety symptoms. However, both groups evidenced improvements in depressive symptoms; however, this modest effect was not significant. Additionally, Mills et al. (2012) reported no significant differences between COPE and TAU in their ability to meaningfully reduce the severity of anxiety and depressive symptoms among their participants with PTSD and co-occurring substance dependence. Moreover, Wüsthoff et al. (2014) investigated the effectiveness of integrated treatment (IT) relative to

TAU for patients with SUD with co-occurring anxiety and/or depression. The results suggested that neither group experienced a significant reduction in psychiatric symptoms concerning anxiety and depression. Generally, integrated and non-integrated treatment produced similar reductions in anxiety and depressive symptoms among patients with a dual diagnosis, with no significant between-group differences being reported.

Notably, Courbasson et al. (2012) examined the preliminary efficacy of adapted dialectic behavioural therapy (DBT) relative to TAU for treating patients with a co-occurring ED and SUD. However, due to ethical considerations necessitating the premature termination of recruitment efforts into the TAU condition, meaningful direct head-to-head comparisons between the DBT and TAU were not possible. Nevertheless, the study found that within the DBT group only, depressive symptoms did not change significantly from baseline to post-treatment. However, significant reductions were observed during the follow-up period of three and six months. Subsequently, the study determined that an adapted version of DBT proved a promising treatment option for patients with an ED and co-occurring SUD.

Overall, integrated and non-integrated treatment evidenced significant yet similar reductions in anxiety and depressive symptoms in participants with a dual diagnosis, with no between-group differences observed. Thus, the results of these studies indicate that neither treatment model maintains primacy above the other but that both approaches to service delivery are similarly efficacious in improving the severity of anxiety and depressive symptoms for participants with a dual diagnosis.

4.4.1.1.3. Psychosis

Of the 11 studies included in this study, only one study reported the outcome of psychotic symptomatology (Gouzoulis-Mayfrank et al., 2015). Gouzoulis-Mayfrank et al. (2015) was concerned with evaluating the efficacy of a long-term, trans-sector integrated treatment programme relative to TAU for treating dual diagnosis patients with a follow-up

period of 12 months under standard treatment conditions. Notably, the results indicated that both the global level of psychological functioning and psychotic symptoms improved for all participants in the study. However, for negative symptoms and general psychopathology, the study did not observe a significant between-group difference. Therefore, integrated treatment and non-integrated treatment produced similar reductions in the severity of psychotic symptoms in a sample of patients with a psychotic disorder and co-occurring substance dependence. Generally, the study discovered that low-threshold, motivational-enhancement, integrated treatment programmes that incorporated psycho-education and behavioural strategies were particularly helpful in treating patients with a dual diagnosis. However, the results of one study alone do not offer sufficient support to make a generalised observation regarding the efficacy of integrated or non-integrated treatment's impact on reducing psychotic symptom severity.

4.4.1.1.4. Eating disorder

Similarly, of the 11 studies included in this study, only one study reported the outcome of ED-related behaviours (Courbasson et al., 2012). Despite the lack of meaningful head-to-head comparisons between the DBT and TAU, the study reported that within the DBT group, at the end of treatment, the intervention had a significant positive effect on behavioural and attitudinal features associated with disorder eating. Specifically, reductions in binge eating episodes, bulimic tendencies, eating, restraint, and weight concerns were sustained at three- or six-month follow-ups. Furthermore, the DBT group evidenced increases in the participants' perceived ability to cope and regulate negative emotions and improved ability to identify emotions, hunger, satiety, and feelings of inadequacy. Therefore, for the collection of studies included in this study, preliminary support was afforded for integrated treatment's superiority over non-integrated treatment in improving eating-related behaviours for participants with an ED and co-occurring SUD.

4.4.1.2. Substance use symptomatology

Similar to psychiatric symptomatology, substance use was a shared reported outcome for all of the studies included in this review (Coffey et al., 2016; Courbasson et al., 2013; Foa et al., 2012; Garland et al., 2016; Gouzoulis-Mayfrank et al., 2015; Graham et al., 2016; McGovern et al., 2011; McGovern et al., 2015; Mills et al., 2012; Sannibale et al., 2013; Wüsthoff et al., 2014). Substance use symptomatology refers to the presence of a diagnosable SUD, substance dependence or substance abuse, along with the associated behavioural, cognitive and affective features (APA, 2013; Sadock et al., 2015).

A majority of studies (54.5%) found that integrated treatment and non-integrated treatment evidenced similar reductions in substance use outcomes for participants with a dual diagnosis, with no significant between-group differences observed (Coffey et al., 2016; Gouzoulis-Mayfrank et al., 2015; Graham et al., 2016; McGovern et al., 2011; Mills et al., 2012; Wüsthoff et al., 2014). A significant proportion of the non-integrated treatments identified in this review focused solely on substance use intervention (Garland et al., 2016; Gouzoulis-Mayfrank et al., 2015; McGovern et al., 2011; McGovern et al., 2015; Mills et al., 2012; Sannibale et al., 2013; Wüsthoff et al., 2014) while all the integrated treatments inherently addressed both SUDs alongside psychiatric disorders. It was therefore plausible that the two treatment models would observe equivalent substance use outcomes.

For example, Coffey et al. (2016) indicated that participants in mPE, mPE + MET-PTSD, and HLS experienced improvements in substance use outcomes. Specifically, all three conditions maintained abstinence for over 85% of days during the six-month follow-up and observed a decline in craving. However, the differences between these groups were not significant. Similarly, Gouzoulis-Mayfrank et al. (2015) found that both integrated treatment and non-integrated TAU reported reduced levels of substance use, with the number of cases

of abstinence slowly decreasing throughout the study. However, the between-group improvements were also not statistically significant.

Furthermore, Graham et al. (2016) determined that at the three-month follow-up, the BIMI and TAU groups, both non-integrated treatments, reported significant reductions in the number of days participants used their primary substance. Despite this improvement, there was no significant difference between these groups. Moreover, the study reports that these same participants all fell into the "low" readiness to change addictive behaviours, which may have undermined the ability of the treatment group (i.e., BIMI) to produce superior results concerning substance use outcomes. Notably, Mills et al. (2012) reported that both COPE and TAU demonstrated significant reductions in participant severity of substance dependence; however, the difference between groups was insignificant. Participants randomised to the integrated COPE condition continued using substances through the duration of the study. This finding challenges the widely supported view that abstinence, along with the improved self-regulatory ability and alternative coping skills that are attained, is required before any trauma-related psychological processes can commence.

In comparison, four studies found that compared to non-integrated treatment, integrated treatment resulted in more significant reductions in substance use outcomes (Courbasson et al., 2012; Garland et al., 2016; McGovern et al., 2015; Wüsthoff et al., 2014). In particular, Garland et al. (2016) highlight the superiority of COPE compared to CBT and TAU in reducing participants' craving for drugs and alcohol. In addition, McGovern et al. (2015) indicated that compared to IAC and standard care alone, ICBT significantly reduced the number of positive urine drug screens and frequency of substance use among its participants. The study's findings offered support for the efficacy of ICBT in improving substance use outcomes for persons diagnosed with PTSD and a co-occurring SUD. Moreover, Courbasson et al. (2012) offered preliminary support for DBT's efficacy in

treating patients with a dual diagnosis, as evidenced by significant within-group reductions in substance use frequency and severity at the end of treatment and three and six-month follow-up.

Lastly, only one study supported the argument that, when compared to integrated treatment, non-integrated treatment leads to significantly greater reductions in substance use outcomes (Sannibale et al., 2013). For example, Sannibale et al. (2013) found that participants receiving CBT for AUD reported lower alcohol consumption, less severe dependence, and improved substance use-related problems than integrated treatment. Additionally, the study acknowledges that treating a participant's SUD impacts the severity of their psychiatric disorder. With this particular sample, targeting their AUD first prevents the dilution of the impact of the substance use treatment, and addressing their PTSD immediately afterwards further prevents deterioration in the participant's functioning.

Remarkably, Foa et al. (2013) compared the substance use outcomes for participants with PTSD and co-occurring alcohol dependence across four different, non-integrated treatments. The study found that all four groups evidenced significant reductions in the percentage of days spent drinking (PDD). Specifically, participants who received naltrexone, a medication primarily used to manage SUDs, reported significantly lower percentage of PDD than participants who received a placebo. Therefore, the results do not specifically suggest which treatment model is superior in reducing substance use-related behaviours. However, the results indicate that participants with PTSD and co-occurring AUD would benefit from the non-integrated yet combined treatment of naltrexone and prolonged exposure therapy as observed in a decreased rate of alcohol dependence up to six months post-treatment.

Generally, the results among the 11 studies included in this review suggest that integrated and non-integrated treatment elicit similar reductions in substance use outcomes

for participants with a dual diagnosis. Although most of the studies had found no significant difference between integrated and non-integrated treatment, numerous programmes reported notable reductions in their participant's substance use irrespective of the approach to service delivery. Similarly to the previous descriptive theme (i.e., psychiatric symptomatology), some of the most impactful programmes concerning substance use outcomes included DBT, COPE, and ICBT. Therefore, these results offer significant support for using CBT-informed principles in treating participants with a dual diagnosis and, specifically, improving substance use outcomes for participants with a dual diagnosis.

4.4.1.3. Treatment retention

Treatment retention was an outcome reported in six of the 11 studies included in this review (Coffey et al., 2016; Courbasson et al., 2012; Gouzoulis-Mayfrank et al., 2015; Graham et al., 2016; McGovern et al., 2011; McGovern et al., 2015). Treatment retention is an essential indicator of a treatment's feasibility and utility, and thus its efficacy (Mills et al., 2012). In this instance, treatment retention refers to the percentage of participants who continue to take part in treatment over a given period of time, usually measured from baseline to the end of treatment. Retention can be measured in various ways and can be observed from multiple angels, including information pertaining to completion rates (Coffey et al., 2016; McGovern et al., 2011), dropout rates (Courbasson et al., 2012), and engagement with treatment (Graham et al., 2016; McGovern et al., 2015). Overall, the results were mixed. Integrated and non-integrated treatment observed similar retention rates. However, although only two studies spoke to treatment completion, non-integrated treatment produced higher completion rates than integrated treatment.

In particular, four studies determined that integrated and non-integrated treatment reported similar retention rates with no significant between-group differences being observed (Coffey et al., 2016; Gouzoulis-Mayfrannk et al., 2015; Graham et al., 2016; McGovern et

al., 2011). Gouzoulis-Mayfrank et al. (2015) found that when compared to integrated treatment, participants in the TAU condition reported a slightly poorer retention rate; however, this difference was not statistically significant. Moreover, Graham et al. (2016) discovered that both interventions, BIMI and TAU, were associated with a significant improvement in participant engagement. This result was accounted for by both groups evidencing improvement in participants' awareness of the need for psychiatric support in managing their mental health problems. Although both conditions were non-integrated treatments, the improvements between groups were not significantly different. Ultimately, these results suggested that a non-integrated programme such as BIMI was a feasible, easy and low-cost approach to improving patient engagement.

Coffey et al. (2016) reported an average retention rate of 69% across all three treatment groups. The study introduced a 90-minute trauma-focused MET-PTSD session prior to the commencement of mPE, the integrated programme under investigation. However, no significant differences were found between the mPE, mPE + MET-PTSD and HLS relative retention rates. Therefore, the addition of motivation-based strategies to increase retention may not be as effective as initially anticipated. Surprisingly, study treatment completion was significantly lower in the mPE (60.0%) and mPE MET-PTSD (62.2%) compared with the HLS condition (87.8%). Despite these differences in completion, mPE and mPE + MET-PTSD still maintained significantly greater reductions in PTSD symptoms compared to HLS. Comparably, McGovern et al. (2011) found that participants in the non-integrated IAC had a superior completion rate (100%) to ICBT (69.6%), despite ICBT eliciting significantly better outcomes concerning PTSD symptom severity. However, 92% of participants in ICBT continued with treatment (i.e., progressed to the second session) compared to 90.9% in IAC. Therefore, these findings challenge the view that the longer participants are retained in treatment and the increased exposure results in better outcomes.

Two studies found that retention rates for integrated treatment were superior to non-integrated treatment (Courbasson et al., 2012; McGovern et al., 2015). For example, Courbasson et al. (2012) observed an elevated dropout rate for participants in the TAU condition compared to the DBT condition. Furthermore, DBT specifically evidenced a significantly greater retention rate to TAU, with only 20% of participants remaining in TAU treatment at post-treatment, while 87% remained in DBT. In addition, the study suggests that the increased contact between participants and clinicians in the DBT group, due to its greater retention rate, contributed to the observed improvement in this group concerning psychiatric and substance use symptomatology.

Similarly, McGovern et al. (2015) discovered that ICBT elicited significantly greater treatment retention rates than a non-integrated IAC and standard care. Specifically, ICBT has its advantage over IAC when investigating each group's initiation, engagement and continuation rates. Furthermore, Wüsthoff et al. (2014) found that the integrated treatment group evidenced a greater increase in motivation for substance abuse treatment when compared to the non-integrated group during the 12-month course of the trial. The authors suggest that integrated treatment may be a more effective option for patients with anxiety or depressive disorder and a concurrent SUD by virtue of its ability to meaningfully increase the motivation for treatment amongst patients, specifically due to the programme implementing a motivational-enhancement based approach.

Therefore, overall these results suggest that integrated treatment and non-integrated treatment elicit similar retention rates among participants with a dual diagnosis, with no significant between-group differences observed. However, of the few studies reported on the measure, non-integrated treatment produced significantly higher completion rates than integrated treatment.

4.4.2. Theme two: Reported strengths and limitations of dual diagnosis treatment

The second analytic theme consists of two descriptive themes: (a) facilitators for change and (b) barriers to change. This theme refers to the factors which reportedly facilitated or hindered the changes observed among the participants in the respective studies. In particular, these factors are related to the components of the therapeutic interventions themselves and the setting in which the studies were conducted. In addition to understanding the outcomes associated with integrated and non-integrated treatment, it is important to acknowledge the mechanisms by which these outcomes may have been brought about. Overall, the findings suggest that therapeutic change was facilitated by using CBT-informed principles and relational variables such as therapeutic alliance and co-ordination between service providers. Additionally, carrying out treatment in in-patient residential facilities was particularly advantageous for participants due to the supplementary support services afforded. However, the nature of treatment in these in-patient residential facilities is not easily translated to out-patient care and remains a resource-heavy endeavour.

4.4.2.1. Facilitators of change

Of the 11 studies included in this review, six identified and discussed the respective factors that facilitated the improvements evidenced among the participants in their respective studies (Coffey et al., 2016; Courbasson et al., 2012; Garland et al., 2016; Graham et al., 2016; Mills et al., 2012; Wüsthoff et al., 2014). This descriptive theme has been segmented into two parts: therapeutic characteristics and study setting characteristics.

4.4.2.1.1. Therapeutic characteristics

Coffey et al. (2016) suggested that the briefer form of prolonged exposure therapy, as situated in an existing TAU treatment programme implemented in this study, produced comparable, and at times superior, treatment outcomes to conventional prolonged exposure therapy when treating patients with PTSD and co-occurring and alcohol dependence. Further,

the study used different therapists for treating PTSD and SUD and found that this form of integrated treatment maintained strong communication lines between the treatment providers/therapists. As a result, participants benefited from this approach in that they were given the opportunity to develop numerous supportive relationships among the treatment team that would facilitate their recovery and feel the complex nature of their dual diagnosis was being comprehensively acknowledged and treated.

Although a meaningful head-to-head comparison between DBT and TAU was lost, Courbasson et al. (2012) acknowledged the numerous advantages of utilising a DBT therapeutic approach modified specifically for treating patients with a dual diagnosis. At the core of this DBT programme was prioritising the therapeutic relationship as a mechanism for therapeutic change. Specifically, mindfulness strategies were incorporated into the programme to assist participants in developing self-regulatory skills to manage negative emotions and maladaptive behaviours associated with their binge eating episodes. Moreover, anecdotal feedback from participants in the DBT programme reported that the mindfulness components were the most impactful skills. In addition, the therapeutic alliance established with clinicians was also cited by participants as essential to their recovery journey. Participants felt consistently validated and motivated to stay in treatment and change their maladaptive behaviours.

Similarly, Garland et al. (2016) found a significant indirect effect of MORE on cravings and PTSD symptoms through increased dispositional mindfulness. Therefore, exposure to dispositional mindfulness produced a considerable therapeutic effect due to enhancing participants' mindful awareness in daily life. In particular, the mindfulness component of MORE established cognitive flexibility and reappraisal that encouraged participants to consciously and adaptively manage post-traumatic stress and its related appraisals. Furthermore, Wüsthoff et al. (2014) accentuate integrated treatment's ability to

improve motivation for treatment. In this study, the integrated treatment condition consisted of CBT and motivational interviewing therapeutic strategies that simultaneously addressed participants' psychiatric disorders and co-occurring SUD. These components evidenced significant improvements in participants' motivation to change their addictive behaviour, although this did not translate to additional reductions in substance use concerning the control condition.

Moreover, Graham et al. (2016) highlight the advantage of utilising specialist dual diagnosis trained staff in delivering interventions. The study discusses the additional level of expertise these staff members afford and their ability to bridge the gap between care co-ordinators in the mental healthcare community. These factors operate as change facilitators as they work to increase the competence of the content and execution of a given integrated treatment programme and improve participants' trust in their clinicians.

These results strongly suggest that therapeutic interventions informed by CBT principles elicit particularly advantageous outcomes for participants with a dual diagnosis. This observation is further supported by earlier findings that discovered the most impactful treatment interventions for improving psychiatric and substance use symptomatology shared similar strategies such as mindfulness training, emotional regulation and distress tolerance, motivational interviewing, and cognitive flexibility. Moreover, these results support the view that therapeutic change is highly dependent on relational variables, including the participant's relationship with their treating clinicians and the degree of co-operation and communication fostered between their service providers.

4.4.2.1.2. Study setting characteristics

Coffey et al. (2016) discussed the significant advantages of carrying out treatment in the context of an in-patient residential treatment programme. Specifically, the study found that being admitted for treatment in a residential treatment facility eliminated treatment

attendance and retention difficulties related to missed appointments due to family and childcare coverage, transportation challenges, and complicated work schedules. Additionally, access to illicit substances is limited, and the risk of elevated substance cravings and subsequent relapse due to elevated stress and trauma-related negative affect is reduced.

Similarly, Garland et al.'s (2016) study consisted of previously homeless participants who, for this study, became residents in a long-term therapeutic community. Consequently, 98% of participants managed to remain abstinent throughout the study. The additional support services embedded in the therapeutic community facilitated this finding, such as housing and accommodation facilities, vocational training and limited access to substances. Comparably, Mills et al. (2012) evidenced significant improvements in PTSD symptoms and substance use outcomes due to the ancillary support services provided in the study setting and the concurrent case management afforded to participants in the integrated treatment group. Therefore, these results propose the significant advantages of carrying out treatment in the context of residential facilities and highlight the setting's ability to limit the interfering impact of external factors such as access to substances, elevated stress, and work and family-related responsibilities.

4.4.2.2. Barriers to change

Of the 11 studies included in this review, only one study meaningfully discussed the relative barriers identified in their treatment that inhibited their participant's recovery journey (Coffey et al., 2016). Coffey et al. (2016) examined the inherent challenges of integrating treatment for patients with a dual diagnosis. Primarily, they found that integrated treatment requires clinicians with substantial clinical expertise in both PTSD and substance abuse treatment. However, the availability of these specialist resources is limited and creates an additional level of organisational complexity. Therefore, conducting such a comprehensive treatment programme requires multiple service providers and expertise, thus extending

treatment duration and increasing financial implications. Moreover, the study highlights the difficulty of translating the cohesiveness and strong communication evident in an in-patient residential treatment facility to an out-patient setting. Considering that only one study speaks to this phenomenon, it is challenging to assert any generalisations from the results. Therefore, the applicability of these results may be limited.

4.5. Conclusion

This chapter focused on describing the characteristics and quality of the selected studies in this review following an iterative thematic analysis and qualitative synthesis process. This resulted in the development of two analytic themes discussed in relation to the descriptive themes that informed them. Overall, the findings of this study suggested that integrated treatment outperformed non-integrated treatment in significantly reducing the severity of psychiatric symptomatology among participants with a dual diagnosis. However, the remainder of the results were mixed. Notably, integrated and non-integrated treatment elicited similar improvements in substance use outcomes, with no significant between-group differences observed. In addition, integrated and non-integrated treatment reported comparable retention rates among participants with a dual diagnosis; however, non-integrated treatment had significantly higher completion rates.

Furthermore, the findings support the efficacy of CBT-informed principles such as mindfulness, emotional regulation, and cognitive flexibility. Relational variables such as therapeutic alliances and clinician co-operation and communication significantly supported observed change among participants with a dual diagnosis. However, the structure and supplementary services afforded in these programmes, particularly integrated treatment, are not easily translated to the out-patient treatment context, which is usually the most accessible avenue for participants to obtain care.

The next chapter will explore the significance of the extracted themes in relation to the larger research question and locate them in the context of current literature. Further, this chapter will present evidence-based recommendations informing the clinical psychological service delivery of dual diagnosis-centric treatment in South African hospitals. The chapter will be concluded with a discussion of the limitations of the present study and the relevant research gaps, and potential directions for future research.

Chapter 5: Discussion and Conclusion

5.1. Introduction

This study conducted a systematic review, critically appraising available research on the use of integrated and non-integrated interventions in treating patients with a dual diagnosis. This chapter presents a discussion of these results in relation to the research question and aims of this study and the context of the available literature on the topic. The chapter concludes with the study's limitations and directions for future research.

5.2. Summary of results in relation to the research question and aims

The broad research question guiding this study was to determine what current literature reported on the integrated and non-integrated treatment outcomes for patients with a dual diagnosis. This section summarises the research findings gathered from the thematic analysis and qualitative synthesis.

5.2.1. Treatment outcomes for patients with a dual diagnosis

The study's first aim was to summarise the treatment outcomes of integrated and non-integrated interventions for patients with a dual diagnosis. Following the data extraction and analysis process, three descriptive themes reflecting the outcomes of treatment were identified. These were psychiatric symptomatology, substance use symptomatology, and treatment retention. The results across these descriptive themes were overall mixed. First, integrated treatment evidenced significantly greater reductions in psychiatric symptomatology, particularly PTSD symptoms, compared to non-integrated treatment. Therefore, these results suggest that integrated treatment maintains better efficacy compared to non-integrated treatment in significantly improving the severity of psychiatric symptoms. This finding is consistent with previous research (Back et al., 2019; De Witte et al., 2014; Drake et al., 2008; Gielen et al., 2014; Mojtabai et al., 2014; Priester et al., 2016; Sinha et al., 2018).

For example, Back et al. (2019) found that, in comparison with a non-integrated RP programme, the concurrent treatment of PTSD and SUD (COPE) participants reported higher rates of PTSD diagnostic remission and greater reductions in their CAPS scores. Similarly, Wolff et al. (2015) determined that both integrated programmes, SS and M-TREM, performed better, compared to no treatment, on PTSD severity, self-esteem, and self-efficacy.

Second, this review found that non-integrated and integrated treatment elicited comparable between-group improvement in substance use symptomatology. All the integrated programmes identified among the 11 studies included in this review addressed SUD simultaneously alongside psychiatric disorders while a large proportion of the non-integrated treatments focused solely on substance abuse. Therefore, it is plausible that the two treatment models would then observe equivalent substance use outcomes.

This finding is only partially supported by previous research. There are significant findings declaring integrated treatment's superiority to non-integrated (Back et al., 2019; De Witte et al., 2014; Drake et al., 2008; Gielen et al., 2014; Mojtabai et al., 2014; Priester et al., 2016; Sinha et al., 2018) while others suggest that integrated and non-integrated treatment manage similar outcomes and are thus both viable and effective treatment options (Cleary et al., 2009; Randall et al., 2001; Torchalla et al., 2012). For example, Randall et al. (2001) reported that, from baseline, both the control group (i.e., non-integrated CBT target at AUD) and the experimental group (i.e., integrated CBT addressing both AUD and social anxiety disorder) experienced improvements in their alcohol misuse behaviours and social anxiety symptoms. Notably, the treatment group's participants were found, at post-treatment, to be drinking more frequently and with heavier drinking days than the control group participants. Additionally, Cleary et al. (2009) conducted a comprehensive review of 25 RCTs comparing psychosocial interventions for substance misuse in patients with a substance abuse problem

and severe mental illness. No significant advantages were found between the integrated and non-integrated treatment with regards to substance misuse.

Third, integrated and non-integrated treatment elicited similar retention rates. However, non-integrated treatment specifically observed significantly better completion rates compared to integrated treatment. These findings were unexpected and not supported by previous research (Morisano et al., 2014; Ness et al., 2014; Priester et al., 2016; Sterling et al., 2011; Torrens et al., 2012). Research claims that the poor engagement, low retention rates, and high drop-out rates evident in non-integrated treatment undermine the potential efficacy of treatment and patient prognosis and outcomes. Therefore, the comparable retention rates observed in both integrated and non-integrated and the significantly higher completion rates in non-integrated treatment may have contributed to the significant yet similar reductions in substance use outcomes.

Consequently, these results present an unclear picture. They do not indicate a clear advantage of either treatment model over the other (i.e., integrated or non-integrated treatment) across all treatment outcomes. However, the results indicated that both integrated and non-integrated treatments are helpful and comparably efficacious treatment options. It appears that how services are delivered may not have as significant an impact on the treatment of patients with a dual diagnosis as expected.

5.2.2. Strengths and limitations of dual diagnosis-focused treatment

To look beyond the initial framework of the treatment model requires considering the modalities and strategies that appear to support change in patients with a dual diagnosis. Ultimately, if effectively treating patients with a dual diagnosis is not about *how* the treatment is delivered, perhaps it is about *what* is being delivered. The second aim of this study was to summarise the strengths and limitations of integrated and non-integrated treatment for patients with a dual diagnosis. Primarily, based on both reported and anecdotal

evidence, the CBT modality proved the most effective intervention framework for delivering treatment for patients with a dual diagnosis. Specifically, interventions such as mindfulness, cognitive flexibility and restructuring, self-regulatory skills, and motivational interviewing were common therapeutic factors identified as significantly advanced participants' recovery journeys. This finding is consistent with previous studies which have found CBT-informed principles (e.g., motivational interviewing and mindfulness) elicited significant improvements for patients with a dual diagnosis (Horsfall et al., 2009; Murthy et al., 2012; Randall et al., 2001; Tiet & Mausbach et al., 2007).

Additionally, consistent with the findings of Miller et al. (2008) and Wampold (2015), effective treatment appears reliant on prioritising relational elements such as the therapeutic alliance, fostering feelings of validation and motivation, and maintaining strong lines of communication between treating clinicians, as well as with their respective patients. Specifically, Cleary et al. (2009) discovered that effectively treating patients with a dual diagnosis relied on addressing their sense of personal control, self-confidence, place of belonging, and commitment to change and hope for their future. That is, looking beyond just skills required to provide the components of a treatment protocol and emphasising the common factors that differentiate effective therapists from less effective therapists, such as empathy, alliance and affirmation (Wampold, 2015).

Lastly, this review found that the setting where treatment was carried out proved to be a vital facilitator of change. Specifically, in-patient or residential treatment programmes were particularly advantageous for participants with a dual diagnosis due to their ability to reduce the influence of environmental risk factors. Several studies acknowledge the same advantage of a controlled setting such as in-patient or residential, citing greater communication and co-ordination between service providers (Cleary et al., 2009; Green et al., 2015; Morisano et al.,

2001), and reduced psychosocial adversity, and exposure to abuse, violence and illicit substances (Lachman et al., 2012).

This review intended to present a meaningful discussion regarding the limitations of dual diagnosis treatment through a lens of the barriers to change identified among the included studies. The main finding here indicated that attempting to translate the advantageous conditions of in-patient treatment to out-patient remains a challenge. In particular, the high level of co-ordination and communication fostered among multidisciplinary treating teams evident in in-patient care is often lost when transitioning to out-patient treatment (Coffey et al., 2016). Furthermore, it is suggested that integrated treatment, although advantageous on a number of fronts, requires multiple service providers with extensive expertise in treating patients with a dual diagnosis. However, this remains a scarce resource. This finding is consistent with the reported difficulties associated with treating patients with a dual diagnosis, as well as implementing integrated treatment (Abou-Saleh et al., 2004; Green et al., 2015; McCallum et al., 2015; Morojele et al., 2012; Pasche et al., 2015; Weich & Pienaar et al., 2009). However, only one study within this review identified and spoke to the barriers to change and, as a result, limits the extent to which any generalisations can be made.

5.2.3. Evidence-based recommendations to inform the clinical psychological service delivery of dual diagnosis-focused treatment in South Africa

The final aim of this study was to propose evidence-based recommendations to inform the clinical psychological service delivery of dual diagnosis-focused treatment in South Africa. Although these recommendations represent a means by which we can achieve effective dual diagnosis care, they should also be understood as goals that practitioners should be working towards. Therefore, enacting change should be approached systematically and incrementally.

Based on the present study's findings and related discussion, the following recommendations are proposed:

1. The findings of this review do not support the enhanced efficacy of integrated treatment over non-integrated treatment or vice-versa. Therefore, irrespective of the treatment model being implemented, it appears that it is more important to increase the number of treatment options made available for patients with a dual diagnosis.
2. In particular, interventions informed by the framework of CBT principles appear to be particularly effective in treating patients with dual diagnoses, notably improving psychiatric and substance use outcomes. Therefore, the findings of this review suggest incorporating a combination of CBT-informed principles such as mindfulness, self-regulatory skills, cognitive restructuring, and motivational interviewing.
3. Additionally, treatment retention and participant motivation will be further enhanced by developing and maintaining strong lines of communication between service providers, engaging therapeutic relationships and culturally sensitive approaches to the treatment in which practitioners are competent.
4. Lastly, it appears that structured settings such as in-patient and residential treatment programmes are advantageous in assisting patients with a dual diagnosis to maintain abstinence and reduce the risk of elevated substance cravings and relapse. Therefore, developing more treatment programmes operating in this context will limit the influence of environmental risk factors, such as psychosocial adversity and exposure to abuse, violence and illicit substances.

5.3. Limitations of the study and directions for future research

There are several limitations to this study. These include the potential for fragmented evidence and the limited ability of a systematic review to provide sufficient information on the included studies. Several of the studies included in this review specified the exclusion of psychiatric diagnoses such as bipolar mood disorder, schizophrenia, schizophreniform, and schizoaffective disorder in their eligibility criteria. This was usually due to the erratic nature of these disorders, which proved challenging to manage in the context of a clinical trial. Therefore, the present study results do not reflect the efficacy of dual diagnosis-centric treatment in relation to these psychiatric conditions. Moving forward, greater efforts to conduct research with these psychiatric populations in mind is necessary to build a comprehensive understanding of dual diagnosis-centric treatment and its ability to effectively treat patients with a dual diagnosis.

Further, all the studies included for the purposes of the present review were conducted in first world countries. Moreover, the included studies were conducted with samples of predominantly male, Caucasian participants. Therefore, these studies may not be representative of other ethnicities, cultures and socio-economic contexts. The generalisability and applicability of these results beyond the contexts mentioned earlier are thus limited. Adapting results from a first-world setting to a third world context requires the consideration of several factors. For example, for South Africans, a history of colonialism and the legacy of Apartheid has resulted in growing health and economic disparities, which has led to an overused and under-resourced public sector limited in its ability to realise the benefits of medical advances (Amado et al., 2012; Benator, 2013). Implementing any psychosocial intervention, either integrated or non-integrated, requires a significant financial investment, time, well-equipped facilities, and adequately trained clinicians, all of which are affected by the larger attitudinal, knowledge, and systemic implementation obstacles (Asmal, 2011; Ruane, 2010).

Beliefs regarding the aetiology of illness are known to alter the health-seeking behaviours individuals engage in, as well as their response to treatment (Seedat et al., 2002). Therefore, identifying the factors specific to South Africans that facilitate or impede their health-seeking behaviours would be of great value in improving overall patient outcomes. Additionally, future research should be directed towards conducting clinical trials that investigate dual diagnosis-centric treatment's efficacy in developing countries such as South Africa. These studies are essential to understanding the transferability of outcomes achieved in first world countries and obtain a more comprehensive account of the context-specific barriers patients experience to treatment.

Furthermore, the specificity of the eligibility criteria of this review has resulted in the selection of a small yet focused collection of studies. However, the small number of studies further limits the generalisability of these results. Furthermore, this review was primarily concerned with the outcomes of RCTs. Therefore, additional systematic reviews that include studies of varying research designs outside of RCTs may elicit different results to complement those reported here.

5.4. Conclusion

The present study was concerned with determining current literature reports on the integrated and non-integrated treatment outcomes for patients with a dual diagnosis. The results provide evidence in support of integrated treatment's advantage over non-integrated treatment in significantly improving psychiatric symptomatology. However, no significant benefits were found between the integrated and non-integrated treatment regarding substance misuse and treatment retention. Overall, insufficient evidence suggests that integrated treatment offers a considerable advantage over non-integrated treatment in treating patients with a dual diagnosis.

As a result, a discussion pertaining to the facilitators and barriers to change across the included studies illustrated several common factors that appeared of particular efficacy in treating patients with a dual diagnosis. Primarily, a CBT framework proved advantageous in treating this clinical population and, specifically, a combination of CBT-informed principles such as mindfulness, self-regulatory skills, cognitive restructuring, and motivational interviewing. Additionally, establishing and maintaining a meaningful therapeutic alliance and strong lines of communication between service providers proved instrumental in participants' recovery journeys. Consequently, these findings were used to develop the recommendations to inform the clinical psychological service delivery of dual diagnosis-focused treatment in South Africa.

References

Abou-Saleh, M. T. (2004). Dual diagnosis: Management within a psychosocial context. *Advances in Psychiatric Treatment, 10*(5), 352–360. https://doi.org/10.1192/apt.10.5.352

Adams, Z. W., McCauley, J. L., Back, S. E., Flanagan, J. C., Hanson, R. F., Killeen, T. K., & Danielson, C. K. (2016). Clinician perspectives on treating adolescents with co-occurring post-traumatic stress disorder, substance use, and other problems. *Journal of Child & Adolescent Substance Abuse, 25*(6), 575–583. https://doi.org/10.1080/1067828X.2016.1153555

Alsuhaibani, R., Smith, D. C., Lowrie, R., Aljhani, S., & Paudyal, V. (2021). Scope, quality and inclusivity of international clinical guidelines on mental health and substance abuse in relation to dual diagnosis, social and community outcomes: A systematic review. *BMC psychiatry*, *21*(1), 209. https://doi-org.uplib.idm.oclc.org/10.1186/s12888-021-03188-0

Amado, L., Christofides, N., Pieters, R., & Rusch, J. (2012). National health insurance: A lofty ideal in need of cautious, planned implementation. *South African Journal of Bioethics and Law, 5*(1), 4–10. https://doi.org/10.7196/SAJBL.209

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association Publishing.

Asmal, L., Mall, S., Kritzinger, J., Chiliza, B., Emsley, R., & Swartz, L. (2011). Family therapy for schizophrenia: Cultural challenges and implementation barriers in the South African context. *African Journal of Psychiatry, 14*(5), 367–371. https://doi.org/10.4314/ajpsy.v14i5.3

Back, S. E., Killeen, T., Badour, C. L., Flanagan, J. C., Allan, N. P., Ana, E. S., Lozano, B., Korte, K. J., Foa, E. B., & Brady, K. T. (2019). Concurrent treatment of substance use

disorders and PTSD using prolonged exposure: A randomized clinical trial in military veterans. *Addictive Behaviors, 90*, 369–377. https://doi.org/10.1016/j.addbeh.2018.11.032

Benatar S. R. (2013). The challenges of health disparities in South Africa. *South African Medical Journal = Suid-Afrikaanse tydskrif vir geneeskunde, 103*(3), 154–155. https://doi.org/10.7196/SAMJ.6622

Bhide, A., Shah, P. S., & Acharya, G. (2018). A simplified guide to randomized controlled trials. *Acta Obstetricia et Gynecologica Scandinavica, 97*(4), 380–387. https://doi.org/10.1111/aogs.13309

Brady, K. T., & Sinha, R. (2005). Co-occurring mental and substance use disorders: The neurobiological effects of chronic stress. *The American Journal of Psychiatry, 162*(8), 1483–1493. https://doi.org/10.1176/appi.ajp.162.8.1483

Brousselle, A., Lamothe, L., Sylvain, C., Foro, A., & Perreault, M. (2010). Integrating services for patients with mental and substance use disorders: What matters?. *Health Care Management Review, 35*(3), 212–223. https://doi.org/10.1097/HMR.0b013e3181d5b11c

Caspi, A., Moffitt, T. E., Cannon, M., McClay, J., Murray, R., Harrington, H., Taylor, A., Arseneault, L., Williams, B., Braithwaite, A., Poulton, R., & Craig, I. W. (2005). Moderation of the effect of adolescent-onset cannabis use on adult psychosis by a functional polymorphism in the catechol-O-methyltransferase gene: Longitudinal evidence of a gene X environment interaction. *Biological Psychiatry, 57*(10), 1117–1127. https://doi.org/10.1016/j.biopsych.2005.01.026

Cleary, M., Hunt, G. E., Matheson, S., & Walter, G. (2009). Psychosocial treatments for people with co-occurring severe mental illness and substance misuse: Systematic

review. *Journal of Advanced Nursing, 65*(2), 238–258. https://doi.org/10.1111/j.1365-2648.2008.04879.x

Coffey, S. F., Schumacher, J. A., Nosen, E., Littlefield, A. K., Henslee, A. M., Lappen, A., & Stasiewicz, P. R. (2016). Trauma-focused exposure therapy for chronic posttraumatic stress disorder in alcohol and drug dependent patients: A randomized controlled trial. *Psychology of Addictive Behaviors, 30*(7), 778–790. https://doi.org/10.1037/adb0000201

Constantino, J. N., Strom, S., Bunis, M., Nadler, C., Rodgers, T., LePage, J., Cahalan, C., Stockreef, A., Evans, L., Jones, R., & Wilson, A. (2020). Toward Actionable Practice Parameters for "Dual Diagnosis": Principles of Assessment and Management for Co-Occurring Psychiatric and Intellectual/Developmental Disability. *Current psychiatry reports*, *22*(2), 9. https://doi-org.uplib.idm.oclc.org/10.1007/s11920-020-1127-8

Courbasson, C., Nishikawa, Y., & Dixon, L. (2012). Outcome of dialectical behaviour therapy for concurrent eating and substance use disorders. *Clinical Psychology & Psychotherapy, 19*(5), 434–449. https://doi.org/10.1002/cpp.748

Critical Appraisal Skills Programme (CASP). (2020). *CASP (Randomised Controlled Trial) Checklist.* https://casp-uk.b-cdn.net/wp-content/uploads/2020/10/CASP_RCT_Checklist_PDF_Fillable_Form.pdf

De Witte, N. A., Crunelle, C. L., Sabbe, B., Moggi, F., & Dom, G. (2014). Treatment for outpatients with comorbid schizophrenia and substance use disorders: A review. *European Addiction Research, 20*(3), 105–114. https://doi.org/10.1159/000355267

Drake, R. E., Mueser, K. T., Brunette, M. F., & McHugo, G. J. (2004). A review of treatments for people with severe mental illnesses and co-occurring substance use disorders. *Psychiatric Rehabilitation Journal, 27*(4), 360–374. https://doi.org/10.2975/27.2004.360.374

Drake, R. E., O'Neal, E. L., & Wallach, M. A. (2008). A systematic review of psychosocial research on psychosocial interventions for people with co-occurring severe mental and substance use disorders. *Journal of Substance Abuse Treatment, 34*(1), 123–138. https://doi.org/10.1016/j.jsat.2007.01.011

Drake, R. E., & Wallach, M. A. (1993). Moderate drinking among people with severe mental illness. *Psychiatric Services, 44*(8), 780–782. https://doi.org/10.1176/ps.44.8.780

Drake, R. E., & Wallach, M. A. (2000). Dual diagnosis: 15 years of progress. *Psychiatric Services (Washington, D.C.), 51*(9), 1126–1129. https://doi.org/10.1176/appi.ps.51.9.1126

Elliott, R., & Timulak, L. (2005). Descriptive and interpretive approaches to qualitative research. In J. Miles & P. Gilbert (Eds), *A handbook of research methods for clinical and health psychology* (pp. 147–159). Oxford University Press.

Fantuzzi, C., & Mezzina, R. (2020). Dual diagnosis: A systematic review of the organization of community health services. *The International Journal of Social Psychiatry*, *66*(3), 300–310. https://doi.org/10.1177/0020764019899975

Foa, E. B., Yusko, D. A., McLean, C. P., Suvak, M. K., Bux, D. A., Jr, Oslin, D., O'Brien, C. P., Imms, P., Riggs, D. S., & Volpicelli, J. (2013). Concurrent naltrexone and prolonged exposure therapy for patients with comorbid alcohol dependence and PTSD: A randomized clinical trial. *JAMA, 310*(5), 488–495. https://doi.org/10.1001/jama.2013.8268

Garland, E. L., Roberts-Lewis, A., Tronnier, C. D., Graves, R., & Kelley, K. (2016). Mindfulness-Oriented Recovery Enhancement versus CBT for co-occurring substance dependence, traumatic stress, and psychiatric disorders: Proximal outcomes from a pragmatic randomized trial. *Behaviour Research and Therapy, 77*, 7–16. https://doi.org/10.1016/j.brat.2015.11.012

Gielen, N., Krumeich, A., Havermans, R. C., Smeets, F., & Jansen, A. (2014). Why clinicians do not implement integrated treatment for comorbid substance use disorder and posttraumatic stress disorder: A qualitative study. *European Journal of Psychotraumatology, 5*, 10.3402/ejpt.v5.22821. https://doi.org/10.3402/ejpt.v5.22821

Gough, D., Oliver, S., & Thomas, J. (2012). *An introduction to systematic reviews*. Sage Publications.

Gouzoulis-Mayfrank, E., König, S., Koebke, S., Schnell, T., Schmitz-Buhl, M., & Daumann, J. (2015). Trans-sector integrated treatment in psychosis and addiction. *Deutsches Arzteblatt International, 112*(41), 683–691. https://doi.org/10.3238/arztebl.2015.0683

Graham, H. L., Copello, A., Griffith, E., Freemantle, N., McCrone, P., Clarke, L., Walsh, K., Stefanidou, C. A., Rana, A., & Birchwood, M. (2016). Pilot randomised trial of a brief intervention for comorbid substance misuse in psychiatric in-patient settings. *Acta Psychiatrica Scandinavica, 133*(4), 298–309. https://doi.org/10.1111/acps.12530

Green, C. A., Yarborough, M. T., Polen, M. R., Janoff, S. L., & Yarborough, B. J. (2015). Dual recovery among people with serious mental illnesses and substance problems: A qualitative analysis. *Journal of Dual Diagnosis, 11*(1), 33–41. https://doi.org/10.1080/15504263.2014.975004

Hamilton, I. (2014). The 10 most important debates surrounding dual diagnosis. *Advances in Dual Diagnosis, 7*(3), 118–128. https://doi.org/10.1108/ADD-05-2014-0013

Hariton, E., & Locascio, J. J. (2018). Randomised controlled trials - the gold standard for effectiveness research: Study design: randomised controlled trials. *BJOG: An International Journal of Obstetrics and Gynaecology, 125*(13), 1716. https://doi.org/10.1111/1471-0528.15199

Harrison, J., Curtis, A., Cousins, L., & Spybrook, J. (2017). Integrated dual disorder treatment implementation in a large state sample. *Community Mental Health Journal, 53*(3), 358–366. https://doi.org/10.1007/s10597-016-0019-1

Horsfall, J., Cleary, M., Hunt, G. E., & Walter, G. (2009). Psychosocial treatments for people with co-occurring severe mental illnesses and substance use disorders (dual diagnosis): A review of empirical evidence. *Harvard Review of Psychiatry, 17*(1), 24–34. https://doi.org/10.1080/10673220902724599

Kay-Lambkin, F. J., Baker, A. L., & Lewin, T. J. (2004). The 'co-morbidity roundabout': A framework to guide assessment and intervention strategies and engineer change among people with co-morbid problems. *Drug and Alcohol Review, 23*(4), 407–423. https://doi.org/10.1080/09595230412331324536

Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., Wittchen, H. U., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey. *Archives of General Psychiatry, 51*(1), 8–19. https://doi.org/10.1001/archpsyc.1994.03950010008002

Khantzian, E. J. (1985). The self-medication hypothesis of addictive disorders: Focus on heroin and cocaine dependence. *The American Journal of Psychiatry, 142*(11), 1259–1264. https://doi.org/10.1176/ajp.142.11.1259

Kronenberg, L. M., Slager-Visscher, K., Goossens, P. J., van den Brink, W., & van Achterberg, T. (2014). Everyday life consequences of substance use in adult patients with a substance use disorder (SUD) and co-occurring attention deficit/hyperactivity disorder (ADHD) or autism spectrum disorder (ASD): A patient's perspective. *BMC Psychiatry, 14*, 264. https://doi.org/10.1186/s12888-014-0264-1

Lachman, A., Nassen, R., Hawkridge, S., & Emsley, R. A. (2012). A retrospective chart review of the clinical and psychosocial profile of psychotic adolescents with co-morbid substance use disorders presenting to acute adolescent psychiatric services at Tygerberg Hospital. *South African Journal of Psychiatry, 18*(2), 53–60. https://doi.org/10.4102/sajpsychiatry.v18i2.351

Laudet, A. B., Magura, S., Vogel, H. S., & Knight, E. L. (2004). Perceived reasons for substance misuse among persons with a psychiatric disorder. *The American Journal of Orthopsychiatry, 74*(3), 365–375. https://doi.org/10.1037/0002-9432.74.3.365

Lembke, A. (2012). Time to abandon the self-medication hypothesis in patients with psychiatric disorders. *The American Journal of Drug and Alcohol Abuse, 38*(6), 524–529. https://doi.org/10.3109/00952990.2012.694532

Lin, J. G., Chen, C. H., Huang, Y. C., & Chen, Y. H. (2012). How to design the control group in randomized controlled trials of acupuncture?. *Evidence-based Complementary and Alternative Medicine: eCAM, 2012*, 875284. https://doi.org/10.1155/2012/875284

Mangrum, L. F., Spence, R. T., & Lopez, M. (2006). Integrated versus parallel treatment of co-occurring psychiatric and substance use disorders. *Journal of Substance Abuse Treatment, 30*(1), 79–84. https://doi.org/10.1016/j.jsat.2005.10.004

McCallum, S., Mikocka-Walus, A., Turnbull, D., & Andrews, J. M. (2015). Continuity of care in dual diagnosis treatment: Definitions, applications, and implications. *Journal of Dual Diagnosis, 11*(3–4), 217–232. https://doi.org/10.1080/15504263.2015.1104930

McCauley, J. L., Killeen, T., Gros, D. F., Brady, K. T., & Back, S. E. (2012). Posttraumatic stress disorder and co-occurring substance use disorders: Advances in assessment and treatment. *Clinical Psychology, 19*(3). https://doi.org/10.1111/cpsp.12006

McGovern, M. P., Lambert-Harris, C., Alterman, A. I., Xie, H., & Meier, A. (2011). A randomized controlled trial comparing integrated cognitive behavioral therapy versus individual addiction counseling for co-occurring substance use and posttraumatic stress disorders. *Journal of Dual Diagnosis, 7*(4), 207–227. https://doi.org/10.1080/15504263.2011.620425

McGovern, M. P., Lambert-Harris, C., Xie, H., Meier, A., McLeman, B., & Saunders, E. (2015). A randomized controlled trial of treatments for co-occurring substance use disorders and post-traumatic stress disorder. *Addiction, 110*(7), 1194–1204. **Error! Hyperlink reference not valid.**https://doi.org/10.1111/add.12943

Miller, S. D., Hubble, M., & Duncan, B. (2008). Supershrinks: What is the secret of their success?. *Psychotherapy in Australia, 14*(4), 14–22. https://www.researchgate.net/profile/Scott-Miller-32/publication/266031113_Miller_SD_Hubble_MA_Duncan_BL_NovemberDecember_2007_Supershrinks_Learning_from_the_field%27s_most_effective_practitioners_The_Psychotherapy_Networker_316_26-35_56/links/5651fdfb08ae1ef929754e02/Miller-SD-Hubble-MA-Duncan-BL-November-December-2007-Supershrinks-Learning-from-the-fields-most-effective-practitioners-The-Psychotherapy-Networker-316-26-35-56.pdf

Mills, K. L., Teesson, M., Back, S. E., Brady, K. T., Baker, A. L., Hopwood, S., Sannibale, C., Barrett, E. L., Merz, S., Rosenfeld, J., & Ewer, P. L. (2012). Integrated exposure-based therapy for co-occurring posttraumatic stress disorder and substance dependence: A randomized controlled trial. *JAMA, 308*(7), 690–699. https://doi.org/10.1001/jama.2012.9071

Mojtabai, R., Chen, L. Y., Kaufmann, C. N., & Crum, R. M. (2014). Comparing barriers to mental health treatment and substance use disorder treatment among individuals with

comorbid major depression and substance use disorders. *Journal of Substance Abuse Treatment, 46*(2), 268–273. https://doi.org/10.1016/j.jsat.2013.07.012

Moore, M., Flamez Brandé, & Szirony, G. M. (2018). Motivational interviewing and dual diagnosis clients: Enhancing self-efficacy and treatment completion. *Journal of Substance Use*, *23*(3), 247–253. https://doi.org/10.1080/14659891.2017.1388856

Morisano, D., Babor, T. F., & Robaina, K. A. (2014). Co-occurrence of substance use disorders with other psychiatric disorders: Implications for treatment services. *Nordic Studies on Alcohol and Drugs, 31*(1), 5–25. https://doi.org/10.2478/nsad-2014-0002

Morojele, N. K., Saban, A., & Seedat, S. (2012). Clinical presentations and diagnostic issues in dual diagnosis disorders. *Current Opinion in Psychiatry, 25*(3), 181–186. https://doi.org/10.1097/YCO.0b013e328351a429

Mueser, K. T., Drake, R. E., & Wallach, M. A. (1998). Dual diagnosis: A review of etiological theories. *Addictive Behaviors, 23*(6), 717–734. https://doi.org/10.1016/S0306-4603(98)00073-2

Murthy, P., Mahadevan, J., & Chand, P. K. (2019). Treatment of substance use disorders with co-occurring severe mental health disorders. *Current Opinion in Psychiatry, 32*(4), 293–299. https://doi.org/10.1097/YCO.0000000000000510

Ness, O., Borg, M., & Davidson, L. (2014). Facilitators and barriers in dual recovery: A literature review of first-person perspectives. *Advances in Dual Diagnosis, 7*(3), 107–117. http://dx.doi.org/10.1108/ADD-02-2014-0007

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The prisma 2020 statement: An updated

guideline for reporting systematic reviews. *International Journal of Surgery, 88*, 105906. https://doi.org/10.1016/j.ijsu.2021.105906

Pasche, S., Kleintjes, S., Wilson, D., Stein, D., & Myers, B. (2015). Improving addiction care in South Africa: Development and challenges to implementing training in addictions care at the University of Cape Town. *International Journal of Mental Health & Addiction, 13*(3), 322–332. https://doi.org/10.1007/s11469-014-9537-7

Priester, M. A., Browne, T., Iachini, A., Clone, S., DeHart, D., & Seay, K. D. (2016). Treatment access barriers and disparities among individuals with co-occurring mental health and substance use disorders: An integrative literature review. *Journal of Substance Abuse Treatment, 61*, 47–59. https://doi.org/10.1016/j.jsat.2015.09.006

Prior, K., Mills, K., Ross, J., & Teesson, M. (2017). Substance use disorders comorbid with mood and anxiety disorders in the Australian general population. *Drug and Alcohol Review, 36*(3), 317–324. https://doi.org/10.1111/dar.12419

Randall, C. L., Thomas, S., & Thevos, A. K. (2001). Concurrent alcoholism and social anxiety disorder: A first step toward developing effective treatments. *Alcoholism: Clinical and Experimental Research, 25*(2), 210–220. https://doi.org/10.1111/j.1530-0277.2001.tb02201.x

Ritchie, J., Lewis, J., Elam, G., Tennant, R., & Rahim, N. (2014). Designing and selecting samples. In J. Ritchie, J. Lewis, C. N. Nicholls, & R. Ormston (Eds.), *Qualitative research practice: A guide for social science students and researchers* (pp. 111–142). Sage Publications.

Ruane, I. (2010). Obstacles to the utilisation of psychological resources in a South African township community. *South African Journal of Psychology: Suid-Afrikaanse Tydskrif Vir Sielkunde, 40*(2), 214–225.

Saban, A., Flisher, A. J., Grimsrud, A., Morojele, N., London, L., Williams, D. R., & Stein, D. J. (2014). The association between substance use and common mental disorders in young adults: Results from the South African Stress and Health (SASH) survey. *The Pan African Medical Journal, 17*(1), 11–17. https://doi.org/10.11694/pamj.supp.2014.17.1.3328

Sadock, B. J., Sadock, V. A., & Ruiz, P. (2015). *Kaplan & Sadock's Synopsis of Psychiatry: Behavioral sciences/Clinical psychiatry* (11th ed.). Wolters Kluwer.

Sannibale, C., Teesson, M., Creamer, M., Sitharthan, T., Bryant, R. A., Sutherland, K., Taylor, K., Bostock-Matusko, D., Visser, A., & Peek-O'Leary, M. (2013). Randomized controlled trial of cognitive behaviour therapy for comorbid post-traumatic stress disorder and alcohol use disorders. *Addiction, 108*(8), 1397–1410. https://doi.org/10.1111/add.12167

Savic, M., Best, D., Manning, V., & Lubman, D. I. (2017). Strategies to facilitate integrated care for people with alcohol and other drug problems: A systematic review. *Substance Abuse Treatment, Prevention, and Policy, 12*(1), 19. https://doi.org/10.1186/s13011-017-0104-7

Schumm, J. A., & Gore, W. L. (2016). Simultaneous treatment of co-occurring posttraumatic stress disorder and substance use disorder. *Current Treatment Options in Psychiatry, 3*(1), 28–36. https://doi.org/10.1007/s40501-016-0071-z

Seedat, S., Stein, D. J., Berk, M., & Wilson, Z. (2002). Barriers to treatment among members of a mental health advocacy group in South Africa. *Social Psychiatry and Psychiatric Epidemiology, 37*(10), 483–487. https://doi.org/10.1007/s00127-002-0577-0

Sibeko, G., & Stein, D. J (2019). Experimental research: Randomised control trials to evaluate task-shifting interventions. In S. Laher, A. Fynn, & S. Kramer (Eds.),

Transforming research methods in the social sciences: Case studies from South Africa (pp. 97–113). Wits University Press.

Sinha, P., Garg, A., & Prakash, O. (2018). Integrated treatment for dual diagnosis: The journey so far. *Malaysian Journal of Psychiatry, 26*(1), 1–5. file:///C:/Users/user/Downloads/408-1616-1-PB.pdf

South African Community Epidemiology Network on Drug Use (SACENDU). (2021). *Monitoring alcohol, tobacco and other drug use trends in South Africa, Vol 23 (1), 2021.* South African Medical Research Council. https://www.samrc.ac.za/sites/default/files/attachments/2020-11-19/SACENDUbrief47.pdf

Sterling, S., Chi, F., & Hinman, A. (2011). Integrating care for people with co-occurring alcohol and other drug, medical, and mental health conditions. *Alcohol Research & Health, 33*(4), 338–349.

Temmingh, H. S., Williams, T., Siegfried, N., & Stein, D. J. (2018). Risperidone versus other antipsychotics for people with severe mental illness and co-occurring substance misuse. *The Cochrane database of systematic reviews*, *1*(1), CD011057. https://doi-org.uplib.idm.oclc.org/10.1002/14651858.CD011057.pub2

Terre Blanche, M., & Durrheim, K. (2006). Histories of the present: Social science research in context. In M. Terre Blanche, K. Durrheim & D. Painter (Eds), *Research in practice: Applied methods for the social sciences* (2nd ed., pp. 1–17). UCT Press.

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology, 8*, 45. https://doi.org/10.1186/1471-2288-8-45

Tiet, Q. Q., & Mausbach, B. (2007). Treatments for patients with dual diagnosis: A review. *Alcoholism, Clinical and Experimental Research, 31*(4), 513–536. **Error! Hyperlink reference not valid.**https://doi.org/0.1111/j.1530-0277.2007.00336.x

Torchalla, I., Nosen, L., Rostam, H., & Allen, P. (2012). Integrated treatment programs for individuals with concurrent substance use disorders and trauma experiences: A systematic review and meta-analysis. *Journal of Substance Abuse Treatment, 42*(1), 65–77. https://doi.org/10.1016/j.jsat.2011.09.001

Torrens, M., Rossi, P. C., Martinez-Riera, R., Martinez-Sanvisens, D., & Bulbena, A. (2012). Psychiatric co-morbidity and substance use disorders: Treatment in parallel systems or in one integrated system?. *Substance Use & Misuse, 47*(8–9), 1005–1014. https://doi.org/10.3109/10826084.2012.663296

Wampold, B. E. (2015). How important are the common factors in psychotherapy? An update. *World Psychiatry, 14*(3), 270–277. https://doi.org/10.1002/wps.20238

Weich, L., & Pienaar, W. (2009). Occurrence of comorbid substance use disorders among acute psychiatric inpatients at Stikland Hospital in the Western Cape, South Africa. *African Journal of Psychiatry, 12*(3), 213–217. https://doi.org/10.4314/ajpsy.v12i3.48496

Williams, D. R., Herman, A., Kessler, R. C., Sonnega, J., Seedat, S., Stein, D. J., Moomal, H., & Wilson, C. M. (2004). The South Africa Stress and Health Study: Rationale and design. *Metabolic Brain Disease, 19*(1–2), 135–147. https://doi.org/10.1023/b:mebr.0000027424.86587.74

Wolff, N., Huening, J., Shi, J., Frueh, B. C., Hoover, D. R., & McHugo, G. (2015). Implementation and effectiveness of integrated trauma and addiction treatment for incarcerated men. *Journal of Anxiety Disorders, 30*, 66–80. https://doi.org/10.1016/j.janxdis.2014.10.009

Wüsthoff, L. E., Waal, H., & Gråwe, R. W. (2014). The effectiveness of integrated treatment in patients with substance use disorders co-occurring with anxiety and/or depression - A group randomized trial. *BMC Psychiatry, 14*, 67. https://doi.org/10.1186/1471-244X-14-67

Appendices

Appendix A: Certificate of language editing and proofreading

On Track Editing and Proofreading

1 December 2021

In my professional capacity as an academic English language and technical editor, I can confirm that the submitted Master's dissertation, authored by Ashley Chetty, has been professionally language edited, the document structure correctly formatted, citations and references cross-checked, and the citations and references formatted according to APA 7th edition specifications.

Title of Master's dissertation:

INTEGRATED VERSUS NON-INTEGRATED TREATMENT FOR PATIENTS WITH A DUAL DIAGNOSIS: A SYSTEMATIC REVIEW

Kind regards

Jacqueline Gamble

jacquelinegamble@ontrackediting.co.za

http://www.ontrackediting.co.za/index.html

Appendix B: Ethical approval from The Research Ethics Committee

24 November 2021

Dear Miss A Chetty

Project Title:	Integrated versus Non-Integrated Treatment for Patients with a Dual Diagnosis: A Systematic Review
Researcher:	Miss A Chetty
Supervisor(s):	Dr N Rawatlal
Department:	Psychology
Reference number:	15223532 (HUM011/0519)
Degree:	Masters

Thank you for the application that was submitted for ethical consideration.

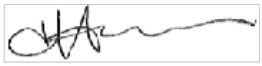
The Research Ethics Committee notes that this is a literature-based study and no human subjects are involved.

The application has been approved on 28 October 2021 with the assumption that the document(s) are in the public domain. Data collection may therefore commence, along these guidelines.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. However, should the actual research depart significantly from the proposed research, a new research proposal and application for ethical clearance will have to be submitted for approval.

We wish you success with the project.

Sincerely,



Prof Karen Harris
Chair: Research Ethics Committee
Faculty of Humanities
UNIVERSITY OF PRETORIA
e-mail: tracey.andrew@up.ac.za

Room 7-27, Humanities Building, University of Pretoria, Private Bag X20, Hatfield 0028, South Africa
Tel +27 (0)12 420 4850 | Fax +27 (0)12 420 4501 | Email pg.humanities@up.ac.za | www.up.ac.za/faculty-of-humanities