An Examination of Resilience and Adverse Childhood Experiences in the Treatment of Anxiety and Depressive Disorders

by

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SUMMARY

Anxiety and depression are extremely unrelenting and incapacitating, being the leading causes of disease burden. This research program sought to examine the roles of childhood adversities and resilience in the presentation of these disorders. The existing body of literature suggested that childhood adversities may contribute to distorted cognitions, emotion dysregulation and maladaptive behaviours, whereas resilience acts as a potential safeguard through the development of positive adaptive strategies in the face of vulnerabilities.

Chapter Two described the prevalence of six common anxiety disorders and the main types of depression and presented cognitive behavioural therapy (CBT) as the suite of preferred evidenced-based therapies for their treatment.

Chapter Three provided a review of the relevance of childhood adversities. They are now considered a silent global epidemic, with a significant impact on developmental milestones and the manifestation of internalising (e.g., anxiety and depression) and externalising disorders (e.g., antisocial behaviour, substance disorders). Particular types of childhood adversities have been linked to adult anxiety and depression.

Chapter Four introduced the concept of resilience, which may be best described as a set of adaptations within specific domains, that if lacking may contribute to anxiety and depression. However, resilience is yet to be consistently applied to the context of psychopathology or psychological intervention. A role for resilience may lie in the gradual shift from traditional deficit-based to more strength-based intervention frameworks.

Chapter Five introduced the methods underpinning the major empirical phases of the research program. There was a detailed commentary on the measures and protocols used to determine the success of a standard treatment delivered locally.

Chapter Six evaluated two strategies to improve the measurement of resilience with the commonly-used Connor-Davidson Resilience Questionnaire. Applying both exploratory and confirmatory factor analyses, subscales termed Adaptability and Tenacity were identified as viable subscales of resilience. However, Receiver Operating Characteristics analyses failed to support the proposition that cutoff values would help to determine the predictive validity of resilience.

Chapter Seven evaluated the efficacy of a standard CBT treatment protocol implemented locally using a single group, pretest-posttest design. Substantial improvement was noted across the treatment program, with further improvement in self-reported resilience. Analyses of the structural relationships among clinical variables and resilience failed to provide definitive evidence of 'causal' associations. The addition of childhood adversities to these analyses provided modest evidence of their detrimental effect during childhood.

Chapter Eight reported on a randomised controlled trial designed to compare treatment outcomes for an experimental, strength-based intervention based on self-compassion with standard treatment for clients with PTSD or depression. The experimental group experienced greater improvement in self-compassion, resilience and severity compared with the standard treatment group, highlighting the potential role of compassion-focused therapy in the management of complex psychopathology.

Chapter Nine summarised the key findings from the total program of research, highlighting the contribution made to existing knowledge. Limitations of the research program were noted, with recommendations offered for future research.

DECLARATION

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

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Zhila Javidi-Hosseinabad

14 September 2018

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Finally, in the 21st century, vast numbers of women around the world still do not have access to education. Being a woman and having lived in masculine dominant societies, I was one of the lucky ones where all the men (in particular my father) in my life have encouraged me to use my feminine qualities and abilities to aim high, and further my purpose became even more inspired by the quotation:

> *As long as women are prevented from attaining their highest possibilities, so long will men be unable to achieve the greatness which might be theirs (from Baha'i writing).*

For that reason:

> **I dedicate my PhD to my delightful granddaughter 'Lena' who has brought a cascade of joy and happiness to our life. I hope that she continues to be inspirational, and an advocate for the education of women.**

ABBREVIATIONS

FIRST INTRODUCED IN CHAPTER TWO

BA   Behavioural Activation

BEs   Behavioural Experiments

BT   Behaviour Therapy

CBT   Cognitive Behavioural Therapy

CR   Cognitive Restructuring

CT   Cognitive Therapy

DSM-5   Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition)

EBT   Exposure-Based Therapy

GAD   Generalised Anxiety Disorder

ICD-10   International Classification Of Diseases-Tenth Edition

NATs   Negative Automatic Thoughts

NICE   National Institute For Clinical Excellence

OCD   Obsessive-Compulsive Disorder

PTSD   Post-Traumatic Stress Disorder

S-R   Stimulus-Response

FIRST INTRODUCED IN CHAPTER THREE

CAs   Childhood Adversities

CSA   Child Sexual Abuse

UNICEF   United Nations International Children's Emergency Fund

FIRST INTRODUCED IN CHAPTER FOUR

BPFI   Baruth Protective Factors Inventory

BRCS   Brief Resilient Coping Scale

CD-RISC   Connor-Davidson Resilience Scale

CD-RISC10   Connor-Davidson Resilience Scale – 10 item version

CD-RISC2   Connor-Davidson Resilience Scale – 2 item version

DRS   Dispositional Resilience Scale

ER-20   Ego Resilience-20

ER-89   Ego Resilience-89

MTRR   Multidimensional Trauma Recovery and Resiliency

PR   Psychological Resilience

RAS   Resilience Appraisals Scale

RIM   Resilience in Midlife

RS   Resilience Scale

RSA   Resilience Scale for Adults

TRS   Trauma Resilience Scale

FIRST INTRODUCED IN CHAPTER FIVE

ACE   Adverse Childhood Experience Questionnaire

AMOS   Analysis of Moment Structures

CARD   Centre for Anxiety and Related Disorders

CBAT   Cognitive Behavioural Assessment Tool

CFA   Confirmatory Factor Analysis

CGI-I   Clinical Global Impressions - Improvement

CGI-S   Clinical Global Impressions - Severity

FOB   Phobic Anxiety Disorders

GAD7   Generalised Anxiety Disorder

IES-R   Impact of Event Scale - Revised

K10   Kessler Psychological Distress Scale

OAD   Other Anxiety Disorders

OCD-R   Obsessive Compulsive Inventory - Revised

PHQ9   Patient Health Questionnaire

SAC HREC   Southern Adelaide Clinical Human Research Ethics Committee

SPSS   Statistical Package for the Social Sciences

WSAS   Work and Social Adjustment Scale

FIRST INTRODUCED IN CHAPTER SIX

AUC   Area Under Curve

CFI   Comparative Fit Index

CIs   Confidence Intervals

EFA   Exploratory Factor Analysis

KMO   Kaiser-Meyer-Olkin

ML   Maximum Likelihood

PA   Parallel analysis

PCL-C   PTSD CheckList - Civilian

RMSEA   Root Mean Square Error of Approximation

ROC   Receiver Operating Characteristics

SCL-90-R   Symptom CheckList - 90 - Revised

SD	Standard Deviation
SE	Standard Error
SRMR	Standardized Root Mean Square Residual
TLI	Tucker-Lewis Index

FIRST INTRODUCED IN CHAPTER SEVEN

ANOVA	Analyses of Variance
TAFE	Technical and Further Education

FIRST INTRODUCED IN CHAPTER EIGHT

CFT	Compassion Focused Therapy
CMT	Compassion Mind Training
MBCT	Mindfulness-Based Cognitive Therapy
MBIs	Mindful Based Interventions
MBSR	Mindfulness Based Stress Reduction
MSC	Mindful Self Compassion
PCL	PTSD CheckList
PCL-M	PTSD CheckList - Military
RCT	Randomised Controlled Trial
SC	Self-Compassion
SCS	Self-Compassion Scale
SCS-SF	Self-Compassion Scale - Short Form

FIRST INTRODUCED IN CHAPTER NINE

SRRS	Social Readjustment Rating Scale

CHAPTER ONE

OVERVIEW

1.1   Introduction

The research program to be described focuses on the clinical experiences of adults who present for treatment of anxiety disorders and/or depressive disorders[1], including post-traumatic stress disorder. Broadly, the goal is to evaluate the potential roles of childhood adversities and resilience in the development of, and recovery from, these disorders. To begin, Chapter One presents a brief overview of the research problem that highlights gaps within the childhood adversity and resilience literatures, and follows with a description of the empirical phases of the research program that intend to achieve the above goal. Further, the objectives and research questions that will drive the research program are then formally presented. Finally, a brief summary of the remaining chapters of the thesis are provided.

1.2   The Research Problem

Clinical observations suggest that the negative consequences of childhood adversities during key developmental stages often persist well beyond their occurrence, and may contribute to the development of erroneous cognitions (e.g., I'm a bad person, I am a failure, nothing ever goes right, I may die or have a heart attack, I will be harmed, this will be a disaster), and negative emotions (e.g., shame, guilt, sadness, and fear). Further, the environmental disadvantages (e.g., household dysfunctions) signified by repeated maltreatment may expose individuals to further risk of complex psychopathology (Baglivio et al., 2015; Dunn et al., 2013; Felitti et al., 1998; Klika & Herrenkohl, 2013; Min et al., 2015; Pargas et al., 2010).

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[1] For convenience, the terms anxiety and depression are used from this point forward to imply anxiety disorders and depressive disorders, respectively.

Much of the research concerning childhood adversities derives from the influential work of Felitti and colleagues (1998). Yet, the mechanisms by which childhood adversities may lead to negative long-term psychopathology remain poorly understood. One reason is the number of studies of childhood adversities that use community or university student samples. The limited number of studies of clinical samples are often cross-sectional only, and have very small samples, thus providing equivocal outcomes (Dunn et al., 2013; Klika & Herrenkohl, 2013; Min et al., 2013, 2015; Pargas et al., 2010).

Of further interest are the cases in which individuals rise above the challenges of life despite past childhood adversities, upholding gains made through psychological interventions, for example. Such cases are often labelled as 'resilient'. Indeed, there are increasing observations that resilience interacts with risk factors to enhance the development of positive adaptation to adversity, and superior outcomes from interventions for psychopathology (Campbell-Sills et al., 2006; Cicchetti, 2016; Fontaine et al., 2016; Hjemdal et al., 2011; Luthar et al., 2015; Masten & Labella, 2016; Rutter, 2012b; Ungar, 2016a).

Yet, resilience also remains relatively under-studied, with limited knowledge about its implications in the dynamic process of the treatment of psychopathology. Nevertheless, reviews of the role of resilience are promising, although further research within clinical populations is needed (Hu et al., 2015; Hjemdal et al., 2011; Min et al., 2015; Mosqueiro et al., 2015; Pakalniskiene et al., 2016). For example, it is possible that recovery from anxiety and/or depression may be influenced jointly by the negative impact of childhood adversities and the protective benefit of resilience.

1.3   Summary of the Thesis

Figure 1.1 provides a schematic representation of the empirical phases of the research program to be presented, which are described more fully in the subsections that follow according to the relevant chapters. First, relevant literature will be presented by way of providing the research context in Phase One. Second, a prospective, longitudinal study of standard treatment practice will be presented to examine the importance of childhood adversities and resilience in development of, and recovery from, anxiety and depression (Phase Two). In the local context, standard treatment comprises 12 sessions of cognitive behavioural therapy relevant to the presenting problem (see also Figure 1.2). Third, a randomised controlled trial will compare an experimental treatment program (comprising self-compassion with behavioural therapy) with standard treatment, in the attempt to provide further evidence of the relevance of resilience to recovery (Phase Three). In response to the background summarised above, a set of objectives and research questions have been established for empirical phases of the thesis (as summarised in Table 1.1).

1.3.1   Chapter Two: Anxiety and Depression

Chapter Two includes a review of anxiety and depression which are the context within which the research program is embedded. The goal is to articulate this context both in terms of a description of the disorders and their relevant treatment. The key diagnostic features of common anxiety and depression are summarised (World Health Organization, 1992, 1993), with the distinction made between normal and pathological states for both disorders. The incidence, prevalence, subcategories, and co-morbidity of these disorders are provided. Gender differences in anxiety and depression are also discussed in this chapter. Cognitive behavioural therapy encompasses the preferred suite of evidence-based interventions for these disorders and are endorsed by National Institute for Clinical Excellence (NICE, 2004a, 2004b, 2005a, 2005b, 2011). Therefore, Chapter Two also describes the key cognitive

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Chapter One
Overview

Phase One

Phase Two

Phase Three

Chapter Two
Anxiety and Depression

Chapter Five
Methods for a Longitudinal Study of Treatment

Chapter Eight
The Efficacy of Self-Compassion versus Cognitive Therapy

Chapter Three
Childhood Adversities and Psychological Disorders

Chapter Six
Measuring Resilience

Chapter Four
Resilience

Chapter Seven
Evaluation of Resilience and Childhood Adversities

Chapter Nine
General Discussion

Figure 1.1 *Flow Chart Illustrating the Research Program*
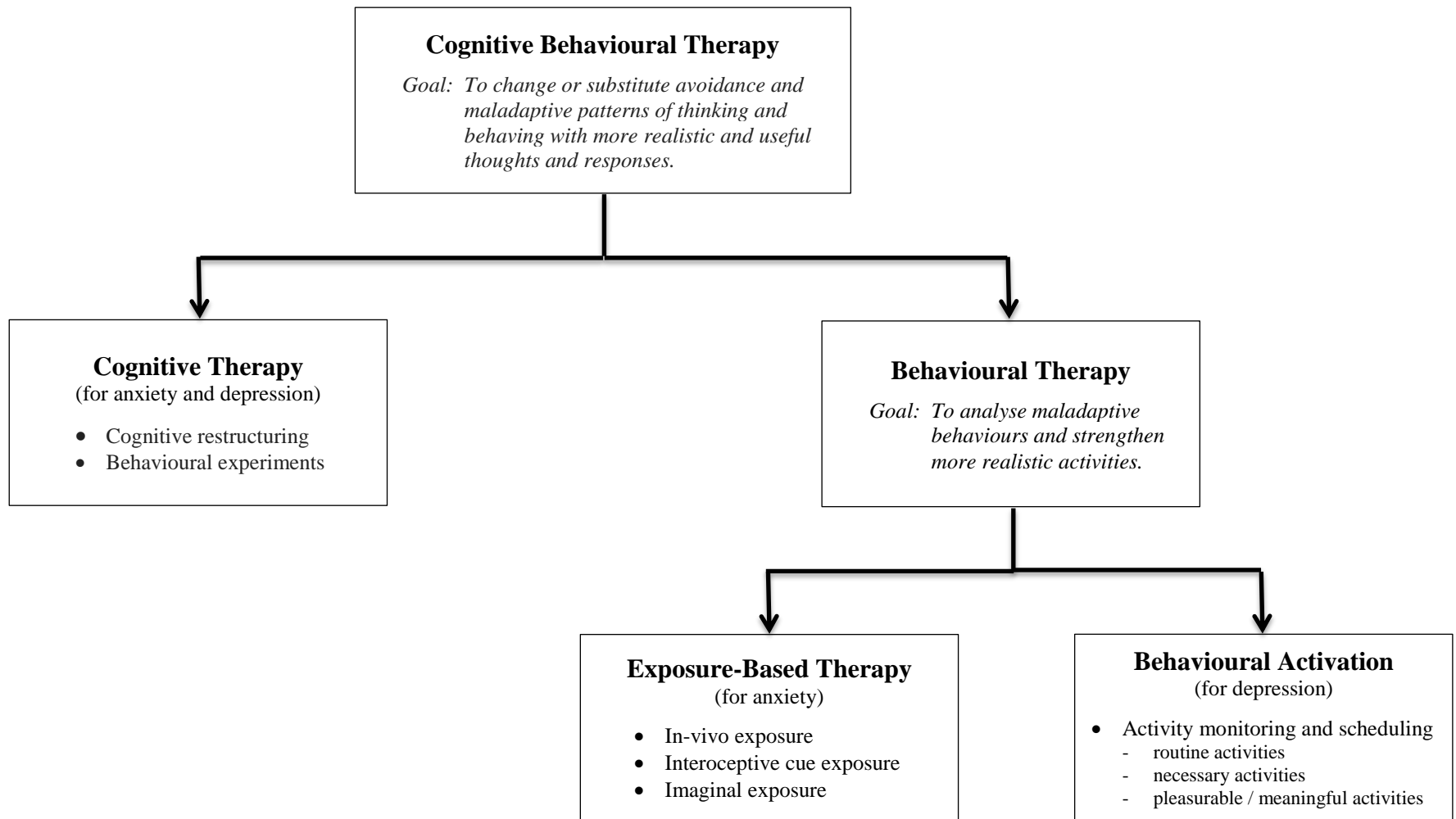
Figure 1.2 *Key Elements of Cognitive Behavioural Therapy as Applied Locally*

Table 1.1   *Empirical Objectives and Research Questions*

Chapter	Objective	Research Questions
Six	Determine the most effective measurement model for resilience using the Connor-Davidson Resilience Scale.	1. Is the Connor-Davidson Resilience Scale best described as a unidimensional or multidimensional instrument? 2. How do Connor-Davidson Resilience Scale scores based on derived factors vary according to diagnosis at presentation? 3. Do Connor-Davidson Resilience Scale subscale scores vary according to key sociodemographic and clinical characteristics at presentation? 4. To what extent are Connor-Davidson Resilience Scale factors derived at pre-treatment also evident at post-treatment?
Six	Identify cutoff scores for the Connor-Davidson Resilience Scale to predict concurrent and prospective psychological distress and treatment response to a local, 12-week cognitive behavioural therapy program.	1. How well does a cutoff score for the Connor-Davidson Resilience Scale predict self-reported psychological distress at pre- and post-treatment? 2. How well does a cutoff score for the Connor-Davidson Resilience Scale predict clinician-reported response to a local, 12-week treatment program? 3. How well do chosen Connor-Davidson Resilience Scale cutoff scores perform for individual diagnostic groups?
Seven	Evaluate the efficacy of a cognitive behavioural therapy treatment program for adults presenting with anxiety and/or depression.	1. To what extent do clinical characteristics vary according to childhood adversities and resilience at pre- and post-treatment? 2. How is primary diagnosis related to childhood adversities and resilience? 3. Do clients with anxiety and/or depression improve following standard cognitive behavioural therapy? 4. What roles do childhood adversities and resilience play in relation to treatment response?
Eight	Compare the treatment outcomes using behavioural therapy with self-compassion or behavioural therapy with cognitive therapy for clients with post-traumatic stress disorder or depression.	1. Does self-compassion augment treatment outcomes for post-traumatic stress disorder and depression? 2. What is the association between self-compassion and resilience, and self-compassion and childhood adversities?

behavioural therapy concepts relevant to anxiety and depression. As noted in Figure 1.2, in the local context this includes exposure-based therapy for anxiety and behavioural activation for depression, while cognitive therapy is used for both disorders, as required.

1.3.2   Chapter Three: Childhood Adversities and Psychological Disorders

Chapter Three reviews the current understanding of childhood maltreatment (e.g., abuse and neglect) and household dysfunctions that together are classified as childhood adversities. A brief description of types of traumas illustrates that interpersonal events (e.g., childhood maltreatment) have more bearing on psychological distress than impersonal adversities (Briere & Elliott, 2000; Huang et al., 2017). It is also noted that some childhood adversities are gender-specific, with women more at risk of child sexual abuse and men more at risk of physical abuse. Similarly, the occurrence of childhood adversities in early compared to late developmental stages are noted to impact on the later development of either internalising (e.g., depression) or externalising (e.g., substance abuse) disorders (Kendler et al., 2000; Nurius et al., 2015). This is argued to be by way of negative internalised representations of the self (e.g., insecure attachment) and the formation of distorted cognitive schema (Aber et al., 1989; Causadias et al., 2012). It is proposed that a more comprehensive understanding of the role of childhood adversities in anxiety, depression and post-traumatic stress disorder treatment is required (Dunn et al., 2013).

1.3.3   Chapter Four: Resilience

Chapter Four describes the history of resilience, identifying three waves of enquiry, including the contemporary understanding of resilience as a dynamic process (Masten & Powell, 2003; Masten & Tellegen, 2012; Wright et al., 2013). Resilience is also described as a balance of physiological and psychological growth that enhances recovery following adversity (Hog et al., 2007; Min et al., 2013; Richardson, 2002). Specifically, certain individuals, despite

experiencing childhood adversities, perhaps are protected against later negative consequences due to their level of resilience (Bonanno & Mancini, 2008; Werner, 2013). Conversely, severe childhood adversities during key developmental stages may diminish resilience. The possible causative factors of resilience (e.g., psychological factors, demographic variables) and their potential association with childhood adversities and later negative consequences are also reviewed (Luthar et al., 2000; Pangallo et al., 2015).

An important section of Chapter Four is a review of instruments designed to measure resilience with older adolescents and adults. There are a significant number, all with differing philosophical underpinnings. Of these, the Connor-Davidson Resilience Scale (Connor & Davidson, 2003) is the measure of choice for this research program. Finally, it is argued that addressing resilience should become an important feature of treatment for anxiety and depression, particularly when childhood adversities are present (Hu et al., 2015).

1.3.4   Chapter Five: Methods for a Longitudinal Study of Treatment

Chapter Five details the methods employed for the core empirical study of this research program. In brief, a consecutive series of adult presentations of anxiety and/or depression at an outpatient specialist service are followed across the course of their treatment program (12 sessions of cognitive behavioural therapy relevant to the presenting disorder). Full details of the study are provided, including exclusion and inclusion criteria, the specifics of the cognitive behavioural therapy program used locally for anxiety and depression, and the instruments and procedures used for data collection.

1.3.5   Chapter Six: Measuring Resilience Using the Connor-Davidson Resilience Scale

Chapter Six is the first empirical chapter. Objectives and research questions for each empirical chapter are presented in Table 1.1. As noted in section 1.3.3, the Connor-Davidson Resilience Scale is the chosen resilience instrument for this program. While it has

demonstrated sound psychometric properties and sensitivity to clinical intervention, such as with post-traumatic stress disorder (Davidson et al., 2008, 2012; Singh & Yu, 2010; Youssef et al., 2013), two potentially important measurement issues remain. Each of these will be reviewed and addressed analytically in Chapter Six prior to complete analyses of the longitudinal study in Chapter Seven.

First, the relevance of the subscales derived from the Connor-Davidson Resilience Scale is yet to be decided. Chapter Six therefore reviews the evidence for a variety of proposed factor structures. For example, different studies report two, three, four or five subscales, which may differ according to sample size and diversity (Green et al., 2014; Sexton et al., 2010). Other studies consider the scale to be unidimensional (Burns & Anstey, 2010; Liu et al., 2015). The most defensible factor/subscale structure in the current research program will therefore be determined through exploratory factor analysis with pre-treatment data, and confirmatory factor analysis with post-treatment data.

Second, a modest number of studies have explored whether it is possible to establish a 'diagnostic' cutoff score for the Connor-Davidson Resilience Scale. That is, the point above which treatment success may be predicted. Again, this issue will be examined with the current sample using a Receiver Operating Characteristics analysis which quantifies the value of either a screening or diagnostic test against a 'gold standard' (Bewick et al., 2004). Chapter Six will determine the relevance of cutoff scores against both pre-treatment and post-treatment severity, and post-treatment clinical improvement.

1.3.6   Chapter Seven: Evaluation of Resilience and Childhood Adversities

The baseline and outcome characteristics of the sample, primary diagnoses (including severity), level of resilience and history of childhood adversities are first described in Chapter Seven. Similarities and differences among these data are then presented using baseline (pre-

treatment) scores. These analyses are followed by longitudinal comparisons for the clients who have completed the full treatment program by the time data collection ceased. The degree of change that may have occurred, in terms of severity of disorder, clinical improvement, and resilience, will be explored. Levels of change according to history of childhood adversities will also be examined.

1.3.7   Chapter Eight: The Efficacy of Self-Compassion versus Cognitive Therapy

Chapter Eight as part of Phase Three of the thesis will first provide a review of the current understanding of self-compassion. This will be presented in six sections: (1) the nature of compassion, (2) the conceptualisation of self-compassion, (3) self-compassion in a therapeutic framework, (4) the role of self-compassion in depression and post-traumatic stress disorder, (5) the efficacy of self-compassion versus cognitive therapy, and (6) the relationship between self-compassion and resilience (Germer & Neff, 2013; Gilbert, 2000, 2008, 2014; MacBeth & Gumley, 2012; Neff & McGehee, 2010). Evidence from this review suggests improved treatment efficacy for complex and recurring depression and post-traumatic stress disorder with the addition of self-compassion. Chapter Eight will therefore also describe a single-blind, 2 (treatment) x 2 (time), randomised controlled trial designed to investigate if resilience and/or severity improve by augmenting standard cognitive behavioural therapy (cognitive therapy with behavioural therapy) with an experimental treatment protocol (self-compassion with behavioural therapy). All participants, sourced from the same pool as the longitudinal study in Phase Two, will be randomly allocated to one of these treatments. Again, baseline (pre-treatment) and outcome (post-treatment) data will be available. Key findings will be discussed, with a focus on the longer-term contribution of self-compassion to the treatment of post-traumatic stress disorder and depression.

1.3.8   Chapter Nine: General Discussion

Chapter Nine provides the opportunity to review and reflect on the program as a whole, highlighting key empirical findings from the research. Specifically, it will allow commentary on the degree to which the objectives and research questions outlined in Table 1.1 have been addressed. The strengths, limitations and benefits of the current research will be discussed, with consideration given to the implications of the results for future research and practice. Chapter Nine concludes with recommendations for future research in developing the knowledge base around resilience, childhood adversities, anxiety and depression, and treatment interventions (e.g., self-compassion with cognitive behavioural therapy).

1.4   Significance of the Research

The outcomes of the current research will be of value in four key ways. First, through the consideration of the relative contributions of childhood adversities and resilience to treatment outcomes, valuable insight will be provided into ways in which therapy can be tailored more appropriately to the individual needs of clients rather than applying a generic therapeutic approach for all. Second, the collection of longitudinal data will allow a better examination of the more dynamic aspects of resilience and how this construct may combine with childhood adversities to influence outcomes for clients with anxiety and depression. Third, this research program will allow a better determination of the extent to which resilience represents a potential tool clients may use during treatment to enhance their ability to self-regulate in times of heightened stress, thus reducing demand on services. Fourth, the comparison study of behavioural therapy augmented with self-compassion or cognitive therapy for clients with either post-traumatic stress disorder or depression has the further potential to contribute to a relatively fledgling literature on self-compassion and provide both researchers and clinicians with valuable insight into the circumstances in which self-compassion may be of potential benefit when incorporated into standard treatment practice.

CHAPTER TWO

ANXIETY AND DEPRESSION

2.1   Introduction

This chapter provides a summary of the current understanding of anxiety and depression, and the evidence-based treatment for each disorder. The aim is to provide the context, in terms of the range of presenting problems and the recommended treatment for each, within which the data to be reported in later chapters have been collected. Specifically, the prevalence, categories, influence of gender and co-morbidity for each condition are outlined. Normal and pathological states of anxiety and depression are distinguished, and the key diagnostic features of common anxiety and depression are summarised using the International Classification of Diseases - Tenth Edition (ICD-10; World Health Organization, 1992, 1993). Relevant cognitive behavioural therapy (CBT) for each disorder is then described, such as exposure-based therapy (EBT) for anxiety, behavioural activation (BA) for depression, and cognitive therapy (CT) for both conditions. A tabular summary of the common components of standard CBT is also provided.

Note that while there is a tendency throughout the chapter to present anxiety and depression, and their treatment, as discrete entities, it is acknowledged that the conjoint presentation of such disorders is also common.

2.1.1   Australian and International Prevalence

Anxiety and depression are leading causes of disease burden. They are the most common mental health disorders and are often persistent and disabling (Kessler et al., 2007; Kroenke et al., 2007; McEvoy et al., 2011; Ramnero et al., 2016; World Mental Health Survey Consortium, 2004). Studies from Canada (Caron, 2010; Statistics Canada, 2008; Wang et al.,

2010) the USA (Kessler et al., 2007), Australia (Burgess et al., 2009; Slade et al., 2009), Nigeria (Gureje et al., 2008) and Europe (Konig et al., 2010) suggest that 6% - 18% of adults experience anxiety every year. Anxiety and depression are the most common mental health problems seen in general medical settings (Karsten et al., 2011; Paulus & Stein, 2010) and in Australian society generally (McEvoy et al., 2011; Slade et al., 2009, 2011; Titov et al., 2015). A substantial 41.3% of Australians meet the criteria for anxiety (26.3%) and/or depression (15%) at some point in their life. Additionally, at the time of survey, 14.4% of respondents had experienced anxiety and 5.4% had experienced depression in the past year, with 7.7% experiencing anxiety and 2.4% depression in the past 30 days. Post-traumatic stress disorder (PTSD; 6.4%) and social phobia (4.7%) were the most common types of anxiety (Burgess et al., 2009; Slade et al., 2011; Teesson et al., 2009).

Gender differences are evident in both anxiety and depression, being more common among women (17.9% of women and 10.8% of men experience anxiety, 7.1% of women and 5.3% of men experience depression). The difference in anxiety is thought to be predominantly due to social phobia, generalized anxiety disorder (GAD), and PTSD being higher among women (Kessler et al., 2007, 2011; McEvoy et al., 2011; Slade et al., 2011; Teesson et al., 2009), with substance use disorders more common for men (Reavley et al., 2010).

2.2   Anxiety

Anxiety may describe a normal feeling experienced in the presence of a perceived stressor, in which case it is considered an adaptive response. Moderate levels of anxiety sharpen thinking, increase alertness, and the ability to act as required. Common life experiences that may result in such tension include job loss, relationship breakdown, serious illness, major accident or the death of a significant other. Anxiety is appropriate in these situations and is usually time limited. As such, feelings of anxiety are understood to be part of everyday life,

with such anxiety considered to be adaptive (Andrews et al., 2003; Karsten et al., 2013; Kroenke et al., 2007; Paulus & Stein, 2010). Further, while symptoms of anxiety may present due to physical illness, or as a side effect of medication, anxiety in these situations does not constitute a disorder (American Psychiatric Association, 2000).

When anxiety, fear or worry becomes disproportionate to a threat, significantly interfering with daily functioning, it is deemed to be pathological. Anxiety is syndromal and can include physical (e.g., pounding heart, trembling, tense muscles), cognitive (e.g., worries, difficulty concentrating), emotional (e.g., distress, irritability), and behavioural (e.g., avoidance, reassurance-seeking, procrastination) symptoms. Anxiety is often considered pathological when attempts to lessen anxiety are maladaptive (American Psychiatric Association, 2000, 2013; McEvoy et al., 2011; World Health Organization, 2004).

2.2.1   Diagnostic Criteria for Anxiety

Types of anxiety are classified according to the criteria of either the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) or the ICD-10 (World Health Organization, 1992). Both offer a categorical classification system providing prototypes of mental health disorders defined in terms of their observable signs, symptoms and impacts on functioning. The classification systems use similar criteria to define the main anxiety, and in clinical practice are considered to be functionally equivalent (Bjelland et al., 2002; Matthey & Ross-Hamid, 2011; Slade et al., 2011). The current research will define anxiety and depression using the ICD-10.

Anxiety comprises a relatively heterogeneous group of conditions ranging from phobias to panic disorder, obsessive compulsive disorder (OCD), GAD and PTSD. There are shared features and at least some common treatment principles. For example, diagnostic criteria relevant to all anxiety include (1) marked and persistent fear that is excessive and

unreasonable, (2) the recognition that this fear is excessive or unreasonable, (3) the avoidance of, anxious anticipation of, or distress in the feared situation(s) that interfere significantly with activities (or a marked distress about having the problem), and (4) a predominantly early onset and relatively high persistence rate over time (American Psychiatric Association, 2000, 2013; World Health Organization, 1992, 2004).

Diagnosis allows the presenting problem to be identified, and is the basis for treatment selection. Notably there is a degree of content specificity of the fear consequence in anxiety cognitions, such that the predominant themes in negative automatic thoughts (NATs) can be used as indicators of the likely nature of the problem (Wells, 2011, 2013). Thus the diagnosis of anxiety is often augmented by identifying the central cognitions in the presentation. Table 2.1 describes the key diagnostic features of the main categories of anxiety and their typical fear-related cognitive themes (Slade et al., 2011; Slade & Watson, 2006; World Health Organization, 1992, 1993, 2008). Common features across anxiety may result in the presentation of the symptoms of multiple disorders. However, diagnostic separation is possible as they can be reliably identified by clinical interview and recognised as comorbid conditions (Costello et al., 2005, 2011; Keenan et al., 2009; Waszczuk et al., 2016).

2.3 Depression

Depression can describe normal feelings of sadness or low mood, making it important to understand the symptoms of genuine clinical depression (Akiskal, 2016; Friedman et al., 2016; Greenberger & Padesky, 1995; Kessler et al., 2003). Depression of two weeks or more is different from normal sadness and may be regarded as clinically significant.

As with anxiety, depressive disorders are syndromal and comprise a range of typically co-presenting physical, cognitive, emotional and behavioural symptoms. It is important to understand that these symptoms may be different for each person, and can vary in number

Table 2.1   *Key ICD-10 Diagnostic Features for Anxiety*

Phobic anxiety disorders:
1. *Agoraphobia ;*
2. *Social phobias;*
3. *Specific (isolated) phobias;*
4. *Other phobic anxiety disorders;*
5. *Phobic anxiety disorder, unspecified.*

Evoked only, or predominantly, in well-defined situations, that are not currently dangerous, but which are characteristically avoided or endured with dread. Concern may focus on individual symptoms like palpitations or feeling faint and is often associated with secondary fears of dying, losing control, or going mad. There may also be anticipatory anxiety when facing evocative situations.

Other anxiety disorders:
1. *Panic disorder [episodic paroxysmal anxiety];*
2. *Generalized anxiety disorder;*
3. *Mixed anxiety and depressive disorder;*
4. *Other mixed anxiety disorders;*
5. *Other specified anxiety disorders;*
6. *Anxiety disorder, unspecified.*

Manifestation of anxiety is the major symptom and is not restricted to any particular environmental situation.

Obsessive-compulsive disorder:
1. *Predominantly obsessional thoughts or ruminations;*
2. *Predominantly compulsive acts [obsessional rituals];*
3. *Mixed obsessional thoughts and acts;*
4. *Other obsessive-compulsive disorders;*
5. *Obsessive-compulsive disorder, unspecified.*

The essential feature is recurrent obsessional thoughts (ideas, images, or impulses) or compulsive acts. They are almost invariably distressing and the client often tries, unsuccessfully, to resist them. They are, however, recognized as his/her own thoughts, even though they are involuntary and often repugnant.

Reaction to severe stress, and adjustment disorders:
1. *Acute stress reaction;*
2. *Post-traumatic stress disorder;*
3. *Adjustment disorders;*
4. *Other reactions to severe stress.*

Disorders identifiable on the basis of not only symptoms and course but also the existence of one or other of two causative influences: an exceptionally stressful life event producing an acute stress reaction, or a significant life change leading to continued unpleasant circumstances that result in an adjustment disorder.

Note.   Adapted from World Health Organization (1992, 1993).

and intensity, as well as change over time (American Psychiatric Association, 2013; Kessler et al., 2015; World Health Organization, 1992, 1993, 2013).

2.3.1   Diagnostic Criteria for Depression

The ICD-10 divides depression into three main categories based on symptom expression, severity and duration (Table 2.2). They are depressive episode, recurrent depressive disorder, and dysthymia (World Health Organization, 1992, 1993).

Additionally, there are circumstances in which symptoms of depression do not constitute a diagnosis of depression. The ICD-10 considers adjustment disorder that includes depressed mood, for example, as a form of anxiety. The presence of a manic episode also excludes a diagnosis of depression. Finally, as with anxiety, if a person with depressive symptoms has a medical disorder known to cause such symptoms, then the appropriate classification is depression due to that medical condition (American Psychiatric Association, 2000, 2013; World Health Organization, 1992, 1993).

2.4   Evidence-Based Treatment for Anxiety and Depression

Front-line psychological interventions include CBT, psychodynamic therapy, hypnosis, eye movement desensitization and reprocessing, for both anxiety and depression, and interpersonal therapy for depression (Barlow, 2004; Beyondblue, 2012; Dunt et al., 2011; Farchione et al., 2012; Pilkington et al., 2013; Sturmey, 2009), whereas for severe depression a range of appropriate medical interventions are recommended (e.g., psychotropic medication, electro convulsive therapy).

2.4.1   Cognitive Behavioural Therapy

CBT is a term used inconsistently. Sometimes it is used interchangeably with CT, especially in relation to derivations of Beck's Cognitive Model (Beck & Beck, 2011; Powers &

Table 2.2   *ICD-10 Diagnostic Features for Depression*

Depressive episode:
1.   *Mild depressive episode;*
2.   *Moderate depressive episode;*
3.   *Severe depressive episode without psychotic symptoms ;*
4.   *Severe depressive episode with psychotic symptoms;*
5.   *Other depressive episodes;*
6.   *Depressive episode, unspecified.*

A disorder which is contingent upon the number, intensity and severity of the symptoms that rarely change from day to day. These range from lowered mood, reduction of energy, decreased activity, reduced capacity for enjoyment, interest, concentration, and marked tiredness after even minimal effort. Sleep is usually disturbed, appetite diminished, with self-esteem and self-confidence almost always reduced. Ideas of guilt or worthlessness are often present. In some cases there are 'somatic' symptoms present such as loss of interest or pleasurable feelings, early waking, depression being worst in the morning, marked psychomotor retardation, agitation, loss of appetite, weight loss, and loss of libido.

Recurrent depressive disorder:
1.   *Recurrent depressive disorder, current episode mild;*
2.   *Recurrent depressive disorder, current episode moderate;*
3.   *Recurrent depressive disorder, current episode severe without psychotic symptoms;*
4.   *Recurrent depressive disorder, current episode severe with psychotic symptoms;*
5.   *Recurrent depressive disorder, currently in remission;*
6.   *Other recurrent depressive disorders;*
7.   *Recurrent depressive disorder, unspecified.*

Defined as a recurrence of a depressive episode(s), without any history of independent episodes of mood elevation and mania. In some cases there are brief episodes of hypomania instantaneously after a depressive episode (e.g., due to antidepressants). Symptoms can last from a few weeks to a number of months. More severe cases may manifest with similar symptoms to manic-depression, melancholia, vital depression or endogenous depression. The risk of mania is constant and, if present, the diagnosis becomes bipolar affective disorder.

Dysthymia:
Characterised by a chronic depression of mood, lasting at least several years, which is not sufficiently severe, or in which individual episodes are not sufficiently prolonged, to justify a diagnosis of severe, moderate, or mild recurrent depressive disorder.

Note.   Adapted from World Health Organization (1992, 1993)

Carlbring, 2016), which uses behavioural strategies to manipulate cognitive processes and thoughts. Generally, CBT is an umbrella term for psychological interventions based on scientific models of human behaviour, cognition, and emotion (Gross, 2015; Hofmann et al., 2013; Leichsenring et al., 2006; Powers & Carlbring, 2016) that encompass aspects of both cognitive and behavioural models (Dudley & Kuyken, 2013; Kuyken et al., 2016). Notably, the behavioural, cognitive and cognitive-behavioural treatment models discussed in this section draw heavily upon the diagnostic terms and classification systems inherent in the most current versions of the DSM and ICD (American Psychiatric Association, 2000, 2013; World Health Organization, 1992, 1993).

Behavioural and cognitive techniques for the treatment of anxiety and depression are derived from scientifically supported theoretical models of psychological disorder in general, and anxiety and depression in particular (Cristea et al., 2013, 2015; Kanter, 2013). There is a theoretically coherent and empirically consistent relationship between the treatment techniques and the symptoms of the disorders they are used to treat. CBT directly targets symptoms to reduce distress and improve (dys)functioning related to these disorders (Beck & Beck, 2011; Foa & McLean, 2016; Hofmann et al., 2013; Simos & Hofmann, 2013). CBT can be located at various points along an epistemological continuum, beginning with first wave behavioural therapy (BT), through second wave CBT (the cognitive revolution), to third wave CBT approaches such as mindfulness, compassion-focussed therapy, and dialectical behavioural therapy that focus on overall health and well-being (Blackburn & Davidson, 1990; Carvalho et al., 2017; Cristea et al., 2013, 2015; Hayes, 2004, 2018; Hayes & Hofmann, 2017; Hofmann et al., 2012; Hofmann & Smits, 2017; O'Connor et al., 2017).

Several meta-analyses provide support for the efficacy of CBT for anxiety (i.e., panic disorder, social phobia, OCD, GAD, and PTSD), with results supporting the effectiveness of

combined behavioural and cognitive approaches for these disorders (Abramowitz et al., 2012; Cully et al., 2010; Deacon & Abramowitz, 2004; James et al., 2007; Kaczkurkin & Foa, 2015; Lundkvist-Houndoumadi et al., 2016). Pure BT is also effective, appearing to work well for some disorders and some treatment populations. The studies reviewed show consistent evidence that CBT provides significant and clinically meaningful positive change, particularly when provided by experienced practitioners (Butler et al., 2006; Lundkvist-Houndoumadi et al., 2016; Simos & Hofmann, 2013; Waldron & Helm, 2004).

Further, a landmark report by Fonagy et al. (2005) gave strong support to CBT for anxiety and depression, noting it to be as effective as pharmacotherapy for mild to moderate depression in the short-term and sometimes superior in the long-term (Johnsen & Friborg, 2015; Roth & Fonagy, 2013; Weitz et al., 2015). Even in severe depression, CBT is as efficacious as medication (Cucciare et al., 2016; Dimidjian et al., 2006; Hofmann et al., 2013; Weitz et al., 2015), yet has the benefit of teaching skills that are practical and help to maintain positive outcomes (Cucciare et al., 2016; Feldman, 2007; Hides et al., 2010). CBT is one of few psychological strategies funded by the Australian Commonwealth Government (McGorry et al., 2013; Pirkis et al., 2011; Reifels et al., 2013).

In addition to controlled trials, evidence for the efficacy of CBT is also derived from clinical practice (Barlow et al., 2000; Dowd & Clark, 2013; Hans & Hiller, 2013). NICE recommend CBT for the treatment of anxiety and mild to moderate depression (NICE, 2004a, 2004b, 2005a, 2005b, 2011). In Australia, it is recommended for both anxiety and depression (Norton & Price, 2007; Ost & Reuterskiold, 2013; Shubina, 2015; Simos & Hofmann, 2013).

2.4.1.1   Behavioural Therapy

EBT for anxiety-related avoidance and BA for depression-related withdrawal are the two primary forms of BT (Abramowitz et al., 2012; Bryant et al., 2008; Hembree et al., 2003;

Kanter et al., 2007; Mulick et al., 2005; Ramnero et al., 2016; Schare & Wyatt, 2013; Shubina, 2015). They are often utilised as stand-alone interventions. In contrast, behavioural experiments (BEs) operate as an adjunct to cognitive restructuring (CR) within CT, and will be reviewed in that section (Davis & Powers, 2011; Foa & McLean, 2016; Marks, 1986; Powers et al., 2010; Veale, 2008).

2.4.1.1.1 Exposure-Based Therapy for Anxiety

BT assumes that non-conscious processes are essential in the development of pathological anxiety and its successful treatment. BT is underpinned by a stimulus-response (S-R) model of associative learning. That is, behavioural theories of anxiety (e.g., Mowrer, 1960) posit that pathological fears are acquired through classical conditioning (i.e., association) and maintained through operant conditioning (i.e., reinforcement) of avoidance behaviour (Agorastos et al., 2011; Barbara & Schwartz, 2002; Foa & McLean, 2016; Golkar et al., 2013; Martin et al., 2012; Schare & Wyatt, 2013; van Minnen et al., 2015).

EBT is a set of behavioural skills intended to lessen pathological fear in individuals with anxiety problems, either to symptoms or to phobic situations. EBT is key to limiting arousal by mastering avoidance (Davis & Powers, 2011; Farmer & Chapman, 2008; Foa & McLean, 2016; Marks, 1986; Martin et al., 2012; McKenzie & Marks, 2003; Powers et al., 2010), and are commonly considered to be the most powerful and efficient technique for assisting clients to overcome feared situations in anxiety. Accordingly, EBT for anxiety uses experimentally established learning principles to extinguish anxious responses to inappropriately feared stimuli. During assessment the therapist attempts to understand the associations relating stimuli to responses, how responses have developed into complex issues, and how conditioning affects behaviour and the development of problems (Dowd & Clark, 2013; Foa & McLean, 2016; Martin et al., 2012; Schare & Wyatt, 2013).

The most widely used EBT for anxiety is systematic exposure to situations and stimuli that evoke pathological fear (Foa & McLean, 2016; Golkar et al., 2013; Kaczkurkin & Foa, 2015). Treatment involves habituation, trial and error learning, and processes of an (re)associative nature, that are posited to be prominent in (the acquisition and) reduction of fear (Foa & McLean, 2016; Marks, 1986; Martin et al., 2012). With repeated exposure, anxiety responses gradually diminish through habituation (Davis & Powers, 2011; Martin et al., 2012; Powers & Carlbring, 2016; Powers et al., 2010). Conscious thoughts about danger are not supposed to play an important role in the maintenance of a disorder, and conscious or deliberate attempts to change ideas about the dangerousness of the feared stimuli are not believed to lead to any (additional) change (Chatard et al., 2012; Foa & McLean, 2016). Ohman's theory of phobias (Golkar et al., 2013; Mineka & Ohman, 2002; Ohman & Soares, 1994) and Marks' propositions about the acquisition of fear and the role of habituation in the reduction of fear (Abramowitz, 2013; Marks, 1986) are examples of this paradigm. Other theorists (e.g., Foa & Kozak, 1986) have postulated that EBT works by providing corrective information about the danger of feared situations (Foa & McLean, 2016; Powers et al., 2010).

EBT involves placing clients in a feared situation, or with a feared object, by starting with the least to most anxiety evoking stimulus (trigger), when there is no actual danger, in order to overcome their anxiety. Treatment involves eliciting a behavioural avoidance/escape profile and staying with the anxiety as the fear stimulus is repeatedly presented until unease reduces (Foa & McLean, 2016; Marks, 1986; McKenzie & Marks, 2003; Schare & Wyatt, 2013; Wolpe, 1968). There are several variations to the delivery of EBT, such as client-directed exposure instructions or self-exposure, therapist-assisted exposure, group exposure, and exposure with response prevention. Additionally, EBT can be carried out in real situations (in-vivo), or through imagination (i.e., imaginal exposure) (Neudeck & Wittchen, 2012). That is, EBT can be delivered by in-vivo exposure, prolonged exposure, virtual reality exposure,

systematic desensitisation (i.e., imaginal exposure) and flooding (Dowd & Clark, 2013; Foa & McLean, 2016; Ost & Reuterskiold, 2013; Ost & Sterner, 1987; Simos & Hofmann, 2013).

EBT is the recommended treatment of NICE for anxiety-related disorders such as PTSD, social phobia, panic disorder, agoraphobia and specific phobia, and for response prevention with anxiety-related compulsions in OCD. GAD is the only anxiety disorder that does not prioritise EBT, as it relies more often on cognitive or metacognitive techniques (Foa & McLean, 2016; Foa & Rauch, 2004; NICE, 2004a, 2004b, 2005a, 2005b, 2011; Notario-Pacheco et al., 2014). Following an initial assessment, the therapist and client devise in partnership a series of exposure tasks arranged hierarchically so that engagement in those behaviours does not result in overwhelming anxiety. Progress is systemic, commencing with behaviours that are minimally anxiety provoking, and progressing to mastery of those task that are/were most anxiety provoking (Foa & Kozak, 1986; Foa & McLean, 2016; Marks, 1986; Neudeck & Wittchen, 2012; Powers et al., 2010). Additional exposure treatment principles (see Table 2.3) are that exposure needs to be graded, prolonged, focused, repeated and supported by homework tasks (Eftekhari et al., 2013; Marks, 1986; Powers & Carlbring, 2016; Powers et al., 2010; Simos & Hofmann, 2013).

2.4.1.2   Behavioural Activation for Depression

Based on learning theory, BA was developed specifically for depression (Hopko et al., 2003; Jacobson et al., 2001; Kanter et al., 2007; Martell et al., 2001, 2013), although there is also evidence of its utility with PTSD (Fresco, 2013; Kanter, 2013; Mulick et al., 2005; Ramnero et al., 2016), anxiety (Chen et al., 2013; Hopko et al., 2006), and in the cultivation of wellbeing in non-clinical populations (Read et al., 2016). Techniques encourage engagement in daily routines and pleasurable activities to alleviate the negativity of depression-related inactivity or withdrawal (Hopko et al., 2003; Kahl et al., 2012; Martell et al., 2013).

Table 2.3   *Four Steps of Behavioural Processes (Habituation and Extinction)*

Exposure Tasks for Anxiety

---

1. Graded

A first step is a task difficult enough to provoke anxiety, but for which there is some confidence of success. Once mastered, tasks higher on the hierarchy are attempted.

---

2. Prolonged

Anxiety is likely to initially increase and then fall over time via habituation. The task is continued until anxiety is reduced by 50% from its highest point.

---

3. Repeated

Frequent exposure prevents fear rising between sessions, providing evidence that initial anxiety can be limited, and that anxiety will decrease over time. Exposure sessions are conducted four times per week or daily.

---

4. Focused

With distraction, anxiety reduces through avoidance. Discomfort diminishes with maintained attention to fear cues.

Note.   Adapted from Marks (1986), Ost (1989), Ost and Reuterskiold (2013), Powers and Carlbring (2016), Powers et al. (2010), Simos and Hofmann (2013).

Behavioural theories (e.g., Ferster, 1973; Lewinsohn, 1974) underpinning BA emphasise the basic premise that people are responsive to reinforcement from their environment(s), and that depression results when reliable sources of positive reinforcement are lost or diminished (Dimidjian et al., 2006; Kahl et al., 2012; Kanter, 2013; Ramnero et al., 2016). Accordingly, if an individual with depression lacks consistent sources of positive reinforcement, treatment targets the (re)establishment of contact with positive reinforcement through activity scheduling, and maintaining contact with new sources of positive reinforcement, such as social skills training (Fresco, 2013; Ramnero et al., 2016; Veale, 2008).

Ferster's (1973) model of depression further posits that withdrawal behaviours and ruminative preoccupations function to allow the avoidance of aversive thoughts, feelings or external situations. Modern BA is based on this insight and emphasises the role of a punishment context and experiential avoidance as key maintaining processes in mental and

emotional problems like depression (Kanter et al., 2009; Ramnero et al., 2016). That is,

avoidance (e.g., of interpersonal and social situations, occupational or daily-life demands, and

distressing thoughts and/or feelings) is viewed as a coping strategy to reduce short-term

distress often associated with pursuing potentially mood-enhancing reinforcers. Table 2.4

shows examples of common avoidance behaviours.

Table 2.4   *Common Avoidance Behaviours in Depression*

Social withdrawal • Not answering the telephone • Avoiding friends	**Cognitive avoidance** • Not thinking about relationship problems • Not making decisions about the future • Not taking opportunities • Not being serious about work or education • Ruminating about how to explain the past or solve insoluble problems
Non-social avoidance • Not taking on challenging tasks • Sitting around the house • Spending excessive time in bed	
Avoidance by distraction • Watching television • Playing computer games • Gambling • Comfort-eating	**Emotional avoidance** • Use of alcohol and other substances

Note.   Adapted from Veale (2008).

These avoidance behaviours have the longer-term cost of reducing opportunities to connect

with positive reinforcers, thus creating or exacerbating life problems (Fresco, 2013; Kanter et

al., 2009; Ramnero et al., 2016; Veale, 2008). Thus it is not just that people with depression

have significantly reduced or lost sources of positive reinforcement in their environment; it is

also that inactivity may be negatively reinforced by the passive avoidance (i.e., the removal

or reduction) of aversive situations or emotional experiences. As summarised in Table 2.4,

Martell et al. (2013), Jacobson (1994, 1997), and Kanter (2013) emphasised the role of a

person's life circumstances and avoidance in depression. That is, certain aspects of a person's

life circumstances are understood to (potentially) trigger depression, which is maintained by

particular ways of responding to these circumstances (Dobson et al., 2008; Jacobson et al., 2001; Kanter, 2013; Martell et al., 2001; Ramnero et al., 2016).

Accordingly, a BA approach targets engagement as a primary strategy to break the maintaining cycle(s) of depression (Ramnero et al., 2016). The initial objective is to increase awareness of avoidance patterns by monitoring and reviewing behaviour (Jacobson et al., 2001; Martell et al., 2001; Ramnero et al., 2016; Veale, 2008). Once these patterns are recognised, the objective becomes the identification of 'treatment' or 'change' goals, which are linked to problem avoidance behaviours and can be combined into activity scheduling. As described in Table 2.5, these goals can be short, medium or long-term. The individual re-engages with activities and situations that are reinforcing and consistent with their goals (Dobson et al., 2008; Jacobson et al., 2001; Martell et al., 2001, 2013; Ramnero et al., 2016).

Rumination is a specific example of an avoidance strategy. A BA approach includes the establishment or maintenance of routines and behavioural strategies for targeting rumination, including emphasising the function of rumination, and on directing attention away from the content of ruminative thoughts toward direct, immediate experience (Martell et al., 2013; Ramnero et al., 2016; Read et al., 2016; Richards et al., 2016).

2.4.2   Cognitive Therapy for Depression

CT assumes conscious and deliberate processes to play an essential role in the development and treatment of psychological disorders. The key premise is that thought(s) and reasoning influence emotional, behavioural and physiological reactions (Beck et al., 1979; Beck & Weishaar, 2005; Ellis, 1962). Thus in contrast to BT, CT is based on a mediational model of learning and change (Figure 2.1). CT was originally developed for depression but has also subsequently been applied to anxiety (Beck & Dozois, 2011; Hofmann et al., 2013; Wells,

Table 2.5   *Key Features of Behavioural Activation*

Assessment and development formulation*:*
1. A development formulation is made that focuses on social context and the way in which this has shaped the client's coping behaviours. For example:
   - *Maladaptive behaviours about social withdrawal, non-social avoidance, cognitive avoidance, emotional avoidance & avoidance by distraction.*
   - *Other factors such as loss, interpersonal conflict or changes in role – and the way in which these factors have influenced the client's ability to cope.*
2. The key issue in the formulation is determining the nature of the avoidance and escape profile
3. The avoidance and escape profile is used to guide the planning of alternative 'approach' behaviours.

Developing treatment Goals:
1. Create and define clear treatment/change goals for the short, medium and long term.
2. The goals are related to avoidance.
3. The goals can be incorporated into activity scheduling and regularly monitored.

Structure*:*
Agenda - R*eview the homework & the progress towards the goals,*
          Discuss feedback on the previous session,
          Focus on one or two specific issues.
1. Homework is more likely to be carried out if the individual is actively engaged in setting it and if there are agreed times or places when it will be carried out.
2. Sessions are collaborative and the client is expected to be active and to try to generate solutions.
3. The number of sessions to treat depression would be between 12 and 24.

Activity scheduling*:*
1. A way of structuring the client's day according to activities that are avoided
2. These are set out on planned timetables (activity schedules).
3. Clients are encouraged to start activity scheduling with short-term goals.
4. It is designed to encourage the client to engage in daily activities such as:
   - *Routine activities*
   - *Necessary activities*
   - *Pleasurable and/or meaningful activities*
5. The client needs to treat their activity schedules as a series of appointments with themselves.

Note.   Adapted from Veale (2008).

Stimulus

↓

Thought(s)

↓

Reaction

| **Emotional** | **Behavioural** | **Physiological** | **Further Negative Thoughts** |
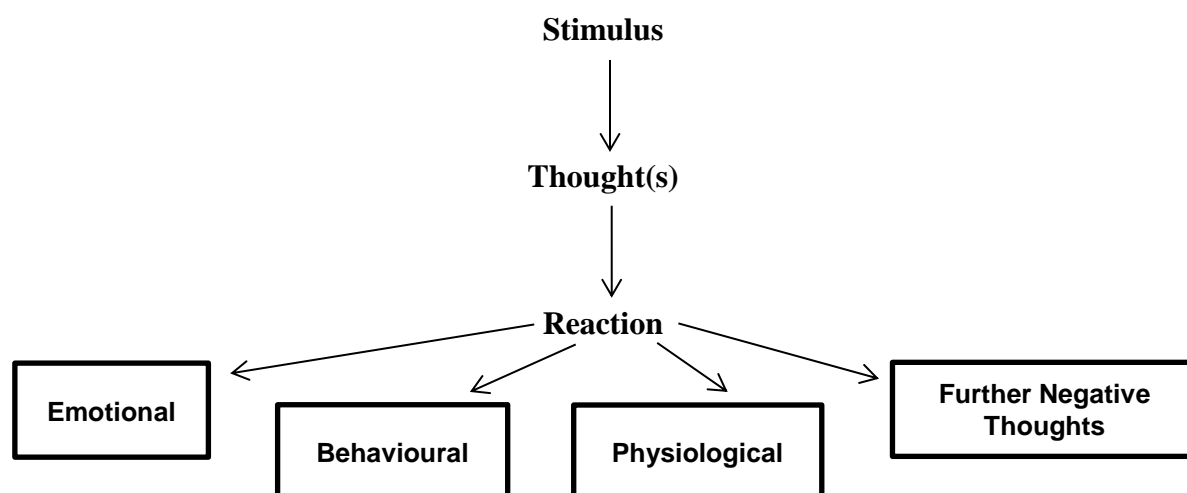
Figure 2.1 *Cognitive Mediational Models*
(adapted from Beck & Beck, 2011).

2013). CT is similar to a basic Stimulus-Response paradigm, but intervening thoughts and meanings are considered central to explaining and changing maladaptive behaviour.

Each disorder (anxiety or depression) has a specific profile of NATs (Beck & Dozois, 2011; Harms, 2010; Hofmann et al., 2013; Wells, 2013). In anxiety, it is fear of danger and an increased perception of vulnerability (Beck, 2005; Beck & Dozois, 2011; Wells, 2013). In depression, it is negative views of self and others, present experiences and future expectations (Beck & Dozois, 2011; Hofmann et al., 2013). Examples of cognitive distortions are shown in Table 2.6. Such cognitions can be used as indicators of the likely presenting problem(s) (Beck et al., 2011; Beck & Beck, 2011; Cristea et al., 2015; Dudley & Kuyken, 2013).

CT draws on Beck's (1976, 2005) proposition that emotional distress is characterised by faulty information processing, with a consistently negative bias (Beck, 1995; Beck & Beck, 2011; Beck & Dozois, 2011). Common errors include personalisation, all or nothing thinking, mind-reading, labelling, and jumping to conclusions. Biased processing tends to be automatic rather than volitional and contributes strongly to the development of negative core beliefs,

with greater attention paid to confirmation of negative views than information that challenges these views (Beck, 1995; Beck & Beck, 2011; Beck & Dozois, 2011; Forand et al., 2016; Greenberger & Padesky, 2015; Hofmann et al., 2013). Three levels of cognition that may intervene between stimuli (events) and responses (emotional, behavioural, physiological, further thoughts) are core beliefs or schemas, underlying rules and assumptions, and automatic thoughts. Those with emotional disorders tend toward a negative bias in all three (Blackburn & Twaddle, 1996; Forand et al., 2016; Greenberger & Padesky, 2015).

Table 2.6   *Cognitive Distortions for Anxiety and Depression*

Disorders	Cognitive Distortions
Anxiety	The fear of physical or psychological danger
Panic Disorder	Catastrophic misinterpretation of body and mental experiences
Phobias	Danger in specific, avoidable situations
OCD	Repeated warning or doubting about safety and repetitive rituals to ward off these threats
Depression	Global, negative view of self, present experience and expectations for future

Note.   Adapted from Hollon and Beck (1994).

Core beliefs are fundamental, enduring cognitions about self, others, the world and the future that are used to interpret experience. It is common for positive and negative core beliefs to exist in balance. They are formed through early learning, reinforced by experience, and become instrumental in the shaping of values and attitudes. As such, unarticulated conditional assumptions that guide behaviour, set standards of achievement, or provide rules of personhood are derived from core beliefs (Beck, 1995; Beck & Beck, 2011; Blackburn & Twaddle, 1996; Hofmann et al., 2013; Powers & Carlbring, 2016). Negative core beliefs may be latent during non-stressful periods but activated by specific stimuli, stressors or life events.

Rigid, unconditional and overgeneralised thinking is then dominant, leading to biased information processing that confirms core beliefs and disconfirms contradictory evidence (Forand et al., 2016; Neenan & Dryden, 2010). Core beliefs tend to be the target of schema-based therapy (Figure 2.2), as distinct from more basic CT that targets NATs (Beck & Beck, 2011; Beck & Dozois, 2011; Forand et al., 2016; Neenan & Dryden, 2010).

NATs represent the intervening element in the Cognitive Meditational Model (Figure 2.1) and are the target of CT. NATs appear rapidly, repetitively, and involuntarily, and are linked to specific emotional reactions. Their power derives in part from their believability. That is, their link with underlying negative core beliefs about self, world (i.e., others), and future are accepted as, at least in part, truthful. Accordingly, logical reasoning and explicit hypothesis formulation and testing, are assumed to be essential in CT-based treatment for anxiety and depression. Within this there are two pathways to change. First, by changing the pattern of NATs, clients improve their emotions as well as maladaptive behaviours. Second, if a client changes maladaptive behaviours they can modify their patterns of NATs too (Beck & Dozois, 2011; Beck, 1995, 2011; Forand et al., 2016; Neenan & Dryden, 2010; Rapee et al., 2013).

2.4.2.1   Cognitive Restructuring

CR is a set of techniques within CT for becoming more aware of thoughts and modifying them when they are distorted or not useful (Beck, 2011; Forand et al., 2016; Neenan & Dryden, 2010; Powers & Carlbring, 2016; Wells, 2013). With anxiety and depression, clients are taught how to identify dysfunctional sets of thoughts and beliefs relating to their problem, and to challenge the validity of those in order to produce and use more adaptive alternatives. CR does not involve distorting reality in a positive direction or attempting to believe the unbelievable instead, it uses reason and evidence to replace distorted thought patterns with more accurate, believable, and/or functional ones.

| **Relevant Childhood Data** |
| Which experiences contributed to the development |
| and maintenance of the core belief(s)? |

| **Core Belief(s)** |
| What are the client's most central beliefs about him/herself? |

| **Intermediate Belief(s)** |
| **Conditional Assumptions/ Belief/Rules** |
| Which positive assumption helps him/her cope with his/her core belief(s)? |
| What is the native counterpart of this assumption? |

| **Compensatory Strategy(ies)** |
| Which behaviours help him/her cope with the belief(s)? |

| **Situation 1** | **Situation 2** | **Situation 3** |
| What was the problematic situation? | | |

| **Automatic Thought (AT)** | **Automatic Thought (AT)** | **Automatic Thought (AT)** |
| What went through his/her mind? | | |

| **Meaning of the AT** | **Meaning of the AT** | **Meaning of the AT** |
| What did the AT mean to him/her? | | |

| **Emotion(s)** | **Emotion(s)** | **Emotion(s)** |
| What emotion was associated with the AT? | | |

| **Behaviour(s)** | **Behaviour(s)** | **Behaviour(s)** |
| What did the client do then? | | |

Figure 2.2   *Cognitive Conceptualisation Diagram*
(adapted from Beck, 1995, 2011).

CR deploys a number of common strategies to help identify and challenge maladaptive thoughts and negative core beliefs. These include the identification of NATs which are dysfunctional or reinforce negative views of the self, the world and/or the future. Also used are the development of rational rebuttals using psychoeducation, thought diaries, the downward arrow (what if) technique with socratic questioning to weigh evidence for/against NATs, and probabilistic reasoning to challenge negative core beliefs. CR assists in challenging negative core beliefs and distancing/giving perspective to generate alternative, adaptive thoughts and beliefs (Beck & Beck, 2011; Beck & Dozois, 2011; Clark & Egan, 2015; Forand et al., 2016; Greenberger & Padesky, 2015; Rapee et al., 2013; Wells, 2013).

2.4.2.2   Behavioural Experiments

BEs are typically cognitive strategies (Clark & Egan, 2015; Forand et al., 2016; Westbrook et al., 2011) that offer an extension to CR beyond verbal explorations. That is, beliefs are explored through action and observation, rather than just verbal discussion, to help the client generate new evidence. Therefore, BEs are often used to follow up verbal discussion. Having explored a negative cognition and generated possible alternative views during a session, BEs may offer a useful way of testing and consolidating these conclusions. They can help the client to gather more convincing evidence as to whether the original negative cognition or the new alternative offers the best (most accurate or most helpful) view of the situation (Forand et al., 2016; Westbrook et al., 2011; Westbrook & Kirk, 2005).

BEs aim to generate information and/or test beliefs, rather than promote habituation of anxiety responses (as in exposure), or generate behaviour (as with activity scheduling). They are derived directly from a cognitive formulation of a problem, and occur as part of a CT intervention. BEs are planned experimental activities undertaken by clients within or between sessions. Their primary purpose is to obtain new information which may help to: test the

validity of their existing beliefs about themselves, the world and the future; construct and/or

test new, more adaptive beliefs; contribute to the development and verification of the

cognitive formulation of the problem (Beck & Dozois, 2011; Beck et al., 2011; Greenberger

& Padesky, 2015; Hofmann et al., 2013; Neenan & Dryden, 2010; Westbrook & Kirk, 2005).

2.5   Common Elements in Behavioural and Cognitive Therapies

The common elements among BT (i.e., EBT and BA) and CT are encapsulated in a basic

CBT framework (Table 2.7). For example, assessment focuses on NAT, physical symptoms,

emotion, avoidance or maladaptive behaviours and psychosocial history. Using this

information the therapist is able to provide a case formulation or conceptualisation for the

presenting disorder(s) (Beck & Dozois, 2011; Cuijpers et al., 2013; Dobson & Dobson, 2009;

Greenberger & Padesky, 2015). Standard measures are other vital common elements for the

BT and CT. The client responds to these measures prior to assessment to support diagnosis.

Additionally, the standard measures are repeated at different treatment intervals thereafter to

measure progress. The other common element within both therapies is the treatment goals

that derive from the case formulation and/or conceptualisation during assessment (Beck,

2011; Dudley & Kuyken, 2013; Kuyken et al., 2016; Zivor et al., 2013).

2.6   Treatment of Comorbid Anxiety and Depression

According to NICE guidelines, when symptoms of both disorders are present, their nature

and extent are assessed, with the primary disorder generally treated first. If both disorders are

due to the same causative factor, the intervention should target this vulnerability (Beck, 2005;

NICE, 2004a, 2004b, 2011). When there are both anxiety and depressive symptoms with no

formal diagnosis but associated functional impairment, the therapist and client collaboratively

choose the intervention (Beyondblue, 2012; Hofmann et al., 2013; Paulus & Stein, 2010;

Simos & Hofmann, 2013; Waszczuk et al., 2016).

Table 2.7   *Common Elements of Behavioural and Cognitive Treatments*

Assessment	Semi-structured diagnostic interview, use of standard measures (in CT identification of primary cognitions).
Diagnosis	Problems are diagnosed according to DSM-5 or ICD-10 criteria. Diagnosis provides a means of identifying a presenting problem, and is used as a basis for selecting an appropriate treatment intervention(s).
Behavioural or Cognitive Problem Formulation	CBT is implemented on the basis of case formulation which provides a guide for therapy, and consequently the most useful approaches will be those that reveal the factors involved in the development and maintenance of anxiety or depression.
Disorder-Specific Treatment Protocols	Historically, CBT programs have been diagnosis-specific. However, current CBT also target core components of particular disorders. For example, specific CBT models now exist for disorders such as: • GAD (Penney et al., 2013); • Health anxiety (Birnie et al., 2013); • OCD (Ost et al., 2015; Shafran et al., 2013); • Panic disorder (Clark et al., 1994; Meuret et al., 2012); • PTSD (Ehlers, 2013; Kleim et al., 2013); • Social phobia (Clark & Wells, 1995; Rapee et al., 2013; Stangier et al., 2003); • Specific phobia (Shearer et al., 2013).
Goal Setting	End of treatment goals derived from case formulation help focus and direct the treatment
Homework	Activities carried out between sessions, selected with the therapist, in order to aid progress towards therapy goals.
Monitoring Progress	As the effects of the therapy are concrete (i.e., changing behaviours, changing thinking, reduced symptoms), outcomes tend to be quite measurable.

Note.   Adapted from Beck and Beck (2011), Beck and Dozois (2011), Dudley and Kuyken (2013), Friedman et al. (2016), Kuyken et al. (2016), Neenan and Dryden (2010), Zivor et al. (2013).

2.7   Chapter Summary

This chapter has considered the prevalence, categories, influence of gender and co-morbidity for the six common anxiety and main types of depression. Examination of gender differences revealed that both anxiety and depression are more common in women. The chapter reflected on CBT (i.e., BT and CT) for both disorders. CBT is extensively studied, evidenced-based therapies for the treatment of anxiety and depression, hence are recommended by the NICE in their guidelines for the treatment of anxiety and mild to moderate depression.

Chapter Three now provides a literature review of the relevance of CAs to adult anxiety and depression. Mainstream research demonstrates that particular types of CAs are linked to adult PTSD, anxiety and depression.

CHAPTER THREE

CHILDHOOD ADVERSITIES AND PSYCHOLOGICAL DISORDERS

3.1   Introduction

The previous chapter reviewed Australian and international research on anxiety and depression. It outlined prevalence, categories of each disorder, co-morbidity, and the influence of gender. CBT was reviewed as the preferred evidence-based approach for these conditions, and descriptions of key CBT techniques for these disorders, such as BT (EBT, BA), and CT were described. The purpose of Chapter Three is to review the evidence concerning childhood abuse, neglect, and household dysfunctions, considered together as CAs. The prevalence, definition, and types of CAs are introduced in detail. Further, gender-specific differences in CAs, and their impact on developmental stages, are also reviewed. Finally, Chapter Three highlights the distorted cognitive schemas that result from CAs, along with the formation of negative internalised self-representations (e.g., insecure attachment). Indeed, there is a growing body of research highlighting the potential contribution of CAs to psychopathology later in life, such as depression, anxiety, and PTSD.

3.2   Prevalence, Definition, and Types of Childhood Adversities

CAs are a major public health and social welfare problem that have been labelled a silent epidemic. The association between CAs and developmental impairment and general distress across childhood, adolescence and adulthood poses the potential for future behavioural issues (Afifi et al., 2008; Briere & Jordan, 2009; Caron, 2010; Denholm et al., 2013; Felitti et al., 1998; Finkelhor et al., 2015; Gilbert et al., 2009; Nurius et al., 2015; Ramiro et al., 2010). Consistent associations have been noted between CAs and poor physical health, social problems, and negative consequences over time. The occurrence of CAs can act as a predictor for depression, anxiety, antisocial personality, an anger problem, and substance and alcohol

misuse across the lifecycle (Afifi et al., 2008; Chapman et al., 2004; Dunn et al., 2013; Nurius et al., 2015; Ramiro et al., 2010; Soares et al., 2016).

Prevalence data suggest that early interpersonal adversities are common across diverse geographical and cultural contexts, with at least 16% of the population within Western cultures experiencing some form of CAs (Andersen, 2015; Briere et al., 2010; Briere & Jordan, 2009; Gershon et al., 2013; Parkhill & Pickett, 2016; Roesler & Dafler, 1993). Gilbert et al. (2009) reviewed the prevalence of childhood abuse and neglect from 2002 to 2007 more specifically within high-income countries (see Table 3.1). The similarity in estimates across studies suggests the widespread nature of CAs, and that similar levels may also occur in countries for which data are not available.

Together, such findings strongly suggest that CAs need to be acknowledged as an extensive social problem that manifests across all cultures and countries (Denholm et al., 2013; Dube et al., 2013; Finkelhor et al., 2015; Kealy et al., 2016; Stark & Landis, 2016; Turner et al., 2012). Both research and clinical practice have been encouraged to advance the understanding of CAs (e.g., abuse, neglect, and household dysfunctions) as possible predictors of long-term psychopathology (Denholm et al., 2013; Dube et al., 2013; Finkelhor et al., 2015; Gilbert et al., 2009; Kealy et al., 2016; Turner et al., 2012). In the following sections, childhood maltreatment (section 3.2.1) and household dysfunctions (section 3.2.2.) are further discussed. Note that while CAs are commonly discussed in isolation, a high percentage of children experience multiple forms of early adversity (Bedi & Goddard, 2007; Bellis et al., 2014; Felitti et al., 1998; Gilbert et al., 2009; Soares et al., 2016).

3.2.1   Childhood Maltreatment

The terms 'childhood maltreatment' and 'child abuse and neglect' are used interchangeably to define the experience of physical, sexual or psychological harm (Briere & Jordan, 2009;

Table 3.1   *Estimates of Childhood Maltreatment in High Income Countries*

Country	Year(s)	Source	% referred for treatment	Type (%)
Australia	2002 to 2003	(Australian Institute of Health and Welfare, 2004)	(3.34%)	Neglect (34%) Physical abuse (28%) Emotional abuse (34%) Sexual abuse (10%)
Canada	2003	(Trocme et al., 2003)	(2.15%)	Neglect (38%) Physical abuse (23%) Emotional abuse (23%) Sexual abuse (9%)
United States	2006	(United States Department of Health and Human Services, 2008)	(4.78%)	Neglect (60%) Physical abuse (10%) Emotional abuse (12%) Sexual abuse (7%)
United Kingdom	2007	(Lanktree et al., 2008)	(2.77%)	Neglect (44%) Physical abuse (15%) Emotional abuse (23%) Sexual abuse (7%)

Note.   Adapted from Gilbert et al. (2009).

Finkelhor et al., 2015; Skokauskas et al., 2013; Stark & Landis, 2016). The current review

focuses on five categories of maltreatment, comprising abuse (i.e., physical, sexual, and

emotional), and neglect (i.e., physical, and emotional) (World Health Organization, 2006).

Behaviours may be intentional or unintentional and include acts of commission or omission.

An act of commission (i.e., abuse) refers to non-accidental behaviour by a person in a

position of power or trust in relation to the victim (e.g., by parents, caregivers, other adults,

and older children and adolescents). This behaviour poses a substantial risk of physical or

psychological harm and/or exploitation, as illustrated in Table 3.2 (Briere & Jordan, 2009;

Briere et al., 2008; Briere et al., 2016; Finkelhor et al., 2005, 2015; Huang et al., 2017;

Pollak, 2015; Stark & Landis, 2016; World Health Organization, 2006).

Child sexual abuse (CSA) in Australia, New Zealand, Canada, and the United Kingdom ranges from 15% to 30% for girls and 5% to 15% for boys (Duncan et al., 2008; Fang et al., 2012; Fergusson et al., 2008). Other data are 3.1% (boys) and 6.8% (girls) for non-contact sexual abuse, 3.7% (boys) and 13.2% (girls) for contact sexual abuse, and 1.9% (boys) and 5.3% (girls) for penetrative abuse (Gilbert et al., 2009, 2012; Parkhill & Pickett, 2016). About 10% of girls and 5% of boys experience penetrative sexual abuse per year in the United States, with more exposed to other forms of sexual abuse (Briere & Jordan, 2009; Briere et al., 2016; Dong et al., 2003; Dube et al., 2013; Fang et al., 2012; Finkelhor et al., 2015). Worldwide estimates for CSA are about 1:4 for girls and 1:5 for boys (Briere et al., 2016; Longman-Mills et al., 2013; Mikton et al., 2011; Putnam et al., 2013; Viola et al., 2016).

In Australia, 76% of sexual assault victims aged 15 years or under are female (Australian Institute of Health and Welfare, 2007). A recent review in Australia reported prevalence rates for girls of 7% to 12% for penetrative abuse and 23% to 36% for non-penetrative abuse, while figures for boys were 4% to 8% and 12% to 16%, respectively (Moore et al., 2015; Price-Robertson et al., 2010). Girls are more likely to be forced into a sexual act, more than twice as likely to experience force for oral or penetrative sexual acts, and over three times as likely to experience physical force in touching or fondling (Daniel et al., 2005; May-Chahal & Cawson, 2005; Veenema et al., 2015).

Worldwide estimates suggest that one third of children are likely to experience physical abuse (D'Andrea et al., 2012; Longman-Mills et al., 2013; Mikton et al., 2011; Stark & Landis, 2016; UNICEF, 2006). Studies from the United Kingdom, United States, New Zealand, Finland, Italy, and Portugal reveal that 3.7% to 16.3% of children experience severe parental violence per year (e.g., hitting, kicking, biting, threatening, using a knife or other weapon) that is likely to place the child at risk of present or future harm (Briere et al., 2010,

Table 3.2   *Illustrative Domains of Abuse*

Abuse	Definition
Sexual	The involvement of a child in activities that s/he does not fully grasp is unable to give informed consent to, or for which the child is not prepared developmentally, or that violates the laws or social prohibits of society.
	Sexual abuse may be committed by either adults or other children who are, by virtue of their age or stage of development, in a position of responsibility, trust or power in relation to the victim. Incidents of CSA may be a single event or ongoing, by either a single perpetrator or multiple perpetrators that includes the completion of, or attempt at, any sexual act:
	• CSA may involve contact either directly or through clothing, of genitalia, buttocks or breasts, with penetration involving the mouth, penis, vulva, or anus of the child and another individual, along with intentional touching;
	• Non-contact CSA includes watching a child shower or toilet, exposing the child to sexual activity, filming, pornography or prostitution.
Physical	The act of shoving, slapping, hitting, shaking, beating, kicking, biting, strangling, throwing, scalding, burning, poisoning and suffocating a child. May also include fabricating or inducing illness in a child.
Emotional	Commonly considered 'persistent' emotional abuse of a child, although it also incorporates isolated incidents. Emotional abuse is associated with a high likelihood of damaging a child's psychological development and social competence.

Note.   Adapted from Briere et al. (2016), Gilbert et al. (2009, 2012), World Health Organization (2006).

2016; Dias et al., 2015; Gilbert et al., 2009; Longman-Mills et al., 2013). Studies from Macedonia, Moldova, Latvia, and Lithuania reveal the yearly prevalence of physical abuse to be 12.2% to 29.7% (Bellis et al., 2014; Sebre et al., 2004). Similar studies from low to middle income countries such as Siberia, Russia, and Romania suggest 24% to 29% physical abuse (Berrien et al., 1995; Browne, 2002; Gilbert et al., 2009). Additionally, retrospective figures suggest that 28% to 31% of men had experienced physical abuse as boys (Dube et al., 2013; MacMillan et al., 1997, 2001; Stark & Landis, 2016; Trocme et al., 2003).

The prevalence of emotional abuse in the United States is about one in ten children per year

(Fang et al., 2012), with specific figures of 10.3% per year having been reported (Finkelhor et

al., 2005, 2015). Studies in Sweden, the United States and the United Kingdom demonstrate

4% to 9% cumulative prevalence for severe emotional abuse (Briere & Jordan, 2009; Briere

et al., 2016; D'Andrea et al., 2012; Fang et al., 2012; Longman-Mills et al., 2013; Stark &

Landis, 2016). Studies from eastern European countries such as Macedonia, Latvia,

Lithuania, and Moldova have reported 12.5% to 33.3% yearly prevalence of moderate to

severe emotional abuse (Bellis et al., 2014; Sebre et al., 2004).

An act of omission (i.e., neglect, or failing to prevent harm) may refer to isolated incidents or

a pattern of failure on the part of a parent or caregiver to meet a child's basic needs in one or

more of the domains summarised in Table 3.3 (Briere & Jordan, 2009; Briere et al., 2016;

Gilbert et al., 2009, 2012; Viola et al., 2016; World Health Organization, 2006). The

prevalence of neglect is between 1.4% and 15.4%, with a 6% to 11.8% cumulative incidence

of absence of care (e.g., not enough food, no medical care when needed, lack of safety)

(Briere & Jordan, 2009; Giardino et al., 2009; Hussey et al., 2006; May-Chahal & Cawson,

2005; Theodore et al., 2007; Viola et al., 2016). Every year in the United States about 10% of

children are neglected (Briere & Jordan, 2009; Briere et al., 2016; Fang et al., 2012; Gilbert

et al., 2009, 2012; United States Department of Health and Human Services, 2008).

3.2.2   Household Dysfunction

Research into childhood maltreatment has underscored the importance of considering

household dysfunctions in conjunction with abuse and neglect (Chapman et al., 2004;

Denholm et al., 2013; Dube et al., 2003; Egle, 2004; Felitti et al., 1998; Finkelhor et al.,

2015). Comprehensive studies of CAs have found that childhood abuse and neglect often

occur in the context of one or more household dysfunctions. Indeed, children who are

Table 3.3   *Illustrative Domains of Neglect*

Neglect	Definition
Physical	Failure to provide adequate nutrition, hygiene, or shelter; failure to provide adequate food, clothing, accommodation; failure to protect a child from violence in the home or neighbourhood or from avoidable hazards. Depending on relevant laws and child protective policies, leaving a young child unsupervised may be considered physical neglect, especially if doing so places the child in danger.
Medical	Failure to meet basic health care needs.
Emotional	Failure to provide emotional security, care and encouragement; failure to ensure safety.
Educational/ developmental	Failure to provide experiences for necessary growth and development, such as withholding educational opportunities, in whole or part.

Note.   Adapted from Ferrara et al. (2015) and Gilbert et al. (2009, 2012).

exposed to maltreatment alongside household dysfunctions experience profound negative effects on their social, physical, and emotional health over time (Afifi et al., 2008; Bellis et al., 2014; Felitti et al., 1998; Hillis et al., 2004; Kalmakis & Chandler, 2014). Household dysfunctions as understood in the current study are summarised in Table 3.4.

Parental alcohol and drug use is especially relevant, as it may increase a child's risk of maltreatment (Afifi et al., 2008; Felitti et al., 1998; Hillis et al., 2004; Ramiro et al., 2010; Reuben et al., 2016). Often these children lag behind their peers in social skills (Mulvihill, 2005) and in the case of CSA, household dysfunction is thought to have a crucial influence on children's responses (Coles et al., 2015; Irish et al., 2010; Kessler et al., 2010; Neumann et al., 1996; Nurius et al., 2015; Reuben et al., 2016). Household dysfunctions during childhood act as an indicator of anxiety, depression, and maladaptive behaviours across the lifespan (Douglas et al., 2010; Fenton et al., 2013; Keyes et al., 2012; Reuben et al., 2016; Strine et al., 2012). However, unlike maltreatment which is often experienced in isolation, household

dysfunction is commonly shared with other family members, relatives or friends (Enoch,

2011; Gibbs et al., 2013; Goldman et al., 2003).

Table 3.4   *Illustrative Domains of Household Dysfunctions*

Household Dysfunction	Definition
Intimate partner or family violence	Comprises any incident of threatening behaviour, violence, or abuse between adults who are, or have been, close partners or family members, irrespective of sex.
	Most frequently the perpetrator is male, but there is growing recognition of the possibility of violence being perpetrated by women.
Alcohol and/or substance abuse	If any member of a household is a problem drinker, or uses street drugs, the household can be defined as dysfunctional in the context of childhood maltreatment (Denholm et al., 2013; Dube et al., 2003a; Felitti et al., 1998; Finkelhor et al., 2013).
Mentally ill household member	If the child victim lives, or has lived, with a household member with mental illness and/or who attempted suicide.
Parental separation or divorce	If the parents are not together during the victim's childhood.
Household member being incarcerated	If any family member has been in prison during the victim's childhood.

Note.   Adapted from Denholm et al. (2013), Felitti et al. (1998), Finkelhor et al. (2013, 2015), and Gilbert et al. (2009, 2012).

Large scale epidemiological studies note that those children who have experienced household

dysfunction have a higher risk of physical abuse and neglect (Afifi et al., 2008; Anda et al.,

2006; Dube et al., 2013; Felitti et al., 1998; Hammermeister et al., 2012; Kalmakis &

Chandler, 2014; Mandelli et al., 2015; Reuben et al., 2016; Soares et al., 2016). Indeed,

children from dysfunctional families have a greater risk of being maltreated across the broad

spectrum of abuse and neglect categories (Cicchetti & Toth, 2016; Denholm et al., 2013;

Narayan et al., 2016; Swopes et al., 2013).

Household dysfunctions are widespread. A national sample of adults (N = 9,282) from the

United States noted that 53% of respondents had experienced some kind of dysfunction

before the age of 18, including parental divorce (17.5%), family violence (14%), economic

adversity (11%), and mental illness (10%) (Finkelhor, 2008; Finkelhor et al., 2013). Other

studies report that children at risk of maltreatment from parents or caregivers also experience

concurrent household dysfunctions (Enoch, 2011; Finkelhor et al., 2013; Green et al., 2010).

A community-based survey in Sweden (Janson et al., 2007) reported the prevalence of

children who had witnessed intimate partner violence (e.g., mother treated violently) between

15 and 6 years of age to range from 8%-10%. Other studies have shown the risk of childhood

maltreatment and household dysfunctions to be 30%-60% for children who witness domestic

violence (Appel & Holden, 1998; Dong et al., 2004; Herrenkohl et al., 2008).

Children who witness intimate partner violence can also be harmed psychologically

(Chapman et al., 2004; Denholm et al., 2013; Dube et al., 2013; Felitti et al., 1998; Gilbert et

al., 2009, 2012). A study in the United Kingdom found that 44% of maltreatment cases

(physical or sexual) involved only one child within a family, with 56% involving more than

one child from the same family (Gilbert et al., 2009, 2012). Similar figures are reported for

household dysfunctions (Gilbert et al., 2009, 2012; Hamilton-Giachritsis & Browne, 2005).

3.3   The Impact of Childhood Adversities at Specific Developmental Stages

The early onset of maltreatment creates insecure attachment relationships, and the inability to

achieve serious developmental milestones (Cicchetti & Toth, 2016; Erickson & Egeland,

2002; Fonagy & Target, 2007; McGoron et al., 2012). Research reveals attachment style is an

important mediating factor since the formation of relationships and the attainment of self-

regulation skills are believed to develop during infancy and the preschool years, with insecure

attachments potentially leading to problematic emotional regulation and poor problem-

solving ability over time (Aber et al., 1989; Ainsworth et al., 1978; Fraley et al., 2011; Kaplow & Widom, 2007). Another possible mediating mechanism is perceived control. That is, early experiences of lack of control in the childhood environment (e.g., maltreatment and household dysfunctions) lead to similar interpretations of subsequent events, with less exposure to the protective characteristic of perceived internal control (Chorpita & Barlow, 1998; Enoch, 2011; Narayan et al., 2016; Ramiro et al., 2010; Reuben et al., 2016).

The occurrence of CAs at early developmental stages of life may be critical for stress-related alterations in brain development leading to complex long-term psychological disturbance. Specifically, in some PTSD cases there has been a link between smaller brains and occurrence of CAs in developmental stages (DeBellis, 2001; DeBellis et al., 1999; Gershon et al., 2013; Glaser, 2000; Kaplow & Widom, 2007). When CAs during infancy and preschool are not addressed, future developmental tasks may be compromised (Cicchetti et al., 2011; De Young et al., 2011). The child's ability to achieve essential progressive milestones (e.g., self-regulation) may be impaired, resulting in later internalisation of problems (Briere & Rickards, 2007; Cicchetti & Toth, 2016; Dunn et al., 2013; Gilbert et al., 2009).

Studies suggest that maltreatment in early developmental stages acts as a predictor of anxiety and depression more than maltreatment in later childhood (Bolger & Patterson, 2001; Cicchetti & Toth, 2016; Van Zomeren-Dohm et al., 2015). Physical and emotional neglect occur more among children aged from 0 to 3 years, whereas CSA is more frequent among children aged 12 to 15 years (Cicchetti & Toth, 2016; Messman-Moore & Long, 2000; United States Department of Health and Human Services, 2008). Overall, global research indicates children who are abused and neglected during early developmental stages have lower self-esteem than children maltreated at later stages (Bolger & Patterson, 2001; Cicchetti, 2016; Pearce & Pezzot-Pearce, 2013; Sroufe et al., 1990).

Further, it is suggested that autonomy during adolescence changes the likely outcome from

internalised to externalised problems (Cicchetti, 2016; Cicchetti & Toth, 1995, 2016; Dion et

al., 2016; Garbarino & Stott, 1989). For example, studies report behavioural delinquency and

disturbances among children abused during adolescence as opposed to younger ages

(Kaufman & Widom, 1999; Malvaso & Delfabbro, 2015; Sedney & Brooks, 1984; Smith et

al., 2013; Thornberry et al., 2001). Those who experience CAs from age 6 to 11, are also

more likely to drop out of school (Dunn et al., 2013; Kaplow & Widom, 2007; Smith et al.,

2013; Thornberry et al., 2001). Indeed, adversities experience by older children commonly

result in more antisocial behavioural disorders over time (e.g., alcohol and substance

disorders, conduct disorder, personality disorders, anger problems, eating disorders, somatic

complaints) responses compared with younger children (Cicchetti, 2016; Dunn et al., 2013).

It is important to understand the full history of CAs because in some cases those identified as

having been maltreated later in childhood actually experienced persistent CAs at an earlier

stage. Research suggests that chronic and repeated maltreatment combined with household

dysfunctions has the tendency to intensify the risk of adjustment problems and other complex

psychological disorders (Cicchetti & Toth, 2016; Felitti et al., 1998; Narayan et al., 2016).

Another contributing factor is the chronicity and severity of maltreatment at developmental

stages (Cicchetti & Toth, 2016; Thornberry et al., 2001; Watts-English et al., 2006).

3.4   Gender-specific Differences and Childhood Adversities

As noted in sections 3.2.1 and 3.2.2, gender can have a direct influence on the CAs

experienced. To review, boys are more likely to experience physical abuse during childhood

(Cavanaugh et al., 2015; Thompson et al., 2004), with girls 2 to 3 times more likely to be

subjected to CSA (Bachman, 2000; Maniglio, 2013). United States data (Fang et al., 2012;

Gorey & Leslie, 1997) offer prevalence rates ranging from 12% to 17% for girls and 5% to

8% for boys. Studies from underdeveloped countries reveal that girls are at greater risk of infanticide, CSA, and physical and emotional neglect, whereas boys are at greater risk of physical punishment (Fenton et al., 2013; Pieterse, 2015).

These gender-specific differences can influence later psychopathology. For example, while physical abuse increases the likelihood of anxiety, depression, and health-related issues for men and women, statistically higher effects are noted for women (Olofsson et al., 2012; Thompson et al., 2004). Paternal emotional abuse and exposure to interpersonal violence are associated with intense anxiety and depressive symptoms mainly among women, whereas men show antisocial behaviours, substance use disorders and anger (Fenton et al., 2013; Gilbert et al., 2012; Widom et al., 2007). The National Comorbidity Survey (N = 8,098) demonstrated that 39.3% of women with CSA had a lifetime risk of depression (Cakir et al., 2016; Molnar et al., 2001). On balance, females are more likely to be victims of gender-based internal violence and abuse that impact the long-term association with complex psychopathology (Lipsky et al., 2016; Molnar et al., 2001; Peled, 2011).

3.5   The Impact of Childhood Adversities on Cognitive Schemas

CAs may alter personality and coping mechanisms, thus influencing components of healthy development (e.g., emotional regulation, attachment, romantic and sexual relationships), in turn leading to later negative outcomes (Felitti et al., 1998; Yanos et al., 2010). Maltreatment and household dysfunctions are leading factors in the potential derailment of a normal developmental pathway (Felitti et al., 1998; Kaplow & Widom, 2007; Ramiro et al., 2010). A person forms internal working models of attachment figures, of the self, and self in relation to others that are based on their early attachment style with key caregivers (e.g., parents) (Besser & Blatt, 2007; Bowlby, 1988; Fonagy & Target, 2007). It follows that CAs may

create insecure attachment, impacting negatively on the development of emotional regulation and interpersonal skills (Lowell et al., 2014; Meyer & Pilkonis, 2005).

Figure 3.1 is a model of individual differences in attachment for infants and adults (Brennan et al., 1998; Fraley et al., 2011; Martins et al., 2016). When parents and primary caregivers react in a sensitive, loving, and reliable manner, the child develops a working model of others as loving, trustworthy and supportive which is internalised (Bowlby, 1988; Fletcher & Gallichan, 2016; Fraley et al., 2011; Mikulincer & Shaver, 2012). CAs in developmental stages may create negative beliefs about the self (e.g., 'I am stupid' or 'I am not worthy of attention') which may result in maladaptive representations of the self, other, and self in relation to others (Beck & Dozois, 2011; Corrales et al., 2016; Waldinger et al., 2001; Wright et al., 2009). Due to CAs the child may develop a sense of self as unworthy, unlovable, incompetent and/or powerless that can put him/her at risk of internalising disorders (e.g., PTSD, anxiety, and depression) or externalising behaviours (e.g., antisocial behaviours) over time (Cicchetti & Toth, 2016; Liem & Boudewyn, 1999; Wright et al., 2009).
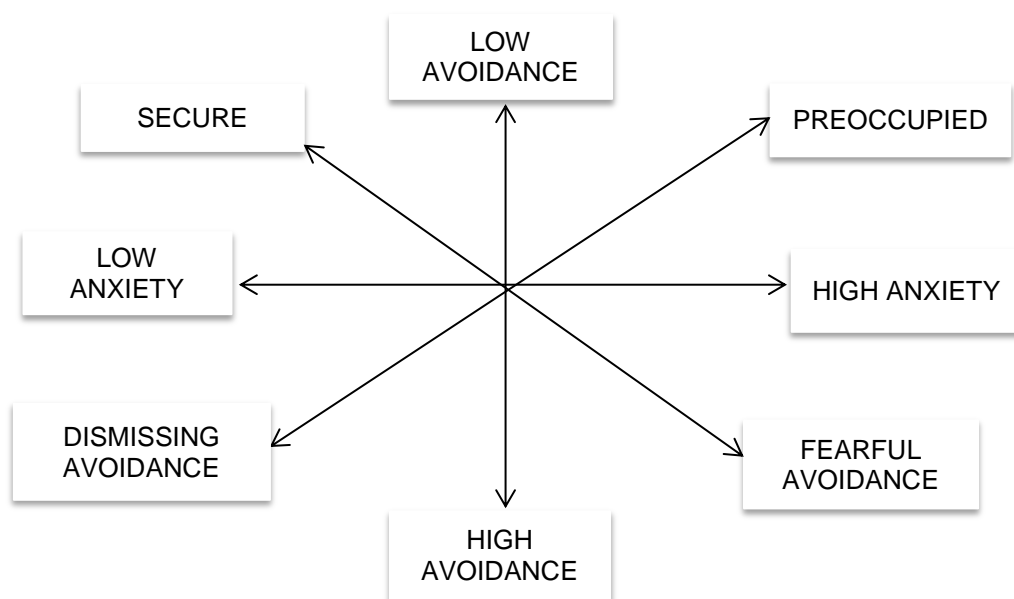
Figure 3.1   *A Model of Individual Differences in Attachment for Infants and Adults* (adapted from Brennan et al., 1998; Fraley & Shaver, 2000).

Cognitive schemas are pre-set representations of past experiences that influence current perceptions, thinking and behaviour (Chalkley, 2015; Fraley et al., 2011). Cognitive processes create the underlying assumptions which lead to relational schemas (Bunn et al., 2006; Chopik et al., 2013; Fraley & Shaver, 2000; Hankin, 2008). Negative assumptions (e.g., self-criticism, automatic negative thoughts, and emotional inhibition) act as mediators between CAs and the development of psychological and behavioural disorders (Bunn et al., 2006; Hastings et al., 2015; Sachs-Ericsson et al., 2006; Wright et al., 2009). For example, emotional abuse and neglect in childhood have a strong association with distorted underlying assumptions that cause negative self-schemas leading to debilitating psychological disorders (e.g., depression, and anxiety) in adulthood (Cicchetti, 2016; Egeland & Susman-Stillman, 1996; Fraley et al., 2011; Gibbs et al., 2013; Obegi & Berant, 2010).

Cognitive maladaptive schemas are 'core beliefs' about the self (e.g., 'I am unlovable'), while conditional schema are related to assumptions (e.g., 'If I ignore myself and please others, I will be loved'). The interaction between the two schemas creates further rejection, impaired autonomy, weakened self-control, self-consciousness, and hypovigilance (Cicchetti, 2016; Fraley et al., 2011). Unconditional maladaptive schemas reinforce the negative belief that no matter what, the result will remain the same and the person will continue to be regarded as useless, helpless, unlovable, and unworthy (Cicchetti, 2016; Renner et al., 2013). In return, conditional maladaptive schemas offer some false hope that the person might change the consequence if they give in to self-sacrifices, inhibit emotions or strive to meet high standards in order to avoid negative outcomes, even if only for a short time (Bush et al., 2016; Evans, 2015). The presence of maladaptive schemas is likely to mediate between CAs and later negative consequences (e.g., depression, and anxiety) (Beck, 2005; Cicchetti & Toth, 2016; Egeland & Susman-Stillman, 1996; Renner et al., 2013).

3.6   The Relationship of Childhood Adversities to Internalised Disorders

There is evidence that CAs can lead to negative physical, behavioural and psychological functioning (Felitti et al., 1998). The impact of internalised disorders may be greater for those who have experienced multiple types and repeated forms of CAs in both early and late developmental stages, amplifying the severity, complexity, and chronicity of these disorders in later life (Cicchetti & Toth, 2016; Felitti et al., 1998; Finkelhor et al., 2015; Kalmakis & Chandler, 2014). In order to create relevant interventions, research and clinical practice need to assess for any maltreatment and household dysfunction in conjunction with internalised and/or externalised disorders rather than only focusing on the effects of specific disorders in isolation (Briere et al., 2016; Cicchetti & Toth, 2016; Fenton et al., 2013; Keyes et al., 2012). Sections 3.6.1, 3.6.2 and 3.6.3 review the current understanding of the association between CAs and the occurrence of depression and anxiety in adulthood, respectively.

3.6.1   Childhood Adversities and Depression

Recent studies reveal that participants who experience CAs have a 1.3% to 2.4% risk of developing depression (Gilbert et al., 2012; Kessler & Magee, 1993; Levitan et al., 2003; Poletti et al., 2016; Young & Widom, 2014), the severity of which may be related to timing, types and severity of CAs. For example, individuals suffer from more severe depressive symptoms when they experience harsh and prolonged CAs at early stages of development (Chapman et al., 2004; Fergusson et al., 2008; Poletti et al., 2016). Additionally, younger adults with CAs are more likely to display complex and severe depression together with maladaptive behaviours (e.g., alcohol and substance dependency) compared with older adults (Chapman et al., 2004; D'Andrea et al., 2012; Kessler et al., 2010; Reuben et al., 2016).

However, there is longitudinal evidence that participants with depression experienced fewer alcohol problems when they received parental support during childhood (Anda et al., 2002;

Douglas et al., 2010; Phillips et al., 2005). The frequency of CAs also increased the

likelihood of severe depression (Briere et al., 2016; Katon et al., 2001; Scott et al., 2011).

Severe depression with the co-morbidity of anxiety was more common for people with CAs

rather than without (Briere et al., 2010; Putnam et al., 2013; Yanos et al., 2010; Young &

Widom, 2014). Other prospective research has shown that household dysfunctions create a

poor quality relationship between child and parent(s), reduce effective coping strategies, and

increase vulnerability to depression (Phillips et al., 2005). Retrospective studies note a link

between depression and a past history of household dysfunction (Chaney et al., 2014;

Goodman & Brand, 2002; Phillips et al., 2005; Putnam et al., 2013). Associations have been

found between household dysfunctions in childhood (e.g., parental drinking, mental illness,

violence, parents' marital problems, death of a parent, and absence of a close adult

relationship), and the prevalence of depression by age 20 (Kessler & Magee, 1994).

3.6.2   Childhood Adversities and Anxiety

Although there is less research about anxiety, several studies have shown that a history of

CAs (reported retrospectively) is related to anxiety among both community and clinical

participants (Keyes et al., 2012; Levitan et al., 2003; Phillips et al., 2005; Spence et al.,

2002). Studies from the Netherlands report the incidence of emotional neglect in childhood to

correspond with 4.5% of depression and anxiety, with a further 9% incidence of other

comorbid disorders (Hovens et al., 2009; Spinhoven et al., 2010).

A prospective study from the United States revealed that childhood maltreatment may

increase the risk of both depression and anxiety, and their comorbidity, in adolescents and

adults (Adams et al., 2004). Other retrospective studies reveal a direct link between CAs and

GAD, panic disorder, and social phobia (Douglas et al., 2010; Heim & Nemeroff, 2001;

Hovens et al., 2015,2016; Putnam et al., 2013). However, there is limited guidance about the

theoretical bases of associations between CAs and later anxiety compared with depression. Suggestions are that depressive symptoms may follow perceived loss, whereas anxiety results from early threat and fear (Beck et al., 1987).

Studies report CAs to be responsible for anxiety and depression in the majority of cases, with more research needed to understand the nature of the association (English et al., 2005; Keyes et al., 2012). Brown, Harris, and Eales (1993) note that CAs during early development may result in the later onset of anxiety, whereas depression follows both early onset CAs and current stressors (e.g., losses, poor social support, and unemployment). Cognitive appraisals of CAs during psychological assessment may create a better understanding of the link between exposure to early CAs and later disorders (Afifi et al., 2008; Briere & Jordan, 2009; Cicchetti & Toth, 2016; English et al., 2005; Keyes et al., 2012).

3.6.3   Childhood Adversities and PTSD

Prospective and retrospective studies consistently suggest that CAs increase the risk of PTSD, with symptoms developing after experiencing or observing a terrifying event (Breslau et al., 2014; Brockie et al., 2015; Schalinski et al., 2016; Whiffen & MacIntosh, 2005). Numerous studies highlight the association between present PTSD and the past experience of CAs, regardless of whether the effects of family and child characteristics or genetic components are controlled statistically (Banyard et al., 2001; Breslau et al., 2014; Brockie et al., 2015; Schalinski et al., 2016; Tolin & Foa, 2006; Whiffen & MacIntosh, 2005). One retrospective study involving young adults with PTSD who experienced early childhood maltreatment reported 23% exposed to CSA, 19% who had been physically abused, 17% who had been neglected, with the lifetime risk of PTSD much higher among those with early childhood maltreatment than those without (Widom, 1999). Some studies have shown childhood maltreatment with an alcoholic parent or parent in prison is also associated with a

higher risk of PTSD (Gilbert et al., 2009, 2012; Johnston & Sullivan, 2016; Widom, 1999). The strong association between types of CSA and severity of PTSD suggests a dose-response effect, with higher PTSD risk linked with penetrative sexual abuse than with contact or non-contact sexual abuse (Briere et al., 2016; Simon et al., 2016; Van Den Bulk et al., 2016).

3.7   Chapter Summary

This brief review indicates that childhood abuse and neglect pose great concern, with their prevalence regarded as a silent global epidemic. Research suggests that childhood maltreatment usually co-exists with household dysfunctions, intensifying the negative influence of maltreatment over time. CAs have a significant impact on both developmental milestones and the manifestation of both internalising (e.g., anxiety, and depression) and externalising disorders (e.g., antisocial behaviour, substance disorders). The experience of CAs may alter the functioning of the brain, and produce insecure attachment, giving rise to later psychological, behavioural and physical problems. More distorted conditional and unconditional self-schemas may form, thus limiting the capacity for social functioning and eventually contributing to complex and chronic internalising and/or externalising disorders.

Research highlights the importance of gender-specific differences in CAs with girls more at risk of CSA and boys more at risk of physical abuse. Researchers and practitioners are encouraged to develop a more comprehensive understanding of CAs, and to incorporate this knowledge within relevant interventions, rather than treating disorders in isolation. However, there is some evidence that in spite of their experience of CAs, certain individuals may be protected against negative consequences and be considered as resilient. Chapter Four reviews the relevance of, along with ways to cultivate resilience, particularly among those with a history of CAs and current anxiety and/or depression.

CHAPTER FOUR

Resilience

4.1   Introduction

Chapter Three described CAs, with an emphasis on their importance as potential precipitating factors for later psychopathology. The experience of CAs during critical developmental stages may contribute to insecure attachment and a negative cognitive style leading to distorted self-schemas and subsequent internalising (e.g., anxiety and depression) and/or externalising disorders (e.g., antisocial behaviour). For this reason the evaluation of CAs during the assessment of psychopathology was encouraged.

Chapter Four introduces the construct of resilience, which is the second key variable of the current research program. First, the history of resilience is outlined, highlighting three specific waves of enquiry. Second, factors related to lower or higher resilience are described. Third, the similarities and differences between definitions of resilience are noted, with an emphasis on the importance of focusing on domain-specific resilience rather than overall resilience. Fourth, current instruments that quantify resilience for older adolescents and adults are briefly reviewed. Fifth, the relationships between resilience and anxiety and depression are described, including a commentary on the distinction between resilience and recovery. Finally, the potential clinical and diagnostic value of resilience is discussed.

4.2   The Definition of Resilience

The word resilience derives from the Latin verb 'resilire' (to resile), defined as having elasticity, flexibility or recuperative power (Oxford English Dictionary, 2007). A resilient person recovers readily from adversity and is described as 'leaping back' or 'springing back' (Grafton et al., 2010; Rosenberg & Yi-Frazier, 2016). The difficulties of identifying a

definition for which there is no universal agreement have been noted (Fergusson & Horwood, 2003; Luthar, 2003; Luthar et al., 2015; Shaikh & Kauppi, 2010). However, it is agreed that resilience reflects a blend of abilities from both internal and external resources that interact to create a healthy response and positive adaptation to adversity (Campbell-Sills et al., 2006; Luthar et al., 2015; Masten, 2015; Masten & Labella, 2016; Rutter, 2012b). Research also highlights culture as a key limitation to determining a global definition of resilience (Bonanno et al., 2015; Ungar, 2013, 2015a; Werner, 2013). Indeed, positive growth and adaptability in the face of adversities are said to be embedded within a sociocultural context (Pooley & Cohen, 2010; Ungar, 2012, 2015a, 2015b; Ungar et al., 2013; Werner, 2013).

It is also clear that resilience is not static but rather changes over time. Resilience is best described as a collection of abilities, each relevant to a specific domain (i.e., work or school performance, behaviour and psychosocial adjustment, and physical health). For example, an individual may demonstrate high resilience in education and employment domains but find it difficult to maintain intimate relationships (Herrenkohl, 2013; Klika & Herrenkohl, 2013; Masten & Labella, 2016; Rutter, 2012b; Tian et al., 2016). Nevertheless, all humans have the potential to strengthen their adaptive functioning and cultivate resilience despite vulnerabilities. As Masten (2001, p. 235) has stated:

> *What began as a quest to understand the extraordinary has revealed the power of the ordinary. Resilience does not come from rare and special qualities, but from the everyday magic of ordinary, normative human resources in the minds, brains, and bodies of children, in their families and relationships, and their communities.*

4.3   Historical Overview of Resilience

Resilience has been classified in two distinct ways (i.e., psychologically or sociologically) according to disciplinary traditions (Shaikh & Kauppi, 2010). The focus of this chapter is resilience as it explores personality traits, positive adaptation, healthy functioning, stress

resistance, and recovery from adversity (Shaikh & Kauppi, 2010). Garmezy (1993) and

Masten et al. (1999) noted that resilience research originated in developmental

psychopathology, with resilience considered to be successful functioning regardless of

adversity (Shaikh & Kauppi, 2010; Tusaie & Dyer, 2004).

Werner (2013) discusses 21 large-scale longitudinal resilience studies from mainly developed

countries. Overall, these studies indicate a strong inverse link between resilience and

vulnerability (Cherry & Galea, 2015; Fergusson & Horwood, 2003; Werner, 2013). They also

identify personal attributes (e.g., hardiness, coping, optimism, patience, tolerance, faith,

adaptability, self-esteem, sense of humour and self-efficacy) and influential protective factors

(e.g., small family, maternal competence, close bond with primary caregiver, supportive

grandparents and/or siblings, competent peer friends, supportive teachers, and successful

school experiences) that empower resilience and positive adaptation regardless of risk factors

(Grafton et al., 2010; Luthar et al., 2015; Masten & Tellegen, 2012; Werner, 2013).

Since the 1970s the discourse concerning resilience has changed, with researchers examining

causative factors (e.g., risk and protective factors, and positive adaptations) across three

waves of enquiry (Baron et al., 1996; Cicchetti et al., 1993; Garmezy, 1993; Garmezy &

Masten, 1991; Herrenkohl, 2013; Masten, 2016; Masten & Cicchetti, 2012; Masten et al.,

1999; Werner, 2013), as discussed is sections 4.3.1 to 4.3.3 (see also Table 4.1).

4.3.1   The First Wave of Resilience Enquiry

Early resilience studies were conducted using institutionalised children who had been

exposed to war, were economically disadvantaged, and therefore at risk of developing

psychopathology (Collishaw et al., 2007; Garmezy & Masten, 1991; Masten & Cicchetti,

2012; Rutter, 1971). Scholars explored genetic and environmental risk factors associated with

vulnerabilities and positive adaptation (Masten et al., 1999; Rutter & Garmezy, 1983;

Werner, 2013). The majority of children who had experienced adversities and lived in

volatile environments were shown to be resilient, despite these circumstances. This led to the

description of 'invulnerability', defined as the internal and external characteristics that help to

overcome adversities (Anthony, 1974; Anthony & Cohler, 1987; Garmezy & Masten, 1991;

Rutter & Garmezy, 1983). Thus, the first wave described resilience as a robust personality

trait (Baron et al., 1996; Rutter, 1985; Rutter & Garmezy, 1983; Werner, 2013).

Table 4.1   *Descriptions of the Three Waves of Enquiry into Resilience*

Three waves of resilience	Features
1. As a set of characteristics	• Hardiness • Coping • Self-Efficacy • Optimism, Patience • Tolerance • Faith • Adaptability • Self-Esteem • Sense of Humour
2. As a dynamic process	• Interaction of risk, protective and other relevant factors • A process of recurrent adversity alongside positive adaptation
3. As the processes of human adaptive systems and as a resilience meta-theory	• Innate energy • Motivating life force • Self-righting mechanisms

Note.   Adapted from Werner (2013).

4.3.2   The Second Wave of Resilience Enquiry

This wave includes the frequent changing nature of life in conjunction with the aptitude that

enables effective reintegration and adaptation, ability to learn from difficult experiences,

develop self-efficacy that empowers cognitive ability, and personal growth in the face of

adversities (Alvord et al., 2016; Grafton et al., 2010; Jacelon, 1997; Tusaie & Dyer, 2004;

Waugh & Koster, 2015; Werner, 2013). Thus, this wave considers resilience as a dynamic

process between protective factors, supportive external resources, positive attributes, and

single or cumulative risk factors over time (Alvord et al., 2016; Klika & Herrenkohl, 2013;

Lee et al., 2013; Luthar & Brown, 2007; Werner, 2013).

When pathways to developmental growth are blocked due to adversity, the dynamic nature of

resilience encourages the activation of behaviours that contribute to positive adaptation.

Resilience encourages the individual to analyse growth instead of concentrating on

predetermined outcomes (Masten, 2016; Rutter, 2012b; Shulman, 2016; Ungar et al., 2013;

Werner, 2013). However, the interaction between these factors and how an individual is

motivated, inspired, and driven to engage in the dynamic process is still unclear (Klika &

Herrenkohl, 2013; Lee et al., 2013; Masten, 2016; Rutter, 2012b; Werner, 2013).

4.3.3   The Third Wave of Resilience Enquiry

The third wave reflects resilience as a meta-theory, representing the development of adaptive

systems over time that are strengthened by values and ideas (e.g., drawn from ancient eastern

medicine, theology, psychology, quantum physics, spirituality, and postmodernist mysticism)

learned across the lifespan (Bradshaw et al., 2007; Grafton et al., 2010; Richardson, 2002;

Waite & Richardson, 2004; Werner, 2013). Richardson (2002, p. 315) defines the concept

"an energy or force that drives a person from survival to self-actualization." Further, self-

actualization creates a life force within innate resources that adjust body, mind, and spirit of

the person to self-motivate, cope, and grow from both external and internal resources despite

experiencing adversities and is known as 'homeostasis' (Bradshaw et al., 2007; Connor &

Davidson, 2003; Richardson, 2002; Waite & Richardson, 2004; Werner, 2013).

4.4   Factors Related to Lower or Higher Resilience

Research highlights the interaction between various factors that either enhance or diminish resilience. Section 4.4.1 describes such risk factors for lower resilience (e.g., gender differences, and CAs), and section 4.4.2 presents evidence of protective internal and external factors (e.g., personal attributes, and supportive resources) (Werner, 2013).

4.4.1   Risk Factors for Lower Resilience

As reviewed in Chapter Three, CAs also need to be acknowledged as risk factors for short- to long-term negative consequences such as psychopathology and maladaptive behaviours which may impact on resilience. The negative consequences of CAs often persist beyond the time of the adversities (Baglivio et al., 2015; Cicchetti & Toth, 2016; Klika & Herrenkohl, 2013; McEwen et al., 2015). Changes in circumstances during early developmental stages could reflect a transition in social roles (Klika & Herrenkohl, 2013; Masten & Labella, 2016; Pargas et al., 2010). However, when adversities occur during these crucial stages, the impact can create maladaptive cognitions and poor access to social resources that may contribute to low resilience and persistent and complex negative outcomes characterised by environmental disadvantages (Dunn et al., 2013; Felitti et al., 1998; Min et al., 2015; Pargas et al., 2010). A detailed commentary on the negative impact of CAs was provided in Chapter Three.

Gender-specific limitations may contribute to lower resilience among men and women in the face of adversities (Davis et al., 2014; Dube et al., 2013; Newsome et al., 2016; Sun & Stewart, 2007; Werner, 2013; Wright et al., 2013). The key, however, to understanding gender differences is to differentiate between externalising and internalising responses while also considering the nature of the adversities. For example, women display stronger resilience to externalising responses but greater vulnerability to internalising responses compared with men (Campbell-Sills et al., 2009; Davidson et al., 2005; Davis et al., 2014; Newsome et al.,

2016; Porter & O'Leary, 1980; Rutter, 2012a; Ungar, 2013). There are also some general gender-specific differences that impact resilience regardless of CAs. For example, women frequently access social and interpersonal resources more than men, whereas men present with stronger personal dispositions than women (Bitsika et al., 2010; Hjemdal et al., 2011; Newsome et al., 2016; Ungar, 2013). At the same time, some studies have been limited by small homogeneous samples that may create bias. For example, Campbell-Sills et al. (2006) found that associations between resilience and psychiatric symptoms did not vary according to gender. However, their sample comprised only 132 participants with 72% women.

4.4.2   Protective Factors for Higher Resilience

Protective factors are characteristics or processes leading to higher resilience and positive outcomes in the face of adversities (Nishi et al., 2010; Tusaie & Dyer, 2004; Waugh & Koster, 2015; Werner, 2013). Rather than being the converse of risk factors, protective factors contribute to positive adaptation regardless of adversities (Lamond et al., 2008; Rutter, 2012b; Wright & Masten, 2015). They are essential to adaptability and overall wellbeing, and cultivating a positive trajectory of resilience. As a result, protective factors have an important clinical value (Baek et al., 2010; Burns et al., 2011; Pakalniskiene et al., 2016; Werner, 2013; Wilks & Spivey, 2010). Protective factors empower the individual to generate positive behaviours, competence, cognitive functioning, autonomy, self-regulation, critical problem-solving skills, empathy, and self-efficacy in the face of risk factors (Fergusson & Horwood, 2003; Masten, 2016; Pakalniskiene et al., 2016; Thompson, 2013).

Protective factors include positive internal resources (e.g., competency, and confidence) and supportive and powerful external resources (e.g., secure parental attachment, healthy peer affiliation, and the availability of supportive environmental and cultural resources) (Bonanno et al., 2012; Fergusson et al., 2008; Lee et al., 2013; Rutter, 2012a, 2012b; Ungar, 2015a).

Secure parental attachment has been described as the presence of warm, nurturing and supportive relationships with at least one parent or caregiver which protects the person against the impact of adversities in their life (Bowlby, 1988; Everall et al., 2006; Fletcher & Gallichan, 2016; Fonagy & Bateman, 2016; Luthar et al., 2015). A healthy peer affiliation often contributes to positive outcomes. For example, a young child or adolescent who is facing adversities within their family may form a healthy relationship with people outside the family (Fergusson et al., 2003; Ungar, 2011, 2012, 2015a; Ungar et al., 2008; Wong et al., 2006; Werner, 2013; Wright & Masten, 2005, 2015). To summarise, the development of resilience appears to be more socially facilitated than biologically determined (Masten, 2015; Starfield et al., 2002; Ungar, 2015a, 2015b; Werner, 2013). Consequently, researchers have been encouraged to pay more direct attention to supportive external resources and less on personality (Bronfenbrenner, 1977; Luthar & Zelazo, 2003; Wang et al., 2015).

4.5   A Brief Review of Resilience Instruments for Adults

There are a number of resilience measures relevant to adults, as evidenced by recent systematic reviews (i.e., Ahern et al., 2006; Liu et al., 2015; Pangallo et al., 2015; Smith-Osborne & Whitehill Bolton, 2013; Windle et al., 2011). A brief summary of key instruments helps to create a better understanding of how resilience is operationalised in terms of theory and application to specific sub-populations (Pangallo et al., 2015; Windle et al., 2011). Sections 4.5.1 through 4.5.12 discuss instruments with sound psychometric properties that may be utilised in a mental health, or other health-related settings, for adults 18 to 65 years of age (Connor & Davidson, 2003; Green et al., 2014; Karaırmak, 2010; Pangallo et al., 2015; Wang et al., 2010). As illustrated in Table 4.2, twelve such scales are reviewed.

4.5.1   Resilience Scale

The Resilience Scale (RS; Wagnild & Young, 1990) is a 25-item measure for which responses are recorded on a 7-point scale. Total scores range from 25 to 175, and low, medium and high resilience are defined. It comprises two subscales (personal competence, and acceptance of self and life). The RS was originally developed from qualitative research with women who had successfully negotiated a major life event (Wagnild, 2009; Wagnild & Young, 1990, 1993) with the dimensions of equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness being identified. The analytical approach used was not outlined (Cenat et al., 2015; Portzky et al., 2010; Wagnild, 2009; Windle et al., 2011).

The RS was re-tested (Wagnild & Young, 1993) using a sample of adults (53-95 years old) but studies have also included caregivers, first-time mothers, public housing residents, immigrants, students and adolescents, thus demonstrating its diverse applicability (Ahern et al., 2006; Wagnild, 2009). The RS is one of the most valid resilience tools with sound psychometric properties ($\alpha = 0.76$ to 0.94). However, it has had limited use in evaluating change and only a few studies have assessed test-retest reliability (Cenat et al., 2015; Portzky et al., 2010; Wagnild, 2009; Windle et al., 2011). Wagnild (2009) has developed a shorter version (14 items) which was originally tested using 39 undergraduate nurses. This abridged version also has sound psychometric properties (Cenat et al., 2015; Pangallo et al., 2015; Portzky et al., 2010; Wagnild, 2009; Windle et al., 2011).

4.5.2   Baruth Protective Factors Inventory

The Baruth Protective Factors Inventory (BPFI; Baruth & Caroll, 2002) is a 16-item measure employing a 5-point response scale. Resilience is described in terms of 'adaptable personality', 'supportive environment', 'fewer stressors', and 'compensating experiences'. The initial participants were students ranging in age from 19 to 54 years (Ahern et al., 2006).

However, there has been only minimal validation of the BPFI with little psychometric data. Further testing with larger samples prior to its application in clinical practice is warranted (Ahern et al., 2006; Pangallo et al., 2015; Smith-Osborne & Whitehill Bolton, 2013).

Table 4.2 *Common Resilience Measurement Tools for Adults*

Scale and Citations	Age and Gender	Dimensions
Resilience Scale (Wagnild & Young, 1990)	Adolescents to older adults Both genders	2
Baruth Protective Factors Inventory (Baruth & Caroll, 2002)	Adolescents to older adults	3
Resilience Scale for Adults (Friborg et al., 2003)	Adults Both genders	5 or 6
Dispositional Resilience Scale (Bartone et al., 1989)	Adults	3
Brief Resilient Coping Scale (Sinclair & Wallston, 2004)	Adult women	Unidimensional
Resilience in Midlife (Ryan & Caltabiano, 2009)	Mid-adults (35 to 60 years) Both genders	5
Multidimensional Trauma Recovery and Resiliency Scale (Harvey et al., 2003)	Adult women	8
Trauma Resilience Scale (Madsen & Abell, 2010)	Older adolescents to adults Both genders	4
Ego Resiliency-89 (Block & Kremen, 1996)	Older adolescents and young adults (18 to 23 years) Both genders	Unidimensional
Psychological Resilience (Windle et al., 2008)	Older adults (age 50+) Both genders	3
Resilience Appraisals Scale (Johnson et al., 2010)	Adults Both genders	3
Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Older adolescents to adults Both genders	5

4.5.3   Resilience Scale for Adults

The Resilience Scale for Adults (RSA; Friborg et al., 2003) consists of 37 self-report items rated on a 5-point scale. The development sample (N = 482) had mean ages of 33.7 years (women) and 36.2 years (men). Five factors are reported: personal competence, social competence, family coherence, social support, and personal structure that demonstrate acceptable test-retest reliability. The RSA distinguishes mental health patients from healthy people and it identifies essential protective factors that prevent instability/psychological disorders, enabling better adaptation to adversities (Friborg et al., 2003; Pangallo et al., 2015; Smith-Osborne & Whitehill Bolton, 2013; Windle et al., 2011). A shorter 33-item version has also been validated (Friborg et al., 2005; Friborg et al., 2009; Pangallo et al., 2015), with six subscales proposed (perception of self, planned future, social competence, structured style, family cohesion, and social resources). This shorter version has the ability to identify personality type, such as good adjustment and vulnerability profiles, among the general population (Friborg et al., 2005; Friborg et al., 2009; Hjemdal et al., 2015).

4.5.4   The Dispositional Resilience Scale

The 45 items of the Dispositional Resilience Scale (DRS; Bartone et al., 1989) are rated on a 3-point scale. It was derived from hardiness theories and has a three-factor structure (control, commitment, and challenge), with resilience argued to be a fixed trait, rather than a dynamic process (Bartone, 2006, 2007; Bartone et al., 1989, 2013; Windle et al., 2011). Recent shorter versions (15-items and 30-items) are available in Norwegian, although further psychometric testing is suggested (Bartone, 2006, 2007; Bartone et al., 2013; Pangallo et al., 2015).

4.5.5   The Brief Resilient Coping Scale

The Brief Resilient Coping Scale (BRCS; Sinclair & Wallston, 2004) comprises only 4 self-report items. It is unidimensional with scores derived from 5-point scales. Relatively poor

internal reliability has been reported (e.g., 0.69). This brief assessment tool is designed to recognise personal qualities that may lead to the capacity to cope with adversity in an adaptive way (Limonero et al., 2014; Pangallo et al., 2015; Smith-Osborne & Whitehill Bolton, 2013; Tomas et al., 2012; Windle et al., 2011). It draws on Polk's theory (1997) of resilience that includes self-efficacy, optimism, and self-reliance (Limonero et al., 2014), and it acknowledges resilience as a dynamic process able to capture change after exposure to adversity. The BRCS is sensitive to changes following interventions (i.e., CBT) intended to improve coping skills and it may be useful in identifying the need for psychological treatment (Sinclair & Wallston, 2004). However, further examination of its psychometric properties is required (Limonero et al., 2014; Pangallo et al., 2015; Sinclair & Wallston, 2004; Smith-Osborne & Whitehill Bolton, 2013; Tomas et al., 2012; Windle et al., 2011).

4.5.6   Resilience in Midlife

Resilience in Midlife (RIM; Ryan & Caltabiano, 2009) consists of 25 self-report items rated on a 5-point scale. It was validated using Australian adults (N = 130; aged 35 to 60 years). It comprises five factors (self-efficacy, family/social networks, perseverance, internal locus of control, and coping and adaptation) (Ryan & Caltabiano, 2009). Further research is needed to establish its psychometric properties and its effectiveness in assessing resilience within various age groups (Pangallo et al., 2015; Smith-Osborne & Whitehill Bolton, 2013).

4.5.7   Multidimensional Trauma Recovery and Resiliency Scale

The Multidimensional Trauma Recovery and Resiliency Scale (MTRR; Harvey et al., 2003) is relatively long, with 135-items presented as a semi-structured interview. The development sample comprised predominantly female adults (86% of N = 181) undergoing treatment for abuse. It captures eight domains relevant to psychological functioning, recovery and resilience following adversity (authority over memory, integration of memory and affect,

affect tolerance, symptom mastery and positive coping, self-esteem, self-cohesion, safe attachment, and meaning making) (Harvey et al., 2003). It has reasonable inter-rater reliability and sound internal consistency among a clinical sample (Bright & Jonson-Reid, 2010; Harvey et al., 2003; Liang et al., 2007; Pangallo et al., 2015; Peddle, 2007).

Harvey and Tummala-Narra (2007) presented a shorter version of the MTRR (99 items) which has equally sound psychometric properties. It was tested using a sample of female prisoners (N = 164) with a background of extensive maltreatment but it is argued to be relevant to both clinical and non-clinical settings (Bright & Jonson-Reid, 2010; Harvey & Tummala-Narra, 2007; Liang et al., 2007; Pangallo et al., 2015; Peddle, 2007).

4.5.8   Trauma Resilience Scale

The Trauma Resilience Scale (TRS; Madsen & Abell, 2010) has 59 items that describe four dimensions (problem solving, relationships, optimism, and spirituality). The development sample (N = 577; mean age = 22 years) comprised university students and adults from community settings of whom 47.3% had experienced violence (Madsen & Abell, 2010; Pangallo et al., 2015; Windle et al., 2011).

4.5.9   Ego Resilience-89

The Ego Resilience-89 (ER-89; Block & Kremen, 1996) is a 14-item self-report tool. Responses to a 4-point scale capture ego-resiliency as a personality characteristic. The scale was developed using young adults (age 18 years; n = 106 and 23 years; n = 104). Although the ER-89 has a sound theoretical basis, the actual content of the measure was developed empirically rather than clinically (Block & Kremen, 1996). Indeed, there is no evidence of clinical applications and it has been used only occasionally in research (Ahern et al., 2006; Block & Kremen, 1996; Pangallo et al., 2015; Prince-Embury, 2013; Windle et al., 2011).

There is also a shorter ER with 20 items (Klohnen, 1996) for adults 18 to 48 years, and a

longer ER with 102 items (Bromley et al., 2006) for adolescents and young adults. These

scales also have their theoretical foundation in the concept of ego resiliency (Gough, 1987).

As with the ER-89, there is no evidence of clinical applications of these two scales (Ahern et

al., 2006; Block & Block, 1980; Block & Kremen, 1996; Bromley et al., 2006; Gough, 1987;

Klohnen, 1996; Pangallo et al., 2015; Prince-Embury, 2013; Windle et al., 2011).

4.5.10   Psychological Resilience

The 19-item Psychological Resilience measure (PR; Windle et al., 2008) uses a 3-point

response scale with items abstracted from established scales. Three factors (self-esteem,

personal competence, and interpersonal control) have been identified. There are few clinical

applications of PR except a study that examined the intervening role that resilience may play

between ill health and wellbeing (Windle et al., 2008, 2011).

4.5.11   Resilience Appraisals Scale

The Resilience Appraisals Scale (RAS; Johnson et al., 2010) comprises 12 self-report items

rated on a 5-point scale. The total score has good internal consistency among adults with

suicidal ideation ($\alpha = 0.88$). Three subscales (social support, emotional regulation, and

problem solving) are robust and have evidence of convergence with other appraisal measures.

Using the RAS, Gooding et al. (2012) reported higher resilience among older compared with

younger adults, particularly in emotional regulation and problem solving.

4.5.12   Connor-Davidson Resilience Scale

The Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) is a 25-item

self-report scale, with items rated from 0 ('not at all true') to 4 ('true nearly all the time').

Higher total scores (0-100) indicate greater resilience. It was originally developed as a

measure of the ability of people with psychological disorders to cope with adversities

(Connor et al., 2003; Davidson et al., 2012). The CD-RISC is used extensively in clinical and research settings (i.e., coping, adaptation, and stress) (Allan et al., 2014; Goins et al., 2013; Green et al., 2014; Liu et al., 2015; Windle et al., 2011). Its reliability and validity have been established with the general population, primary care patients and psychiatric outpatients, including those with GAD and PTSD (Chen et al., 2016; Davidson et al., 2012; Goins et al., 2013; Green et al., 2014; Niu et al., 2016; Peng et al., 2014).

A unidimensional 10-item CD-RISC has recently been proposed (Campbell-Sills & Stein, 2007). It has sound psychometric properties with good internal consistency (CD-RISC10; range = 0-40; α = 0.85) (Bitsika et al., 2010; Burns & Anstey, 2010; Gonzalez et al., 2016). There is support for the notion that the CD-RISC10 assesses the core concerns of resilience (Aloba et al., 2016; Cosco et al., 2016; Goins et al., 2013; Green et al., 2014; Hartley, 2012; Gucciardi et al., 2011; Wang et al., 2010, 2015; Wright et al., 2013).

It has also been suggested that only two CD-RISC items are required (Davidson et al., 2012; Vaishnavi et al., 2007) to capture the essence of resilience. The two items address the ability to bounce back and adapt to change. Although brief, the CD-RISC2 has demonstrated good test-retest reliability, convergent validity and divergent validity. It has served as a screening measure for follow-up after treatment for psychological disorders (Davidson et al., 2012; Green et al., 2014; Hammermeister et al., 2012; Solano et al., 2016; Vaishnavi et al., 2007). An illustrative application is a comparison of participants with and without PTSD revealing the CD-RISC2 to be able to differentiate between the groups (Jeong et al., 2015). Such studies point to the CD-RISC2 being a valuable tool in the rapid assessment of resilience.

4.6   The Role of Resilience in Anxiety and Depression

Research highlights that even resilient individuals may experience at least some emotional pains, intrusive cognitions, and rumination in the face of adversities (Bonanno, 2004;

Bonanno et al., 2012, 2015; Ungar, 2016). Resilience may not fully protect those people who have limited external support if exposed to multiple and complex risk factors, especially during key developmental stages when they may experience strong negative emotions contributing to complex mental health disorders (Cicchetti, 2010, 2013, 2016; Hjemdal et al., 2011; Masten & Labella, 2016; Masten & Tellegen, 2012; Ungar, 2016).

Historically, mainstream psychological research has largely focused on the association between PTSD and resilience whereas epidemiological and biological data have revealed that low resilience could be strongly related to conditions such as anxiety and depression, substance and alcohol-related disorders, and antisocial behaviours (Bitsika et al., 2010, 2013; Gibb et al., 2007; Hoge et al., 2007; Horn et al., 2016; Min et al., 2013, 2015). Resilience may even operate as a moderating factor between risk factors (e.g., maltreatment) and psychopathology (Campbell-Sills et al., 2006; Cicchetti, 2016; Fontaine et al., 2016). Studies (e.g., Rutter, 1987, 1993) suggest the possibility of associations between early adversities and later psychological disorders even though the majority of the population with background risk factors will not experience psychopathology (Cicchetti, 2016; Collishaw et al., 2007; Rutter, 2012a, 2012b). One study comparing resilience between participants with anxiety and depression reported no statistical difference, but nevertheless a strong trend towards those with depression having lower resilience (Min et al., 2013).

During the last decade more resilience-based studies have investigated the association between resilience and anxiety and depression. However, there remains relatively limited knowledge about contributing factors and implications for resilience for people with these disorders, particularly as they undergo psychological interventions (Adshead & Ferris, 2007; Hjemdal et al., 2011; Lowry-Webster et al., 2001; Min et al., 2013, 2015; Mosqueiro et al., 2015; Pakalniskiene et al., 2016; Southwick et al., 2005; Waugh & Koster, 2015).

This research is the first to use a large homogeneous sample to explore CAs and resilience longitudinally across a standard CBT protocol contribute to augmentation of resilience among a large clinical sample with anxiety and depression.

4.7   Is Resilience the Same as Recovery?

The resilience process is different from that of recovery and yet these terms are often used interchangeably (Bonanno, 2004; Calhoun & Tedeschi, 2014; Fletcher & Sarkar, 2013; Harvey et al., 2003; Rutter, 2007; Waugh & Koster, 2015). Recovery implies a trajectory where normal functioning temporarily gives way to psychopathology, which may be experienced for months or years, with a gradual return to pre-trauma status (Bonanno, 2004; Bonanno et al., 2004; Mancini et al., 2015; Rutter, 2007). On the other hand, resilience is more holistic and comprehensive than the simple absence of psychopathology, as defined within recovery. Resilience creates the ability and competence to maintain relatively stable (healthy) levels of psychological and physical functioning despite vulnerabilities (Bonanno, 2005; Bonanno & Mancini, 2011, 2012; Catalano et al., 2011; Franczak et al., 2016; Mancini & Bonanno, 2012; Mancini et al., 2015; Muller et al., 2009).

It is clear that resilience develops from exposure to adversities and is a dynamic process that contributes to the active shaping of the person's personality. Individuals gain the ability to learn from previous experiences, and by accessing supportive environmental resources they can guard themselves from further adverse situations. For example, studies of adult resilience in the face of potential trauma (e.g., loss of spouse) demonstrated that those participants who displayed a constant pattern of resilience appear to continue with their lives with minimal or no distractions over time (Bonanno, 2004; Rutter, 2007, 2012a, 2012b, 2012c). However, participants whose response was consistent with a recovery pattern struggled with mild to moderate psychological symptoms and their everyday activities, but were able to return to

their previous level of functioning about 1-2 years later (Almedom & Glandon, 2007;

Bonanno, 2004; Bonanno & Mancini, 2008, 2011; Bonanno et al., 2012; Burns et al., 2011;

Fletcher & Sarkar, 2013; Grafton et al., 2010; Mancini et al., 2015; Rutter, 2007, 2012b).

4.8   Psychological Interventions and Resilience

Traditionally the focus of psychological interventions for anxiety and depression have been

on vulnerabilities, resulting in limited attention to the potential role of resilience as a

protective factor (Alvord et al., 2016; Cicchetti, 2010, 2016; Luthar & Cicchetti, 2000;

Masten & Cicchetti, 2012; Min et al., 2012, 2013, 2015; Waugh & Koster, 2015). In fact

most commonly a unidimensional approach to intervention for these disorders is

implemented on the assumption that all will benefit from the same intervention. This may be

ineffective or harmful (Alvord et al., 2016; DeRosier et al., 2013; Min et al., 2012, 2013,

2015; Sinclair et al., 2016; Southwick & Charney, 2012; Werner, 2013). For example,

Casella and Motta (1990) highlight that those individuals who cope well with bereavement

are sometimes viewed as cold and unsympathetic, whereas those who cope well with violent

or life-threatening events are regarded in terms of extreme heroism. These perceptual

differences tend to reinforce the misunderstanding that only rare individuals with exceptional

emotional strength express resilience. On the contrary, it is more appropriate to acknowledge

that all individuals have the capacity to express some level of resilience, perhaps dependent

on the specific stressors or adversities encountered (Alvord et al., 2016; Bonanno, 2004;

Bonanno & Mancini, 2012; Bonanno et al., 2004, 2015; Hoffman et al., 2016; Werner, 2013).

It is important to move beyond conceptions of health and pathology that are too simplistic in

order to improve intervention modalities and to develop a more comprehensive understanding

of domain-based resilience. While resilience may buffer the impact of adversities that lead to

the risk of psychopathology, the very symptoms of psychopathology may result in the

resilient components of an individual being not readily apparent (Bonanno, 2004; Bonanno & Mancini, 2012; Bonanno et al., 2015; Herrman et al., 2011; Hoffman et al., 2016; Ungar, 2012, 2016; Ungar et al., 2013; Werner, 2013). Thus, it would be advantageous for clinicians to have the ability to differentiate between resilience and recovery to enable them to gather information about patients' levels of resilience and incorporate such information into relevant treatment (Alvord et al., 2016; Waugh & Koster, 2015; Windle, 2010; Windle et al., 2011; Wingo et al., 2010; Wright & Masten, 2005; Wright et al., 2013).

There is also a need to identify when and for whom specific interventions might be most appropriate. For example, mothers with depression who have survived CSA show remarkable strengths in parenting (Alvord et al., 2016; McEwen et al., 2015; Rutter, 2007, 2012a; Tusaie & Dyer, 2004; Werner, 2013; Wright & Masten, 2005; Wright et al., 2013). Fortunately, the focus of health promotion is slowly shifting from pathology and problem-orientation to new approaches that consider the factors that shape resilience in terms of health, quality of life, and adaptation, in spite of current anxiety or depression (Bastounis et al., 2016; Grafton et al., 2010; Klika & Herrenkohl, 2013; McEwen, 2016; Min et al., 2013, 2015; Reivich et al., 2013; Rutter, 2012a, 2012b; Southwick & Charney, 2012; Waugh & Koster, 2015).

Davidson et al. (2012) highlight the importance of understanding resilience in terms of attitudes, coping strategies, behaviours, psychosocial consistency, and also its dynamic quality (e.g., insight, initiative, humour, and independence) (Alvord et al., 2016; Cicchetti, 2013; Masten, 2015, 2016; McEwen, 2016; Rutter, 2012b; Werner, 2013). Resilience-focused interventions need to recognise potential associations between these personal resources and competencies, and other health issues (i.e., psychological, physical, and genetic), and lifestyle-related challenges (Fergusson & Horwood, 2003; Masten & Cicchetti, 2016; Rutter, 2006, 2012a, 2012c; Sabina & Tindale, 2008; Ungar, 2016; Werner, 2013).

Further research is needed to gain a better understanding of how protective factors may be modified clinically to strengthen resilience, leading to resilience-enhancing treatments (Alvord et al., 2016; Franczak et al., 2016; Hu et al., 2015; Jacelon, 1997; Li et al., 2015; Min et al., 2015; Muller et al., 2009; Spies & Seedat, 2014; Ungar, 2012; Ungar et al., 2013; Werner, 2013). This may encourage a sense of wellness, social connectedness, and meaning and purpose. The motivation for self-healing is often initiated when people gain the ability to develop a deeper understanding of their own journey (Almedom & Glandon, 2007; Connor, 2006; Sippel et al., 2015; Tusaie & Dyer, 2004; Ungar, 2012). Finally, resilience is considered to be a toolbox that develops positive adaptive functioning and learning abilities over time in response to adversities (Alvord et al., 2016; Lee et al., 2013; Muller et al., 2009).

4.9   Chapter Summary

Resilience emerged in the 1970s as a paradigm shift away from considering resilience as a fixed trait and instead to a dynamic process associated with innate abilities. Resilience may best be described as a set of adaptations within specific domains, that if lacking may contribute to anxiety and depression. Yet, as noted, resilience has rarely been applied within the context of a psychopathology or psychological intervention. However, the clinical and diagnostic value of assessing resilience is evident, with interventions gradually shifting from a deficit-based to a more strength-based framework.

The challenge remains to establish the degree to which CAs (Chapter Three) and resilience (Chapter Four) may inform interventions for these disorders. Chapter Five describes the methodology of a longitudinal study designed as a step towards addressing the understanding of links between resilience, CAs, and anxiety and depression within a treatment context, which forms the framework of the current research program.

CHAPTER FIVE

METHODS FOR A LONGITUDINAL STUDY OF STANDARD TREATMENT

5.1   Introduction

As summarised in Chapter Four, understanding associations between resilience, CAs, and anxiety and depression may help to identify useful 'correlates' of these disorders, such as the role of a potential psychological resource (resilience) may buffer the effects of further adversity, or facilitate treatment. Chapter Five outlines the design and methods of the first study in this research program, which aims to describe the associations among resilience, CAs, severity of presenting disorder, and improvement following treatment.

5.2   Design and Context

A one-group, pretest-posttest design was used (Campbell & Stanley, 1963), with the research pathway summarised in Figure 5.1, and described further in the following sections. It mirrors the general clinical pathway used at the Centre for Anxiety and Related Disorders (CARD), Adelaide, South Australia. This service is staffed by therapists and trainee therapists with professional backgrounds in nursing, psychiatry, psychology, and social work. All have either completed or are undertaking postgraduate qualifications in CBT. Prior to commencement of the study a research information and training session was conducted for all CARD clinical staff to ensure the standardised implementation of the research protocol.

Treatment at CARD normally comprises 12 sessions of standard treatment (i.e., CBT) following National Institute for Health and Clinical Excellence Guidelines (NICE, 2004a, 2004b, 2005; Office for National Statistics, 2000). Treatment begins with a cognitive behavioural assessment, and discussion of the rationale for the agreed treatment plan. Clients attend either weekly or fortnightly with sessions including assessment of mental health status, homework review, and negotiated cognitive or behavioural tasks (see also Figure 1.2).

Monitoring and review of these tasks is then incorporated into subsequent treatment sessions. Routine evaluation data are recorded at the Assessment Interview (pre-treatment) and at Discharge Review after 12 sessions (post-treatment).

Standard treatment is tailored to the individual's specific presentation and commonly includes psycho-education, motivational interviewing, skills training, with relapse prevention strategies and maintenance being discussed throughout the standard treatment process. Relevant CBT components are selected for intervention based on provisional diagnoses, commonly comprising either BT (BA or EBT) and/or CT (Dobson, 2000; Hopko et al., 2003; Lovell & Richards, 2000).
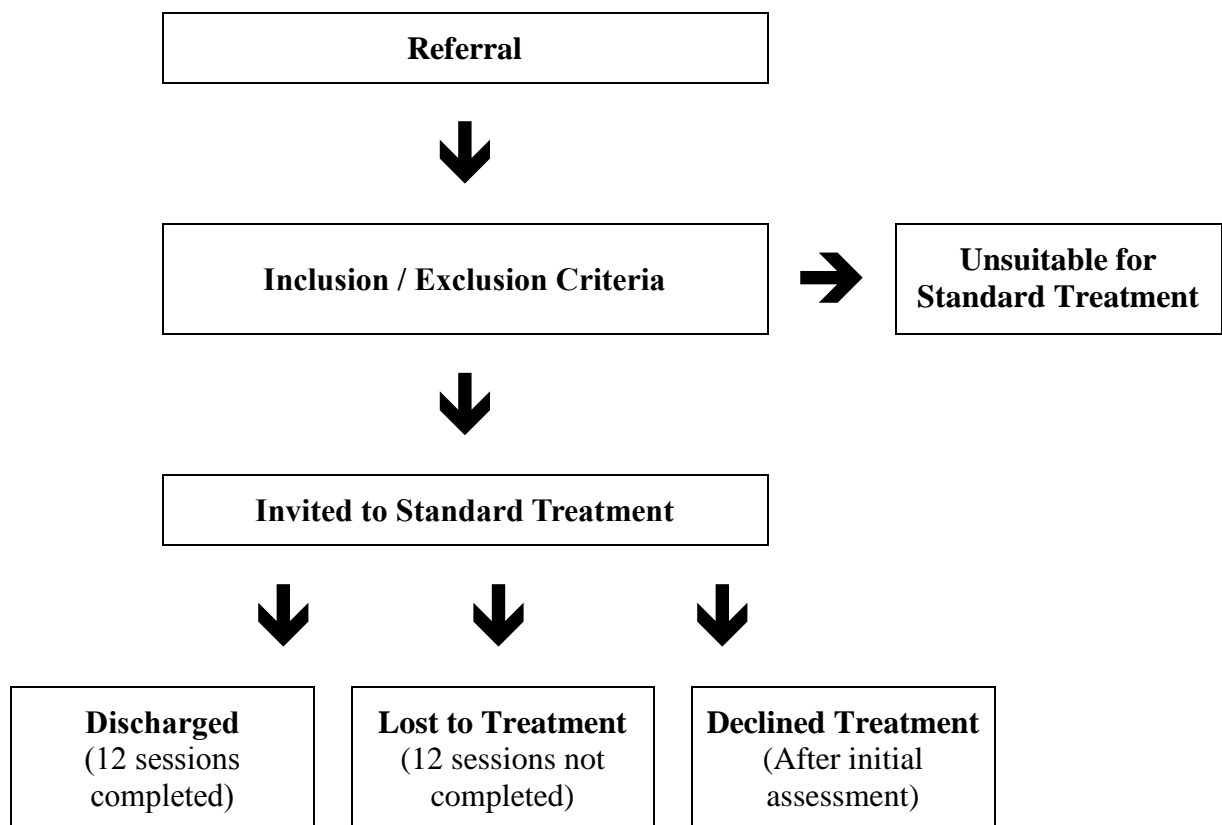
Figure 5.1   *CARD Pathway for Treating Anxiety and Depression*

5.3   Participants and Procedure

Clients are referred to CARD by general practitioners, the Emergency Department of an associated tertiary hospital, community mental health services, and other health and welfare professionals. Consecutive referrals who met the inclusion criteria during the study period were recruited. Potential participants were adults (18 to 65 years) seeking a first episode of treatment for their anxiety and/or depression (assessed using ICD-10 criteria). Exclusion criteria were age (under 18 or above 65 years), refusal of treatment, or a presenting problem incompatible with CBT (e.g., unmanaged psychotic illness, active suicidality, active self-harming behaviours, active substance or alcohol misuse, and current domestic violence).

Pre-treatment screening and assessment were completed by 672 participants, representing approximately 56% of all referrals to CARD during the study period. At the cessation of data collection, 349 participants (51.9%) had completed the full 12 sessions of standard CARD treatment. The remaining 323 (48.1%) participants either remained in treatment, were on a wait-list for treatment, had chosen not to commence treatment, or had voluntarily ceased treatment. The study protocol was approved by the Southern Adelaide Clinical Human Research Ethics Committee (SAC HREC; Appendix 5.1). Potential participants were given a brief verbal and written description of the nature and purpose of the study (Participant Information Form; Appendix 5.2) prior to written consent being obtained (Consent Form; Appendix 5.3). Administration of a Cognitive Behavioural Assessment Tool (Appendix 5.4) was followed by completion of all clinical measures (Questionnaire Booklet; Appendix 5.5).

5.4   Cognitive Behavioural Assessment Tool

On first presentation, a semi-structured interview was conducted (CBAT) to allow the therapist to determine a primary diagnosis and management plan. While specific ICD-10 codes were assigned, for the purposes of analyses in this research program primary diagnosis

comprised: Phobic Anxiety Disorders (FOB) which included agoraphobia, social phobias, and specific isolated phobias; PTSD which referred to reactions to severe stress and adjustment disorders; Other Anxiety Disorders (OAD) which embraced panic disorder and GAD; Depression, including both current and recurrent depressive episodes; and OCD which comprised obsessional thoughts or ruminations, and compulsive acts.

The CBAT also included a Sociodemographic Data Form to allow participants to record age at referral (in years), gender, relationship status (categorised in terms of having a partner or not), education level achieved (classified as secondary school, Technical and Further Education (TAFE) or trade qualification, or tertiary education), and employment status (full-time, part-time, unemployed, retired or homemaker, or student).

The current presentation was also appraised, including onset and past history, triggers (i.e., what, where, when, why, and with whom the problem occurs), frequency and intensity of symptoms, a behavioural analysis, associated cognitions, reassurances and safety behaviours, behavioural excesses, avoidances and/or withdrawals, mental state and risk assessment, modifiers (e.g., substance use and self-harming behaviours), medication, functional impairment, aims of therapy, past/current treatments, level of motivation, and personal strengths. The severity of presentation was classified from 'normal' to 'among the most extremely ill' using the 7-point Clinical Global Impressions Scale - Severity (CGI-S; Berk et al., 2008; Busner & Targum, 2007; Guy, 1976).

5.5   Questionnaire Booklet

Table 5.1 provides a summary of data collection instruments and variables, including the time of collection (pre- and/or post-treatment). With the exception of the Adverse Childhood Experience (ACE) Questionnaire and the Connor-Davidson Resilience Scale (CD-RISC), data comprise those routinely collected by CARD therapists.

Table 5.1   *Summary of Instruments and Variables*

Data collection	Instrument / Construct	Variable(s)
Assessment Interview - Pre-treatment	Cognitive Behavioural Assessment Tool	Primary diagnosis
	Clinical Global Impressions - Severity	Score 1 to 7
	Sociodemographic Data Form	Age at referral Gender Relationship status Education level Employment status
	Adverse Childhood Experience Scale	Total score (0-10) Severity (nil, 1-3, ≥ 4)
Questionnaire Booklet - Pre- and post-treatment	Connor-Davidson Resilience Scale	Total score (0-100)
	Kessler Psychological Distress	Total score (10-50) Psychological distress (≥ 22)
	Patient Health Questionnaire	Total score (0-27) Severity cut-off (≥ 10)
	Generalised Anxiety Disorder	Total score (0-21) Severity cut-off (≥ 8)
	Impact of Event Scale - Revised	Total score (0-88) Severity cut-off (≥ 33)
	Obsessive Compulsive Inventory - Revised	Total score (0-72) Severity cut-off (≥ 21)
	Work and Social Adjustment Scale	Total score (0-40) Functional impairment (≥ 20)
Discharge Review - Post-treatment	Clinical Global Impressions - Improvement	Score 1 to 7 Improvement (≤ 2)

5.5.1   Adverse Childhood Experience Questionnaire

The Adverse Childhood Experience Questionnaire (ACE; Felitti et al., 1998) is a reliable and valid 10-item measure of exposure to adversity during the first 18 years of life (Dong et al., 2004). Responses ('yes', 'no') are summed, resulting in a total score of 0 to 10. This score may also be reported as 'nil CAs' (0), moderate CAs (1-3), or severe CAs (≥ 4). Separate domains of Abuse (0-3), Neglect (0-2), and Household Dysfunctions (0-5) may also be calculated. An example item for Abuse is "Did a parent or other adult in the household often or very often swear at you, insult you, put you down, or humiliate you? Or act in a way that made you afraid that you might be physically hurt?" Illustrative of Neglect is "Did a parent or other adult in the household often or very often feel that no one in your family loved you or thought you were important or special? Or your family didn't look out for each other, feel close to each other, or support each other?" Finally, Household Dysfunctions is characterised by "Did you ever live with anyone who was a problem drinker or alcoholic or who used street drugs?" Internal reliabilities (α) in the current study for the total sample at pre-treatment were 0.75 (total adversity), 0.64 (Abuse), 0.44 (Neglect), and 0.58 (Household Dysfunctions). Therefore, the subscales were not analysed further in the current research program.

5.5.2   Connor-Davidson Resilience Scale

As reviewed in Chapter Four (section 4.5.12), the CD-RISC (Connor & Davidson, 2003) is a 25-item self-report measure based on the pioneering work of Kobasa (1979), Rutter (1985), and Lyons (1991). Participants' ratings (0-4) provide a total resilience score ranging from 0 to 100. Example items include "I am able to adapt to change" and "I can achieve my goals." Sound reliability has been reported for the CD-RISC in terms of internal consistency and test-retest reliability (Connor, 2006; Connor & Davidson, 2003; Yu et al., 2011). Validity has also been demonstrated, including convergent validity with measures of other aspects of resilience (e.g., hardiness, perceived stress). Significant associations with indicators of psychological

health (e.g., self-esteem and life satisfaction) have also been evident. Finally, increases in resilience as measured by the CD-RISC are strongly associated with clinical improvements in psychiatric patients generally and PTSD patients specifically (Connor & Davidson, 2003). In the current study internal reliability for the CD-RISC at pre-treatment was 0.93.

5.5.3   Kessler Psychological Distress Scale

The Kessler Psychological Distress Scale (K10; Kessler & Mroczek, 1992) is a 10-item self-report screening scale commonly used as a measure of non-specific psychological distress (Kessler et al., 2003). Respondents indicate the frequency with which each item (e.g., 'How often did you feel worthless?') was true for them during the past four weeks ('none of the time', 'a little of the time', 'some of the time', 'most of the time', 'all of the time'). Responses from 1 to 5 are summed to yield a total psychological distress score ranging from 10 to 50, with higher scores reflecting greater psychological distress. Internal reliability at pre-treatment for the full sample was 0.92. Based on Australian norms (Furukawa et al., 2003; Slade et al., 2011), a classification of psychological distress is generally applied to a score of 22 or more. The K10 has been used to both recognise and distinguish psychological disorders such as depression and anxiety, has been validated for a range of physical health conditions (e.g., asthma, metabolic syndrome, and diabetes), and also among injecting drug users, pregnant women, and HIV patients (Adams et al., 2004; Dunbar et al., 2008; Hides et al., 2007; Kessler et al., 2003; Slade et al., 2009; Spies et al., 2009).

5.5.4   Patient Health Questionnaire

The Patient Health Questionnaire (Kroenke et al., 2001) is a self-report measure for primary care settings that provides diagnoses of eight clinical disorders according to DSM-IV criteria (Lowe et al., 2002; Spitzer et al., 1999). In the current study, only the 9-item major depression module (PHQ9) was used (Kroenke et al., 2001a, 2001b; Kroenke et al., 2007).

Responses relate to how often problems (e.g., 'feeling down, depressed or hopeless') may have bothered participants during the past two weeks ('not at all', 'several days', 'more than half the days', 'nearly every day'). These responses are scored 0 to 3, and summed to yield a total score ranging from 0 to 27, with higher scores reflecting more severe depression. Good internal reliability (0.89), test-retest reliability (0.84), construct validity and criterion validity (against interviews with mental health professionals) have been reported. Sensitivity to change has also been confirmed (Kroenke et al., 2001a, 2001b). The recommended score for major depression is 10 and above (Gilbody et al., 2007; Kroenke & Spitzer, 2002; Kroenke et al., 2001). Internal reliability at pre-treatment for the full sample was 0.90.

5.5.5   Generalised Anxiety Disorder Scale

The Generalised Anxiety Disorder Scale (GAD7; Spitzer et al., 2006) assesses severity of anxious feelings (e.g., 'trouble relaxing') in the past two weeks ('not at all', 'several days', 'more than half the days', or 'nearly every day'). Responses (0 to 3) are summed (range 0-21), with higher scores reflecting greater anxiety. Internal (0.92) and test-retest (0.83) reliability, and criterion and construct validity have been reported in primary care settings (Kroenke et al., 2007; Spitzer et al., 2006). At pre-treatment, the current internal reliability was 0.90. A score of 8 or above indicates clinical anxiety (Spitzer et al., 2006).

5.5.6   Impact of Events Scale - Revised

The revised Impact of Events Scale (IES-R; Weiss & Marmar, 1997) was developed to reflect the diagnostic criteria for PTSD in the DSM-IV. It is a 22-item self-report measure that addresses avoidance, intrusion, and hyper-arousal. Respondents evaluate how distressing the difficulty described in each item has been for them during the past seven days using a 5-point scale ranging from 'not at all' (0) to 'extremely' (4), resulting in a total score from 0 to 88.

High levels of internal consistency have been reported, ranging from 0.79 to 0.94 (Creamer et al., 2003; Weiss & Marmar, 1997). Internal reliability at pre-treatment for the current full sample was 0.95. Test-retest reliability across 6 months has ranged from 0.89 to 0.94 (Weiss & Marmar, 1997). Although the IES-R was not developed as a diagnostic tool, examination of its discriminant validity has found it to differentiate between individuals with and without PTSD (Beck et al., 2008). Creamer et al. (2003) report a total score of 33 or above to yield diagnostic sensitivity of 0.91 and specificity of 0.82.

5.5.7   Obsessive Compulsive Inventory - Revised

The revised Obsessive Compulsive Inventory (OCI-R; Foa et al., 2002) is an 18-item self-report measure of OCD symptom severity (e.g., washing, checking, ordering, obsessing, hoarding, neutralising), relevant to both clinical and non-clinical individuals. Five response categories (0-4) are used ('not at all', 'a little', 'moderately', 'a lot', or 'extremely') to determine the extent to which respondents have been distressed or bothered by symptoms during the past four weeks. Total scores may range from 0 to 72, with a score of 21 or above differentiating OCD from non-OCD (Foa et al., 2002). The OCI-R has high internal consistency (ranging from 0.81 to 0.93), good to excellent test-retest reliability (ranging from 0.57 to 0.91), good discriminant validity and satisfactory convergent validity (Foa et al., 2002). The current sample provided a pre-treatment internal reliability coefficient of 0.91.

5.5.8   Work and Social Adjustment Scale

The Work and Social Adjustment Scale (WSAS; Mundt et al., 2002) is a 5-item self-report measure of functional impairment across five domains (work, home management, social leisure activities, private leisure activities, and family and relationships) (Marks, 1986). Each item allows respondents to indicate the degree to which a problem impacts on their ability to carry out day-to-day activities in one of these domains. A 9-point response scale ranges from

0 ('not at all') to 8 ('very severely'). Responses are summed to yield a functional impairment score ranging from 0 to 40, with higher scores reflecting greater impairment. A score above 20 suggests significant psychopathology.

The scale has reported internal consistency of 0.85 (Mundt et al., 2002; Proudfoot, et al., 2004). The figure for the current full sample at pre-treatment was 0.79. Clinically, it has been widely used to measure the effects of treatment for anxiety and depression on functioning (Kenwright et al., 2004; Mataix-Cols et al., 2005; Proudfoot et al., 2004). The WSAS has been shown to be reliable and valid, and sensitive to change in samples with anxiety and/or depression (Mundt et al., 2002). In the current study it measured the experiential impact of participants' psychological problems on their functioning.

5.6   Discharge Review

Upon completion of treatment, the Questionnaire Booklet was re-administered, followed by a Discharge Review by the treating therapist that included the Clinical Global Impressions Scale - Improvement (CGI-I) that rates clients on a 7-point scale from 'very much improved' to 'very much worse' (Berk et al., 2008; Busner & Targum, 2007; Guy, 1976). For categorical analyses, a rating of ≤ 2 was considered 'improved'.

5.7   Statistical Analyses

Data management and analysis were conducted primarily using SPSS (version 23). The confirmatory factor analyses (CFA) reported in Chapter Six were analysed using Mplus (version 7.4). Autoregressive cross-lagged panel analyses (Selig & Little, 2012) reported in Chapter Seven were conducted using the analysis of moment structures (AMOS) algorithms within SPSS. Frequency analyses were conducted to check for data quality including allowable ranges and missing data. Specific statistical procedures are described in context in Chapters Six, Seven, and Eight.

5.8   Chapter Summary

In summary, Chapter Five has introduced the methods guiding the first empirical

investigation of this research program. The study examines the potential roles that CAs and

resilience may play in the presentation of anxiety and depression, and also in the success of a

standard treatment protocol. The results of this enquiry are presented in Chapter Seven.

However, Chapter Six first details relevant literature and associated analyses concerning

possible ways to operationalise resilience for the analyses in Chapter Seven.

CHAPTER SIX

MEASURING RESILIENCE USING THE CD-RISC

6.1   Introduction

Chapter Four introduced resilience, highlighting the three unique waves of resilience inquiry. Over time, resilience has been modified from a set of characteristics, to the interaction between attributes within personality, and therefore as a set of dynamic processes. Resilience is best conceptualised as a range of adaptations that can be learnt across multiple domains. This flexibility highlights the potential contribution of resilience as an aid to improving psychological wellbeing. As noted in Chapter Four, the CD-RISC was selected for use in the current research program as it is commonly used to measure resilience in clinical trials such as for depression and anxiety. In such trials the CD-RISC has sound psychometric properties and is sensitive to the effects of psychological interventions.

Chapter Five then presented the methods applied to the first study of this program (i.e., resilience and CAs introduced to a local CBT protocol). However, before presenting the full set of results for this longitudinal study (Chapter Seven), Chapter Six presents evidence for the specific variables that will be used to characterise resilience in later analyses (i.e., Chapters Seven and Eight). First, the alternative factor structures that have been suggested for the CD-RISC are reviewed. Second, a review is presented of studies that have attempted to dichotomise resilience into high and low for 'diagnostic' purposes. Chapter Six then comprises both EFA and CFA to determine the best available factor structure to quantify resilience with the current data, and the presentation of Receiver Operating Characteristic (ROC) curves to test the potential clinical utility of cutoff points for the CD-RISC using the current data.

6.2   The Original Five Factor Structure of the CD-RISC

The original presentation of the CD-RISC (Connor & Davidson, 2003) described a

measurement model comprising five factors (subscales). As detailed in Table 6.1, these were:

personal competence, high standards and tenacity; trust in instincts, tolerance of negative

affect and strengthening effects of stress; positive acceptance of change and secure

relationships; control; and spirituality. However, in general the repeatability of these factors

has been limited, although two studies have offered support for the original model. First,

Allan et al. (2014) report good psychometric properties for these factors/subscales using a

large sample of university entrants (N = 1534). Second, a Chinese study examined the

psychometric properties of the CD-RISC among adolescents (N = 2914) affected by the

Sichuan earthquake (Yu et al., 2011). There was satisfactory goodness-of-fit from CFA.

6.3   Alternative CD-RISC Factor Structures

Beyond the examples cited above, it is more common for researchers to report alternate

models for the CD-RISC. This section reviews evidence for a range of alternative factor

structures for the CD-RISC: five factors but dissimilar to the original proposal, four factors,

three and two factor models, and unidimensional solutions.

6.3.1   Five Factor Models

An Australian study (Gillespie et al., 2009) of operating room nurses (N = 735) provided a

five factor structure using EFA with explained variance of 55.6%, that varied minimally in

content from those originally reported by Connor and Davidson (2003). In a relatively small

study (N = 40), Sexton et al. (2010) initially reported seven factors for the CD-RISC, but

three of these provided only two items with substantial factor loadings. On re-analysis, with

the number of factors restricted to five, the following solution was reported:

emotional/interpersonal stability; self-efficacy; adaptability or ability to benefit from previous

Table 6.1   *The Five Original CD-RISC Subscales*

Factor		Scores	Items
1	Personal competence, high standards and tenacity	(0-32)	10. Best effort no matter what
			11. You can achieve your goals
			12. When things look hopeless don't give up
			16. Not easily discouraged by failure
			17. Think of self as strong person
			23. I like challenges
			24. Work to attain my goals
			25. Pride in my achievements
2	Trust in one's instincts, tolerance of negative affect and strengthening effects of stress	(0-28)	6. See the humorous side of things
			7. Coping with stress strengthens
			14. Under pressure, focus and think clearly
			15. Prefer to take the lead in problem solving
			18. Make unpopular or difficult decision
			19. Can handle unpleasant feelings
			20. Have to act on a hunch
3	Positive acceptance of chance and secure relationships	(0-20)	1. Able to adapt to change
			2. Close and secure relationships
			4. Can deal with whatever comes
			5. Past success gives confidence for new challenge
			8. Tend to bounce back after illness
4	Control	(0-12)	13. Know where to turn for help
			21. Strong sense of purpose
			22. In control of my life
5	Spirituality	(0-8)	3. Sometimes fate or God can help
			9. Things happen for a reason

Note.   Adapted from Connor and Davidson (2003).

learning experiences; spirituality (3 items only); confidence in decision-making (2 items only). Alternatively, the five factors identified by Pietrzak et al. (2009), who applied EFA to data from 272 veterans of the Iraq war, were hardiness, purpose/control, leadership, effort, and spirituality. A clinical study from Korea (Baek et al., 2010) evaluated the psychometric properties of the Korean version of the CD-RISC using EFA with data from 576 nurses, university students, and firefighters. Their initial five-factor solution comprised hardiness, persistence, optimism, support, and spirituality. However, the latter three were found not to be psychometrically sound. Despite this observation, the same five factor solution was later supported by Jung et al. (2012) among psychiatric outpatients with anxiety disorders (N = 127) and members of the general Korean population (N = 194) using both EFA and CFA.

6.3.2   Four Factor Models

A large study (Lamond et al., 2008) investigated resilience in a United States community sample (N = 1395 older women; 14% Hispanic; 76% non-Hispanic white), resulting in four factors (adaptation and tolerance for negative affect, personal control and goal orientation, leadership and trust in instincts, and spiritual coping). A study from Iran (Khoshouei, 2009) which evaluated the psychometric properties of the Farsi version of the CD-RISC among university undergraduates (N = 323; women = 168; men = 155; aged 19 to 34 years) also reported four factors (adaptability, achievement motivation, tenacity, and self-confidence) with satisfactory reliability. A similar Australian study of undergraduates (men = 208; women = 193; age range 17 to 54 years, Mean = 23.6, SD = 7.24) identified four factors, two of which comprised only a few items (Bitsika et al., 2010): challenge-seeking, strong purpose and persistence (12 items); decisive and solution focused (3 items); spiritual belief (2 items); and self-confidence and optimism (8 items). Finally, Singh and Yu (2010) examined the CD-RISC among Indian university students (N = 256; age range 17 to 27, mean age 22.7 years), reporting four reliable factors termed hardiness, optimism, resourcefulness, and purpose.

6.3.3   Three and Two Factor Models

A Chinese study (Yu & Zhang, 2007) evaluated the psychometric properties of a Chinese version of the CD-RISC among adult participants (N = 560). CFA offered no support for the original factors, with EFA producing three dimensions (tenacity, strength, and optimism). Other researchers, such as Catalano et al. (2008), have provided support for this solution. A Turkish study (Karairmak, 2010), comprising adult earthquake victims (N = 246; mean age = 35.8 years, SD = 8.6), examined the Turkish CD-RISC with both EFA and CFA producing a five-factor structure. However, only three of these were psychometrically sound (tenacity and personal competence, tolerance of negative affect, and tendency toward spirituality).

A study involving adolescents (N = 701) from Africa (Jorgensen & Seedat, 2008) used EFA to produce both a three (tenacity, adaptation, and spirituality) and two factor structure (tenacity/spirituality, and adaptation). The authors noted that the solution appeared to depend on the ethnic composition of the sample analysed. Finally, Mealer et al. (2016) reported a three factor solution for the CD-RISC using a sample of 744 critical care nurses. Using only 16 items, with other items removed due to identified psychometric shortcomings, their factors (personal competence, perseverance, and leadership) had sound internal reliability and construct validity.

6.3.4   Unidimensional Models

Studies supporting the CD-RISC as unidimensional include an Australian report by Green et al. (2014) based on a military sample (N = 198). Initially, analyses yielded a two-factor structure (adaptability and self-efficacy) with good internal consistency, reliability, and concurrent validity. However, the adaptability factor was found to be more 'appropriate' to their definition of resilience as it was shown to protect against the development of psychological disorders (e.g., PTSD) following exposure to military trauma. Re-analysis led

to a better data fit for this unidimensional model. Finally, a large Australian study (Burns &

Anstey 2010) examined a random sample of 20 to 24 year old participants (N = 1775), using

both EFA and CFA. The authors advocated that a unitary structure was the best fit for their

data after eliminating three items from the original scale, leaving a 22-item CD-RISC.

6.4   Potential CD-RISC 'Diagnostic' Cutoff Scores

Beyond the more precise description of resilience that might be provided by a reliable factor

structure, there are other ways in which the CD-RISC might inform psychological

interventions, such as by gauging their likelihood of success, or by quantifying their actual

success. One technique that may be used for this purpose is the ROC curve (Streiner &

Cairney, 2007) which provides summary information, such as the validity of the CD-RISC in

predicting a dichotomous outcome (e.g., diagnosis/no diagnosis) by reference to the Area

Under the Curve (AUC). More specific information is gained by determining a cutoff point

between positive (high) and negative (low) CD-RISC scores for those with or without a

diagnosis at initial presentation (pre-treatment) and/or post-treatment. This strategy allows

sensitivity (true positive rate) and specificity (true negative rate) values of the CD-RISC to be

quantified in a given context. To date, only a modest number of studies (summarised in Table

6.2) have presented data from cohorts with psychological disorders using ROC curves

(Bezdjian et al., 2017; Min et al., 2012, 2015; Peng et al., 2014; Tian et al., 2016).

Common among these studies are cross-sectional data derived from relatively small sample

sizes. A range of outcome measures are used, including treatment response, suicidal ideation,

psychological distress, PTSD, and a mental health diagnosis. Of note is the study by Bezdjian

et al. (2017) who conducted their analyses with a longitudinal design using over 50,000

participants. However, their AUC was only modest (64% for both unsuitability for military

Table 6.2   *Summary of Existing Studies of CD-RISC Sensitivity and Specificity*

Citation	Study type	Sample	Outcome	N	Cutoff	Sensitivity (%)	Specificity (%)	AUC (%)
Min et al. (2012)	Longitudinal	Outpatients with depression	Treatment response (CGI-I ≤ 2)	178	49.5	57.6	65.0	60.7
Peng et al. (2014)	Cross-sectional	Rehabilitation patients with severe accidental injuries	Mental health (SCL-90-R ≥ 160)	115	57.5	73.0	62.8	71.7
			PTSD (PCL-C ≥ 38)		45.5	57.8	91.4	76.4
Min et al. (2015)	Cross-sectional	Patients diagnosed with depression and/or anxiety	Suicidal ideation (none-mild vs. moderate-severe)[†]	436	39.5	75.4	58.1	69.6
Tian et al. (2016)	Cross-sectional	Renal transplant recipients	Psychological distress (K10 ≥ 22)	139	60.5	90.0	54.2	72.4
Bezdjian et al. (2017)	Longitudinal	US Air Force service members	Unsuitability attrition	53,692	Not assessed			64.0
			Mental health diagnosis					64.0

Note.   AUC = Area Under ROC Curve; CGI-I = Clinical General Impression – Improvement subscale; K10 = Kessler Psychological Distress Scale; SCL-90-R = Symptom Checklist 90 Revised; PCL-C = PTSD Checklist – Civilian Version.
[†] Suicidal ideation measured using Beck Depression Inventory item 9; 0-1 none-mild, 2-3 moderate-severe.

service and a mental health diagnosis). Further, they did not report sensitivity, specificity, or a proposed diagnostic cutoff. Min et al. (2012) also reported longitudinal data, but for only 178 outpatients with depression. Overall, AUC figures range from 60.7% (poor) in a study reported by Min et al. (2012), to 76.4% (fair) in a cross-sectional study predicting PTSD among rehabilitation patients reported by Peng et al. (2014).

Similarly, sensitivity (57.6 - 90.0%) and specificity (54.2 - 91.4%) vary greatly. For example, in one study (Tian et al., 2016), sensitivity of 90.0% coupled with specificity of 54.2% suggest the use of the CD-RISC as a screening test, whereas in another study (Peng et al., 2014) sensitivity of 57.8% and specificity of 91.4% are more indicative of its suitability as a diagnostic test. Given these variations, there are inconsistent recommendations for diagnostic cutoffs (39.5 - 60.5). Further, many of these studies do not specify the 'rule' used to determine cutoffs, although it may be inferred that the goal of all studies was to maximise the sum of sensitivity and specificity, thereby maximising the J index (Youden, 1950).

In summary, the variability of the results reported is likely to be attributable to the effect of sample size, but more importantly the characteristics of these samples (e.g., military personnel, transplant recipients, rehabilitation patients, as well as some with anxiety and depression). For this reason, the determination of ROC data for the current sample, which is relatively large, homogeneous and longitudinal, remains a useful researcch goal.

6.5   Summary, Objectives, and Research Questions

The CD-RISC continues to show, excellent psychometric properties as a single 'resilience' score. However, attempts to definitively describe a multidimensional structure for the scale remain complex. The original factor structure is rarely replicated, with multiple alternatives described in the literature. Of note is the likelihood that sample composition, particularly in terms of psychological vulnerabilities, may impact on the dimensions identified. Further

studies have therefore been encouraged. The first objective to be addressed in Chapter Six was therefore to determine whether, with the current sample, CD-RISC is best considered as a unidimensional instrument, or conversely whether clinically and theoretically sound factors can be identified. The following research questions were posed:

1. Is the Connor-Davidson Resilience Scale best described as a unidimensional or multidimensional instrument?
2. How do Connor-Davidson Resilience Scale scores based on derived factors vary according to diagnosis at presentation?
3. Do Connor-Davidson Resilience Scale subscale scores vary according to key sociodemographic and clinical characteristics at presentation?
4. To what extent are Connor-Davidson Resilience Scale factors derived at pre-treatment also evident at post-treatment?

A further potential advance in the use of resilience is as a predictive marker. This requires 'diagnostic' cutoffs to be determined. The outcomes of recent studies using ROC analyses have offered a range of potential cutoff scores using diverse samples, but including some with anxiety and mild to major depression. However, again, these proposals are far from definitive. Therefore, the second objective to be addressed in Chapter Six was whether the current sample offers promise for the establishment of cutoff values for the CD-RISC, with the following research questions posed:

1. How well does a cutoff score for the Connor-Davidson Resilience Scale predict self-reported psychological distress at pre- and post-treatment?
2. How well does a cutoff score for the Connor-Davidson Resilience Scale predict clinician-reported response to a local, 12-week CBT program?
3. How well do chosen Connor-Davidson Resilience Scale cutoff scores perform for individual diagnostic groups?

6.6   Method

The participants, procedures and measures are those described in Chapter Five.

6.6.1   Statistical Analyses

The CD-RISC factor structure was examined by applying EFA to pre-treatment data and

CFA to post-treatment data to provide further evidence for the stability and utility of

identified factors. To examine the potential for a 'diagnostic' cutoff for the CD-RISC, ROC

curve analyses were calculated.

6.7   Results

6.7.1   Exploratory Factor Analysis of Pre-Treatment CD-RISC Items

The analysis to determine the factor structure of the CD-RISC was conducted in three parts.

First, the initial communalities (squared multiple item-total correlations) of CD-RISC items

were examined. Given that items with low communalities are unlikely to contribute to

factors, such items (n = 3) were removed from the correlation matrix until a minimum of .30

was achieved (range 0.33 - 0.62). Five communalities were still considered low (< 0.40) and

none were classified as high (> 0.70; Gorsuch, 1983).

Second, the remaining 22 items were subjected to maximum likelihood (ML) extraction,

which was chosen as it allows generalisation from a sample to a population (Gorsuch, 1983)

and correlations with more unique variance and less error variance are given more weight

(Kim & Mueller, 1985). The assumption of normality required by ML was found to be

satisfied by inspecting the skew and kurtosis of the measured variables (Fabrigar et al., 1999).

Both Kaiser-Meyer-Olkin (KMO) sampling adequacy (KMO = 0.95, Sphericity = 7024.91, *p*

< 0.001) and goodness-of-fit ($\chi^2_{(188)} = 858.60$, p < 0.001) were excellent. Parallel analysis

(PA; Lautenschlager, 1989) was used to identify the number of factors to retain. More

reliable than the 'eigenvalues greater than 1' rule (Zwick et al., 1986), and appropriately

conservative when there are modest correlations between items (Cliff, 1988), PA allows both

the number of variables and the sample size to be considered when determining factor

retention. Only two factors were rotated on this basis, accounting for approximately 49% of the variance. A varimax rotation was then undertaken to maximise the uniqueness of these two factors. Scale membership was defined by the higher of the two factor loadings for an item (shown in bold in Table 6.3). Items removed prior to rotation due to low communalities are also shown for completeness. This analysis suggested that 17 of the 22 items could be included in subscales derived from these two factors. However, a further two items (Items 5 and 23) loaded equally on the two factors. This led to the decision to conduct a final factor analysis with only 20 items, removing those that offered no discrimination.

This final analysis also produced communalities with a minimum of .31, with five still considered low (< 0.40) and again none classified as high (> 0.70). Sampling adequacy (KMO = 0.95, Sphericity = 6090.35, $p < 0.001$) and goodness-of-fit ($\chi^2_{(151)} = 721.35$, p < 0.001) remained excellent. Two factors were still supported by PA, again accounting for approximately 49% of the variance. Note that all 20 items included in the analysis were able to be allocated to the resultant scales. Table 6.4 displays final factor loadings.

The first factor offered a subscale of 11 items, with a minimum loading of 0.45. The internal reliability (α) for the total sample of the resultant scale was 0.88 which was not able to be improved by the removal of any item. Inspection of item content suggested overlap with Connor and Davidson's (2003) original 'trust in instincts' and 'acceptance of change' factors. Nine of the items were also shared with the CD-RISC10 (Campbell-Sills & Stein, 2007). However, the subscale was termed 'Adaptability' to acknowledge its correspondence with previously reviewed subscales of this name (Green et al., 2014; Jorgensen & Seedat, 2008).

The second factor offered a subscale comprising nine items (minimum loading 0.40), with a total sample α coefficient of 0.86, which also could not be improved by item removal. While there were echoes of Connor and Davidson's (2003) 'personal competence' and 'perceived

Table 6.3   *Initial Factor Loadings for a Two-Factor CD-RISC Model*

Item	Factor 1	Factor 2
17. I think of myself as a strong person.	**.62**	.44
14. Under pressure, I focus and think clearly.	**.62**	.25
19. I can handle unpleasant feelings.	**.61**	.23
4. I can deal with whatever comes my way.	**.59**	.38
8. I tend to bounce back after a hardship or illness.	**.56**	.40
6. I see the humorous side of things.	**.55**	.18
7. Coping with stress strengthens me.	**.55**	.37
16. I am not easily discouraged by failure.	**.54**	.42
18. I can make unpopular or difficult decisions.	**.53**	.13
15. I prefer to take the lead in problem solving.	**.52**	.31
5. Past success gives me confidence for new challenges.	.50	.50
23. I like challenges.	.50	.47
1. I am able to adapt to change.	.46	.27
24. I work to attain my goals.	.36	**.71**
21. I have a strong sense of purpose.	.32	**.69**
11. I can achieve my goals.	.43	**.65**
25. I take pride in my achievements.	.27	**.61**
22. I feel in control of my life.	.43	**.60**
12. When things look hopeless, I don't give up.	.41	**.57**
10. I give my best effort no matter what.	.18	**.53**
13. I know where to turn to for help.	.18	**.44**
2. I have close and secure relationships.	.12	.40
3. Sometimes fate or God can help.		
9. Things happen for a reason.		
20. I hate to act on a hunch.		
Eigenvalue	9.35	1.45
% variance accounted for	42.5	6.60

Table 6.4   *Final Factor Loadings for a Two-Factor CD-RISC Model*

Item	Adaptability	Tenacity
17. I think of myself as a strong person.	**.63**	.44
14. Under pressure, I focus and think clearly.	**.62**	.25
19. I can handle unpleasant feelings.	**.61**	.23
4. I can deal with whatever comes my way.	**.58**	.38
8. I tend to bounce back after a hardship or illness.	**.57**	.41
16. I am not easily discouraged by failure.	**.55**	.42
6. I see the humorous side of things.	**.54**	.17
7. Coping with stress strengthens me.	**.54**	.37
18. I can make unpopular or difficult decisions.	**.53**	.13
15. I prefer to take the lead in problem solving.	**.52**	.31
1. I am able to adapt to change.	**.45**	.27
24. I work to attain my goals.	.37	**.70**
21. I have a strong sense of purpose.	.32	**.69**
11. I can achieve my goals.	.43	**.65**
25. I take pride in my achievements.	.27	**.61**
22. I feel in control of my life.	.43	**.61**
12. When things look hopeless, I don't give up.	.42	**.57**
10. I give my best effort no matter what.	.19	**.54**
13. I know where to turn to for help.	.18	**.45**
2. I have close and secure relationships.	.11	**.40**
Eigenvalue	8.38	1.44
% variance accounted for	41.9	7.20

control' factors, the resultant subscale was termed 'Tenacity' to acknowledge its similarity to

the subscales of this name derived by Jorgensen and Seedat (2008), Karairmak (2010), and to

a lesser extent Yu and Zhang (2007). The total sample correlation between Adaptability and

Tenacity at pre-treatment was 0.72. While attempts were made (e.g., varimax rotation) to

derive unique scales, this correlation was nevertheless predictably sizeable as some key items

still carried substantial loadings on their second factor (e.g., Items 17 and 22).

6.7.1.1   Evidence of the Utility of Adaptability and Tenacity

To determine whether Adaptability and Tenacity might provide differential information on

resilience, analyses were conducted using pre-treatment study variables (see Table 5.1). First,

differences in resilience between diagnostic groups were considered (Table 6.5). Both

Adaptability and Tenacity produced an overall significant group difference, with the

depression and PTSD samples lowest in each case, and the OCD and OAD samples highest.

Beyond this, a range of pair-wise differences was evident among the groups according to

Bonferroni *post hoc* testing that varied modestly between Adaptability and Tenacity.

Table 6.5   *Comparison of Proposed CD-RISC Scales by Diagnosis*

Diagnosis	Adaptability		Tenacity	
	Mean	(SD)	Mean	(SD)
FOB	18.6	(8.0)	18.1	(6.9)
PTSD	17.5	(7.5)	16.6	(6.8)
OAD	20.0	(7.8)	19.4	(6.6)
OCD	20.5	(7.7)	21.3	(6.4)
Depression	17.0	(7.5)	14.8	(6.8)
$F_{(group)}$	4.08^{**}		14.15^{***}	

Note. $^{**} p < 0.01$; $^{***} p < 0.001$.

There was no relationship between age and either Adaptability or Tenacity (both $r = 0.03$).

Other sociodemographic variables are presented in Table 6.6. While there was no gender

difference for Adaptability, women reported higher Tenacity than men. Both Adaptability

and Tenacity varied with education, being higher among those who had received more

education. Similarly, both constructs varied with employment; those unemployed reported the

lowest levels, and those in full-time employment reported the highest levels. Finally, there

was a significant positive effect of having a partner for Tenacity but not Adaptability.

Table 6.7 presents correlations between clinical variables and Adaptability and Tenacity,

respectively. All measures of severity shared significant negative associations with both

Adaptability and Tenacity. The number of CAs reported (ACE total) was also negatively

related to Tenacity (albeit modestly), whereas Adaptability was not related to the number of

CAs experienced. These analyses are essentially repeated in Table 6.8 using the clinical

variables in categorical form. Again, both Adaptability and Tenacity were shown to be

significantly associated with all measures of severity, whereas the number of CAs

experienced was unrelated to Adaptability but significantly associated with Tenacity. A

higher level of tenacity was associated with the experience of fewer CAs.

6.7.2 Confirmatory Factor Analysis of the CD-RISC Using Post-Treatment Data

To further determine the usefulness of the two identified resilience factors, CFA was

conducted using the data obtained only from those participants who completed the full 12

session local CBT program. Both a unidimensional structure and a two factor structure were

tested using the maximum likelihood estimator. A range of goodness-of-fit indices are

reported (Table 6.9) as is the usual recommendation, as each provides a separate qualitative

commentary on the model (Hooper et al., 2008; Hu & Bentler, 1999; Kline, 2016). While

thresholds for acceptable model-fit are noted, these are considered rules of thumb at best.

Table 6.6   *Comparison of Proposed CD-RISC Scales by Sociodemographic Variables*

	Adaptability			Tenacity		
	Mean	**(SD)**	**t/F**	**Mean**	**(SD)**	**t/F**
Gender						
Men	18.7	(8.1)	0.18	17.3	(7.2)	2.12*
Women	18.6	(7.6)		18.4	(6.8)	
Education level						
Secondary	17.6	(7.9)		16.8	(7.2)	
TAFE, trade	19.4	(7.5)	5.55**	18.7	(6.6)	7.49***
Tertiary	19.8	(7.8)		19.2	(7.0)	
Employment						
Full-time	21.4	(7.8)		20.6	(6.7)	
Part-time	17.9	(7.6)		17.3	(7.2)	
Unemployed	16.6	(7.6)	5.92***	16.0	(5.7)	7.00***
Retired, homemaker	18.2	(7.7)		19.0	(7.0)	
Student	18.8	(7.8)		17.4	(6.7)	
Relationship						
No partner	18.3	(7.5)	1.53	17.1	(6.8)	4.22***
Partner	19.2	(8.3)		19.4	(7.0)	

Note. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Table 6.7   *Correlations of Proposed CD-RISC Scales with Clinical Data*

	Adaptability	**Tenacity**
ACE total	-.03	-.13***
CGI-S	-.35***	-.36***
K10	-.47***	-.50***
PHQ9	-.48***	-.55***
GAD7	-.45***	-.39***
IES-R	-.30***	-.28***
OCI-R	-.17***	-.12**
WSAS	-.40***	-.47***

Note. **$p < 0.01$; ***$p < 0.001$.

Table 6.8   *Comparison of Proposed CD-RISC Scales by Categorical Clinical Data*

	Adaptability			Tenacity		
	Mean	**(SD)**	**t/F**	**Mean**	**(SD)**	**t/F**
ACE categories						
None	19.4	(8.7)		20.0	(7.7)	
1 – 3	19.1	(7.8)	1.96	18.4	(6.9)	7.69***
4 +	18.0	(7.6)		16.9	(6.7)	
K10						
Low	25.5	(7.7)	10.21***	24.1	(6.7)	10.19***
High	17.5	(7.2)		16.9	(6.5)	
PHQ9						
Low	24.5	(7.2)	11.27***	23.8	(5.9)	12.66***
High	17.0	(7.2)		16.4	(6.4)	
GAD7						
Low	24.4	(7.6)	9.17***	22.5	(6.9)	7.93***
High	17.5	(7.3)		17.1	(6.7)	
IES-R						
Low	22.1	(7.6)	7.13***	20.7	(7.1)	6.09***
High	17.4	(7.5)		17.0	(6.7)	
OCI-R						
Low	20.1	(7.6)	5.04***	18.7	(7.0)	2.88**
High	17.1	(7.8)		17.2	(6.9)	
WSAS						
Low	21.6	(7.2)	8.36***	21.3	(6.8)	10.59***
High	16.7	(7.6)		15.8	(7.0)	

Note. *** $p < 0.001$.

Table 6.9   *Goodness of Fit Indices for Alternative CD-RISC Factor Structures*

Index	Name	Thresholds	Single Factor	Two Factors
χ2	Chi-square	Non-significant	709.16 (df = 172)	572.35 (df = 171)
χ2 / df	Relative Chi-square	5:1 adequate 2:1 or 3:1 good	4.12	3.34
CFI	Comparative Fit Index	> .90 adequate > .95 excellent	.886	.915
TLI	Tucker-Lewis Index	> .90 adequate > .95 excellent	.874	.905
RMSEA	Root Mean Square Error of Approximation	< .08 adequate < .05 good < .03 excellent	.095 [.087 - .102][*]	.082 [.075 - .089][*]
SRMR	Standardised Root Mean Square Residual	< .08 good	.073	.071

Note: Cited threshold levels obtained from Hu and Bentler (1999), Hooper et al. (2008) and Kline (2016).

[*] 90% Confidence Interval

For both models, the statistical significance of the χ^2 is more likely to be attributable to the size of sample than poor model fit. It is commonly acknowledged that χ^2 is sensitive to sample size in such models (Kline, 2016). For the single factor model, however, most other indices are below acceptable levels, with only the SRMR considered 'good'. In contrast, the CFI, TLI and SRMR may be classified as 'adequate' or 'good', respectively, for the two factor model, with the Relative χ^2 approaching 'good' and the RMSEA near 'adequate'. Finally, the χ^2 derived from the two factor model is significantly lower than that from the single factor model ($\chi^2_{(1)} = 136.81$, p < .001), also suggesting the two factor solution to be relatively superior. Table 6.10 summarises the factor loadings for the alternative solutions.

Table 6.10   *Factor Loadings for Alternative CD-RISC Factor Structures*

	Single Factor	Two Factors
Adaptability		
Item 17	.81	.83
Item 14	.77	.79
Item 19	.73	.74
Item 4	.74	.76
Item 8	.77	.79
Item 16	.74	.75
Item 6	.58	.59
Item 7	.78	.75
Item 18	.64	.66
Item 15	.64	.65
Item 1	.76	.75
Tenacity		
Item 24	.83	.85
Item 21	.73	.80
Item 11	.83	.84
Item 25	.63	.65
Item 22	.83	.83
Item 12	.79	.81
Item 10	.62	.64
Item 13	.58	.62
Item 2	.51	.67

6.7.3   CD-RISC 'Diagnostic' Classification

To determine whether diagnostic cutoff scores are practical for the CD-RISC, ROC curve

analyses were conducted using two dichotomous outcome evaluations. First, the K10 was

classified as low or high on the basis of Australian norms (Furukawa et al., 2003; Slade et al.,

2011). The term psychological distress is generally applied to a score of 22 or more. For the

current data, 571 participants (85.0%) at pre-treatment and 168 participants (48.1%) at post-

treatment were considered to be in distress. The use of this classification also allowed direct

comparison of the current results with those of Tian et al. (2016) as summarised in Table 6.2.

Second, therapists' impressions of treatment response using the CGI-I (Busner & Targum,

2007) resulted in 207 participants (59.3%) being classified as 'improved' (a rating of ≤ 2).

Again, this decision allowed direct comparison of the results with those of Min et al. (2012).

Youden's J statistic was applied (Youden, 1950) to evaluate CD-RISC cutoff points against

these outcome measures. It combines sensitivity and specificity into a single measure and is

defined as the likelihood of a positive test result for participants with a particular

characteristic (e.g., distress) compared with those without. Youden's J is also equivalent to

the maximal vertical distance between the diagonal (chance) line and the ROC curve in any

given analysis. Analyses were conducted evaluating pre-treatment measures, pre-treatment

with post-treatment measures (where applicable), and post-treatment measures. For these

analyses, the full sample and each diagnostic sub-sample were examined independently. All

variables were scored such that higher resilience scores would equate positively with lower

psychological distress and greater clinical improvement, respectively.

Summaries (Tables 6.11 to 6.15) include means and standard deviations, a t test of the

difference between these values, a point-biserial correlation between the respective measures,

AUC (with standard error), proposed cutoff score, and associated sensitivity and specificity.

Table 6.11 presents data for both the CD-RISC and high and low K10 classifications at pre-treatment. There were significant negative relationships between the CD-RISC and the dichotmous classification of K10 suggesting that higher resilience was associated with lower K10 scores. At 78.8% the AUC was satisfactory for the full sample, with sensitivity of 71.3 and specificity of 73.4. As with all results to be reported, these figures varied substantially in the analyses involving diagnostic sub-samples. These are presented predominantly for illustrative purposes and will not be routinely highlighted.

Table 6.12 includes pre-treatment CD-RISC data with post-treatment K10. All probabilities were again significant, suggesting a relationship between resilience and low distress. The AUC was a more modest 68.0% (sensitivity 52.5, specificity 76.2). Pre-treatment CD-RISC and post-treatment CGI-I (Table 6.13) also shared an association such that higher resilience was reported by participants who improved with treatment. However, the figures derived from the ROC analysis were relatively poor, with an AUC of only 57.0% and sensitivity of 37.2%, although the cutoff score provided a more satisfactory sensitivity figure of 75.4%.

Post-treatment CD-RISC and K10 (Table 6.14) were again statistically related, and provided a more impressive AUC of 80.1% (sensitivity 75.1, specificity 73.8). These results were largely mirrored by those for post-treatment CD-RISC with post-treatment CGI-I (Table 6.15) for which the AUC was 77.8% (sensitivity 75.1, specificity 73.8). The exception was the reduced sensitivity (69.1) associated with the latter analysis. Across these five ROC analyses the recommended cutoff score with which to maximise Youden's J varied from a low of 49.5 (pre-treatment CD-RISC with post-treatment K10) to a high of 56.5 (post-treatment CD-RISC with post-treatment K10 and CGI-I).

Table 6.11   *Associations between CD-RISC and K10, both at Pre-treatment*

	Mean	(SD)	t	r	AUC	SE [95% CIs]	Cutoff	Sensitivity	Specificity
Full sample									
K10 < 22	60.0	(15.9)	10.66***	-.38***	.788***	.025 [.739 - .838]	51.5	71.3	73.4
K10 ≥ 22	42.4	(15.2)							
FOB									
K10 < 22	56.2	(17.8)	5.07***	-.32***	.716***	.045 [.628 - .804]	51.5	59.1	74.7
K10 ≥ 22	42.5	(15.6)							
PTSD									
K10 < 22	59.3	(12.4)	3.20**	-.27**	.828**	.056 [.717 - .938]	44.5	100.0	55.1
K10 ≥ 22	41.5	(15.3)							
OAD									
K10 < 22	60.7	(14.9)	5.46***	-.47***	.802***	.052 [.699 - .905]	54.5	69.2	81.9
K10 ≥ 22	43.9	(13.2)							
OCD									
K10 < 22	67.1	(12.8)	5.24***	-.47***	.844***	.047 [.751 - .937]	61.5	77.8	81.7
K10 ≥ 22	47.4	(14.7)							
Depression									
K10 < 22	66.0	(10.8)	4.20***	-.39***	.940***	.034 [.873 - 1.000]	51.5	100.0	79.6
K10 ≥ 22	37.4	(15.0)							

Note. **p < 0.01; ***p < 0.001.

Table 6.12 *Associations between Pre-treatment CD-RISC and Post-treatment K10*

	Mean	(SD)	t	r	AUC	SE [95% CIs]	Cutoff	Sensitivity	Specificity
Full sample									
K10 < 22	49.8	(16.3)	6.11***	-.31***	.680***	.028 [624 - .735]	49.5	52.5	76.2
K10 ≥ 22	39.5	(15.3)							
FOB									
K10 < 22	48.8	(16.1)	4.19***	-.36***	.695***	.047 [.602 - .787]	49.5	46.6	85.7
K10 ≥ 22	36.9	(14.2)							
PTSD									
K10 < 22	47.1	(16.2)	1.57	-.22	.643	.078 [.490 - .795]	42.5	78.3	60.0
K10 ≥ 22	39.5	(18.2)							
OAD									
K10 < 22	52.7	(15.2)	2.66**	-.35**	.706**	.072 [.564 - .848]	49.5	67.7	78.3
K10 ≥ 22	42.1	(13.3)							
OCD									
K10 < 22	55.3	(17.6)	2.25*	-.27*	.660*	.067 [.529 - .792]	56.5	55.9	75.8
K10 ≥ 22	46.4	(14.6)							
Depression									
K10 < 22	43.2	(13.8)	2.18*	-.29*	.662*	.077 [.510 - .814]	41.5	55.0	75.8
K10 ≥ 22	34.5	(14.0)							

Note. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Table 6.13   *Associations between Pre-treatment CD-RISC and CGI-I at Post-treatment*

	Mean	(SD)	t	r	AUC	SE [95% CIs]	Cutoff	Sensitivity	Specificity
Full sample									
CGI-I $\leq$ 2	46.8	(16.5)	2.69^{**}	$.14^{**}$	$.570^{*}$	.031 [.509 - .631]	51.5	37.2	75.4
CGI-I $\geq$ 3	42.0	(16.4)							
FOB									
CGI-I $\leq$ 2	45.3	(15.9)	1.43	.13	.553	.059 [.436 - .669]	24.5	93.2	23.5
CGI-I $\geq$ 3	40.6	(17.4)							
PTSD									
CGI-I $\leq$ 2	47.8	(15.9)	2.60^{*}	$.34^{*}$	$.687^{*}$	.075 [.539 - .835]	39.0	77.4	59.1
CGI-I $\geq$ 3	35.7	(17.8)							
OAD									
CGI-I $\leq$ 2	50.1	(16.1)	1.00	.14	.574	.079 [.421 - .728]	49.5	58.6	64.0
CGI-I $\geq$ 3	45.9	(14.2)							
OCD									
CGI-I $\leq$ 2	53.7	(18.6)	1.32	.16	.589	.071 [.449 - .729]	52.0	59.4	65.7
CGI-I $\geq$ 3	48.3	(14.4)							
Depression									
CGI-I $\leq$ 2	38.8	(13.7)	0.53	.07	.553	.080 [.396 - .710]	34.5	66.7	50.0
CGI-I $\geq$ 3	36.7	(15.4)							

Note. $^{*}p < 0.05$; $^{**}p < 0.01$.

Table 6.14 *Associations between CD-RISC and K10, both at Post-treatment*

	Mean	(SD)	t	r	AUC	SE [95% CIs]	Cutoff	Sensitivity	Specificity
Full sample									
K10 < 22	65.8	(16.0)	10.98***	-.51***	.801***	.023 [.756 - .847]	56.5	75.1	73.8
K10 ≥ 22	47.5	(15.1)							
FOB									
K10 < 22	64.9	(17.2)	5.62***	-.46***	.786***	.041 [.705 - .867]	54.5	79.5	69.4
K10 ≥ 22	48.1	(14.6)							
PTSD									
K10 < 22	66.9	(18.1)	4.02***	-.49***	.800***	.066 [.671 - .929]	59.5	73.9	80.0
K10 ≥ 22	49.2	(14.0)							
OAD									
K10 < 22	64.6	(13.8)	4.17***	-.50***	.790***	.064 [.666 - .915]	58.5	67.7	82.6
K10 ≥ 22	47.7	(16.0)							
OCD									
K10 < 22	68.7	(14.3)	4.68***	-.50***	.784***	.055 [.676 - .892]	56.5	82.4	60.6
K10 ≥ 22	53.2	(12.8)							
Depression									
K10 < 22	64.4	(15.9)	5.74***	-.63***	.879***	.045 [.790 - 968]	50.0	80.0	78.8
K10 ≥ 22	39.0	(15.4)							

Note. *** $p < 0.001$.

Table 6.15   *Associations between Post-treatment CD-RISC and CGI-I at Post-treatment*

	Mean	(SD)	t	r	AUC	SE [95% CIs]	Cutoff	Sensitivity	Specificity
Full sample									
CGI-I $\leq$ 2	64.0	(15.7)	9.99^{***}	$.47^{***}$	$.778^{***}$	.025 [.729 - .827]	56.5	69.1	73.9
CGI-I $\geq$ 3	46.7	(16.3)							
FOB									
CGI-I $\leq$ 2	63.1	(16.3)	5.27^{***}	$.43^{***}$	$.773^{***}$	.046 [.684 - .863]	51.5	78.4	64.7
CGI-I $\geq$ 3	45.6	(16.6)							
PTSD									
CGI-I $\leq$ 2	65.5	(15.5)	5.01^{***}	$.58^{***}$	$.850^{***}$	.055 [.742 - .958]	53.5	87.1	72.7
CGI-I $\geq$ 3	44.7	(14.1)							
OAD									
CGI-I $\leq$ 2	65.2	(13.9)	4.21^{***}	$.50^{***}$	$.789^{***}$	.062 [.667 - .911]	58.5	69.0	80.0
CGI-I $\geq$ 3	48.3	(15.6)							
OCD									
CGI-I $\leq$ 2	68.7	(14.7)	4.31^{***}	$.47^{***}$	$.766^{***}$	.058 [.652 - .879]	55.5	87.5	57.1
CGI-I $\geq$ 3	54.1	(12.9)							
Depression									
CGI-I $\leq$ 2	58.6	(15.6)	4.33^{***}	$.52^{***}$	$.825^{***}$	.058 [.711 - .940]	43.5	77.8	76.9
CGI-I $\geq$ 3	38.2	(18.6)							

Note. $^{***}p < 0.001$.

6.8   Discussion

Chapter Six provided the opportunity to explore measurement options for resilience using the CD-RISC prior to formal analysis of the longitudinal study described in Chapter Five and to be presented in Chapter Seven. Specifically, two issues were examined that featured prominently in the literature at the time of this research program.

First, the dimensionality or factor structure of the CD-RISC was tested. Various researchers had advocated for either five dimensions (including the original CD-RISC), four, three, two or one dimension (see Section 6.3). The current analyses comprised both EFA (pre-treatment data) and CFA (post-treatment data) to provide additional commentary on this issue.

The use of EFA with a conservative retention rule (PA; Lautenschlager, 1989) supported only two factors, with the evidence for the second factor modest at best. Nevertheless, both factors had theoretical plausibility in terms of their content and similarity to previously identified factors (Green et al., 2014; Jorgensen & Seedat, 2008; Karairmak, 2010; Yu & Zhang, 2007). The two factors were termed Adaptability and Tenacity, respectively, with the former almost directly reflecting the CD-RISC 10 (Campbell-Sills & Stein, 2007). While the follow-up CFA analyses suggested greater support for a two-factor rather than unidimensional model, this analysis was only conducted with a select group of participants who had completed treatment. That is, the CFA results perhaps need to be viewed with caution as it could be argued that the sample used was biased towards more highly motivated, and likely more resourced and resilient, participants.

However, overall the empirical evidence of the utility of Adaptability and Tenacity was not strong. When all study variables were considered, very few unique results could be attributed to either Adaptability or Tenacity. The key reason for this is that although the two factors were identified as separate constructs, they nevertheless remained highly correlated. Yet there

is a persuasive nature about these constructs. Given the multiple definitions of resilience and the lack of clarity concerning the nature of resilience (see Chapter Four), the notion that it comprises (perhaps in part) the ability to adapt to changing environmental demands, and/or the tenacity to persist in the face of change, has some credibility that is worthy of further exploration. If Adaptability or Tenacity are to be considered in research beyond the scope of the current program the actual composition of the scales needs to be addressed. That is, items may need to be developed beyond those currently available from the CD-RISC.

The second issue examined in this chapter was whether there was any empirical support for a cutoff point along the CD-RISC continuum that would allow the reliable classification of participants as expressing 'high' or 'low' resilience, and also whether such a classification provided appropriate predictive validity with severity and/or recovery. The use of cutoffs has been explored in a number of studies, but often with small sample sizes (Bezdjian et al., 2017; Min et al., 2012, 2015; Peng et al., 2014; Tian et al., 2016).

The key question remains as to the potential contribution of such a cutoff to the assessment of resilience. If high resilience is associated with better outcomes, for example, then knowing that a particular participant is above the cutoff prior to treatment may allow treatment choices to reflect this fact, with resilience accepted as an internal protective factor. Conversely, a score at presentation below the cutoff may highlight a specific issue to address within a treatment program, especially if improvements in resilience are associated with better recovery. Finally, measurement of both pre- and post-treatment data allows change to be quantified. However, these strategies are only useful if the dichotomised scores are meaningfully better predictors than the existing continuous scale.

The current analyses sought to contribute to the debate by determining clients' 'caseness' by comparing scores with both a self-report measure of severity (K10) and a therapist-reported

evaluation of improvement following treatment (CGI-I). Continuous CD-RISC scores were dichotomised (low versus high) using ROC curves to allow inspection of the cutoff score with best discriminative capability. Overall, there was relatively modest variation among sensitivity and specificity figures, with the AUCs derived from the current data being larger and more stable than those of previous studies, such as Min et al. (2012) and Bezdjian et al. (2017), suggesting overall better fit between resilience and K10 and CGI-I, respectively.

However, on balance the available data provided little evidence that resilience had substantial predictive validity beyond the cross-sectional context (at either pre- or post-treatment). That is, the use of pre-treatment resilience to predict post-treatment outcomes was modest at best, and substantial sensitivity and specificity figures be calculated for either K10 or CGI-I. This does not imply the lack of concurrent association between resilience and severity. There are a number of potential reasons for the obtained results.

First, the sample was homogeneous in that all participants qualified for support from CARD on the basis of a first presentation compatible with CBT, yet they represented five distinct diagnostic groupings (e.g., PTSD, depression, GAD, etc.). Differential cutoffs according to diagnosis may have been more appropriate, as each disorder presents with different core beliefs/fears, symptoms, emotions, and maladaptive behaviours. Yet such analyses, as presented in Tables 6.11 to 6.15, produced quite volatile results, probably due to low sample sizes. It makes little sense to report a sensitivity figure of 100.0%, for example.

Second, the decision was made, following previous authors (Bezdjian et al., 2017; Min et al., 2012, 2015; Peng et al., 2014; Tian et al., 2016), not to expressly attempt to quantify the CD-RISC as either a screening (by attempting to maximise sensitivity) or diagnostic instrument (by maximising specificity). This alternate approach may provide more precise data, but would entail, for example, setting K10 as the 'gold standard' condition, and determining

whether false positives or false negatives were preferable when evaluating the test cutoff (CD-RISC). It could reasonably be argued that such a strategy elevates the importance of resilience beyond the warranted level, and potentially labels low resilience as a 'pathology', rather than, as is more likely, a co-morbidity of anxiety and depression,

6.9   Chapter Summary

The analyses sought to evaluate two strategies to improve the measurement of resilience using the CD-RISC. First, following both EFA and CFA, the subscales of Adaptability and Tenacity have been accepted, and are carried forward to be used in the remaining empirical sections of the current research program (Chapters Seven and Eight) to further test their applicability. However, ROC curves evaluating the CD-RISC against both the K10 and CGI-I, failed to support the predictive validity of resilience, particularly using a longitudinal design. Therefore, cutoff scores for the CD-RISC are not used in the remaining empirical chapters. Chapter Seven now presents the full analyses from a longitudinal study of treatment, with both resilience and CAs included as potential factors in determining outcome.

CHAPTER SEVEN

EVALUATION OF RESILIENCE AND CHILDHOOD ADVERSITIES

7.1   Introduction

Chapter Seven presents the results of a longitudinal study of treatment, the methods for which were described in Chapter Five. Section 7.2 presents a full description of the characteristics of both the pre- and post-treatment samples, including sociodemographic characteristics, diagnoses, pre-treatment clinical variables, CAs, and resilience. Comparisons are also made between participants who did and did not complete treatment to determine any bias in the post-treatment sample. For both CAs and resilience, pre- and post-treatment analyses focus on their associations with sociodemographic and clinical characteristics, and primary diagnosis. Section 7.3 compares pre- with post-treatment data for all relevant variables using only participants who completed the treatment program. This commentary includes consideration of change in both clinical variables and levels of resilience relative to the experience of CAs. A series of multivariate analyses in Section 7.4 examine the relationships among key study variables to provide insight into the potential for pre-treatment levels to account for treatment responses, when acknowledging resilience and CAs, respectively. Key findings from Chapter Seven are then discussed in Section 7.5. In summary, the key objective for Chapter Seven was to evaluate the efficacy of a CBT treatment program for adults presenting with anxiety and/or depression. The following research questions were posed:

1. How is primary diagnosis related to childhood adversities and resilience?
2. To what extent do clinical characteristics vary according to childhood adversities and resilience at pre- and post-treatment?
3. Do clients with anxiety and/or depression improve following standard CBT?
4. What roles do childhood adversities and resilience play in response to treatment?

7.2   Sample Description and Evaluation of Post-treatment Sample Bias

In this section the sociodemographic details, diagnosis, pre-treatment clinical variables, CA

profile, and resilience measures are presented for the pre-treatment sample of consecutive

presentations to CARD for a first assessment of anxiety and/or depression (N = 672). There

are also comparisons between the post-treatment sample (n = 349, 51.9%), who completed

the full 12 sessions of standard treatment, with the 323 participants who did not provide post-

treatment data, to allow insight into any bias in the composition of the post-treatment sample.

As noted in Chapter Five, these 323 participants included clients who either remained in

treatment when data collection ceased, were on a wait-list for treatment, had chosen not to

commence treatment, or had voluntarily ceased treatment.

7.2.1   Sociodemographic Characteristics

Table 7.1 comprises data for the age of participants. There was no mean difference in the

ages of those completing/not completing treatment ($t_{(670)}$ = 1.18, ns). The pre-treatment

sample comprised mainly women (n = 412, 61.3%), and there was no difference in the

proportion of women completing or not completing treatment ($\chi^2_{(1)}$ = 0.03, ns; see Table 7.2).

Table 7.1   *Age at Referral of Participants*

Pre-treatment (n = 672)			Post-treatment (n = 349)			No follow-up data (n = 323)		
Range	**Mean**	**(SD)**	**Range**	**Mean**	**(SD)**	**Range**	**Mean**	**(SD)**
18 - 65	35.4	(12.7)	18 - 65	35.9	(13.1)	18 - 64	34.8	(12.3)

This was also true for relationship status (Table 7.3). Among the total sample, 345

participants (52.0%) reported having a partner, and this proportion did not vary with

treatment completion ($\chi^2_{(1)}$ = 0.08, ns). The predominant level of education in the full sample

was secondary (n = 294, 43.9%). In this case, proportions were different between those who

did and did not complete treatment ($\chi^2_{(2)}$ = 26.25, p < .001; see (Table 7.4). Participants with

a tertiary level education were more likely to be present in the post-treatment sample than

those with lower levels of education. Finally, employment status is presented in Table 7.5.

The most representative status was part-time (n = 278, 41.4%), with proportions not differing

significantly between those who did and did not complete treatment ($\chi^2_{(4)}$ = 4.70, ns).

Table 7.2   *Gender of Participants*

	Pre-treatment (n = 672)		Post-treatment (n = 349)		No follow-up data (n = 323)	
	n	(%)	n	(%)	n	(%)
Men	260	(38.7)	134	(38.4)	126	(39.0)
Women	412	(61.3)	215	(61.6)	197	(61.0)

Table 7.3   *Relationship Status of Participants*

	Pre-treatment (n = 672)		Post-treatment (n = 349)		No follow-up data (n = 323)	
	n	(%)	n	(%)	n	(%)
No partner	318	(48.0)	209	(51.6)	196	(48.4)
Partner	345	(52.0)	136	(52.7)	209	(51.6)

Table 7.4   *Education Level of Participants*

	Pre-treatment (n = 672)		Post-treatment (n = 349)		No follow-up data (n = 323)	
	n	(%)	n	(%)	n	(%)
Secondary	294	(43.9)	140	(40.2)	154	(47.8)
TAFE/trade	218	(32.5)	98	(28.2)	120	(37.3)
Tertiary	158	(23.6)	110	(31.6)	48	(14.9)

Table 7.5   *Employment Status of Participants*

	Pre-treatment (n = 672)		Post-treatment (n = 349)		No follow-up data (n = 323)	
	n	**(%)**	**n**	**(%)**	**n**	**(%)**
Full-time	127	(18.9)	70	(20.1)	57	(17.6)
Part-time	278	(41.4)	137	(39.3)	141	(43.7)
Unemployed	59	(8.8)	28	(8.0)	31	(9.6)
Retired, homemaker	60	(8.9)	28	(8.0)	32	(9.9)
Student	148	(22.0)	86	(24.6)	62	(19.2)

7.2.2   Diagnosis

A summary of the primary diagnoses of participants is presented in Table 7.6. There was strong representation of FOB (n = 230, 34.2%), with the least prevalent diagnosis being depression (n = 98, 14.6%). In comparing those participants who completed the full treatment program and those who did not, it was found that PTSD clients were under-represented post-treatment whereas OCD clients were over-represented ($\chi^2_{(4)} = 18.33$, p < .001).

Table 7.6   *Primary Diagnosis of Participants*

	Pre-treatment (n = 672)		Post-treatment (n = 349)		No follow-up data (n = 323)	
	n	**(%)**	**n**	**(%)**	**n**	**(%)**
FOB	230	(34.2)	122	(35.0)	108	(33.4)
PTSD	135	(20.1)	53	(15.2)	82	(25.4)
OAD	109	(16.2)	54	(15.5)	55	(17.0)
OCD	100	(14.9)	67	(19.2)	33	(10.2)
Depression	98	(14.6)	53	(15.2)	45	(13.9)

7.2.3   Pre-treatment Clinical Variables

Clinical variables are presented in both continuous (Table 7.7) and categorical (Table 7.8) form, with the latter also using standard published cut points for severity. All variables suggest that, on the whole, the sample were presenting with a high level of severity. For example, 85% were above the severity cutoff for the K10. This was less of an issue using more specific measures such as the OCI-R (47.0%), and function (WSAS) which indicated less impairment (60.4%). Using the continuous measures, participants who completed the full treatment program were considered less severe by treating therapists (CGI-S) than those who did not, and also according to the IES-R (Table 7.7). This difference was not evident for the categorical version of the IES-R (Table 7.8). There is no published cutoff for the CGI-S.

7.2.4   Childhood Adversities

The experience of Cas, as measured by the ACE questionnaire at pre-treatment, are summarised in Table 7.9 (continuous data) and Table 7.10 (categorical data). At least one CA was reported by 589 participants (87.6%). Of these, 281 (41.8% of the total sample) reported four or more CAs. Overall, the average number of CAs experienced was 3.3 (SD = 2.4, range = 0-10). In neither continuous (Table 7.9) nor categorical form ($\chi^2_{(2)} = 1.50$, ns) were there significant differences between participants who completed treatment and those who did not.

7.2.4.1   Childhood Adversities and Sociodemographic Characteristics

Age at referral was not related to either total CA score (r = 0.02, ns) or CA categories ($F_{(2,669)} = 0.46$, ns; Table 7.11). Means for gender are presented in Table 7.12 and Table 7.13. The total CA score was significantly higher among women ($t_{(587)} = 4.92$, p < .001). This is also demonstrated by the categorical CA data ($\chi^2_{(2)} = 15.46$, p < .001). Relationship status (Tables 7.14 and 7.15) was not associated with either CA total score ($t_{(578)} = 0.94$, ns) or CA categories ($\chi^2_{(2)} = 2.64$, ns).

Table 7.7   *Clinical Variables: Continuous Measures*

	Pre-treatment (n = 672)			Post-treatment (n = 349)			No follow-up data (n = 323)			$t_{(670)}$
	Range	Mean	(SD)	Range	Mean	(SD)	Range	Mean	(SD)	
CGI - S	2 - 7	4.8	(1.1)	2 - 7	4.5	(1.1)	2 - 7	5.1	(1.2)	6.61[***]
K10	10 - 50	30.3	(8.8)	10 - 50	30.9	(8.5)	10 - 50	31.6	(9.1)	1.02
PHQ9	0 - 27	15.5	(6.9)	0 - 27	15.1	(6.9)	0 - 27	16.0	(7.0)	1.53
GAD7	0 - 21	13.5	(5.4)	0 - 21	13.2	(5.4)	0 - 21	13.8	(5.4)	1.54
IES-R	0 - 86	45.2	(19.8)	0 - 86	43.6	(19.4)	0 - 86	46.9	(20.2)	2.17[*]
OCI-R	0 - 70	22.3	(14.6)	0 - 69	22.5	(14.0)	0 - 70	22.0	(15.2)	0.45
WSAS	0 - 40	21.9	(9.4)	0 - 40	21.6	(9.0)	0 - 40	22.1	(9.7)	0.72

Note.   [*] $p < .05$; [***] $p < .001$.

Table 7.8   *Clinical Variables: Categorical Measures*

	Pre-treatment (n = 672)		Post-treatment (n = 349)		No follow-up data (n = 323)		$\chi^2_{(1)}$
	n	(%)	n	(%)	n	(%)	
K10	571	(85.0)	297	(85.1)	274	(84.8)	0.01
PHQ9	524	(78.0)	266	(76.2)	258	(79.9)	1.31
GAD7	557	(82.9)	289	(82.8)	268	(83.0)	0.00
IES-R	494	(73.5)	251	(71.9)	243	(75.2)	0.95
OCI-R	316	(47.0)	170	(48.7)	146	(45.2)	0.83
WSAS	406	(60.4)	209	(59.9)	197	(61.0)	0.09

Note.   Table entries are the number (n) and percentage (%) of participants above the severity cutoff.

Table 7.9   *Childhood Adversities Score Recorded at Pre-treatment*

Pre-treatment (n= 672)			Post-treatment (n = 349)			No follow-up data (n = 323)			
Range	**Mean**	**(SD)**	**Range**	**Mean**	**(SD)**	**Range**	**Mean**	**(SD)**	$t_{(670)}$
0 - 10	3.3	(2.4)	0 - 9	3.2	(2.5)	0 - 10	3.4	(2.4)	1.42

Table 7.10   *Childhood Adversity Categories Recorded at Pre-treatment*

	Pre-treatment (n = 672)		Post-treatment (n = 349)		No follow-up data (n = 323)	
	n	**(%)**	**n**	**(%)**	**n**	**(%)**
None	83	(12.4)	48	(13.8)	35	(10.8)
1 - 3	308	(45.8)	160	(45.8)	148	(45.8)
4 +	281	(14.8)	141	(40.4)	140	(43.3)

Note.   Table entries are n (%) above the severity cutoff.

[**] $p < .01$; [***] $p < .001$.

Table 7.11   *CA Categories by Age at Referral*

CA category	Mean	(SD)
None	36.2	(12.7)
1-3	34.9	(13.0)
4+	35.7	(12.4)

Table 7.12   *CA Total Score by Gender*

Gender	Mean	(SD)
Men	2.8	(2.2)
Women	3.7	(2.5)

Table 7.13   *CA Categories by Gender*

	Men		Women	
CA category	n	(%)	n	(%)
None	41	(15.8)	42	(10.2)
1-3	134	(51.5)	174	(42.2)
4+	85	(32.7)	196	(47.6)

Note.   Column percentages (%) are shown.

Table 7.14   *CA Total Score by Relationship Status*

Relationship status	Mean	(SD)
No partner	3.2	(2.4)
Partner	3.4	(2.6)

Table 7.15   *CA Categories by Relationship Status*

CA category	No partner		Partner	
	n	**(%)**	**n**	**(%)**
None	48	(11.9)	35	(13.6)
1-3	194	(47.9)	107	(41.5)
4+	163	(40.2)	116	(45.0)

Note.   Column percentages (%) are shown.

Means for level of education are shown in Table 7.16. CA total score ($F_{(2,667)}$ = 4.21, p < .05) demonstrated a modest relationship. Participants with technical or trade certificate education reported significantly higher CA scores than tertiary level participants (Bonferroni post hoc test). This difference was not evident using CA categorical data ($\chi^2_{(4)}$ = 8.22, ns; Table 7.17).

Table 7.16   *CA Total Score by Level of Education*

Education level	Mean	(SD)
Secondary	3.3	(2.4)
TAFE/trade	3.6	(2.5)
Tertiary	2.9	(2.5)

Table 7.17   *CA Categories by Level of Education*

CA category	Secondary		TAFE/trade		Tertiary	
	n	**(%)**	**n**	**(%)**	**n**	**(%)**
None	32	(10.9)	25	(11.5)	25	(15.8)
1-3	140	(47.6)	89	(40.8)	79	(50.0)
4+	122	(41.5)	104	(47.7)	54	(34.2)

Note.   Column percentages (%) are shown.

Finally, total CA score ($F_{(4,667)} = 2.07$, ns) did not vary across employment categories (Table 7.18). However, when broken into categories of CA experience (Table 7.19), a modest significant association was identified ($\chi^2_{(8)} = 16.91$, p < .05). Unemployed participants were more likely to have experienced a greater number of CAs, with students and those in full-time employment likely to have experienced fewer CAs.

Table 7.18   *CA Total Score by Employment Status*

Employment status	Full-time	
	Mean	(SD)
Full-time	3.2	(2.5)
Part-time	3.4	(2.5)
Unemployed	4.1	(2.3)
Retired, homemaker	3.1	(2.5)
Student	3.1	(2.4)

Table 7.19   *CA Categories by Employment Status*

CA category	Full-time		Part-time		Unemployed		Retired, homemaker		Student	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
None	17	(13.4)	29	(10.4)	4	(6.8)	12	(20.0)	21	(14.2)
1-3	61	(48.0)	130	(46.8)	19	(32.2)	23	(38.3)	75	(50.7)
4+	49	(38.6)	119	(42.8)	36	(61.0)	25	(41.7)	52	(35.1)

Note.   Column percentages (%) are shown.

7.2.4.2   Childhood Adversities and Diagnosis

There was a significant difference between diagnostic groups in the total CA score ($F_{(4, 667)}$ = 17.54, p < .001). Bonferroni post hoc testing revealed that those diagnosed with PTSD reported a significantly higher CA score than all other diagnostic groups (Table 7.20). Further, those with depression reported a significantly higher score than those with OCD. Table 7.21 displays diagnostic groups by the CA categories. Again, there was a significant difference ($\chi^2_{(8)}$ = 50.61, p < .001) suggesting that those with PTSD or depression had experienced more CAs.

Table 7.20   *CA Total Score by Diagnosis*

Diagnosis	Mean	(SD)
FOB	3.1	(2.2)
PTSD	4.7	(2.6)
OAD	2.7	(2.5)
OCD	2.4	(2.1)
Depression	3.5	(2.3)

Table 7.21   *CA Categories by Diagnosis*

	FOB		PTSD		OAD		OCD		Depression	
CA category	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
None	28	(12.2)	8	(5.9)	22	(20.2)	16	(16.0)	9	(9.2)
1-3	114	(49.6)	39	(28.9)	53	(48.6)	57	(57.0)	45	(45.9)
4+	88	(38.3)	88	(65.2)	34	(31.2)	27	(27.0)	44	(44.9)

Note.   Column percentages (%) are shown.

7.2.4.3   Childhood Adversities and Clinical Variables

Four permutations of analysis were possible, with both continuous and categorical

representations of the variables considered. First, the total CA score was correlated with

continuous clinical variables (Table 7.22). At pre-treatment, significant positive associations

were evident with all clinical variables (albeit of modest size). At post-treatment, the size of

all correlations had reduced, with a number becoming non-significant. For all significant

correlations, the greater experience of CA was associated with higher levels of severity.

Table 7.22   Correlations of *CA Total Score by Clinical Variables: Continuous*

	Pre-treatment (n = 672)	Post-treatment (n = 349)
CGI	.22***	.01
K10	.23***	.14**
PHQ9	.22***	.12*
GAD7	.16***	.06
IES-R	.27***	.17**
OCI-R	.14***	.07
WSAS	.19***	.11*

Note.   * p < .05, ** p < .01, *** p < .001.
CGI = CGI-S at pre-treatment, but CGI-I at post-treatment

Second, for CA categories with continuous clinical variables, a series of oneway analyses of

variance (ANOVA) were conducted (Table 7.23). At pre-treatment, all results were highly

significant. Bonferroni post hoc testing demonstrated that for all assessment variables the

zero CA and 1-3 CA groups were equivalent while the 4+ CA group recorded significantly

higher scores than both of these lower categories. At post-treatment, the significant effects

were more modest and some were not statistically significant. Bonferroni post hoc testing

Table 7.23   *CA Categories by Clinical Variables: Continuous*

	Pre-treatment (n = 672)							Post-treatment (n = 349)						
	None		1-3		4+			None		1-3		4+		
	Mean	(SD)	Mean	(SD)	Mean	(SD)	$F_{(2,669)}$	Mean	(SD)	Mean	(SD)	Mean	(SD)	$F_{(2,346)}$
CGI	4.4	(1.3)	4.6	(1.2)	5.1	(1.0)	17.01***	2.5	(1.2)	2.3	(1.0)	2.4	(1.1)	0.42
K10	28.7	(9.6)	29.8	(8.6)	33.6	(8.2)	19.24***	21.8	(8.9)	21.2	(8.8)	24.2	(9.6)	4.19*
PHQ9	13.1	(7.0)	14.7	(7.0)	17.2	(6.5)	16.69***	7.8	(6.2)	7.9	(6.5)	9.7	(7.0)	3.30*
GAD7	11.7	(5.9)	13.0	(5.6)	14.5	(4.8)	11.02***	7.0	(5.5)	6.7	(5.2)	7.7	(5.6)	1.32
IES-R	38.9	(20.8)	40.9	(19.6)	51.8	(17.9)	29.35***	25.6	(21.4)	23.1	(18.3)	31.9	(20.2)	7.76***
OCI-R	20.1	(13.9)	20.4	(13.5)	24.9	(15.6)	8.26***	16.1	(12.9)	13.3	(11.2)	17.1	(14.8)	3.36*
WSAS	18.8	(8.9)	20.9	(9.4)	23.8	(9.1)	12.19***	12.5	(8.9)	12.4	(9.0)	15.0	(10.2)	3.14*

Note.   *$p < .05$, ***$p < .001$.
    CGI = CGI-S at pre-treatment, CGI-I at post-treatment

indicated that for K10, PHQ9, IES-R, and OCI-R, the 1-3 CA group was significantly lower than the 4+ CA group. There were no pairwise differences for the significant WSAS result.

Third, CA total scores were compared with clinical variables using severity cutoffs (Table 7.24). At pre-treatment, most clinical indicators were significantly associated with CA scores, with participants who scored above severity cutoffs having experienced a greater number of CAs. This was not the case for OCI-R. At post-treatment, few significant differences were evident. However, participants above the severity cutoff for K10 were more likely to have experienced a greater number of CAs, as were those above the severity cutoff for WSAS.

Table 7.24   *CA Total Score by Clinical Variables: Categorical*

	Pre-treatment (n = 672)					Post-treatment (n = 349)				
	Below cutoff		Above cutoff			Below cutoff		Above cutoff		
	Mean	(SD)	Mean	(SD)	$t_{(670)}$	Mean	(SD)	Mean	(SD)	$t_{(2,347)}$
K10	2.1	(2.1)	3.5	(2.4)	5.30***	2.9	(2.3)	3.5	(2.6)	2.04*
PHQ9	2.5	(2.2)	3.5	(2.5)	4.48***	3.0	(2.4)	3.5	(2.5)	1.71
GAD7	2.4	(2.3)	3.5	(2.4)	4.28***	3.1	(2.4)	3.3	(2.6)	0.54
IES-R	2.5	(2.2)	3.6	(2.5)	5.80***	3.1	(2.3)	3.3	(2.7)	1.68
OCI-R	3.2	(2.3)	3.5	(2.5)	1.46	3.1	(2.3)	3.3	(2.7)	0.61
WSAS	2.8	(2.3)	3.6	(2.5)	4.34***	3.0	(2.4)	3.7	(2.5)	2.22*

Note.   * $p < .05$, *** $p < .001$.

Fourth, analyses were conducted using CA categories against severity cutoffs for clinical variables. At pre-treatment, the results replicated those reported in Table 7.24 above (Table 7.25); participants in the 4+ CA category had a higher probability of recording clinical scores above severity cutoffs for variables except OCI-R. At post-treatment, only IES-R provided a significant effect, with participants reporting more CAs likely to be above the severity cutoff.

Table 7.25   *CA Categories by Clinical Variables: Categorical*

	Pre-treatment (n = 672)							$\chi^2_{(2)}$	Post-treatment (n = 349)							$\chi^2_{(2)}$
	None		1-3		4+				None		1-3		4+			
	n	(%)	n	(%)	n	(%)			n	(%)	n	(%)	n	(%)		
K10	60	(72.3)	250	(81.2)	261	(92.9)		27.71***	21	(43.8)	68	(42.5)	79	(56.0)		5.92
PHQ9	57	(68.7)	223	(72.4)	244	(86.8)		22.59***	16	(33.3)	55	(34.4)	61	(43.3)		2.99
GAD7	58	(69.9)	243	(78.9)	256	(91.1)		26.73***	20	(41.7)	55	(34.4)	56	(39.7)		1.32
IES-R	50	(60.2)	206	(66.9)	238	(84.7)		32.51***	17	(35.4)	44	(27.5)	61	(43.3)		8.20*
OCI-R	40	(48.2)	133	(43.2)	143	(50.9)		3.56	17	(35.4)	34	(21.3)	44	(31.2)		5.64
WSAS	37	(44.6)	176	(57.1)	193	(68.7)		18.12***	8	(16.7)	37	(23.1)	45	(31.9)		5.45

Note.   Table entries are n (%) above severity cutoff.

* $p < .05$, *** $p < .001$.

7.2.5   Resilience

Table 7.26 reports data for the total CD-RISC (termed Resilience) and the factor scores

derived in Chapter Six (Adaptability and Tenacity). The mean levels for each of these

variables were modest, reflecting a poor level of resilience at pre-treatment. Level of

resilience, however, was not associated with whether or not participants continued in

treatment and provided post-treatment data.

7.2.5.1   Resilience and Sociodemographic Characteristics

There were no associations between age at referral and any measure of resilience, either at

pre-treatment or post-treatment (see Table 7.27). Table 7.28 presents the means for gender,

indicating that women reported higher Tenacity scores than men at pre-treatment, and higher

Resilience and Tenacity scores at post-treatment. Relationship status was related to both

Resilience and Tenacity at pre-treatment (Table 7.29), and all measures at post-treatment.

Participants with a partner reported higher scores in all cases.

Resilience, Adaptability, and Tenacity each provided a significant result with level of

education, at both pre- and post-treatment (Table 7.30). Bonferroni post hoc analyses

indicated that at pre-treatment, participants with secondary education had significantly lower

scores (on all measures) than either those with a TAFE/trade or tertiary education. At post-

treatment, those with a secondary education reported lower Resilience and Tenacity scores

than those with tertiary education. There were no pairwise differences for Adaptability.

At pre-treatment, significant group differences in employment status were noted for all of

Resilience, Adaptability and Tenacity (Table 7.31a). Post hoc testing noted the same pairwise

differences for all variables. Participants with full-time employment reported higher scores

than those who worked part-time, were unemployed, or students. There were no statistically

significant group differences at post-treatment (Table 7.31b).

Table 7.26   *Pre-treatment Resilience Measures*

	Pre-treatment (n = 672)			Post-treatment (n = 349)			No follow-up data (n = 323)			
	Range	**Mean**	**(SD)**	**Range**	**Mean**	**(SD)**	**Range**	**Mean**	**(SD)**	$t_{(670)}$
Resilience	3 - 93	45.0	(16.5)	3 - 93	44.8	(16.6)	5 - 93	45.2	(16.5)	0.30
Adaptability	0 - 42	18.7	(7.8)	1 - 39	18.5	(7.9)	0 - 42	18.9	(7.8)	0.73
Tenacity	0 - 36	18.0	(7.0)	0 - 36	18.0	(7.1)	1 - 35	18.0	(6.9)	0.10

Table 7.27   *Correlations between Resilience Scores and Age at Referral*

Pre-treatment (n = 672)			Post-treatment (n = 349)		
Resilience	Adaptability	Tenacity	Resilience	Adaptability	Tenacity
.04	.03	.03	-.04	-.03	-.05

Table 7.28   *Resilience Scores by Gender*

	Pre-treatment (n = 672)			Post-treatment (n = 349)		
	Men	Women		Men	Women	
	Mean (SD)	Mean (SD)	$t_{(670)}$	Mean (SD)	Mean (SD)	$t_{(347)}$
Resilience	43.8 (16.9)	45.8 (16.3)	1.53	54.5 (19.0)	58.5 (17.3)	2.02[*]
Adaptability	18.7 (8.1)	18.6 (7.6)	0.18	23.6 (8.5)	24.3 (8.0)	0.76
Tenacity	17.3 (7.2)	18.4 (6.8)	2.12[*]	21.2 (7.7)	23.5 (6.7)	2.96[**]

Note.   [*] $p < .05$, [**] $p < .01$.

Table 7.29   *Resilience Scores by Relationship Status*

	Pre-treatment (n = 672)			Post-treatment (n = 349)		
	No partner	Partner		No partner	Partner	
	Mean (SD)	Mean (SD)	$t_{(661)}$	Mean (SD)	Mean (SD)	$t_{(343)}$
Resilience	43.3 (15.9)	47.6 (17.1)	3.32[***]	54.8 (16.7)	60.5 (19.3)	2.92[**]
Adaptability	18.3 (7.5)	19.2 (8.3)	1.57	23.3 (7.5)	25.2 (9.0)	2.09[*]
Tenacity	17.1 (6.8)	19.4 (7.0)	4.22[***]	21.7 (6.9)	24.0 (7.4)	2.93[**]

Note.   [*] $p < .05$, [**] $p < .01$ [***] $p < .001$.

Table 7.30   *Resilience Scores by Level of Education*

| | Pre-treatment (n = 672) | | | | Post-treatment (n = 349) | | | |
| | Secondary | TAFE/trade | Tertiary | | Secondary | TAFE/trade | Tertiary | |
	Mean (SD)	Mean (SD)	Mean (SD)	$F_{(2,667)}$	Mean (SD)	Mean (SD)	Mean (SD)	$F_{(2,345)}$
Resilience	42.2 (17.0)	46.9 (15.3)	47.7 (16.7)	8.16***	53.7 (18.3)	58.7 (17.9)	59.6 (17.5)	4.02*
Adaptability	17.6 (7.9)	19.4 (7.5)	19.8 (7.8)	5.55**	22.7 (7.9)	24.8 (8.5)	25.0 (8.2)	3.16*
Tenacity	16.8 (7.2)	18.7 (6.6)	19.2 (7.0)	7.49***	21.3 (7.6)	23.0 (7.0)	23.7 (6.5)	3.86*

Note.   * $p < .05$, ** $p < .01$ *** $p < .001$.

Table 7.31a   *Resilience Scores by Employment Status: Pre-treatment*

| | Pre-treatment (n = 672) | | | | | |
| | Full-time | Part-time | Unemployed | Retired, homemaker | Student | |
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	$F_{(4,667)}$
Resilience	51.1 (16.0)	43.4 (16.6)	40.7 (15.0)	46.2 (16.8)	44.2 (16.2)	6.36***
Adaptability	21.4 (7.8)	17.9 (7.6)	16.6 (7.6)	18.2 (7.7)	18.8 (7.8)	5.92***
Tenacity	20.6 (6.7)	17.3 (7.2)	16.0 (5.7)	19.0 (7.0)	17.4 (7.0)	7.00***

Note. *** $p < .001$.

Table 7.31b   *Resilience Scores by Employment Status: Post-treatment*

| | Post-treatment (n = 349) | | | | | |
| | Full-time | Part-time | Unemployed | Retired, homemaker | Student | |
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	$F_{(4,344)}$
Resilience	61.0 (18.4)	54.7 (18.1)	57.4 (15.5)	58.2 (20.3)	56.8 (17.5)	1.49
Adaptability	26.1 (8.4)	22.8 (8.0)	23.6 (7.2)	24.9 (9.1)	23.9 (8.2)	1.99
Tenacity	24.0 (7.2)	21.7 (7.4)	22.9 (6.1)	22.6 (8.1)	22.7 (6.7)	1.30

7.2.5.2   Resilience and Diagnosis

At pre-treatment, all resilience measures varied by diagnosis (Table 7.32a). Bonferroni post hoc testing identified that for Resilience and Tenacity, participants with depression reported significantly lower scores than participants with FOB, OAD, and OCD. Further, participants with OCD reported significantly higher scores than those with either FOB or PTSD. For Tenacity only, an additional difference involved participants with OAD reporting higher scores than those with PTSD. For Adaptability, the only significant differences concerned participants with OCD scoring significantly higher than those with either depression or PTSD. Table 7.32b presents the results at post-treatment, with far fewer pairwise differences found to be evident. For Resilience, participants with depression reported significantly lower scores than those with FOB or OCD. These differences also held for Tenacity, for which participants with depression also scored lower than those with OAD. At post-treatment, Adaptability did not provide an overall significant result with diagnosis.

7.2.5.3   Resilience and Clinical Variables

At both pre- and post-treatment (Table 7.33), there was a significant negative correlation between Resilience and all clinical measures of severity. These were particularly substantial for K10 and PHQ9, and conversely quite modest for the more specialised OCI-R measure. Further, neither Adaptability nor Tenacity provided a set of results that was discriminable from those of the CD-RISC total score. However, noticeably higher coefficients were evident at post-treatment for all variables. This is a likely result of the select nature of the sample at post-test. The clear discrimination in resilience scores against clinical variables was also reinforced by the categorical analyses presented in Table 7.34a (pre-treatment) and Table 7.34b (post-treatment). As expected, all analyses were statistically significant, with higher mean Resilience, Adaptability and Tenacity scores for those participants below clinical cutoffs on all measures.

Table 7.32a *Resilience Scores by Diagnosis: Pre-treatment*

| | Pre-treatment (n = 672) | | | | | |
| | FOB | PTSD | OAD | OCD | Depression | |
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	$F_{(4,667)}$
Resilience	45.2 (16.9)	42.6 (15.7)	47.9 (15.3)	51.0 (16.2)	38.9 (16.1)	8.58[***]
Adaptability	18.6 (8.0)	17.5 (7.5)	20.0 (7.8)	20.5 (7.7)	17.0 (7.5)	4.08[**]
Tenacity	18.1 (6.9)	16.6 (6.8)	19.4 (6.0)	21.3 (6.4)	14.8 (6.8)	14.15[***]

Note. [**] p < .01, [***] p < .001.

Table 7.32b *Resilience Scores by Diagnosis: Post-treatment*

| | Post-treatment (n = 349) | | | | | |
| | FOB | PTSD | OAD | OCD | Depression | |
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	$F_{(4,344)}$
Resilience	58.2 (18.1)	56.9 (18.0)	57.4 (16.9)	61.1 (15.6)	48.6 (19.8)	4.01[**]
Adaptability	24.6 (8.1)	23.3 (8.5)	24.2 (7.9)	25.4 (7.3)	21.2 (9.1)	2.37
Tenacity	22.9 (7.2)	22.4 (7.4)	22.7 (6.6)	25.0 (5.6)	18.9 (7.9)	5.77[***]

Note. [**] p < .01, [***] p < .001.

Table 7.33 *Correlations between Resilience and Clinical Variables: Continuous*

	Pre-treatment (n = 672)			Post-treatment (n = 349)		
	Resilience	**Adaptability**	**Tenacity**	**Resilience**	**Adaptability**	**Tenacity**
CGI	-.37***	-.35***	-.36***	-.56***	-.56***	-.53***
K10	-.50***	-.47***	-.50***	-.62***	-.64***	-.57***
PHQ9	-.53***	-.48***	-.55***	-.63***	-.63***	-.60***
GAD7	-.43***	-.45***	-.39***	-.55***	-.58***	-.48***
IES-R	-.29***	-.30***	-.28***	-.48***	-.52***	-.43***
OCI-R	-.13***	-.17***	-.12**	-.36***	-.41***	-.28***
WSAS	-.46***	-.40***	-.47***	-.61***	-.61***	-.58***

Note. ** p < .01, *** p < .001.
    CGI = CGI-S at pre-treatment, CGI-I at post-treatment

Table 7.34a *Resilience by Clinical Variables: Categorical, Pre-treatment*

	Resilience					Adaptability					Tenacity				
	Below cutoff		Above cutoff			Below cutoff		Above cutoff			Below cutoff		Above cutoff		
	Mean	(SD)	Mean	(SD)	$t_{(670)}$	Mean	(SD)	Mean	(SD)	$t_{(670)}$	Mean	(SD)	Mean	(SD)	$t_{(670)}$
K10	60.0	(15.9)	42.4	(15.2)	10.60***	25.5	(7.7)	17.5	(7.2)	10.21***	24.1	(6.7)	16.9	(6.5)	10.19***
PHQ9	58.4	(14.3)	41.3	(15.1)	12.29***	24.5	(7.2)	17.0	(7.2)	11.27***	23.8	(5.9)	16.4	(6.4)	12.66***
GAD7	56.6	(16.3)	42.6	(15.6)	8.68***	24.4	(7.6)	17.5	(7.3)	9.17***	22.5	(6.9)	17.1	(6.7)	7.93***
IES-R	51.6	(16.2)	42.5	(16.0)	6.64***	22.0	(7.6)	17.4	(7.5)	7.13***	20.5	(7.1)	17.0	(6.7)	6.09***
OCI-R	47.3	(16.4)	42.5	(16.4)	3.81***	20.1	(7.6)	17.1	(7.8)	5.04***	18.7	(7.0)	17.2	(6.9)	2.88**
WSAS	52.4	(15.2)	40.2	(15.6)	10.05***	21.6	(7.2)	16.7	(7.6)	8.36***	21.3	(6.4)	15.8	(6.5)	10.59***

Note. *p < .05, ***p < .001.

Table 7.34b   *Resilience by Clinical Variables: Categorical, Post-treatment*

	Resilience					Adaptability					Tenacity				
	Below cutoff		Above cutoff			Below cutoff		Above cutoff			Below cutoff		Above cutoff		
	Mean	(SD)	Mean	(SD)	$t_{(347)}$	Mean	(SD)	Mean	(SD)	$t_{(347)}$	Mean	(SD)	Mean	(SD)	$t_{(347)}$
K10	65.8	(16.0)	47.5	(15.1)	10.98***	28.1	(7.1)	19.5	(6.9)	11.55***	24.8	(6.3)	19.1	(6.4)	9.83***
PHQ9	64.1	(15.5)	45.2	(15.6)	11.06***	27.3	(7.1)	18.6	(7.0)	11.20***	25.3	(6.1)	18.1	(6.6)	10.36***
GAD7	63.8	(16.0)	45.6	(15.4)	10.43***	27.2	(7.2)	18.6	(6.9)	11.06***	25.0	(6.4)	18.6	(6.7)	11.16***
IES-R	62.2	(17.0)	47.3	(16.0)	7.95***	26.4	(7.6)	19.4	(7.3)	8.32***	24.6	(6.7)	18.9	(6.7)	7.54***
OCI-R	59.9	(17.8)	49.0	(16.1)	5.20***	25.6	(7.9)	19.7	(7.3)	6.36***	23.5	(7.1)	20.2	(6.8)	3.89***
WSAS	61.6	(16.5)	43.5	(15.4)	9.13***	26.1	(7.6)	17.9	(6.7)	9.00***	24.4	(6.4)	17.4	(6.8)	8.86***

Note.   *** p < .001.

7.3   Assessment of Pre- to Post-treatment Change

A basic analysis of change for the continuous versions of the clinical variables (repeated

measures t tests) is presented in Table 7.35. All variables changed significantly from pre- to

post-treatment indicating improvement in wellbeing over the course of the CARD program.

This finding is replicated by the analysis of the categorical versions of the clinical variables

by χ^2 testing (Table 7.36). That is, a significantly reduced number of participants were

classified above the relevant severity cutoff for each variable at post-treatment compared with

pre-treatment. Given the close correspondence in results between continuous and categorical

versions of the clinical variables (Table 7.35 compared with Table 7.36), only continuous

measures will be presented in all further analyses of severity.

Table 7.35   *Change in Clinical Scores: Continuous*

	Pre-treatment (n = 349)		Post-treatment (n = 349)			
	Mean	**(SD)**	**Mean**	**(SD)**	**r**	**$t_{(348)}$**
K10	30.9	(8.5)	22.5	(9.2)	.59	19.51***
PHQ9	15.1	(6.9)	8.6	(6.7)	.59	19.87***
GAD7	13.2	(5.4)	7.2	(5.4)	.51	21.01***
IES-R	43.6	(19.4)	27.0	(19.9)	.59	17.36***
OCI-R	22.5	(14.0)	15.2	(13.1)	.75	14.04***
WSAS	21.6	(9.0)	13.5	(9.5)	.59	18.07***

Note.   *** $p < .001$.

Table 7.36   *Change in Clinical Scores: Categorical*

	Pre-treatment (n = 349)		Post-treatment (n = 349)		
	n	**(%)**	**n**	**(%)**	$\chi^2_{(1)}$
K10	297	(85.1)	168	(48.1)	43.94[***]
PHQ9	266	(76.2)	132	(37.8)	54.19[***]
GAD7	289	(82.8)	131	(37.5)	29.45[***]
IES-R	244	(69.9)	122	(35.0)	49.37[***]
OCI-R	170	(48.7)	95	(27.2)	105.68[***]
WSAS	209	(59.9)	90	(25.8)	45.78[***]

Note.   [***] $p < .001$; Table entries are n (%) above severity cutoff.

### 7.3.1   Pre- to Post-treatment Change Relative to Childhood Adversities

To determine whether the experience of CAs was associated with treatment-related change in clinical variables a series of repeated measures ANOVAs were conducted using CAs in categorical form (0, 1-3, 4+) as a between subjects factor. Results are presented in Table 7.37. Only the interaction effect between time and CAs (the key effect of interest) is shown. Weak significant effects were noted for K10, PHQ9, and WSAS. To aid in the interpretation of these effects they are also depicted in Figure 7.1. At pre-treatment, K10, PHQ9, and WSAS were all elevated for those participants who reported either 1-3 CAs or 4+ CAs. Similarly, reductions in distress (K10 and PHQ9) and functional impairment (WSAS) at post-treatment were equivalent for these two groups. The significant interaction appears attributable to the slightly more modest improvement of participants who reported no CAs.

Table 7.37   *Change in Clinical Scores Relative to CAs*

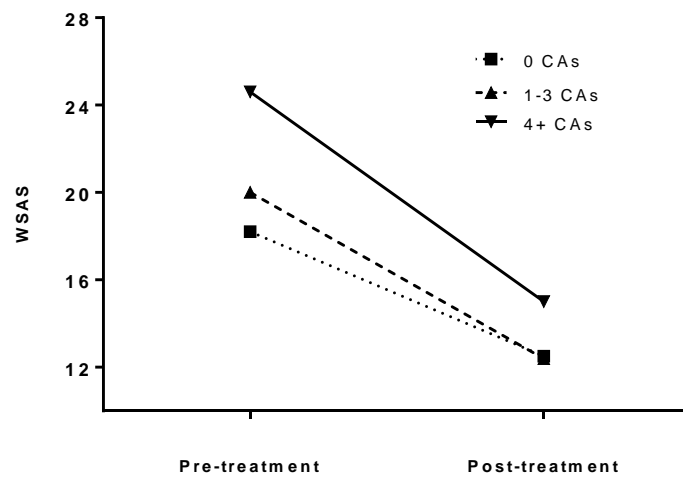| | Pre-treatment (n = 349) | | | | | | Post-treatment (n = 349) | | | | | | |
| | 0 CAs | | 1-3 CAs | | 4+ CAs | | 0 CAs | | 1-3 CAs | | 4+ CAs | | |
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)	$F_{(2,346)}$
K10	27.6	(9.3)	29.6	(8.3)	33.6	(7.9)	21.8	(8.9)	21.2	(8.8)	24.2	(9.6)	3.45[*]
PHQ9	12.2	(7.0)	14.4	(7.0)	17.0	(6.2)	7.8	(6.2)	7.9	(6.5)	9.7	(7.0)	4.13[*]
GAD7	11.5	(5.9)	12.9	(5.4)	14.1	(4.9)	7.0	(5.5)	6.7	(5.2)	7.7	(5.6)	2.08
IES-R	37.3	(22.2)	39.4	(18.5)	50.5	(17.2)	25.6	(21.4)	23.1	(18.3)	31.9	(20.2)	2.70
OCI-R	21.2	(13.7)	20.7	(12.8)	25.0	(15.2)	16.1	(12.9)	13.3	(11.2)	17.1	(14.8)	1.60
WSAS	18.2	(8.2)	20.0	(8.6)	24.6	(8.9)	12.5	(8.9)	12.4	(9.0)	15.0	(10.2)	4.51[*]

Note. [*] $p < .05$.
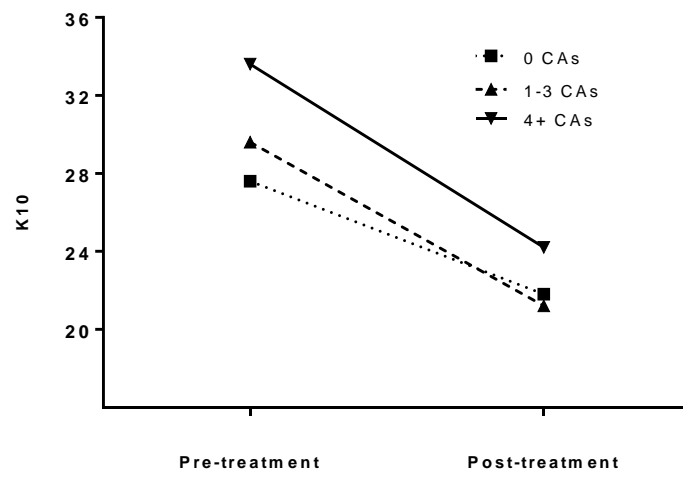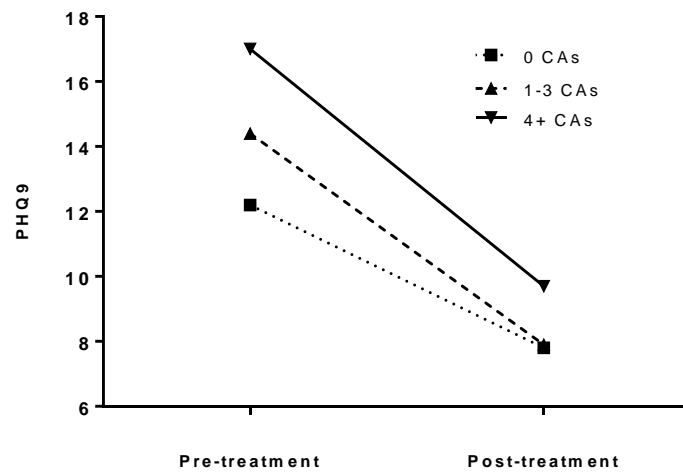
Figure 7.1   *Treatment by CA Interactions for (a) K10, (b) PHQ9, and (c) WSAS*

7.3.2   Pre- to Post-treatment Change in Resilience

Simple analyses of change in CD-RISC scores (repeated measures t tests) are presented in

Table 7.38. All of Resilience, Adaptability and Tenacity improved significantly over time.

Table 7.38   *Change in Resilience Scores*

	Pre-treatment (n = 349)		Post-treatment (n = 349)			
	Mean	**(SD)**	**Mean**	**(SD)**	**r**	**$t_{(348)}$**
Resilience	44.8	(16.6)	57.0	(18.0)	.65	15.44***
Adaptability	18.4	(7.9)	24.0	(8.2)	.60	14.34***
Tenacity	18.0	(7.1)	22.6	(7.2)	.67	14.63***

Note.   ***p < .001.

7.3.3   Change in Resilience Relative to Childhood Adversities

To assess whether the experience of CAs was associated with resilience levels, a series of

repeated measures ANOVAs was performed with CA groups as a between subjects factor.

Results are summarised in Table 7.39. As with previous similar analyses, only the interaction

effect between time and CA groups is presented as it is the key effect of interest. The data

suggest that improvement in resilience scores, in terms of overall Resilience, Adaptability,

and Tenacity were independent of the reported level of experience of CAs.

Table 7.39   *Change in Resilience Scores Relative to CAs*

| | Pre-treatment (n = 349) | | | | | | Post-treatment (n = 349) | | | | | | |
| | 0 CAs | | 1-3 CAs | | 4+ CAs | | 0 CAs | | 1-3 CAs | | 4+ CAs | | |
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)	$F_{(2,346)}$
Resilience	48.6	(19.1)	45.2	(15.8)	43.1	(16.5)	58.7	(21.4)	56.9	(16.9)	56.5	(18.2)	1.10
Adaptability	19.3	(8.9)	18.7	(7.7)	17.9	(7.8)	24.3	(9.6)	24.2	(7.8)	23.6	(8.2)	0.15
Tenacity	20.5	(7.9)	18.2	(6.7)	16.9	(7.1)	23.8	(8.2)	22.5	(6.6)	22.3	(7.4)	2.52

7.4   Assessment of Structural Relationships among Core Study Variables

The goal of examining clinical change relative to resilience presented a novel pattern for analysis. Autoregressive cross-lagged panel analyses were chosen to address this issue. They are designed to assess the structural relations among constructs that are measured repeatedly, rather than examine change per se (Selig & Little, 2012). Cross-lagged effects are evaluated controlling for the prior level of the construct being predicted, allowing a commentary on how one construct might induce change in another. As such, these analyses have historically been considered to be pseudo analyses of causal effects (Bentler, 1980; Kenny, 1979).

7.4.1   Resilience and Clinical Variables

In this section the chosen analyses allow the issue of whether it is more likely that psychological wellbeing (for example) predicts resilience at post-treatment, or whether resilience more likely predicts psychological wellbeing at post-treatment. Results for each clinical variable with (a) Resilience, (b) Adaptability, and (c) Tenacity are presented in Figures 7.2 to 7.7. Each figure depicts the relevant pre- and post-treatment variables, their variances ($\rightarrow$) and covariances ($\leftrightarrow$), appropriate error terms (e1, e2), and squared multiple correlations (bolded). Significance levels are *** p < .001, ** p < .01, and * p < .05.

There is only very conservative evidence available from these analyses to allow any determination of the likely 'causal' associations among resilience and clinical variables. Inspection of the cross-lagged coefficients in Figures 7.2 to 7.7 suggests the following. For the PHQ9 there is a hint that low scores may precede higher Adaptability. This result was also evident for the WSAS. However, other significant effects suggest that both high Adaptability and high Tenacity scores may precede low IES-R scores. Similarly, the evidence suggests that high Resilience and high Tenacity scores may precede low WSAS scores.
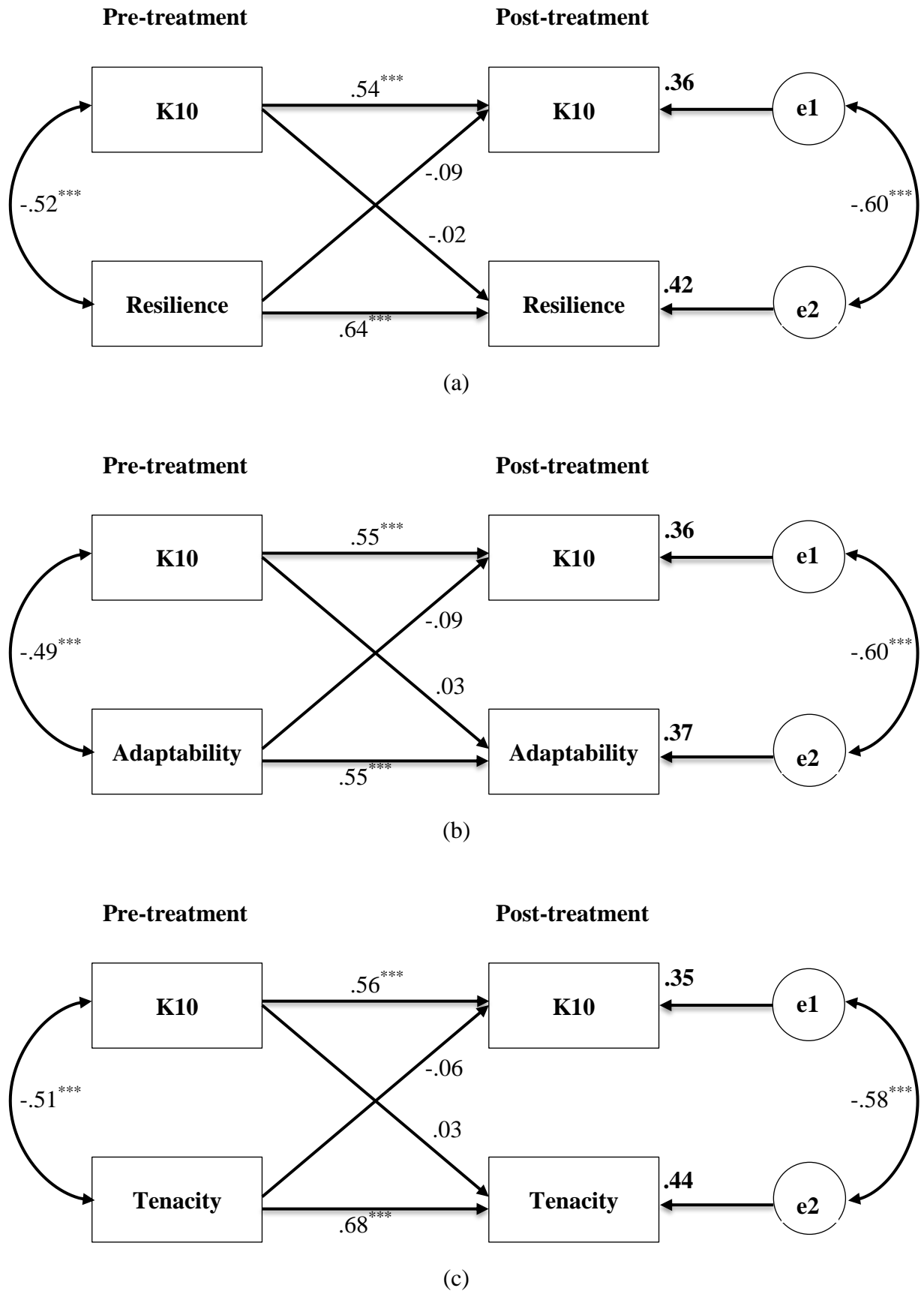
Figure 7.2   *Autoregressive Cross-lagged Panel Analyses for K10 by Resilience*
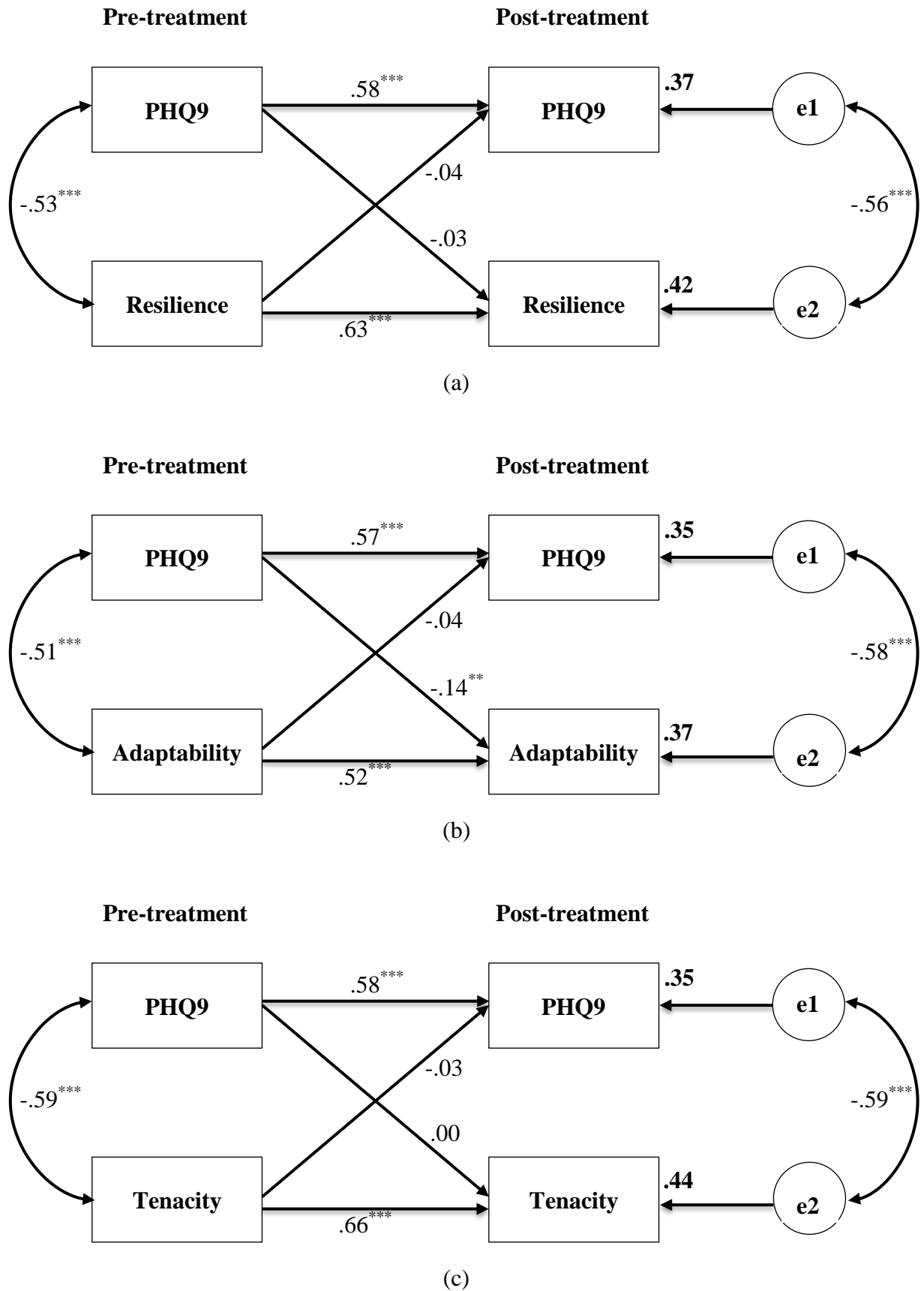
Figure 7.3   *Autoregressive Cross-lagged Panel Analyses for PHQ9 by Resilience*
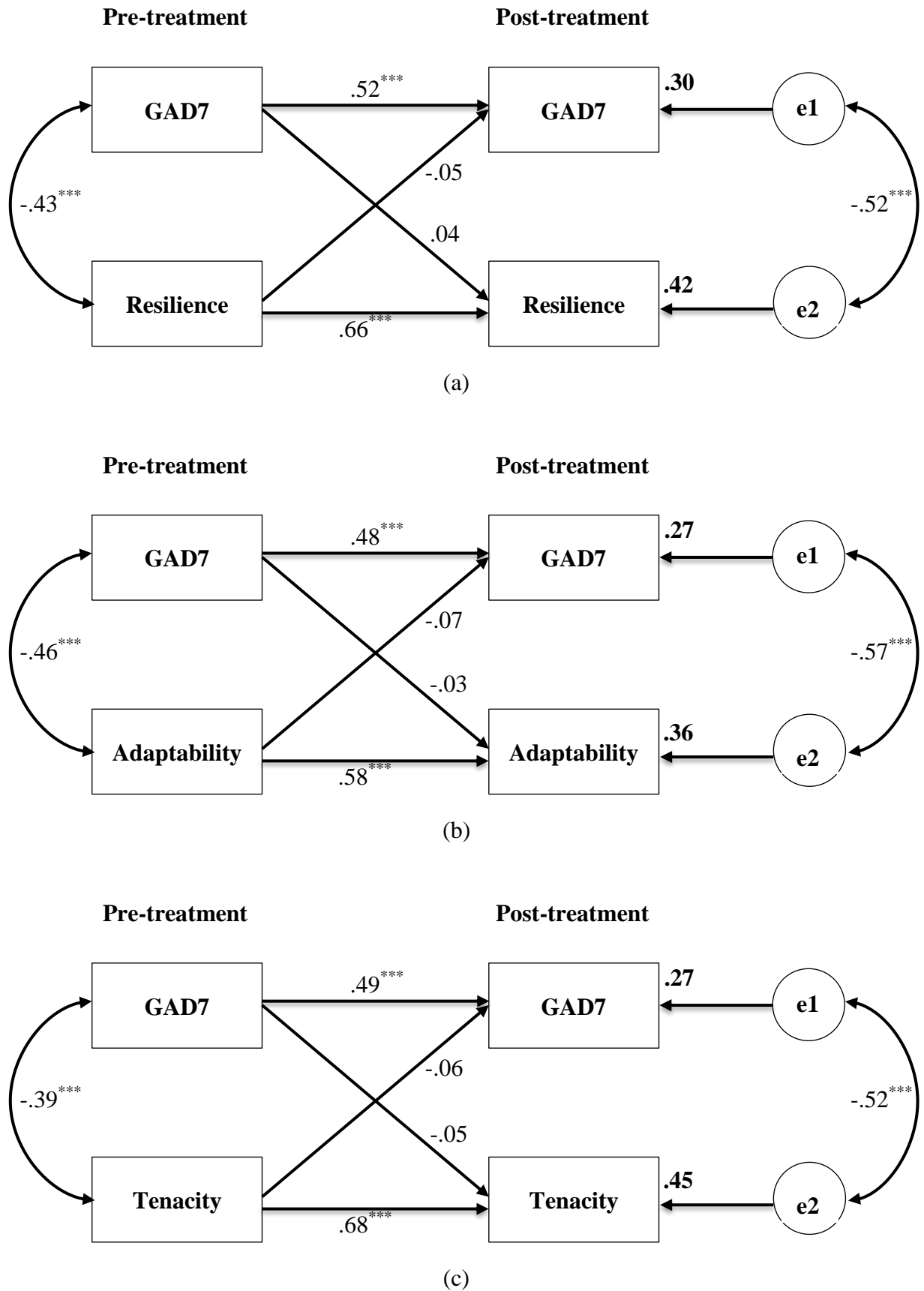
Figure 7.4   *Autoregressive Cross-lagged Panel Analyses for GAD7 by Resilience*
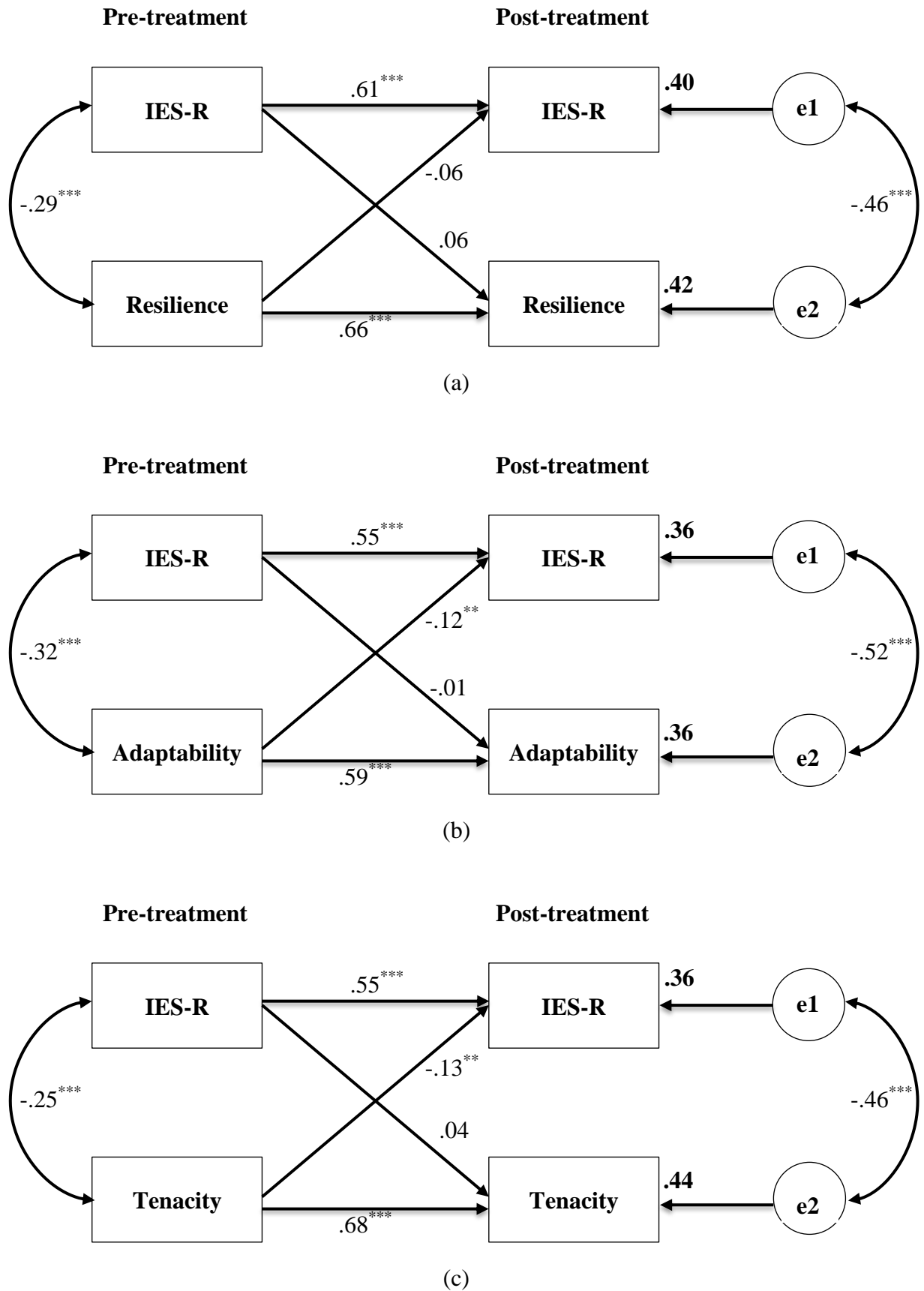
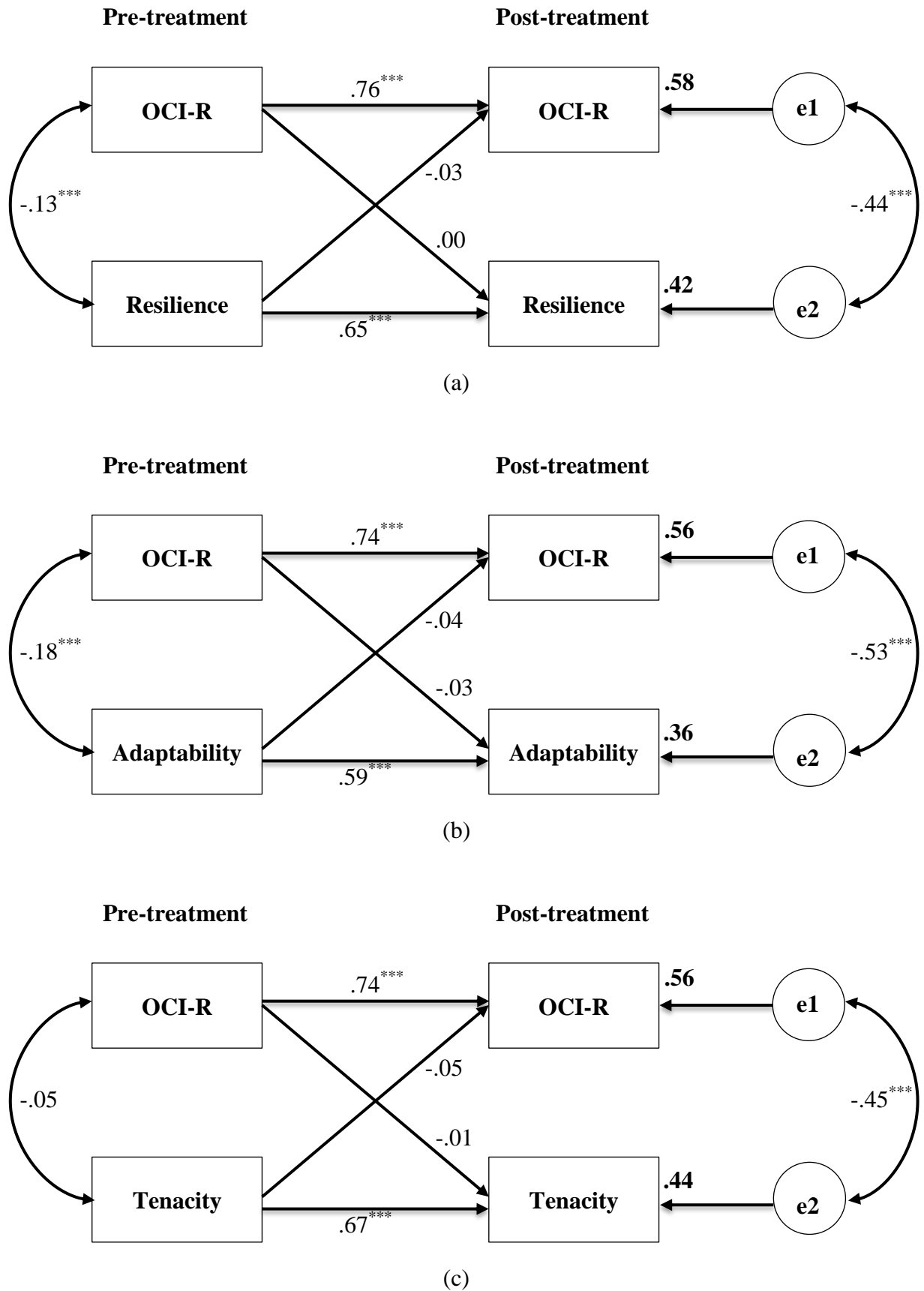Figure 7.5   *Autoregressive Cross-lagged Panel Analyses for IES-R by Resilience*

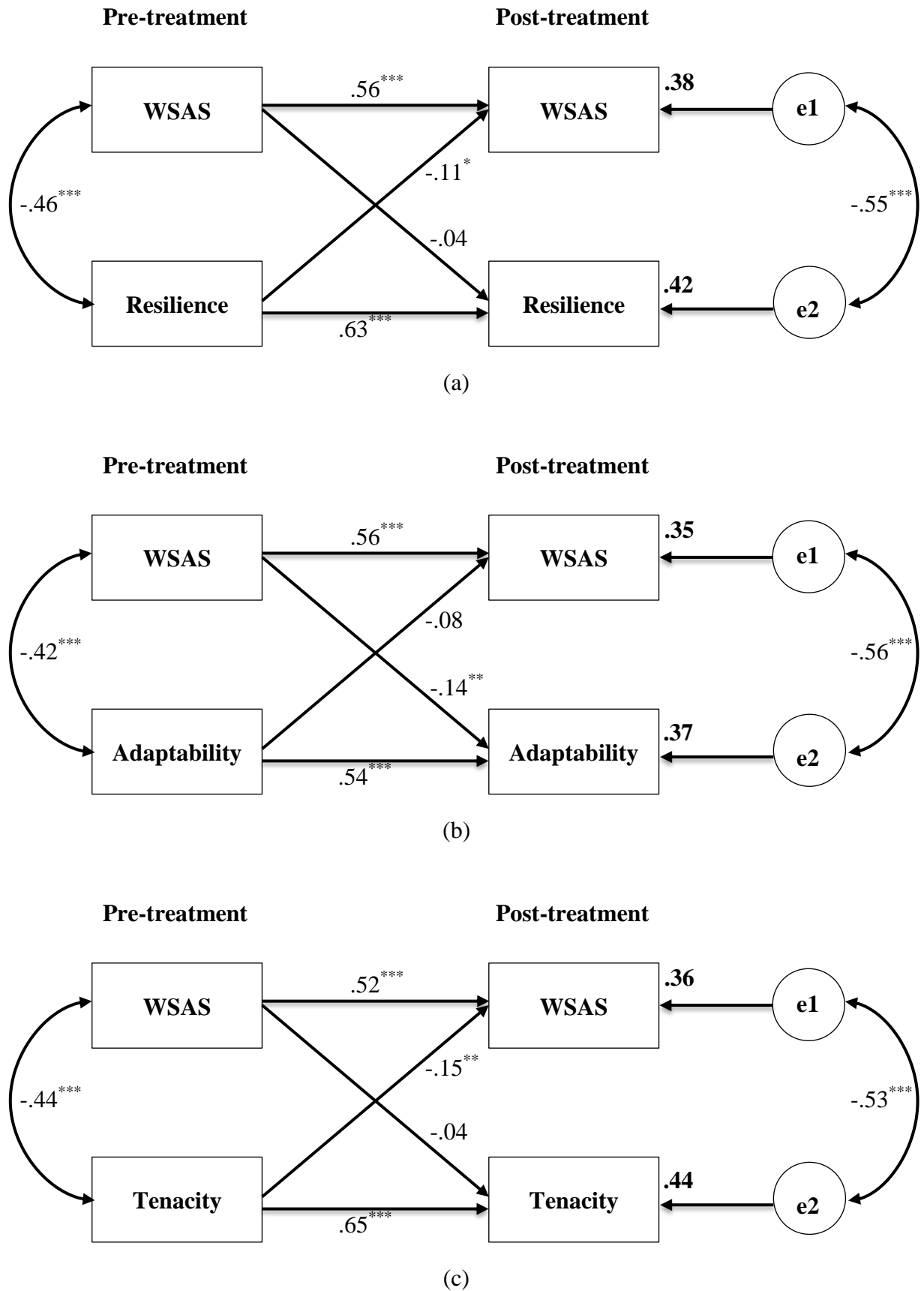Figure 7.6   *Autoregressive Cross-lagged Panel Analyses for OCI-R by Resilience*

Figure 7.7   *Autoregressive Cross-lagged Panel Analyses for WSAS by Resilience*

7.4.2   Resilience, Clinical Variables, and Childhood Adversities

One of the advantages of autoregressive cross-lagged panel analyses is the ability to conduct

multigroup analyses to examine moderating effects that may impact on the full sample

results. In the current research this allowed the relations among resilience and each clinical

variable to be re-examined by including CAs (0, 1-3, 4+) as a potential moderator. In these

analyses, a χ^2 test is conducted to determine whether regression estimates (e.g., cross-lagged

coefficients) differ significantly across levels of the proposed moderator (e.g., CAs). The

relevant χ^2 results are presented in Table 7.40, with the cross-lagged panels shown in Figures

7.8 to 7.12 for only those χ^2 analyses that were significant (i.e., K10 with Resilience and

Adaptability, and GAD7 with Resilience, Adaptability, and Tenacity).

Table 7.40   *Evaluation of CA Differences in Analyses of Resilience by Clinical Variables*

	Resilience		**Adaptability**		**Tenacity**	
	$\chi^2_{(8)}$	**p**	$\chi^2_{(8)}$	**p**	$\chi^2_{(8)}$	**p**
K10	17.80	.023	19.98	.010	12.17	.144
PHQ9	12.64	.125	11.40	.180	12.02	.150
GAD7	19.13	.014	16.94	.031	17.69	.024
IES-R	13.19	.106	11.87	.157	10.65	.222
OCI-R	13.64	.092	11.41	.405	12.01	.151
WSAS	14.13	.078	9.19	.327	12.01	.151

For both K10 and GAD7, the effect of interest was a strong association between pre-

treatment Resilience and Adaptability and post-treatment wellbeing (higher Resilience and

Adaptability 'predicted' later wellbeing) among participants who reported no CAs. For

GAD7 and Resilience, opposite effects were also noted for Resilience. A positive association

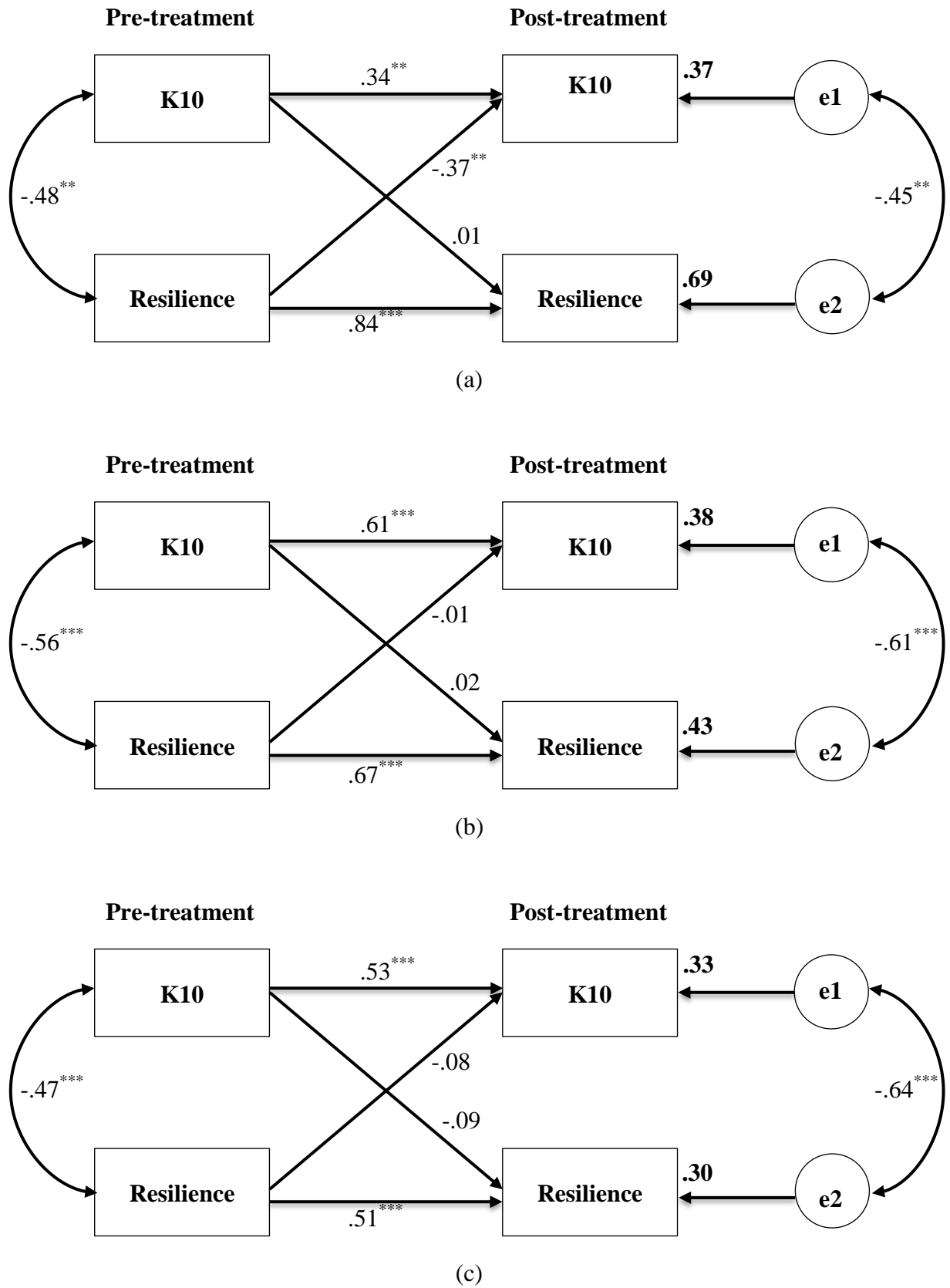held between pre-treatment GAD7 and post-treatment Resilience for participants reporting

Figure 7.8   *Autoregressive Cross-lagged Panel Analyses for K10 by Resilience,*
                  with CAs as a Moderator: (a) = 0 CAs, (b) = 1-3 CAs, (c) = 4+ CAs

Figure 7.9   *Autoregressive Cross-lagged Panel Analyses for K10 by Adaptability, with CAs as a Moderator: (a) = 0 CAs, (b) = 1-3 CAs, (c) = 4+ CAs*

Figure 7.10   *Autoregressive Cross-lagged Panel Analyses for GAD7 by Resilience,*
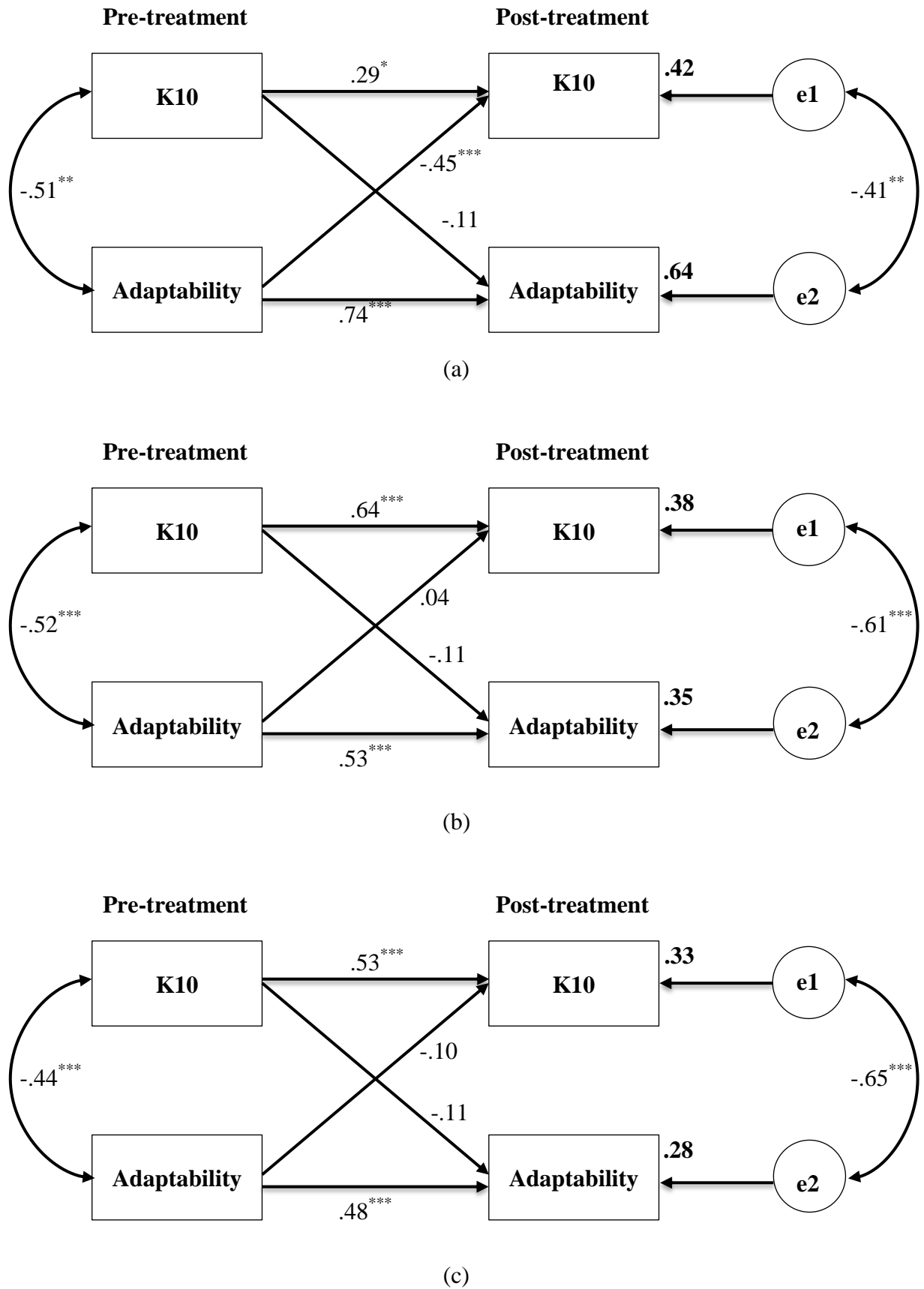*with CAs as a Moderator: (a) = 0 CAs, (b) = 1-3 CAs, (c) = 4+ CAs*

Figure 7.11   *Autoregressive Cross-lagged Panel Analyses for GAD7 by Adaptability,
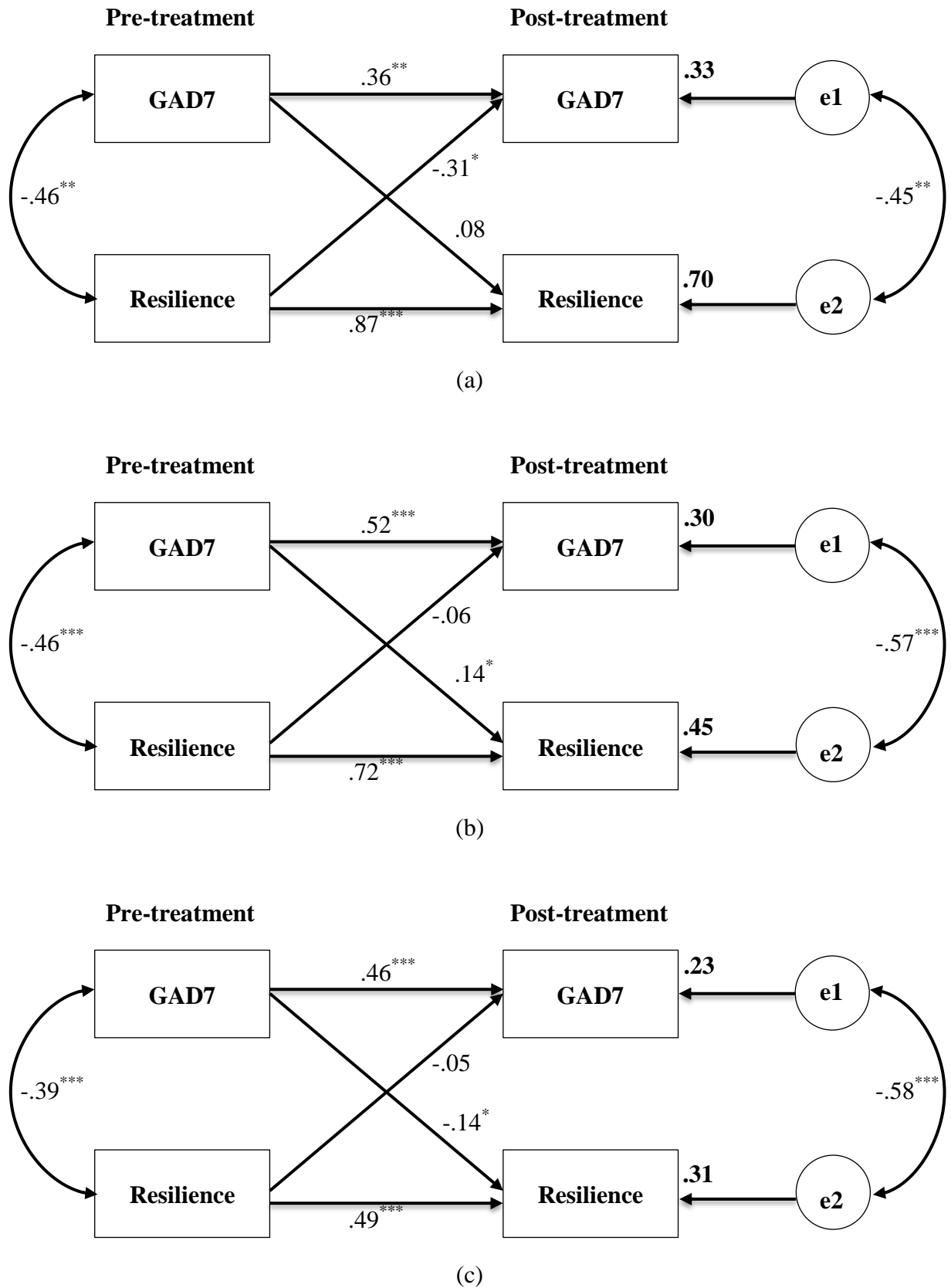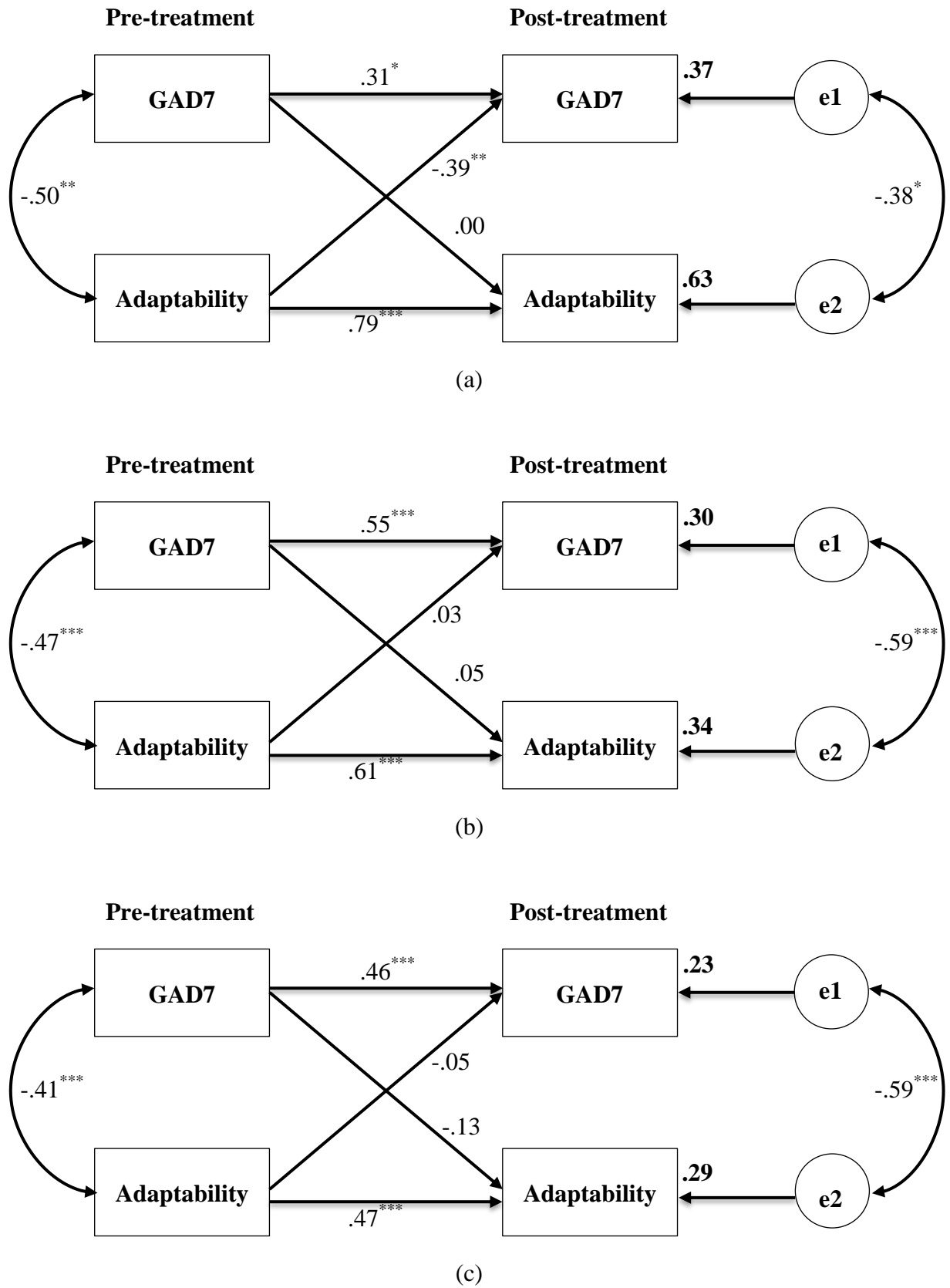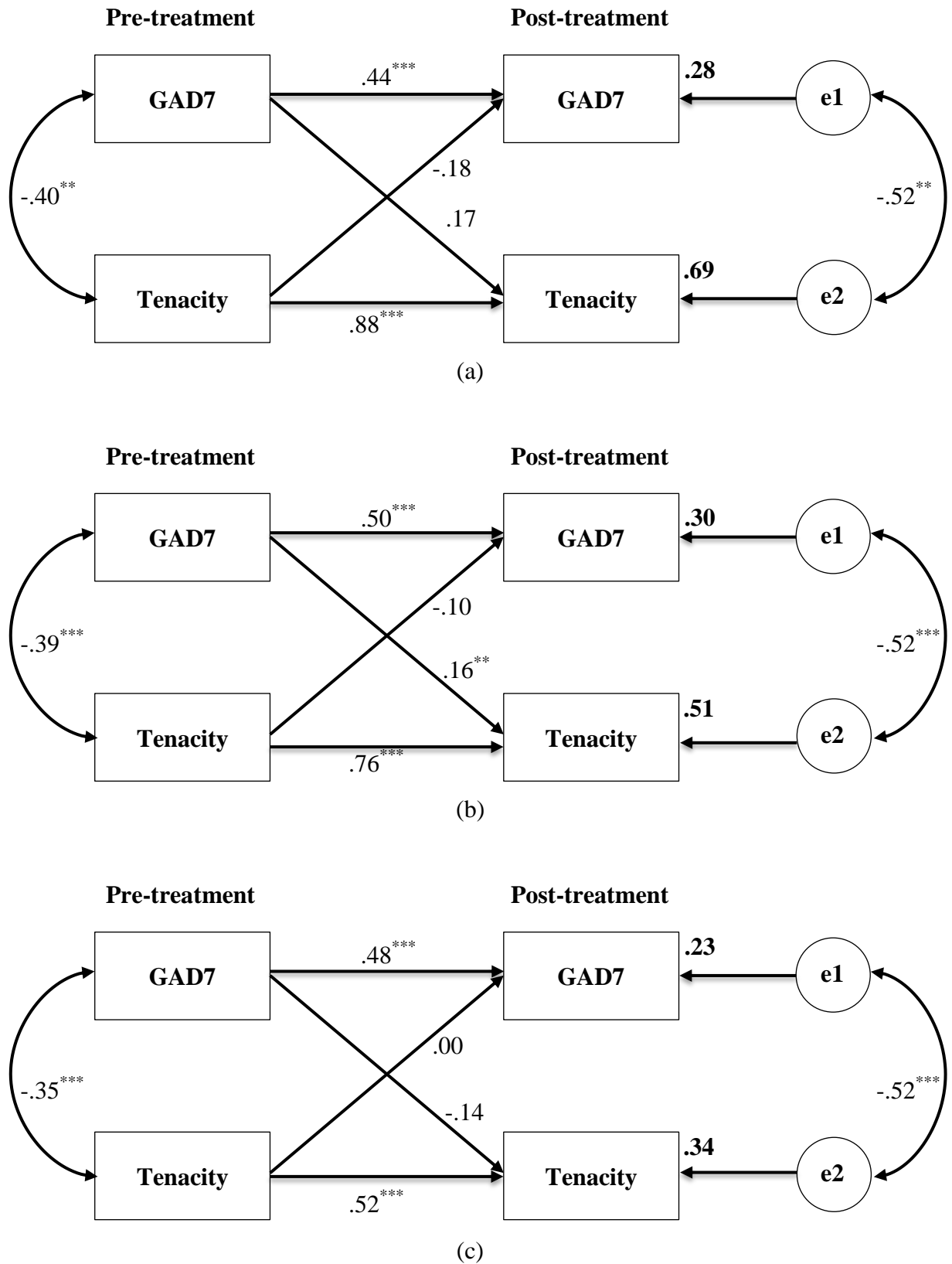with CAs as a Moderator: (a) = 0 CAs, (b) = 1-3 CAs, (c) = 4+ CAs*

Figure 7.12   *Autoregressive Cross-lagged Panel Analyses for GAD7 by Tenacity,*
               with CAs as a Moderator: (a) = 0 CAs, (b) = 1-3 CAs, (c) = 4+ CAs

between 1-3 CAs (higher GAD7 leading to higher Resilience). This association was also present for GAD7 and Tenacity (higher GAD7 leading to higher Tenacity). Conversely, a negative association held between pre-treatment GAD7 and post-treatment Resilience for participants reporting 4 or more CAs (higher GAD7 leading to lower Resilience).

7.5   Discussion

Chapter Seven provided insight into the treatment experiences of individuals who participated in a 12-week standard CBT program for depression and/or anxiety, with the additional consideration of how outcomes varied according to resilience and CAs. The longitudinal nature of the study allowed a consideration of the dynamic associations among key variables over time.

Greater experience of CAs was associated with more severe clinical characteristics, particularly at pre-treatment. Overall, pre-treatment levels of distress and functional impairment were higher for individuals who had experienced previous CAs (i.e., at least one or more CA; 1-3 *or* 4+ CAs). However, there was less distress and greater functioning at post-treatment, irrespective of the number of CAs reported, suggesting that participation in the 12-week CBT program met the intended goal of improved wellbeing. These findings also suggest that exposure to *any* adversity during early formative years is most relevant to health and wellbeing rather than the actual number of CAs. Perhaps the experience of any CAs predisposes individuals to a particular interpretative style that is just as responsive to standard CBT even in the presence of multiple as opposed to isolated CAs. In accord with the notion that depression and PTSD may present as complex psychopathologies, participants with a primary PTSD diagnosis reported more CAs than those with other diagnoses. When CAs were represented by categorical variables, there was greater experience of CAs among individuals with PTSD or depression.

The potential contribution of resilience to wellbeing was highlighted by the finding that, at both pre- and post-treatment, participants who showed greater resilience (all three measures) experienced fewer psychological difficulties, particularly in terms of less general psychological distress and fewer depressive symptoms. However, lower levels of overall Resilience and Tenacity for those with depression at both pre- and post-treatment, indicate the need to attend closely to potential variability in resilience according to diagnosis and tailor intervention to the specific needs of clients.

Overall, there were significant clinical differences between pre- and post-treatment. That is, participants all experienced improvement in wellbeing after exposure to standard CBT intervention, irrespective of whether continuous or categorical clinical measures were used. This finding provided further support for the well-established contribution of the local CBT program to the management of anxiety and depression. Significant differences were also evident for resilience, with all three indices (overall Resilience, Adaptability, and Tenacity) showing improvement between pre- and post-treatment. However, this improvement did not vary according to the experience of CAs. That is, the number of CAs reported by participants did not account for differences in resilience either prior to, or after completion of, treatment.

The multivariate analyses allowed a preliminary insight into the nature of the associations among key study variables, accounting for the availability of resilience and clinical data at two time points (i.e., pre- and post-treatment). The effects of pre-treatment levels were able to be controlled statistically to examine the potential for specific characteristics to be associated with post-treatment wellbeing. Low levels of depression (PHQ9) and functional impairment (WSAS) at pre-treatment were both associated with more Adaptability after completion of the 12-week CBT program. When these multivariate findings are considered together with the bivariate associations reported for depression (i.e., low Resilience and Tenacity for those with

depression at pre- and post-treatment), there is evidence of a general theme for this diagnostic group. At least for individuals who scored more highly on measures of depression in this study, standard CBT may not have provided the opportunity for a stronger sense of resilience to be developed. Future research might explore other options to enhance the treatment experiences of individuals with complex psychopathology such as depression. However, higher pre-treatment levels of Adaptability and Tenacity were related to fewer PTSD symptoms (i.e., low IES-R). Greater overall Resilience and Tenacity at pre-treatment were related to less functional impairment at post-treatment.

The second part of these multivariate analyses involved consideration of CAs as a potential moderator of the associations between resilience and clinical characteristics. When preliminary conditions were met, relevant analyses were possible only for two measures of psychological wellbeing: general psychological distress (K10), and anxiety (GAD7). Among individuals who had not experienced any CAs, higher pre-treatment levels of Resilience and Adaptability were related strongly to lower levels of psychological distress and anxiety. However, for people with 1-3 CAs, greater anxiety at pre-treatment was associated with a higher level of resilience at post-treatment (both overall Resilience and Tenacity). However, when the number of CAs reported was at least 4 or more, greater pre-treatment anxiety was associated with a lower level of overall Resilience. While these cross-lagged analyses have the advantage of accounting for repeated measures of specific constructs (i.e., pre- and post-treatment measures of psychological wellbeing and resilience) and providing insight into the possible direction of such associations, causal relationships cannot be determined. Large population-based studies involving the regular follow-up of children over time would allow closer examination of the potential influence of early exposure to CAs on subsequent psychological wellbeing and resilience.

In general, the improvements in psychological wellbeing, particularly, and self-reported resilience, provided support for the existing 12-week treatment program for individuals with depression and/or anxiety. While examination of the structural relationships evident among core study variables hinted at the nature of possible associations, the determination of any casual relationships remains a worthy focus of future studies. For example, a more precise understanding of the role of resilience would be valuable. In general, greater resilience at pre-treatment was associated with better wellbeing at post-treatment, and completion of the 12-week treatment program was related to greater resilience, irrespective of the extent to which CAs had been experienced. However, there were subtle differences in the pattern of results involving the roles of CAs and resilience when depression and anxiety were greater at pre-treatment. Such findings are worthy of further exploration to better understand their potential clinical implications, especially in terms of what standard CBT offers such clients.

7.6   Chapter Summary

Chapter Seven has included data evaluating the efficacy of a standard treatment protocol (e.g., traditional CBT) implemented locally at CARD using a single group pretest-posttest design. Substantial improvement was noted across the 12-session treatment program, with further evidence of improvement in self-reported resilience. Analyses of the structural relationships among clinical variables and resilience failed to provide definitive evidence of 'causal' associations. The addition of CAs to these analyses provided modest evidence for the detrimental effect of having experienced any number of adversities during childhood. Chapter Eight will now provide a more formal test of the CARD program, compared with a novel treatment protocol.

CHAPTER EIGHT

THE EFFICACY OF SELF-COMPASSION VERSUS COGNITIVE THERAPY

8.1   Introduction

Chapter Eight (Phase Three) furthers the understanding of the treatment of psychological disorders in relation to resilience and CAs. Standard treatment (CT with BT) is compared with an experimental protocol that replaces CT with self-compassion (SC) techniques (SC with BT). The focus on resilience in this program of research has encouraged a consideration of strength-based therapeutic interventions more specifically. Some clients fail to benefit from CR/CT within standard CBT programs. SC aims to build skills that target maladaptive reactions resulting from problematic cognitions. Distorted cognitions (e.g., engrained harsh self-criticisms) that heighten negative emotions (e.g., shame and guilt) maintain and intensify psychological complaints (e.g., PTSD and depression). SC has been found to be superior to CT within standard CBT, although SC may be inferior to CT when there is an absence of, or lower levels of, self-criticism in these disorders (Diedrich et al., 2014, 2016; Cuijpers et al., 2013; Feliu-Soler et al., 2017; Hayes, 2004; Neff, 2016a; Valdez & Lilly, 2016).

SC cultivates the soothing-contentment as a natural regulator of the threat and drive systems (Gilbert, 2009; Gilbert et al., 2014; Lee, 2009). This is done through the induction of self-compassion and its components (i.e., self-kindness, mindfulness, and common humanity) that facilitate a better connection between head and heart that may be particularly useful for individuals with complex psychopathology. Chapter Eight begins by reviewing relevant literature. Consideration is given to the nature of compassion, SC, the use of SC in a therapeutic framework (including with depression and PTSD), the efficacy of SC versus CT, and the relationship between SC and resilience. The methods and results of a single-blind 2 (treatment) x 2 (time) RCT.

8.2   What is Compassion?

Both spiritual and health care literatures describe the value of compassion for wellbeing, and the science of compassion continues to evolve. Spiritual traditions have long recognised the transformative power of compassion. For example, Buddhists note compassion to be the noblest of attributes (Dalai Lama, 2001; Gilbert, 2005, 2008; Gilbert et al., 2004; Salzberg, 2002), with their mental practices, exercises, and disciplines to train the mind in compassion having been drawn upon in psychology (Dalai Lama, 1995; Gilbert 2010).

Compassion is defined as awakened feelings in response to the suffering of the self or others which may inspire the offer of assistance. Attributes such as kindness, empathy, generosity, acceptance, and tolerance are commonly included in definitions of compassion (Feldman & Kuyken, 2011; Gilbert, 2005; Goetz et al., 2010; Wispe, 1991). These motivate the action necessary to relieve suffering, which enables healing and contentment (Dalai Lama, 2001; Feldman & Kuyken, 2011; Gilbert, 2005). Gilbert identified two forms of compassion (Gilbert & Choden, 2013). First, paying attention to or having sensitivity towards the suffering of self and/or others and being able to hold or contain that suffering. Second, to be motivated to help and take efforts to relieve or prevent suffering (Gilbert & Choden, 2013). Within therapy, suffering often means working with complex anxiety, stress, depression and trauma and the contexts within which they arise (Gilbert et al., 2014).

Commonly and importantly, compassion is proposed to be a phenomenon that can be measured, taught and learnt, or more accurately cultivated, through skills and practices. For example, Weng et al. (2013) note that compassion is not a stable trait. However, there remains a lack of consensus on the definition of compassion (Gilbert, 2017; Strauss et al., 2016). This is important from a research perspective as a clear definition enables a phenomenon to be reliably measured and evaluated. Strauss et al. (2016) sought to define

compassion by drawing on existing definitions that recognise five elements (recognising suffering, understanding the universality of human suffering, feeling for the person suffering, tolerating uncomfortable feelings, and motivation to act/acting to alleviate suffering).

It is suggested that the process of cultivating compassion requires patience, steady care, proper tools, and a supportive environment that allows suffering to be recognised, thus motivating a person to transcend adversity of self and/or other(s) (Feldman & Kuyken, 2011; Gilbert, 2000, 2005; Goetz et al., 2010). Acknowledging that compassion does not come easily to all, Gilbert (2005, p. 1) noted that "Humans are capable of extreme cruelty but also considerable compassion." Significant cruelty is evident in human history and is present in modern societies. In many ways the capitalist, economic, modern way of life is the antithesis of compassion, as it is intensely competitive and individualistic (Gilbert, 2017). This suggests compassion (as a way of relating to self and others) needs to be chosen and nurtured from among other potentially competing interpretations of mind and society (Strauss et al., 2016).

8.3   A Conceptualisation of Self-Compassion

Broadly, SC is the practice of applying compassion to the self.

> *"... if a person stops judging and criticizing oneself long enough to experience a degree of self-kindness, the impact of negative emotional experiences will be lessened, making it easier to maintain balanced awareness of one's thoughts and emotions. Similarly, realizing that suffering and personal failures are shared with others lessens the degree of blame and harsh judgment placed on oneself, just as a lessening of self-judgment can soften feelings of uniqueness and isolation"*
> (Neff, 2003a, p. 225).

Neff (2003b) conceptualises SC in terms of three components, each with a positive and negative counterpart: (1) self-kindness versus self-judgement, (2) common humanity versus isolation, and (3) mindfulness versus over-identification (Neff, 2003a). These components are seen as strongly interconnected, combining and mutually interacting to create a self-

compassionate frame of mind (Neff, 2003b; Neff & McGehee, 2010). The combination of these components is often used to distinguish SC from other self-concepts such as self-esteem and also mindfulness (Germer & Neff, 2013).

Self-kindness is the tendency to be warm, kind, patient and understanding toward the self, as opposed to being self-judgmental, which is the inclination to be biased, self-critical, disapproving and intolerant toward suffering, with feelings of inadequacy (Neff, 2011a; Salzberg, 1997). The practice of self-kindness in stressful/negative situations creates an emotional equanimity towards the self that eases the healing process (Brach, 2003; Germer & Neff, 2013; MacBeth & Gumley, 2012; Neff & McGehee, 2010; Salzberg, 1997).

Common humanity involves the recognition that feelings of failure, inadequacy, and emotional pain and suffering are part of the shared human experience. The very definition of being 'human' means accepting mortality, vulnerability, and imperfections (Lopez et al., 2016; Neff, 2003b). Therefore, features of the self should be considered from a broad and inclusive perspective rather than a position of isolation, for which there may be a tendency to view challenges as unconnected and separated. Loneliness is a feature of failure or distress (Germer & Neff, 2013; Neff, 2003b; Yang, 2016).

Mindfulness is integral to SC and refers to the ability to live in the present moment, being sufficiently aware of painful experiences to allow a balanced view of circumstances, and to extend compassion towards the self and others (Bibeau et al., 2016; Germer & Neff, 2013; Neff, 2003b). The converse of mindfulness is over-identification, which is the tendency to overstate or become engrossed in personal emotions, which is associated with difficulty finding an objective or more helpful viewpoint. That is, over-identification is characterised by the tendency to get carried away, ignore, avoid, and be absorbed by negative thoughts and emotions (Birkett, 2013; Germer & Neff, 2013; Germer & Siegel, 2012). Mindfulness

enables people to pause and align their responses with their goals, values, and intentions (Germer & Siegel, 2012; Salzberg, 1997; Tirch, 2010).

8.4   Benefits of Self-Compassion

The development of, and complexity of, psychopathology may be affected by exposure to harsh and ongoing self-criticism. Self-criticism has been linked with negative adversities in early stages of life such as poor parental practices (e.g., being neglectful and being over-protective), negative peer affiliations (e.g., bullying), and CAs generally (e.g., abuse, neglect and/or household dysfunctions). These contribute to an undesirable self-image (Amitay et al., 2008; Kopala-Sibley & Zuroff, 2014; Kopala-Sibley et al., 2013; Pepping et al., 2015).

In contrast, SC skills and practices create the opportunity to target self-criticism more specifically (Germer & Neff, 2013; Germer & Siegel, 2012). The benefits of SC for self-criticism are still to be established. People with greater SC are more likely to be able to support and care for themselves, enabling them to enhance their quality of life despite life challenges (Barnard et al., 2011; Leary et al., 2007; MacBeth & Gumley, 2012; Miron et al., 2016; Westphal et al., 2016). Those who practise SC are able to access their soothing system more effectively in the face of early adversity (Balsamo et al., 2014; Germer & Neff, 2013; Gilbert, 2014b; Goetz et al., 2010; Neff & McGehee, 2010). The evidence also shows that the regular practice of SC also creates healthy emotional capabilities that promote compassion towards others (Warren et al., 2016).

8.5   Self-Compassion within the Therapeutic Framework

Certain psychotherapeutic models can cultivate SC or its components (Barnard et al., 2011), with recent evidence of encouraging outcomes for general wellbeing and improved psychopathology resulting from SC-based interventions (Germer & Neff, 2013; Gilbert, 2016; Lee, 2009; Neff, 2016a; Valdez & Lilly, 2016; Warren et al., 2016). Three such

therapeutic frameworks (e.g., mindfulness-based interventions [MBIs], mindful self-compassion [MSC], and compassion focused therapy [CFT]), are regularly practised within Western psychology, and are briefly described below (Diedrich et al., 2016; Gilbert & Procter, 2006; Neff & Germer, 2013).

MBIs are interconnected with SC in terms of the creation of potential pathways to improve SC through increased mindfulness (Kabat-Zinn, 2003, 2009). MBIs (i.e., mindfulness-based stress reduction [MBSR], mindfulness based cognitive therapy [MBCT]) are treatment programs developed by Kabat-Zinn (1982) and Segal et al. (2002), respectively. The group-based format used both didactic and experimental elements, concentrating on mindful meditative practices. MBIs (i.e., MBSR and MBCT) are designed to teach people to become more aware of, and be non-judgmental of, their thoughts, feelings, sensations, and behaviours (Kabat-Zinn, 1994, 2003; Williams et al., 2007). The aim is to cultivate present moment awareness that encourages disengagement from rumination, self-judgements, negative emotions, and experiential avoidance, all of which have a detrimental effect on psychological health (Carmody & Baer, 2009; Segal et al., 2002; Williams et al., 2007). SC plays a key role in the effectiveness of both MBSR and MBCT, as increases in SC are associated with reduced stress following MBSR (MacBeth & Gumley, 2012; Shapiro et al., 2005), and reduced both erroneous beliefs and depressive symptoms with MCBT (Kuyken et al., 2010; MacBeth & Gumley, 2012). Combined therapies (e.g., MBIs with traditional CBT) for PTSD have also shown improvements in SC and a significant reduction in symptomology (Hollis-Walker & Colosimo, 2011; King et al., 2013; Segal et al., 2002; Valdez & Lilly, 2016).

MSC is an 8-week program designed to explicitly integrate SC and mindfulness training (Neff & Germer, 2013). MSC includes centralised SC, which defines and explains how it differs from self-esteem, self-pity, and self-indulgence (Fredrickson et al., 2008; Neff &

Germer, 2013). A variety of mindfulness and SC techniques are taught which, through

monitored practice, lead to development of strategies for dealing with difficult emotions and

challenging relationships (Neff & Germer, 2013). A community-based study noted significant

gains in SC and mindfulness, as well as lower levels of stress, anxiety, and depression

(Fredrickson et al., 2008; Kearney et al., 2013; Neff & Germer, 2013). Results from a RCT

were similar, and well above those for the control group (Neff & Germer, 2013). A veteran

cohort with PTSD showed that the SC component of MSC increased positive emotions,

enabling compassion for the self and others (Fredrickson et al., 2008). MSC was also related

to improved self-acceptance (Kearney et al., 2013).

CFT is a trans-diagnostic strategy that draws on evolutionary, social, and developmental

psychology, and neuroscience. It incorporates elements of mindfulness and Tibetan

Buddhism, as well as techniques from CBT and other therapies (Gilbert, 2009, 2014a,

2014b). CFT originally focused on working with people who engaged in harsh self-criticism

but is now increasingly used to treat a wide variety of issues including anxiety (Tirch, 2012),

PTSD (Lee et al., 2001), shyness and social anxiety (Wellford, 2012), post-natal depression

(Cree, 2015), overeating (Goss & Allan, 2009), and anger (Kolts, 2012). CFT focuses on

three major systems that are important in emotion regulation, and the development and

potential recovery from psychopathology: the threat-self-protection system, the drive-

excitement system, and the soothing-contentment system (Gilbert, 2009, 2014a, 2014b).

In CFT it is hypothesised that the soothing-contentment system is often poorly accessible to

people with harsh self-criticism and high shame. The threat-self-protection system typically

dominates, giving rise to complex psychopathology. One of its key concerns is to help clients

develop a sense of warmth, safety, and soothing through compassion for self and others, and

from others (Gilbert, 2009). A key idea is to train the mind to focus on compassion, and to

activate compassionate ways of responding to distress, anxiety, depressed mood, and suffering, in order to better regulate the mind and emotions. In doing so, specific biological systems in the brain are stimulated to minimise the dysregulation associated with common causes of psychological disorders (Gilbert, 2009; Lee, 2001; Tirch, 2012; Wellford, 2012).

Compassionate mind training (CMT) incorporates specific exercises, many of which are familiar within traditional CBT (psychoeducation, attention training, self-monitoring thoughts and images, BEs, and BA). The difference is that CFT utilises these strategies to organise the mind in terms of compassion (Gilbert, 2014a, 2014b; Gilbert & Procter, 2006; Lee, 2009; Lee et al., 2001). CMT seeks to reduce depressive feelings, self-criticism, anxiety, shame, inferiority, and maladaptive behaviours (Ashworth et al., 2011; Bowyer et al., 2014; Gilbert, 2014a, 2014b; Gilbert & Procter, 2006; Lee, 2009; Lee et al., 2001).

Further, CFT produces higher resilience and wellbeing, particularly for people with high self-criticism that manifests as feelings of shame (Gilbert, 2014a, 2014b; Lee, 2009). CFT produces improved overall wellbeing and lowered negative symptoms of complex psychopathologies such as PTSD and recurrent depression (Ashworth et al., 2011; Braehler et al., 2013; Gilbert, 2009; Gilbert & Procter, 2006; Laithwaite et al., 2009; Lee, 2009; Lucre & Corten, 2013; Mayhew & Gilbert, 2008). It can improve intimacy, adaptive affect regulation, successful coping with perceived inadequacy, enable a range of adaptive emotions, protect against maladaptive emotions, and enhance habituation to anxiety (Gilbert, 1989, 2009, 2010, 2014a, 2014b; Gilbert & Plata, 2013; Lee, 2009).

8.6   The Role of Self-Compassion in Depression and PTSD

Depression and PTSD are often persistent and disabling, being leading causes of disease burden, with undesirable impacts on clients, families and communities (McEvoy et al., 2011; Ramnero et al., 2016). There is a predisposition for relapse, recurrence and persistence

through the subconscious formation of maladaptive erroneous beliefs (e.g., self-criticism).

Chapter Two presented a detailed description of causes, prevalence and types of depression

and PTSD. Other evidence considers training in compassion (i.e., SC) to be a dynamic

approach to treating depression as it augments the self-soothing system, regulating the threat

and drive systems, facilitating adaptive emotional regulation, greater life satisfaction, positive

psychological outcomes, elevated happiness and lower depressive symptoms in the context of

adversity (Diedrich et al., 2014; MacBeth & Gumley, 2012; Shapira & Mongrain, 2010).

To understand the role of SC in PTSD, the presence of self-criticism (e.g., self-judgment,

self-blame and rumination) during the experience of (particularly interpersonal) trauma, leads

to affect dysregulation (e.g., intense fear, helplessness, shame, guilt, sadness, horror, anger,

despair) and increased severity of symptoms (DePrince et al., 2010; Neff et al., 2005;

Reynolds & Brewin, 1998; Valdez & Lilly, 2016; Westphal et al., 2016). The intensity of

self-criticism has a direct association with the severity and complexity of PTSD symptoms, as

demonstrated with various samples such as non-combat veterans of war, Holocaust survivors,

college students, and victims of domestic violence (Cox et al., 2004; McCranie & Hyer,

1995; Sharhabani-Arzy et al., 2005; Thompson & Waltz, 2008; Yehuda et al., 1994). In

general, self-criticism ia a strong predictor of poorer recovery and resilience for PTSD

(Beaumont et al., 2012; Hiraoka et al., 2015; Valdez & Lilly, 2016; Westphal et al., 2016).

Further, higher levels of self-criticism have been noted among individuals with PTSD

compared with depression (Southwick et al., 1991).

SC provides the resources to reduce PTSD symptoms (Warren et al., 2016; Westphal et al.,

2016). For example, the use of loving-kindness meditation, which includes compassion for

self and others, was associated with fewer PTSD symptoms in a sample of war veterans

(Kearney et al., 2013). SC has also been associated with fewer trauma-related symptoms

among adolescents (Zeller et al., 2015), and fewer negative thoughts and reduced fear of

failure among those with PTSD (Barnard et al., 2011; Leary et al., 2007). Combat veterans

with superior SC displayed less PTSD symptomatology and better day-to-day functional

abilities (Dahm, 2013). A lack of SC has also been noted to be a better predictor of PTSD

symptom severity than the intensity of combat exposure (Hiraoka et al., 2015). In summary,

SC appears to act as a protective factor, being associated with less anxiety, better affect

regulation, and improved wellbeing in the context of PTSD (Beaumont et al., 2012; Hiraoka

et al., 2015; Thompson & Waltz, 2008; Valdez & Lilly, 2016; Westphal et al., 2016).

Miron and colleagues (2015) found that fear of SC, compounded by a lack of psychological

flexibility, was associated with more severe PTSD symptoms. It is important to be aware of

such potential barriers to the development of SC when treating clients with complex

psychopathology (Gilbert et al., 2014; Gilbert & Choden, 2013; Lee et al., 2001). This is

particularly so when clients have experienced adversity during their childhood or

adolescence, when caregivers have not been forthcoming with kindness, compassion and

unconditional love, contributing to the formation of motivational habits arising out of fear

and self-criticism (Lee et al., 2001; Gilbert et al., 2014; Miron et al., 2015)

8.7   The Efficacy of Self-Compassion versus Cognitive Therapy

CBT (i.e., the first and second waves of CBT) has succeeded in being considered the leading

evidence-based and more cost-effective treatment (gold standard) for a broad range of

psychological disorders (Feliu-Soler et al., 2017; Mavranezouli et al., 2015; Skapinakis et al.,

2016). CT is the main therapeutic method within second wave CBT (see also Chapter Two

for a comprehensive review) (Beck, 2005, 2011; Butler et al., 2006; Cahill et al., 2009;

Cristea et al., 2015; Dudley & Kuyken, 2013). As acknowledged by Gross and John (2003),

CT strategies are to challenge negatively biased information processing, substitute

remedial/logical evidence that corrects erroneous assumptions/beliefs, and reduce the impact

of negative emotions and psychological symptoms (Amitay et al., 2008; Beck, 2005;

Diedrich et al., 2016; Gotlib & Joormann, 2010; Gross, 2013; Valdez & Lilly, 2016).

However, CT has its limitations, particularly in complex and chronic psychopathologies, with

concerns about non-adherence, attrition, and relapse (Cuijpers et al., 2013; Feliu-Soler et al.,

2017; Hayes, 2004; Valdez & Lilly, 2016). Further, using CT techniques, challenging the

content of NATs (e.g., in-built self-criticism), can be problematic in times of heightened

anxiety, dissociation, or the presence of strong negative emotions such as shame and guilt

(Gilbert, 2009; Jaycox et al., 1998; Johnson et al., 2011; Tarrier & Humphreys, 2000; Taylor

et al., 2003; Valdez & Lilly, 2016). While clients may understand the logic of healthier

thinking, they may nonetheless struggle to feel differently due to the forceful nature of their

internalised self-criticism (Gilbert, 2009; Lee, 2009; Neff, 2016a; Warren et al., 2016). In

such circumstances it may not be beneficial to teach new skills, thoughts, and emotional

reactions (Gilbert, 2009; Hembree et al., 2003; Lee, 2009; Padesky & Mooney, 2012).

More recent interventions termed 'third wave CBT' recommend that it may be more effective

if individuals with complex psychological disorders learn to recognise their inner strengths,

positive qualities, and to comprehend the concept of shared common humanity (Gilbert,

2009; Lu et al., 2014; Padesky & Mooney, 2012; Waugh & Koster, 2015). Third wave

therapies focus on the purpose and function of problematic cognitions. They enable the

cultivation of awareness and non-judgemental acceptance rather than traditional cognitive

restructuring that challenges the content of erroneous thoughts. Further, the main focus of

CFT and other SC-based interventions is not recovery or absence of disorder but improved

psychological functioning, overall health, and wellbeing (Carvalho et al., 2017; Hayes, 2004;

Hayes & Hofmann, 2017; Hofmann & Smits, 2017; O'Connor et al., 2017).

8.8   Sources of Self-Compassion: A Role for Resilience

As noted in Chapter Four, resilience is a dynamic process that may safeguard against the

negative consequences of adversities (Fletcher & Sarkar, 2013; Horn et al., 2016). SC is

related in that it allows for positive adaptation to pain and adversity (Gilbert & Procter,

2006). Studies support the ability of SC to augment resilience through the self-soothing

system. For example, SC has enhanced the capacity to reduce levels of cortisol and stress,

and inconsistencies in heartrate (Porges, 2007; Rockcliff et al., 2008). Higher SC has also

shown a positive trajectory with resilience during adversity (Germer & Neff, 2013; Neff &

McGehee, 2010; Persinger, 2012; Tanaka et al., 2011; Wei et al., 2011; Yang, 2016). SC may

help to promote and maintain resilience and therefore psychological health, especially in the

face of CAs (Hayter & Dorstyn, 2014; Leary et al., 2007; Neff, 2011b).

8.9   Study Proposal

SC shows promise as an adjunct to resilience in improving recovery and wellbeing,

particularly for more complex psychopathologies (Barlow et al., 2017; Diedrich et al., 2014;

Germer & Neff, 2013; Valdez & Lilly, 2016; Westphal et al., 2016). However, Westphal et

al. (2016) noted that only four of 14 studies applying SC were conducted using a clinical

cohort. Both RCTs and longitudinal research designs, with diverse clinical cohorts, are

therefore needed to better understand the role that SC and related strength-based therapies

may play in reducing symptoms of complex psychopathologies (Aldao et al., 2010; Barlow et

al., 2017; Diedrich et al., 2014, 2016; Germer & Neff, 2013; MacBeth & Gumley, 2012;

Valdez & Lilly, 2016; Westphal et al., 2016).

8.9.1   Objective and Research Questions

The effectiveness of an experimental treatment protocol (SC with BT), compared with

standard treatment (CT with BT), was evaluated for a cohort of clients with either depression

or PTSD. These diagnoses were chosen based on both the need for a relatively homogenous sample, and clinically-derived evidence that self-criticism is associated with more severe depression and/or PTSD, such as recurrent relapses, suicidal ideation, maladaptive emotion regulation (i.e., worthlessness, shame and guilt), poorer recovery (from traditional CBT), and lower resilience (Beaumont et al., 2012; Brewin & Firth-Cozens, 1997; Cox et al., 2004; Ehler et al., 2015; Fazaa & Page 2003; Gilbert 2009; Hiraoka et al., 2015; Murphy et al., 2002; Sharhabani-Arzy, 2005; Teasdale & Cox, 2001). That is, a stronger sense of SC may serve as a protective factor for both diagnoses (Beaumont et al., 2012; Dahm, 2013; Gilbert, 2016; Valdez & Lilly, 2016; Warren et al., 2016).

The objective was to determine whether therapeutic options for complex psychopathology could be expanded by emphasising strength-based recovery and resilience for these presentations. The association between SC and resilience was also of interest, as was whether the efficacy of traditional BT was enriched by engaging participants with SC skills practice, compared with CT. The research questions were:

1. Does SC augment treatment outcomes for PTSD and depression?
2. What is the association between SC and resilience, and SC and CAs?

8.10   Method

8.10.1   Design, Analysis, and Approvals

A single-blind 2 (treatment) x 2 (time) repeated measures RCT was conducted. Standard treatment was compared with the experimental treatment protocol across a 12-session program. Key analyses comprised 2 x 2 repeated measures ANOVA. The required sample size was determined for the interaction between treatment and time (the effect of most interest) using G*Power 3 (Faul et al., 2007). For alpha = .05 and power = 80% it was determined that a 'small effect size' of Partial Eta Squared =.02 (equivalent to Cohen's f = .14) would require 29 participants per group. The study was approved by the Southern

Adelaide Clinical Human Research Ethics Committee (SAC HREC) (Appendix 8.1) and

registered with the Australian New Zealand Clinical Trials Registry (12617000885392).

8.10.2   Participants and Procedure

Participants comprised clients who met the inclusion criteria and had completed a 12-week

program at CARD. Inclusion criteria were being aged between 18 and 65 years, with a

primary diagnosis of either depression or PTSD, and referred by their GP or other health care

professional to this service for the first time. An Information Sheet (Appendix 8.2) was given

to participants at their first appointment, with informed consent (Appendix 8.3) obtained prior

to completion of the pre-treatment questionnaire booklet (see Section 8.10.3).

An administrative staff member of CARD who was not involved in this study allocated

participants to one of the two treatment arms using a computer-generated block

randomisation schedule. Within this, participants were also allocated randomly by diagnosis,

to one of two senior CARD therapists. Note, however, that neither diagnosis nor therapist

was appropriately powered to be a key predictor variable. For brevity, the resultant

participant groups are termed 'standard' and 'experimental' throughout the analyses.

The session-by-session protocols, which also varied depending on diagnosis (PTSD or

depression), are described fully in Appendix 8.4. During the first session, a semi-structured

interview was conducted (CBAT; Appendix 8.5) to allow final determination of primary

diagnosis and management plan. Some potential participants were excluded at this point on

the basis of a diagnosis that was incompatible with the study treatment options. Table 8.1

summarises the 62 participants who completed all requirements for inclusion in the analyses

as allocated to treatment protocol, diagnosis, and therapist. Figure 8.1 presents a CONSORT

statement fully detailing participant recruitment and retention.

Table 8.1   *Summary of Study Participants by Treatment, Diagnosis, and Therapist*

	Standard treatment (n = 31)		Experimental treatment (n = 31)		Full trial (n = 62)	
	n	(%)	n	(%)	n	(%)
Diagnosis						
PTSD	15	(48.4)	15	(48.4)	30	(48.4)
Depression	16	(51.6)	16	(51.6)	32	(51.6)
Therapist						
A	15	(48.4)	16	(51.6)	31	(50.0)
B	16	(51.6)	15	(48.4)	31	(50.0)

8.10.3   Measures

A questionnaire was administered at both pre- and post-treatment including two scales introduced specifically for this study and are described below (Self-Compassion Scale and PTSD CheckList - Civilian). Other scales were used previously in Phase Two (ACE, CD-RISC, K10, PHQ9, and WSAS) and have been described fully in Chapter Five. They are briefly summarised in the following sections. The full questionnaire booklet is shown in Appendix 8.6, and all study variables are summarised in Table 8.2.

8.10.3.1   Self-Compassion Scale (SCS; Neff, 2003a)

The SCS is a 26-item self-report instrument that assesses the degree to which an individual's thoughts are self-compassionate. Responses are recorded using a 5-point scale ('almost never' to 'almost always') indicating how often participants act in the manner described (Birkett, 2013; Neff, 2003a, 2016b). There are six subscales (self-kindness, self-judgment, common humanity, isolation, mindfulness, over-identified) reflecting the conceptualisation of SC (Neff 2003a; 2003b; 2016b). The most common scoring option is to report two scales (self-compassion, comprising the three positive subscales; self-criticism, comprising the three
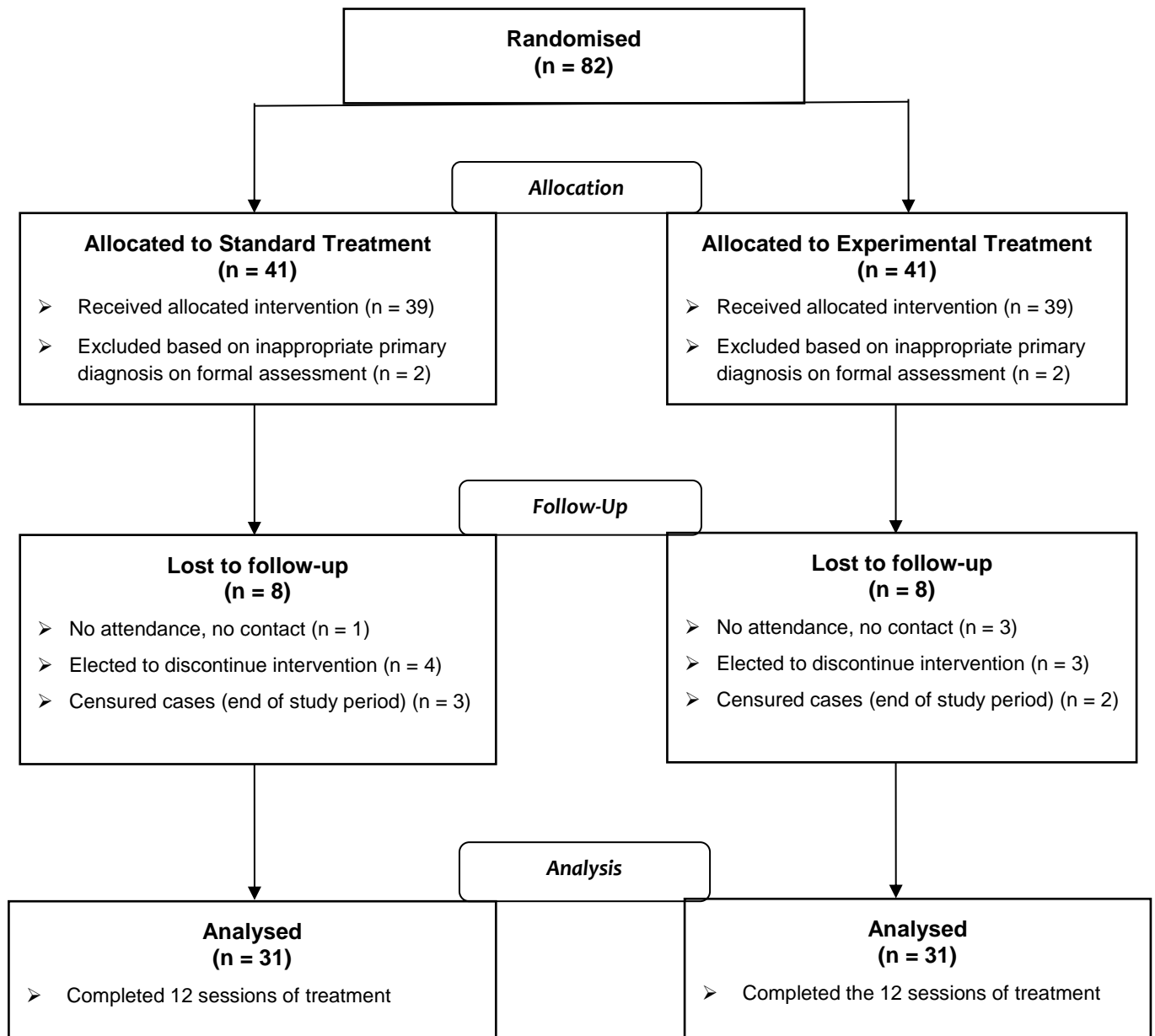
Figure 8.1   *CONSORT Statement Describing Participant Selection and Retention*

Table 8.2   *Summary of Instruments and Variables*

Instrument / Construct	Variable(s)
Clinical Global Impressions - Severity	Score 1 to 7
Demographic Data	Gender Age (years) Education level Employment status Relationship status
Self-Compassion Scale	Total score (26-130)
PTSD Checklist - Civilian	Total score (17-85)
Adverse Childhood Experience Scale	Total score (0-10) Severity (nil, 1-3, $\geq$ 4)

Resilience
    Adaptability
    Tenacity
	Total score (0-100)
	Score (0-44)
	Score (0-36)

Kessler Psychological Distress Scale	Total score (10-50) Psychological distress ($\geq$ 22)
Patient Health Questionnaire	Total score (0-27) Major depression ($\geq$ 10)
Work and Social Adjustment Scale	Total score (0-40) Functional impairment ($\geq$ 20)
Clinical Global Impressions - Improvement	Score 1 to 7 Improvement ($\leq$ 2)

negative subscales). These two scales range from 13 to 65. However, the negative (self-criticism) components of the SCS are strongly associated with psychological issues (Muris & Petrocchi, 2017). Using this sscale may therefore result in an overstated relationship with psychopathology symptoms (Muris & Petrocchi, 2017). The current study therefore assessed only a grand total for SCS, combining the responses from all 26 items (range 26-130) with the three negatively worded subscales reverse coded (Neff, 2003a). Internal reliabilities for the current sample were 0.89 (pre-treatment) and 0.95 (post-treatment).

The SCS shows evidence of good test-retest reliability and internal consistency for both the total score and the subscales (Neff, 2003a, 2006; Neff et al., 2017), and both strong construct validity (Birkett, 2013; Heffernan et al., 2010; Miron et al., 2016; Neff, 2003a) and convergent validity (Neff, 2006, 2016b; Neff, et al., 2007). The SCS has shared positive associations with social connectedness and emotional intelligence, and negative associations with self-criticism and neurotic perfectionism (Leary et al., 2007; Neff, 2003b; Neff et al., 2007, 2017; Neff & Vonk, 2009). Importantly, the SCS is sufficiently reliable and valid to justify its use as a predictor of anxiety, depression, psychological health, and overall wellbeing (Crowder & Sears, 2017; Neff et al., 2007).

8.10.3.2   PTSD CheckList - Civilian (PCL-C; Weathers et al., 1991)

The PCL-C evaluates the influence of traumatic experiences and PTSD symptoms in non-combat, civilian populations and has become the most frequently used instrument for this purpose (Schinka et al., 2007; Wilkins et al., 2011). It contains 17 items that are based on DSM-IV criteria for PTSD. Each item quantifies whether a type of traumatic distress has been experienced over the previous two months using a 5-point scale ('not at all' to 'very much'). A total score (range 17-85) quantifies the level of symptoms. While four subscales have also been identified (re-experiencing: 5 items, range 5-25; avoidance: 3 items, range 3-15; numbing: 4 items, range 4-20; hyper-arousal: 5 items, range 5-25) (Asmundson et al., 2000; Schinka et al., 2007; Wilkins et al., 2011) these are not reported in the current research.

The PCL-C has robust psychometric properties with internal consistency ranging from 0.75 to 0.97, test-retest reliability of 0.96, convergent validity of 0.85 with other PTSD scales, and inter-rater agreement of 0.74 with a structured interview for PTSD (Weathers & Ford, 1996; Weathers et al., 1994; Wilkins et al., 2011). Current internal reliabilities were 0.91 (pre-treatment) and 0.90 (post-treatment).

8.10.3.3   Adverse Childhood Experience Scale (ACE, Dong et al., 2004)

ACE is a reliable and valid 10-item self-report measure of exposure to adversity during the first 18 years of life and it assesses the domains of abuse, neglect, and household dysfunctions. Exposure is reported as 'yes' or 'no', resulting in an adversity score of 0 to 10. The internal reliability in the current study was 0.72. CAs quantified by the ACE may also be considered severe if they number four or more.

8.10.3.4   Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003)

The CD-RISC is a 25-item self-report measure that surveys personal competence, trust in instincts, perceived control, acceptance of change, and spiritual beliefs. It is a 5-point scale ranging from 0 ('not true at all') to 4 ('true nearly all of the time'). A total score, ranging from 0 to 100, is obtained by summing all items ($\alpha = 0.91$ at pre-treatment and 0.95 at post-treatment with the current sample). Higher scores reflect greater resilience. In line with the analyses presented in Chapter Six, Adaptability (11 items, range 0-44, $\alpha = 0.86$ and 0.92) and Tenacity (9 items, range 0-36, $\alpha = 0.83$ and 0.90) were also calculated.

8.10.3.5   Kessler Psychological Distress Scale (K10; Kessler & Mroczek, 1992, 1994)

The K10 is a self-report screening scale for non-specific psychological distress capable of recognising and distinguishing psychopathology (e.g., PTSD, anxiety, and depression) (Kessler et al., 2003). Responses, scored 1 to 5, are summed to yield a total score ranging from 10-50, with higher scores reflecting greater psychological distress. Internal reliabilities for the current sample were 0.88 (pre-treatment) and 0.89 (post-treatment). Further, Australian norms suggest that a classification of psychological distress is generally applied to a score of 22 or more (Australian Bureau of Statistics, 2003; Slade et al., 2011).

8.10.3.6   Patient Health Questionnaire (PHQ9; Kroenke, et al., 2001)

The PHQ9 is a self-report measure for use in primary care settings. It is based directly on the DSM-IV diagnostic criteria for major depression (Lowe, et al., 2002; Spitzer, et al., 1999). Responses scored between 0 to 3 relate to how often problems may have bothered participants during the past two weeks and were summed to yield a total score ranging from 0 to 27. Higher scores reflect more severe depression (Kroenke, et al., 2001). Internal reliabilities for the current sample were 0.83 (pre-treatment) and 0.86 (post-treatment). A score of 10 and above indicates major depression.

8.10.3.7   Work and Social Adjustment Scale (WSAS; Mundt et al., 2002)

The WSAS is a 5-item self-report measure of functional impairment across five domains (work, home management, social leisure activities, private leisure activities, and family and relationships) (Marks, 1986). A 9-point response scale ranges from 0 ('not at all') to 8 ('very severely') with responses summed to yield an overall functional impairment score ranging from 0 to 40, with higher scores reflecting greater impairment. Internal reliabilities for the current sample were 0.80 (pre-treatment) and 0.85 (post-treatment). Respondents scoring above 20 are considered to have significant psychopathology.

8.10.3.8   Clinical Global Impressions Scale

As an overall summary, the severity of presentation was recorded using the 7-point ('normal' to 'among the most extremely ill') Clinical Global Impressions Scale - Severity (CGI-S) (Berk et al., 2008; Busner & Targum, 2007; Guy, 1976) by the treating therapist. At the completion of treatment (Discharge Review; Appendix 8.7), the Clinical Global Impressions Scale - Improvement (CGI-I) was also used by therapists to rate clients on a 7-point scale ('very much improved' to 'very much worse'), with a rating of ≤ 2 considered 'improved'.

8.11   Results

For descriptive purposes, Table 8.3 presents correlations for the total sample among all continuous study variables at pre-treatment and again at post-treatment. As a general observation (and as also noted in Chapter Seven), correlations were stronger following treatment. Alternative resilience measures offered little discrimination, although at pre-treatment stronger effects were present between Tenacity and clinical measures of severity than for Resilience or Adaptability. There was little evidence that CAs were associated with any of severity, the CD-RISC, or SC.

8.11.1   Sample Description and Pre-treatment Randomisation Check

The samples did not differ significantly in their age at referral ($t_{(60)} = 0.97$, ns). The mean age of the standard treatment group was 37.2 years (SD = 13.5), whereas the mean age of the experimental treatment was 40.3 years (SD = 12.0). Similarly, the samples did not differ on other sociodemographic characteristics (Table 8.4). Core study variables are presented as continuous measures in Table 8.5 with the majority also demonstrating pre-treatment equivalence. However, there was a significant difference between the two groups for SC such that, at the commencement of the study, those to receive standard treatment reported higher SC than those to receive the experimental treatment. Finally, Table 8.6 presents the categorical versions of those study variables for which there is an accepted severity cutoff score. Again, no difference between the groups was identified. Note that the distribution of CAs responses, with 95% of participants reporting at least one CA, precluded further analysis of these data in categorical form.

Table 8.3   *Correlations among Core Study Variables at Pre- and Post-treatment*

	1	2	3	4	5	6	7	8	9	10
1. SC		.60***	.58***	.53***	-.03	-.52***	-.31*	-.34**	-.23	-.35**
2. Resilience	.37**		.97***	.95***	-.01	-.51***	-.44***	-.43***	-.39**	-.50***
3. Adaptability	.36**	.92***		.86***	-.03	-.48***	-.40***	-.36**	-.37**	-.46***
4. Tenacity	.37**	.91***	.70***		.00	-.51***	-.51***	-.50***	-.44***	-.48***
5. CAs	-.24	-.12	-.10	-.14		-.01	.19	.21	.18	.08
6. CGI	-.16	-.36**	-.29*	-.39**	.09		.64***	.61***	.52***	.54***
7. K10	-.23	-.35**	-.21	-.45***	.11	.44***		.82***	.77***	.66***
8. PHQ9	-.27*	-.25	-.09	-.35**	-.03	.49***	.75***		.68***	.65***
9. PCL-C	-.10	-.23	-.16	-.33**	.28*	.49***	.57***	.49***		.52***
10. WSAS	-.23	-.36**	-.25	-.42***	.15	.27*	.58***	.45***	.29*	

Note.   * $p < .05$, ** $p < .01$, *** $p < .001$.

CGI = CGI-S at pre-treatment, but CGI-I at post-treatment.

Pre-treatment data are below the diagonal, with post-treatment above.

CAs (measured at pre-treatment only) are included with both data sets.

Table 8.4 *Sociodemographic Variables Assessed at Pre-Treatment, and Group Comparisons*

	Standard treatment (n = 31)		Experimental treatment (n = 31)		
	n	(%)	n	(%)	χ^2
Gender					
Men	9	(29.0)	7	(22.6)	0.08
Women	22	(71.0)	24	(77.4)	
Partner					
No	25	(80.6)	19	(63.3)	1.49
Yes	6	(19.4)	11	(36.7)	
Education					
Secondary school	15	(48.4)	13	(43.3)	
Trade certificate	9	(29.0)	6	(20.0)	1.63
Tertiary level	7	(22.6)	11	(36.7)	
Employment					
Full-time	3	(9.7)	4	(12.9)	
Part-time	8	(25.8)	11	(35.5)	
Unemployed	0	(0.0)	2	(6.5)	3.68
Retired/homemaker	7	(22.6)	5	(16.1)	
Student	13	(41.9)	9	(29.0)	

Table 8.5   *Continuous Variables at Pre-treatment, and Comparisons between Treatments*

Scores	Standard treatment (n = 31)[†]			Experimental treatment (n = 31)			t
	Range	Mean	(SD)	Range	Mean	(SD)	
SC	21 - 49	33.7	(7.5)	14 - 43	28.9	(6.7)	2.60*
Resilience	9 - 68	46.5	(14.2)	13 - 77	43.5	(16.2)	0.78
Adaptability	4 - 33	20.0	(7.0)	2 - 38	17.4	(7.9)	1.38
Tenacity	2 - 27	18.1	(6.3)	5 - 29	17.3	(6.4)	0.48
CAs	0 - 9	4.0	(2.3)	0 - 9	4.5	(2.4)	0.76
CGI-S	3 - 7	5.3	(1.2)	4 - 7	5.6	(0.8)	1.15
K10	18 - 50	32.7	(7.7)	20 - 48	35.2	(7.1)	1.28
PHQ9	3 - 27	17.0	(6.1)	6 - 25	17.8	(4.7)	0.56
PCL-C	24 - 85	56.7	(15.3)	29 - 76	61.0	(11.8)	1.25
WSAS	10 - 40	21.5	(9.2)	10 - 39	24.5	(8.2)	1.37

Note.   * p = .012 (two-tailed); † n = 30 for Self-compassion (SC) due to the removal of a statistical outlier from the pre-treatment distribution.

Table 8.6   *Categorical Variables at Pre-treatment, and Comparisons between Treatments*

	Standard treatment (n = 31)		Experimental treatment (n = 31)		
	n	**(%)**	**n**	**(%)**	χ^2
CAs					
0	1	(3.2)	2	(6.5)	
1 - 3	14	(45.2)	9	(29.0)	1.87
4 +	16	(51.6)	20	(64.5)	
K10	28	(90.3)	30	(96.8)	0.27
PHQ9	28	(90.3)	30	(96.8)	0.27
WSAS	17	(54.8)	21	(67.7)	1.09

Note.   Table entries for K10, PHQ9, and WSAS are n (%) above severity cut-off.

8.11.2   Intervention Effectiveness

SC was assessed for differential change that may be attributable to the intervention (data included in Tables 8.5 and 8.7). While there was an overall significant effect for time (but not treatment), of more importance was the significant interaction demonstrating a greater increase in SC over time among the experimental group, relative to the standard group, suggesting that the intervention was effective. The interaction is depicted in Figure 8.2.

8.11.3   Post-treatment Resilience and Trial Results

Pre-treatment resilience data is shown in Table 8.5, with post-treatment data in Table 8.7. For all measures (Resilience, Adaptability, and Tenacity) there was both a significant time effect and a significant treatment by time interaction which are represented in Figure 8.3. In all cases, participants receiving the experimental treatment increased their resilience scores more than those receiving standard treatment.

Table 8.7   *Continuous Variables at Post-treatment, and Trial Results*

Scores	Standard treatment (n = 31)[†]			Experimental treatment (n = 31)			$F_{treatment}$	F_{time}	$F_{interaction}$
	Range	Mean	(SD)	Range	Mean	(SD)			
SC	17 - 59	37.5	(9.2)	31 - 60	43.5	(8.4)	0.16	57.06***	19.63***
Resilience	8 - 88	57.4	(17.1)	32 - 94	68.4	(15.0)	1.25	103.62***	15.80***
Adaptability	3 - 37	24.8	(7.5)	11 – 43	29.3	(7.1)	0.33	93.76***	17.27***
Tenacity	1 - 33	21.7	(6.8)	15 - 36	26.4	(6.0)	1.81	71.10***	12.93***
CGI-I	1 - 5	2.8	(0.7)	1 - 3	1.6	(0.6)	n/a	n/a	n/a
K10	11 - 38	26.0	(6.8)	13 - 32	20.7	(5.2)	0.99	126.20***	16.80***
PHQ9	1 - 19	10.1	(5.1)	0 - 16	7.5	(4.0)	0.67	203.69***	7.79**
PCL-C	21 - 60	42.0	(9.9)	20 - 56	35.4	(9.8)	0.18	172.49***	12.60***
WSAS	0 - 32	15.1	(8.8)	0 - 28	10.8	(6.5)	0.13	96.78***	13.08***

Note.   ** $p < .01$, *** $p < .001$.

[†] n = 30 for Self-compassion (SC) due to the removal of a statistical outlier from the pre-treatment distribution.
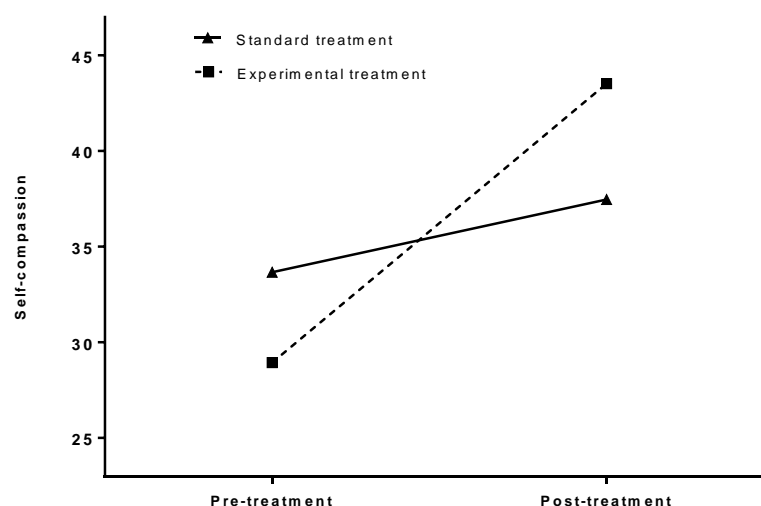
Figure 8.2   *Demonstration of Greater Improvement in SC for the*
                    Experimental Group Relative to the Standard Group

8.11.4   Post-treatment Clinical Data and Trial Results

All measures of severity (clinical data) are also shown in Tables 8.5 and 8.7. The therapist-reported measure of improvement (CGI-I) which is only collected at post-treatment indicated that the two groups improved equally ($t_{(60)} = 0.78$, ns). However, each self-report measure of severity (K10, PHQ9, PLC-C, and WSAS) provided a significant treatment by time interaction effect, all of which suggested greater improvement in the experimental group relative to the standard treatment group (see also Figure 8.4a and 8.4b).

The final analyses to be presented (Table 8.8) repeat the ANOVAs presented above but include CAs as a covariate. Although there were slight variations in the three effects reported above (treatment, time, and treatment x time interaction), the addition of CAs did not substantially alter the results already summarised above. Further, there was only one significant main effect for CAs (suggesting an association between CAs and PCL-C), and one significant interaction between CAs and time (suggesting that the relationship between CAs and the PHQ9 varies between pre- and post-treatment).
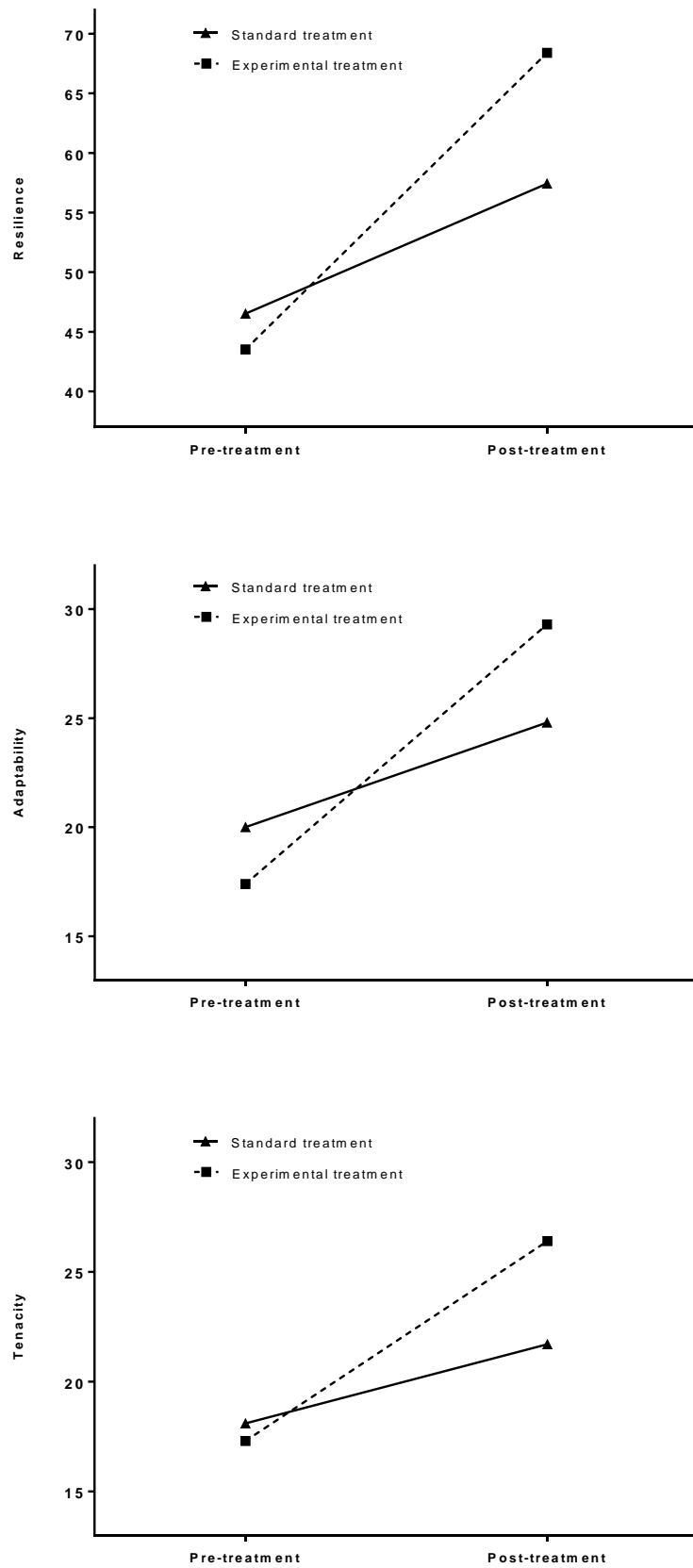
Figure 8.3   *Demonstration of Greater Improvement in all Resilience Measures for the Experimental Group Relative to the Standard Group*
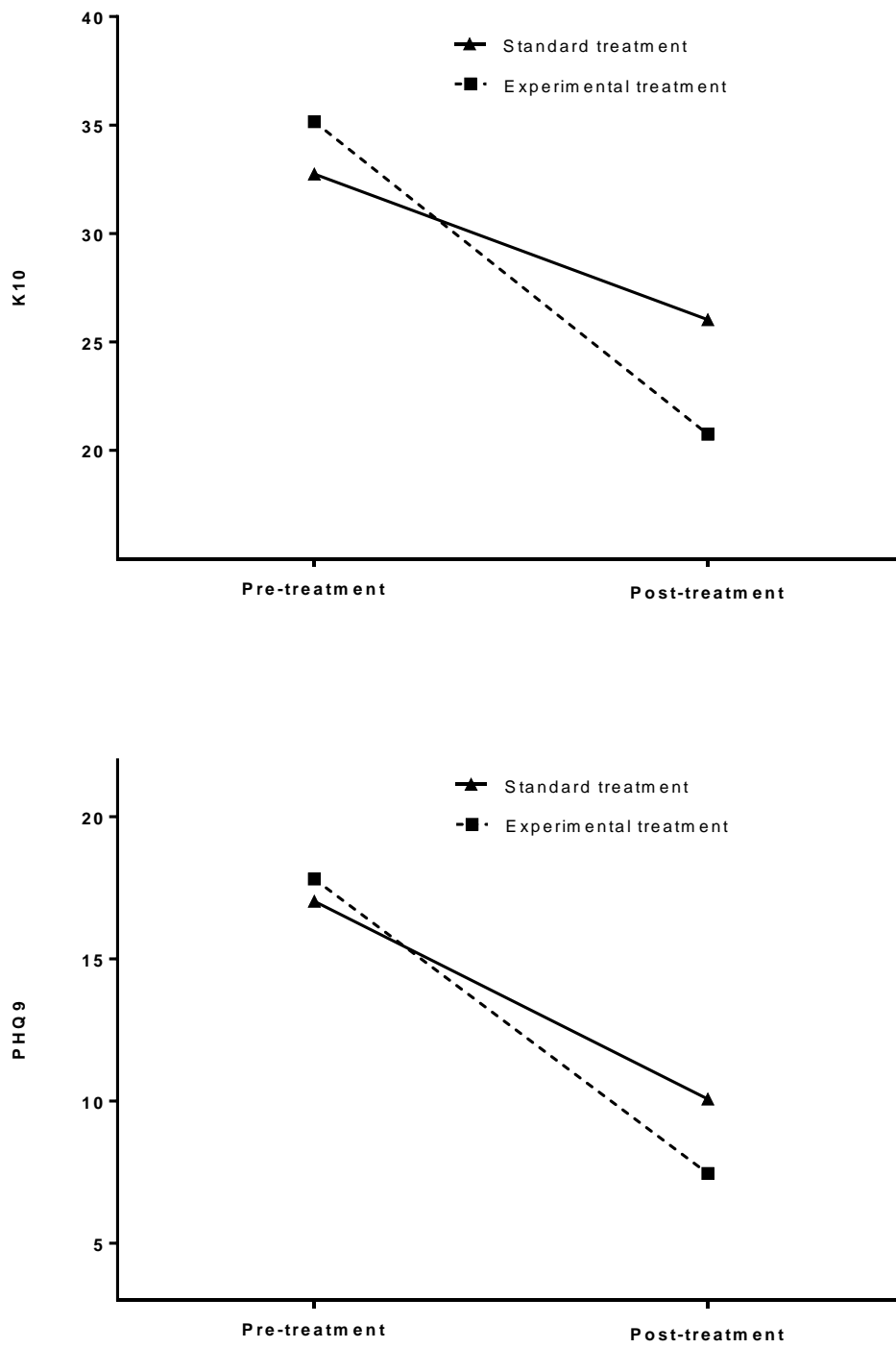
Figure 8.4a   *Demonstration of Greater Improvement in Severity Measures for the*
               Experimental Group Relative to the Standard Group (K10 and PHQ9)
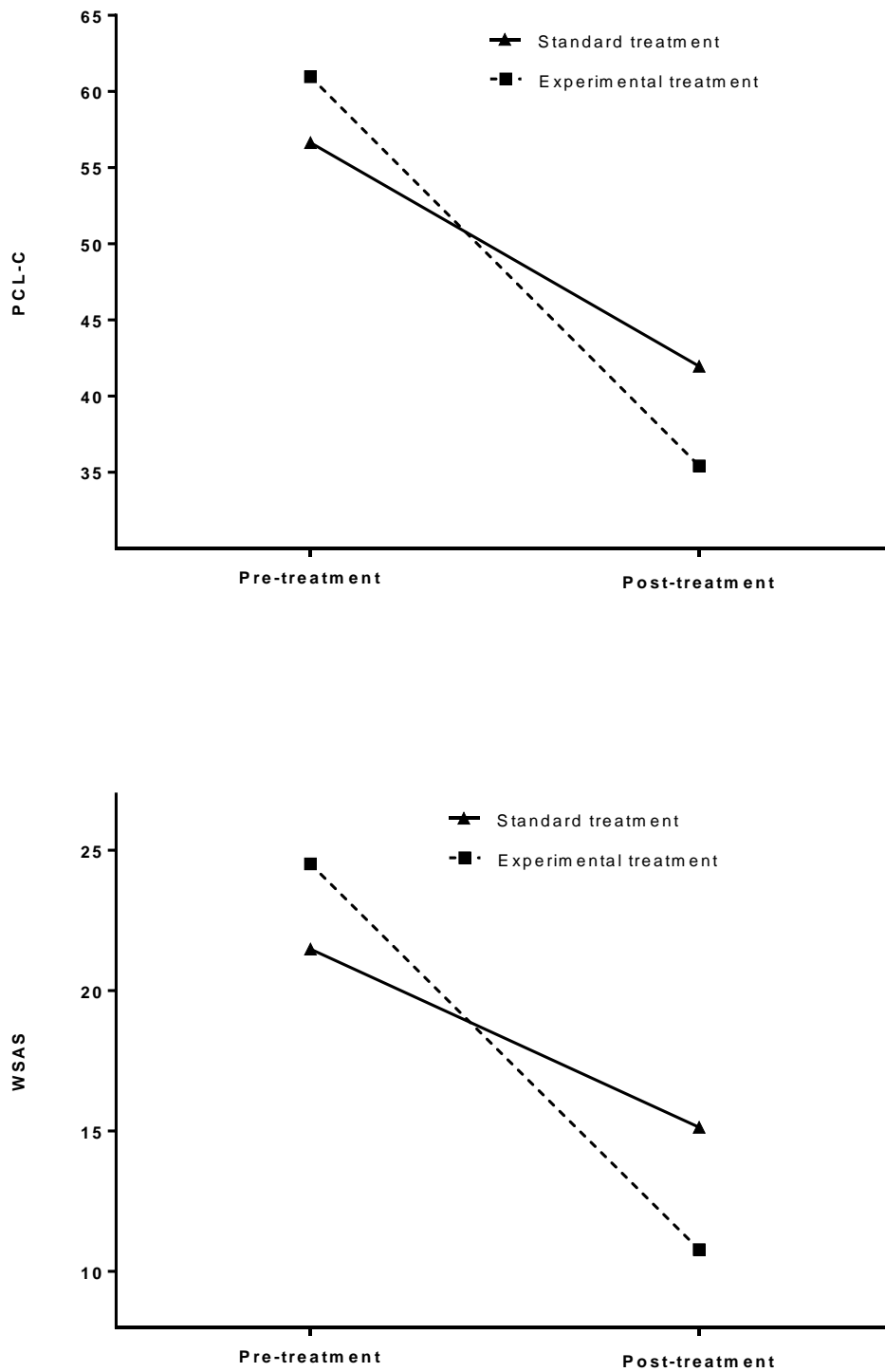
Figure 8.4b   *Demonstration of Greater Improvement in Severity Measures for the
Experimental Group Relative to the Standard Group (PCL-C and WSAS)*

Table 8.8   *Analyses of Variance Including Childhood Adversities as a Covariate*

Scores	Treatment	Time	Treatment x Time	Childhood Adversities	Adversities x Time
SC	0.20	33.72***	47.51***	2.41	0.01
Resilience	1.37	18.91***	15.03***	0.42	0.34
Adaptability	0.39	19.31***	16.64***	0.38	0.06
Tenacity	1.98	10.95**	12.17***	0.60	0.69
K10	1.31	37.54***	17.25***	2.24	0.72
PHQ9	0.80	80.54***	9.45**	0.68	4.75*
PCL-C	0.44	30.11***	11.82***	5.17*	0.86
WSAS	0.22	19.66***	12.56***	1.17	0.08

Note.   * $p < .05$,   ** $p < .01$,   *** $p < .001$.

8.12   Discussion

Chapter Eight represents Phase Three of the research program and involved the evaluation of an RCT comparing standard treatment (CT with BT) and a new, third wave approach to CBT comprising SC with BT (experimental treatment). This study acknowledged the vast body of literature suggesting that some individuals, such as those who engage in greater self-criticism, respond better to strength-based treatment programs.

Key features of Phase Three included the use of a relatively homogenous, clinically derived cohort to examine the extent to which clients with a complex psychopathology of PTSD or depression experienced better wellbeing after SC with BT as opposed to those who had received standard CT with BT. Overall, empirical support was provided for the experimental treatment, with a greater increase in SC and all three resilience measures (i.e., Resilience, Adaptability, Tenacity) from pre- to post-treatment. However, a key shortcoming was the significant difference in pre-treatment levels of SC between the standard and experimental

groups, with greater SC evident for the standard group prior to participation in the RCT. Such pre-treatment levels of SC for the standard group may have offered some clinical advantage and contributed to smaller overall differences between the two groups.

While this set of results provided support for the potential contribution of SC to the management of complex psychopathology, CAs made only a modest contribution to treatment responses across both standard and experimental groups. Most participants had experienced multiple CAs and therefore it was not possible to gauge how the experience of standard and experimental treatments might vary for individuals with relatively few, if any, vulnerabilities arising during childhood. There was minimal change in the pattern of results when the potential influence of CAs was considered in multivariate analyses. That is, there was only an association between the experience of CAs and the intensity of traumatic experience (i.e., PCL-C) and evidence of variability in the relationship between CAs and depressive symptomology (i.e., PHQ9) from pre- to post-treatment. Given that the current measurement of CAs using the ACE relies on the simple acknowledgment of the occurrence of a particular vulnerability, there would be value in examining how treatment outcomes vary according to differing perceptions of the intensity and/or severity of CAs. Such information may allow a more informed choice about the types of intervention best suited to clients.

The evaluation of treatment outcomes comprised both therapist-derived and self-reported indices. While participants perceived improvements in all measures of severity (i.e., K10, PHQ9, PCL-C, and WSAS), the therapists did not report any difference in outcomes according to the type of treatment received. In future, it would be wise for an independent therapist who is not involved in the delivery of treatment to be responsible for the evaluation of outcomes to ensure a more precise insight into the nature of any changes in wellbeing over time.

Overall, the RCT highlighted the potential value of SC, at least in combination with BT, to the treatment of complex psychopathology, with greater improvement in SC, severity and resilience compared with those who received standard CBT. Future studies could usefully explore SC (and its different forms) with other clinical cohorts to better establish the characteristics of clients for whom such strength-based therapy is best suited.

8.13   Chapter Summary

Chapter Eight reported on an RCT designed to compare treatment outcomes for an experimental (SC with BT) and standard (CT with BT) intervention for individuals with PTSD or depression. There was greater improvement in SC, resilience and severity for the experimental group compared with those who received standard CBT, highlighting the potential role of compassion-focused therapy in the management of complex psychopathology. Overall, the experience of CAs made a very modest contribution to treatment outcomes. Chapter Nine will now summarise the key findings from this program of research and explain how they contribute to the existing body of knowledge. Limitations of the current research will be identified, with recommendations offered for future research.

CHAPTER NINE

INTEGRATION, DISCUSSION, AND RECOMMENDATIONS

9.1   Introduction

This research program was concerned with facilitating recovery from anxiety and depression. Specifically, the potential role of two key constructs, resilience and childhood adversities, was investigated, along with the utility of self-compassion training as a novel treatment modality. Beyond these core considerations, however, the program allowed much more to be presented. Initially (Phase One), a comprehensive review of anxiety and depression, and their accepted treatment strategies, was provided (Chapter Two). Reviews of childhood adversities (Chapter Three), and resilience (Chapter Four) were also presented.

Following this, Phase Two first described the methods used to establish the effectiveness of local treatment for anxiety and depression (Chapter Five). This represents the core study of the research program. In Chapter Six, 'satellite' analyses using the resilience data from this core study examined two pertinent issues concerning the measurement of resilience. These were (1) the factor structure or dimensionality of the CD-RISC, and (2) the potential of cutoff values for the CD-RISC that might represent meaningful diagnostic markers for evaluating presentations and/or recovery. The formal results of this core study were presented in Chapter Seven. Finally, Phase Three (Chapter Eight) expanded the theme of strength-based recovery/resilience by presenting the results of an RCT comparing an experimental treatment (SC with BT) with the local standard treatment (CT with BT) using a sample of clients with PTSD or depression.

Chapter Nine now offers integrative discussions of the relevance of the chosen research program (e.g., the need to address gaps in the current understanding of the treatment of

anxiety and depression, the broader meaning of the results that have been presented, relative to the research objectives and questions (summarised in Table 1.1), and the acknowledged limitations of the research program. These are followed by practical recommendations for future research. Finally, an overall conclusion to the program is then offered.

9.2   The Relevance of the Chosen Research Program

It cannot be claimed that the joint consideration of variables such CAs, resilience, anxiety and depression, CBT and SC is novel. However, past studies have commonly used either community participants, college students, and/or were conducted with small clinical samples (Bunn, 2006; Lu et al., 2014; Min et al., 2012, 2013, 2015; Padesky & Mooney, 2012; Valdez & Lilly, 2016; Waugh & Koster, 2015). It was therefore concluded that advancement in this area required robust longitudinal research with large clinical samples to evaluate the associations among these variables (Chapman et al., 2004; Davidson et al., 2008, 2012; Felitti et al., 1998; McEvoy et al., 2011; Ramnero et al., 2016; Waszczuk et al., 2016). The following subsections of Section 9.2 provide further justification for the chosen program.

9.2.1   The Continuing Problem of Anxiety and Depression

Anxiety and depression remain persistent, disabling disorders. They are the most prevalent of mental health disorders, and the most frequent presentations in general medical settings (Burgess et al., 2009; Teesson et al., 2009; Waszczuk et al., 2016). They represent the leading causes of burden of disease globally (Kessler et al., 2007; McEvoy et al., 2011; Ramnero et al., 2016; World Health Organization, 1992, 1993, 2008, 2013). In Australia the prevalence of these disorders is high (41.3% overall; 26.3% anxiety, 15% depression). Both anxiety (17.9% vs.10.8%) and depression (7.1% vs. 5.3%) are more common among women. These high figures continue despite many years of research concerning the causes of, and treatments

for, both anxiety and depression. Therefore, further research that attempts to shed light on these conditions and their treatment is warranted.

9.2.2   The Crisis of Childhood Adversity

Abuse, neglect, and household dysfunctions experienced during key developmental stages childhood, collectively termed CAs in this thesis, are recognised as having the potential for long-term negative consequences for psychological wellbeing. CAs are a critical social welfare problem around the world that have been labelled a silent epidemic (Briere et al., 2010, 2016; Cicchetti & Toth, 2016; Dunn et al., 2013; Felitti et al., 1998; Finkelhor et al., 2015). They are continually associated with developmental impairment, distorted cognitions, emotional inhibition, gender-specific problems, and psychological complaints throughout life (Bowyer et al., 2014; Cicchetti & Toth, 2016; Gilbert et al., 2005, 2006; Lee, 2009; Lee et al., 2001). Despite the greater understanding of the immediate impact of CAs, their long-term effects are less well established. Importantly, it has been noted that there are limited longitudinal studies designed to explore the influence of CAs over time (Dunn et al., 2013; Kealy et al., 2016; Nurius et al., 2015). Such studies have therefore been encouraged (Briere et al., 2016; Dube et al., 2013; Finkelhor et al., 2015; Kealy et al., 2016).

9.2.3   The Potential Benefits of Resilience

The attraction of resilience as a protective factor for wellbeing, particularly in the mental health field, continues to gain momentum. It has come to be considered an important personal construct in that its presence may allow positive adaptations across multiple domains of life. Further, the understanding of resilience as a dynamic construct that can be taught (i.e., socially facilitated rather than biologically determined), makes it suitable for inclusion in treatment programs. Indeed, the clinical and diagnostic value of resilience in programs for psychopathology has become more evident in recent years (Bitsika et al., 2010; Cicchetti &

Toth, 2016; Davidson et al., 2008, 2012; Fletcher & Sarkar, 2013; Masten & Cicchetti, 2016; Ungar, 2016; Werner, 2013). However, the development of resilience is by no means deterministic of the likelihood of better treatment outcomes (Alvord et al., 2016; Connor, 2006; Masten & Labella, 2016; McEwen et al., 2015; Shulman, 2016). On this basis further research into the role of resilience in psychopathology and its treatment was considered of critical importance to the research program undertaken.

9.2.3.1   Measuring Resilience with the CD-RISC

Central to the inclusion of resilience in the evaluation and treatment of mental health is the ability to offer reliable and valid measurement. The most frequently used scale to quantify resilience, particularly in the psychopathology field, is the CD-RISC (Connor & Davidson, 2003). The total score derived from the CD-RISC has repeatedly demonstrated good psychometric properties such as internal consistency, test-retest reliability, and both construct and convergent validity, and is sensitive to the outcomes of psychological interventions (Chen et al., 2016; Connor & Davidson, 2003; Davidson et al., 2012; Green et al., 2014). However, the relevance of the current research program was further enhanced by addressing two CD-RISC measurement issues that have featured in the literature.

First, the degree to which additional dimensions of resilience are embedded in the CD-RISC has produced significant debate (e.g., Burns & Anstey, 2010; Davidson et al., 2008, 2012; Green et al., 2014; Jorgensen & Seedat, 2008; Karairmak, 2010; Khoshouei, 2009; Lamond et al., 2008; Liu et al., 2015; Sexton et al., 2010; Singh & Yu, 2010; Youssef et al., 2013; Yu & Zhang, 2007). The value of the current research was the ability to consider dimensions purely within the psychopathology context (Davidson et al., 2012; Green et al., 2014).

Second, some authors (Bezdjian et al., 2017; Min et al., 2012, 2015; Peng et al., 2014; Tian et al., 2016) have presented data for potential diagnostic cutoffs using the CD-RISC. Such

results, using ROC curve analyses, have not been definitive, with proposed cutoffs being quite variable. The ability to contribute to this debate with a large homogenous clinical sample also enhanced the relevance of the research program.

9.2.4   Cognitive Behavioural Therapy for Anxiety and Depression

CBT has come to be regarded as the 'gold standard' treatment for psychopathology (Blackburn & Davidson, 1990; Cristea et al., 2015; Hides et al., 2010; Richards et al., 2016). CBT usually comprises BT (BA and EBT) and/or CT for psychological complaints (NICE, 2004a, 2004b, 2005a, 2005b, 2011), which are subsidised by the Australian Commonwealth Government for the treatment of anxiety and depression (McGorry et al., 2013; Pirkis et al., 2011; Powers & Carlbring, 2016; Reifels et al., 2013; Weitz et al., 2015). CBT is also the preferred evidence-based approach for psychological complaints at CARD where the data for the research program was obtained. Nevertheless, there is a tendency toward relapse in CBT programs, with average dropout rates of 22.1% for CT and 26.0% for CBT. This is particularly problematic in complex and severe psychological cases (e.g., PTSD and recurrent depression) (Gilbert, 2009, 2010; Hembree et al., 2003; Padesky & Mooney, 2012; Valdez & Lilly, 2016). A prospective exploration of local CBT as presented to clients with anxiety and depression was therefore deemed a relevant first step for the current research program (Padesky & Mooney, 2012; Valdez & Lilly, 2016; Waugh & Koster, 2015).

9.2.5   Self-Compassion as a Treatment for Complex Psychopathology

SC is an emerging area of inquiry, and elements of SC have been included within both new and old therapeutic frameworks (i.e., MBIs, CFT, and MSC) in recent years (Germer & Neff, 2013; Gilbert, 2016; Neff, 2016a; Valdez & Lilly, 2016; Warren et al., 2016). Studies of compassion for self and others have provided evidence of its benefits for complex psychopathology and the enhancement of resilience (Carvalho et al., 2013; Gilbert & Procter,

2006; Neff, 2016a; Westphal et al., 2016). The formation of problematic cognitions (e.g., in-built self-criticism) has the tendency to create severe maladaptive reactions that intensify the threat and drive systems and mask the self-soothing system (Diedrich et al., 2016; Gilbert, 2009, 2014a; Neff, 2016a; Westphal et al., 2016). It has been proposed that SC-related techniques and practices can activate the soothing contentment system to regulate the other two systems (Bibeau et al., 2016; Germer & Neff, 2013; Gilbert, 2009, 2014a; Gilbert & Procter, 2006; Neff & McGehee, 2010). These encouraging findings were considered of merit, and the research program provided an appropriate context within which to test the efficacy of SC alongside a more standard CBT protocol.

9.3   Interpretation and Significance of Research Findings

The current research comprised three empirical phases: (1) the evaluation of the measurement possibilities from the CD-RISC, (2) a prospective longitudinal study of a large, homogenous, clinical sample, and (3) an RCT study comparing treatment protocols. Key constructs in this program were CAs, resilience, and SC. Section 9.3 represents a summary of the outcomes and their significance by relating them to the original research objectives and questions associated with each of the empirical phases.

9.3.1   Measures of Resilience: Adaptability, Tenacity, Diagnostic Cutoffs

The question of how many factors or dimensions are embedded within any given set of scale items is commonly asked. This has certainly been the case for the CD-RISC. A range of answers has been given, ranging from one to five. However, to the author's knowledge this is the first inquiry of this nature using a large, homogenous, clinical sample (i.e., anxiety and depression) and a longitudinal (pre- and post-treatment) design. In fact, the data had the added advantage of allowing both EFA and CFA to be conducted. Overall, however, there

was tenuous evidence presented from both sets of analyses with which to defend the two newly derived resilience dimensions, which were termed Adaptability and Tenacity.

These terms were not unique in the literature but rather supported other studies (e.g., Green et al., 2014; Jorgensen & Seedat, 2008; Karairmak 2010; Khoshouei, 2009; Lamond et al., 2008; Pooley & Cohen, 2010; Ungar et al., 2013; Werner, 2013; Yu & Zhang 2007). More specifically, Adaptability largely reflected the content of the proposed CD-RISC10 (Campbell-Sills & Stein, 2007). There was less evidence, however, for the useful application of Adaptability and Tenacity in providing alternative statistical commentaries on the nature of resilience. The scales created were highly correlated, providing results that were equivalent in many of the analyses in Chapters Six, Seven, and Eight.

However, the potential value of these two dimensions should not be immediately discounted. The ability to describe resilience as more than 'resilience' (i.e., with multiple components) has significant attraction, and may represent important progress in the understanding of the nature of resilience. For example, if future research supports Adaptability and Tenacity, resilience may be described as the ability to adapt to changeable environmental stressors, and/or the tenacity to continue in the face of change. Clearly such descriptions need further empirical support before being accepted. To improve the measurement of Adaptability and Tenacity perhaps they need to be considered outside of the constraints of the items of the CD-RISC (see also Section 9.5.3).

The investigation of the potential for the CD-RISC to be able to provide a consistent classification for high versus low resilience in relation to severity and the extent of recovery from psychological presentations ('diagnostic' cutoff points) was perhaps a little more ambitious. There have been studies proposing such cutoffs previously (e.g., Bezdjian et al., 2017; Min et al., 2012, 2015; Peng et al., 2014; Tian et al., 2016), but often with small

clinical sample sizes or non-clinical samples. In the current research both K10 and CGI-I were used to allow ROC curves to be produced with associated sensitivity and specificity figures, and AUCs. While the results from pre- and post-treatment data were satisfactory, albeit variable, there was little encouragement for this exercise in the longitudinal context (i.e., reduced ability of pre-treatment data to predict post-treatment data), even though this would be the most useful application of these techniques.

These findings do not imply that resilience is not associated with severity at presentation, or recovery from anxiety and depression. Rather, it suggests that resilience covaries with severity during treatment, with neither being specifically predictive of the other. That is, little or no evidence was available to consider resilience to be either a screening test or a diagnostic instrument in the current setting. On this basis, no further analyses of this issue were considered beyond Chapter Six.

9.3.2   Evaluation of Treatment: The Roles of Resilience and Childhood Adversities

Chapter Seven presented a set of findings for a standard 12-week CBT program, with consideration of the roles of resilience and CAs in responses to treatment. The longitudinal design permitted consideration of the dynamic association between key variables over time.

Note that the findings presented in Chapter Seven need to be understood with respect to the methodology employed. It was an uncontrolled intervention evaluating CBT in the local context. In essence, it acted as an audit of local practices and their success, and also as a 'proof of concept' that resilience, CAs and severity of psychopathology covaried.

Exposure to CAs was strongly linked to the severity of clinical characteristics, particularly at pre-treatment. That is, the pattern of results suggested that the experience of adversity during crucial developmental stages of life can have a detrimental effect on overall psychological

wellbeing. It is possible that further exposure to adverse life events during adulthood may intensify the severity of such disorders over time.

Overall, there was substantial improvement upon completion of treatment in terms of higher resilience, fewer psychological symptoms, and better functioning, irrespective of the number of CAs experienced. These findings accord with the current understanding of the well-documented efficacy of CBT techniques for the management of psychopathology (Beck & Beck, 2011; Ost et al.,2015; Simos, & Hofmann, 2013; Skapinakis et al., 2016). There was also evidence that higher resilience at pre-treatment (i.e., overall Resilience and Tenacity) was associated with better functioning at post-treatment. Those individuals who experienced fewer depressive symptoms and functional impairments at pre-treatment had greater Adaptability after completion of the CBT program. Perhaps those individuals with greater resilience and less severe psychological symptoms are better placed to reap the potential benefits of such treatment. However, the experience of CAs did not account for differences in resilience at pre- or post- treatment. As discussed in detail in Sections 9.4.1 and 9.5.1, possible recall bias associated with the retrospective self-reporting of CAs may have reduced the capacity of the ACE to provide accurate insight into the potential contribution of CAs.

The multivariate analyses undertaken in the latter part of Chapter Seven allowed a preliminary exploration of how the core set of study variables (severity of psychological symptomology, resilience, CAs) may together account for inter-individual differences in treatment responses among clients who received standard CBT for anxiety or depression. While the structural relationships generated by these analyses hinted at the nature of associations among these variables, it was not possible to determine causal associations. Large population-based studies involving the regular follow-up of children during childhood

and into adulthood would provide better insight into how the early experience of adverse events might affect resilience and psychological wellbeing.

Another observation was that individuals with poorer resilience experienced more severe depressive symptoms prior to, and at completion of, a standard CBT program. Participants with more severe PTSD or depression also indicated exposure to a larger number of CAs compared with those with other diagnoses. These individuals may have additional needs for intervention that extend beyond the scope of standard CBT.

9.3.3   The Augmentation of Treatment with Self-Compassion

Chapter Eight described the evaluation of an RCT comparing standard CBT with an experimental treatment designed to facilitate a sense of self-compassion. Unlike the examination of treatment responses to standard CBT for a range of different diagnostic groups as in Phase Two, Phase Three presented findings for a relatively homogenous, clinical sample of individuals with a primary diagnosis of either PTSD or depression.

In general, empirical support was provided for the role of the experimental treatment (SC with BT) with greater improvement in SC and all three resilience measures (i.e., Resilience, Adaptability, Tenacity) when compared with the standard treatment group (CT with BT). These findings were in accord with those of other researchers (e.g., Gilbert, 2000, 2005, 2016; Lee, 2009; Neff, 2016a; Neff & Germer, 2017) who have suggested that for individuals with ingrained self-criticism such as those with complex psychopathology, SC-related techniques (e.g., CFT, MSC, and MBIs) may enhance the protective factors of resilience.

Findings such as those presented in Chapter Eight are important as they serve to replicate and augment the growing body of evidence for novel treatment modalities. The results are of additional importance due to the need to apply techniques that are cost effective as well as

therapeutically effective, particularly for publicly funded clinics such as the current context. Given the high demand for services, and the need to minimise rates of attrition and recurrence, treatment options need to come with the promise of positive results and a well-demonstrated capacity to be delivered within the allowable 12-session treatment program.

Therapeutic programs must also engender a willingness and enthusiasm to participate on the part of clients, thus resulting in the best use of public monies. This RCT study contributes to a relatively fledgling literature on the therapeutic efficacy of SC, providing both researchers and clinicians with valuable insight into the circumstances in which SC may be of potential benefit when incorporated into standard practice. Overall, these preliminary findings suggest that SC, in conjunction with BT, is a worthy inclusion in PTSD and depression treatment protocols.

Further research could be conducted using clients who display treatment resistance to standard CBT intervention to determine whether they benefit from a more strength-based program. Longer follow-up periods would also allow a better determination of whether the addition of SC to treatment protocols contributes to the psychological flourishing of clients, as is its intended purpose, rather than just improvements in overall wellbeing. That is, it would be worthwhile to establish the extent to which changes persist beyond completion of the treatment program, with clients able to apply their SC-derived skills in later contexts.

The self-perceived experience of CAs made only a modest contribution to treatment responses for both standard and experimental groups, with minimal change in the pattern of results for multivariate analyses. Most participants reported experiencing multiple CAs, which made it problematic to gain a more precise insight into how the experience of early adversities affected treatment outcomes relative to no experience of adversities, for both groups. Unfortunately, there was evidence that participants who received standard treatment

had higher SC at pre-treatment than those in the experimental group, precluding a more accurate insight into the nature of differences between the two treatment approaches. Any future comparisons of treatment protocols must ensure that there are no differences between samples for key study variables (e.g., SC, resilience, etc.) prior to an intervention.

Consideration also needs to be given to the role of therapists in the delivery and evaluation of interventions to ensure that treatment responses can be measured accurately, as discussed in Chapter 8. Even though the therapists did not report any improvement difference across the two groups, participants themselves perceived changes in SC, resilience and severity indices. While practical constraints precluded the use of an independent person in the current study, future studies should consider ways in which the opportunity for unintended bias and/or measurement error can be reduced.

Future research needs to focus on ways to capture more accurately the perceived intensity and/or severity of CAs and how they may contribute to treatment responses regardless of the nature of the intervention (see Section 9.4.1). Overall, these preliminary findings suggest that SC, in conjunction with BT, is a worthy inclusion in PTSD and depression treatment protocols. However, the extent to which individuals with other complex psychopathologies may benefit remains unclear. Future research must seek to identify the characteristics of clients most likely to reap the therapeutic benefits of compassion-focused therapy. There is also likely to be a need for greater exploration of different forms of strength-based therapy and how they might best match client characteristics (see Section 9.5.4).

9.4   Limitations of the Research Program

Given the commentary on the significance of the current findings in Section 9.3, it is important to place these findings in context by acknowledging a number of perceived limitations of the research program (Sections 9.4.1 to 9.4.4). Some of these are further

considered in Section 9.5 as they also highlight relevant improvements that may be embraced in future research that builds on the results of the current program.

9.4.1   Retrospective Self-Reporting of Childhood Adversities

The ACE questionnaire was used to capture CAs at pre-treatment. A reliable and valid commentary on clients' experiences requires retrospective self-reporting. This may result in the inclination towards recall bias such as masking, underestimating, or concealing (avoidance of uncomfortable feelings associated with disclosing an adversity), and in other cases may overvalue the impact of CAs over time (Brewin et al., 1993; Della-Femina et al., 1990; McLaughlin et al., 2010; Pereda et al., 2009). This may, in part, have resulted in the lack of association between CAs and resilience noted in Phase Two of the research. Further, Ford and colleagues (2014) report that a total ACE score may not offer the crucial information about the significant features (e.g., the chronicity, age of onset, and severity) of exposure to CAs, and that this may hinder, undervalue, and/or produce unmeasured covariates to the onset of, and recovery from, these disorders.

Options to acknowledge these issues are, however, limited. Any alternative instrument, for example, would also require retrospective reporting. In Section 9.6.1, one option for future research with the ACE is presented which partially addresses the issue of severity. It comprises providing a more fine-grained set of response categories for ACE items than the dichotomous 'yes' / 'no' that is currently used. Finally, the current research did not assess the timing of CAs during clients' childhoods. It may be informative to consider whether the timing of CAs (e.g., in relation to age and/or key developmental stages) has an association with enduring mental health issues (Blaauw et al., 2002; Keiley et al., 2001).

9.4.2   Comorbidities in Anxiety and Depression

For clarity in the presentation of results, the current research did not acknowledge potential comorbidities within the sample recruited for either Phases Two or Three. However, evidence suggests that comorbid disorders may obscure the severity of the primary disorder (e.g., anxiety or depression), the protective effect of resilience, and even potentially compromise treatment outcomes (Jacobson & Newman, 2017; McLaughlin et al., 2006). Comorbidity rates among psychological presentations are consistently high (ranging from 40%-80% for anxiety or depression) and are typically risk factors for one another that may act to compound the complexity of the primary disorder (de Graaf et al., 2003; Lamers et al., 2011; McEvoy et al., 2011; Washburn et al., 2016). Also, comorbidities among these disorders have a predisposition to cause higher disability and poorer recovery than pure presentations (without comorbidities) of anxiety or depression (Kessler et al., 2005, 2010; Lamers et al., 2011; Spinhoven et al., 2014; Washburn et al., 2016). In summary, although diagnosis was not a key feature of this research program, attention to comorbidities may have improved the precision of the results presented.

9.4.3   Disparities in Therapist Variables

Therapist variables (e.g., level of experience, integrity, and adherence to treatment protocols) can play a role in treatment outcomes, particularly for psychotherapy (Beutler et al., 1986; Huppert et al., 2001, 2006; McHugh et al., 2009; Sauer-Zavala et al., 2017; Shafran et al., 2009). As mentioned in Chapter Five, CARD is a public service that provides traditional CBT for anxiety and depression. It is also the main placement opportunity for trainee therapists from an attached university. For this reason, the therapists contributing to Phase Two ranged from those with long-standing experience and skills through to trainee therapists with minimal experience in delivering CBT. Therefore, it is possible that the observations may have been influenced by this inconsistency across treatment. At the same time, one of the strengths of CARD is the robust structure of ongoing clinical supervision for each trainee

therapist from senior therapists. Nevertheless, and as was done in Phase Three, it may be useful in future research of this nature to be able to control for therapist variables (Huppert et al., 2001, 2006; Sauer-Zavala et al., 2017; Shafran et al., 2009).

9.4.4   Lack of Diversity in the Clinical Samples

CARD predominantly services clients from a white European background. For that reason, ethnicity was not recorded in the sociodemographic data for this research program (there would have been little variation to note). As a result, the findings of the empirical phases may not be relevant to people of other ethnic backgrounds. For example, there is evidence that the protective benefits of resilience are directly associated with ethnicity (Ungar, 2008, 2013). The outcomes of the current research program may therefore need to be considered cautiously before applying them to clients from other ethnic groups. Conversely, researchers and practitioners who provide multicultural services should be mindful of the need to consider ethic diversity in the composition of their samples.

9.5   Recommendations for Further Research and Implications for Practice

Section 9.4 has briefly described perceived limitations to the current research program. It is certainly true that if a second opportunity arose to undertake the current research again, certain aspects of the methodology and selection of questionnaires, for example, would be modified. When conducting a program of research over an extended period, ideas and priorities change, and the research field itself changes dynamically. There remain substantial further opportunities for research into the treatment of anxiety and depression with variables such as resilience, CAs, CBT, SC, but also others. Section 9.5 (9.5.1 to 9.5.5) outlines a modest number of proposals for such research based on the findings, limitations, and significance of the empirical phases of the current program, with additional reflection based on clinical observation.

9.5.1   Assessing Dose-Response Effects for Adverse Childhood Experiences

As foreshadowed in Section 9.4.1, a proposed positive advancement in the measurement of CAs may involve providing response options that reflect 'dose-response' exposure. It is proposed that a dose-response assessment of CAs may better reflect the severity of their later debilitating impact (e.g., anxiety, depression, PTSD, and/or psychosis) (Blaauw et al., 2002; Clausen & Crittenden, 1991; Fisher et al., 2010; Flaherty et al., 2006; Schilling et al., 2007, 2008; Trauelsen et al., 2015). A number of psychometric advantages would also follow. For example, Ford and colleagues (2014) suggest that capturing CAs with a dose-response scoring system would reduce recall bias. Further, the increased range of values available for each individual adversity may allow their individual interpretation and would improve the internal reliability figures for the major CAs subthemes (i.e., abuse, neglect, and household dysfunctions) allowing their effect to be explored separately from a CA total score (Mello, 2016). This was not possible in the current research due to low alpha levels. Further, some authors argue that the severity of exposure to childhood abuse and neglect are more relevant to later psychological complaints than the total ACE score (Blaauw et al., 2002; Clausen & Crittenden, 1991; Fisher et al., 2010; Flaherty et al., 2006; Keiley et al., 2001; NHS Confederation, 2008; Schilling et al., 2007, 2008; Trauelsen et al., 2015). In summary, research exploring the differential reporting of CAs using alternative response formats for the ACE (e.g., 5- or 7-point scales, open-ended numeric reporting) is recommended.

9.5.2   Perceived Life Event Stress, Resilience, and Mental Health

Notwithstanding the potential role of CAs in psychotherapy, the problem of recall bias as discussed in Section 9.4.1 renders the obtained data questionable. It is proposed that the measurement of stress beyond CAs may also inform treatment for anxiety and depression. There are three common traditions for the measurement of stress (Clark et al., 2007; Cohen et al., 1995). First, the environmental approach defines stress as change, quantifying it as the

number and magnitude of key life events experienced in a specified period, such as 12 months or two years (e.g., Holmes & Rahe, 1967). Second, the psychological approach emphasises the importance of how life events are perceived and evaluated (Lazarus & Folkman, 1984). Finally, the biological perspective depicts stress in terms of the response of physiological systems (Kiecolt-Glaser et al., 2002).

There is a clear link between perceptions of stress, or exposure to stressors, and resilience (Campbell-Sills et al., 2006; Mello, 2016; Nurius et al., 2012; Nurius et al., 2012). Further, studies suggest that rumination on distorted beliefs might predict heightened sensitivity to poor outcomes, particularly in psychopathology. Stressors might relate to the limitations that have been imposed by symptoms of psychological complaints such as procrastination, avoidance behaviours and/or isolation (Cohen et al., 2018; Hobson et al., 1998, 2001; Holmes & Rahe, 1967; McLaughlin et al., 2010; Powell & Enright, 2015; Rahe, 1975; Rahe & Arthur, 1978; Ruscio et al., 2015; Tennant & Andrews, 1976). This heightened sensitivity could trigger repetitive rumination about intense fears and/or erroneous assumptions to self, world, and future which then generate and strengthen avoidance and maladaptive behaviours (e.g., social withdrawal, anger problem, poor motivation, lack of interest, antisocial behaviours, and alcohol and substance dependency) (Kendler et al., 1998; Mezulis et al., 2010; Powell & Enright, 2015; Ruscio et al., 2015; Tennant & Andrews, 1976).

Life event stress, or stressors, are a part of common humanity shared by all (Powell & Enright, 2015; Germer & Neff, 2013). However, people have different ways of perceiving their stress, and certain individual factors (e.g., those with a psychological complaint) dictate the way life event stress is interpreted (Powell & Enright, 2015; Ruscio et al., 2015; Siegrist, 2008; Vrieze & Claes, 2009; Wichers et al., 2009).

The measurement of both life event stress and its perception (appraisal) are readily

quantifiable in the clinical context by way of an instrument such as the Social Readjustment

Rating Scale (SRRS; Hobson et al., 1998; Holmes & Rahe, 1967; Rahe, 1970). Stress is

determined by summing the points associated with specified life events that have been

experienced by the client, ranging from 22 (minor law violation) to 87 (death of spouse/mate)

(Hobson & Delunas, 2001). Further, the addition of an appraisal rating scale (e.g., 0 = 'not at

all stressful' to 3 = 'extremely stressful') would also allow the evaluation of the perception of

stress among clients (Powell & Enright, 2015; Ruscio et al., 2015). In this way, the broader

conception of stress could be evaluated along with the severity of presentations (e.g., anxiety

and depression) regardless of CAs. In summary, the research recommended is the

quantification of associations among life event stress and its appraisal, resilience, and

psychopathology presentations (e.g., anxiety and depression).

9.5.3   The Potential for Adaptability and Tenacity as Resilience Indicators

As noted in Section 9.3.1, there was some evidence that Adaptability and Tenacity may be

viable subthemes of resilience as measured using the CD-RISC. This supports previous

research that has suggested similar dimensions for the CD-RISC (Green et al., 2014;

Jorgensen & Seedat, 2008; Karairmak 2010; Khoshouei, 2009; Lamond et al., 2008; Pooley

& Cohen, 2010; Ungar et al., 2013; Werner, 2013; Yu & Zhang 2007). However, for

Adaptability and Tenacity to be accepted as genuine constructs the results they provided

would have needed to be more domain specific. That is, very few empirical findings in the

current research allowed the discrimination between them.

The recommendation for research is to consider the theoretical composition of Adaptability

and Tenacity with the goal of building unique scales for their measurement that are

independent of the CD-RISC. Such a study would first have to determine item content,

administer the items to large, heterogeneous samples of (preferably) both clinical and non-clinical groups. Analyses examining convergent and divergent validity may then be conducted to address the question of whether Adaptability and Tenacity are unique elements of resilience. If successful, such research would allow the scope of resilience research, both in mental health and perhaps beyond, to broaden.

9.5.4   Compassion Focused Therapy for Treatment Resistant Anxiety and Depression

Long-term anxiety and depression are often profoundly persistent and disabling, and frequently associated with higher reported CAs (McEvoy et al., 2011; Ramnero et al., 2016). These disorders have the tendency for relapse, recurrence, and persistence, particularly in the presence of in-built self-criticism with shame (Diedrich et al., 2014; Ehret et al., 2015; Germer & Neff, 2013; Gilbert & Procter, 2006). The evidence from Chapter Eight (RCT study) was that SC techniques were encouraging as an adjunct to treatment for depression and PTSD generally and were superior to CT techniques. The protocol used in Chapter Eight (see Appendix 8.4) was based on a stand-alone model of SC inducing activities (Neff, 2003b) introduced for their predicted ability to target self-kindness, common humanity, and mindfulness. Regular mindful self-compassion exercises were also introduced. Additionally, activities were drawn from CFT for their ability to moderate the severity of depression and PTSD symptoms (e.g., thought record for critical voice and SC, compassionate letter writing to self, practising healthy emotion regulation, and threat and safety strategies). Nevertheless, more research is needed to further establish the value of SC, and to be enable the link between SC and resilience to be more clearly understood.

The proposed research replicates the methodology of Chapter Eight but with the goal of evaluating CFT against CBT with clinical samples comprising clients with more precisely defined 'treatment resistant' (i.e., to CBT) anxiety and/or depression. This proposed RCT of

CFT compared with CBT would advance the understanding of the sources of compassion for self, to others and from others by using CFT as a significant alternative treatment option for more complex psychopathologies (Barnard et al., 2011; Gilbert, 2009, 2016; Lee, 2009; Valdez & Lilly, 2016). The proposed protocol is a much more targeted and intensive approach to the cultivation of compassion than was implemented in Chapter Eight in the following ways.

CFT is based on six attributes (i.e., care for wellbeing, sensitivity towards distress and need, sympathy, distress tolerance and acceptance, empathy, and non-judgement), along with the skills of attention, reasoning and thinking, behaviour, sensory focus, feeling, and use of imagery to directly target the cultivation of a compassionate mind. Further, CFT has a focus on being attentive to potential blocks in the ability to develop SC. The concept of the flow of compassion from others and to others is emphasised, along with activities/skill development that additionally lead to a different experience of life generally.

9.5.5   Treatment for Anxiety and Depression with and without Comorbidities

As noted in Section 9.4.2, comorbidities were considered beyond the scope of the current research program, yet their potential importance is not to be denied. Lamers et al. (2011) indicate comorbidity rates in anxiety and depression to be very high. Approximately one in six clients have three or more comorbid disorders, and the rate may be higher in the presence of past CAs. Accordingly, it is imperative at assessment to gather information on all comorbidities along with the primary diagnosis (Lamers et al., 2011; McLaughlin et al., 2006; Spinhoven et al., 2014; van Balkom et al., 2008). The acknowledgement of the existence of comorbidities reinforces the importance of establishing transdiagnostic treatment methods that highlight relevant theoretical and practical commonalities in anxiety or depression in the presence of comorbidities (McEvoy et al., 2009; Titov et al., 2015).

Common psychological complaints have mutual symptoms and maladaptive behaviours. The purpose of transdiagnostic methods is to address both the primary diagnosis and comorbid disorder(s), as opposed to diagnosis-specific interventions designed to focus on pure anxiety or pure depression (Ellard et al., 2010; Jacobson & Newman, 2017; McEvoy et al., 2009; Titov et al., 2015). There is evidence that transdiagnostic interventions are clinically more effective than diagnosis-specific approaches, particularly in the presence of comorbidities (Dear et al., 2011; Farchione et al., 2012, 2017; Norton & Barrera, 2012; Pearl & Norton, 2017; Titov et al., 2015). The literature also suggests the need for more systematic research that compares transdiagnostic and diagnosis-specific interventions for anxiety or depression, with or without comorbid disorders (Andrade et al., 1994; Jacobson & Newman, 2017; Kessler et al., 1994; Lamers et al., 2011, McEvoy et al., 2009, 2011; Titov et al., 2015).

In summary, research is needed to examine differences in comorbidity patterns for anxiety and depression separately and the potential for transdiagnostic treatments (Brown et al., 2001; Hovens et al., 2010; Jacobson & Newman, 2017; Lamers et al., 2011). Further, it would be valuable to evaluate the differences in severity between depression and anxiety with and without comorbidities. Finally, it is suggested that the effectiveness of transdiagnostic interventions and diagnosis-specific interventions be compared both in the presence of resilience, and in terms of their ability to improve resilience, again with and without comorbidities.

9.6   Overall Conclusion

The overall pattern of results highlighted a strong, positive association between early experience of CAs and poorer psychological wellbeing, with greater resilience related to better wellbeing among individuals with anxiety or depression.

The measurement of key study variables had several challenges including the retrospective nature of self-reported CAs as measured by the ACE, and the differing factor structures for the CD-RISC to measure resilience. Nevertheless, sound empirical support was provided for two newly derived dimensions, termed Adaptability and Tenacity, with a consistent pattern of associations with various indices of wellbeing. The identification of these two dimensions offers the potential for improved operationalisation of resilience using the CD-RISC.

The overall sample comprised five distinct diagnostic groupings, some of which were relatively small and dissimilar in their symptomology (e.g., distorted cognitions, negative emotions and physical symptoms, avoidance/maladaptive behaviours). Such heterogeneity may have introduced additional variables that were not considered when pre- and post-treatment wellbeing was compared in Phase Two. However, the RCT involving SC with BT had the advantage of a more homogeneous sample to minimise potential differences in sample characteristics that might contribute to differing treatment outcomes.

There would be value in the future exploration of ways to improve measurement of CAs using the ACE. For example, it would be helpful to investigate the dose-response effect of CAs to examine whether the perceived intensity and/or severity of experience with CAs might provide a more precise understanding of differences in both pre- and post-treatment wellbeing. Such information may allow clinicians to tailor interventions more appropriately to the specific needs of clients.

Further, the RCT showed that resilience improved to a greater extent among individuals who received SC and BT for PTSD or depression compared with those in receiving standard treatment (CT and BT). This addition of SC to usual BT may facilitate recovery for more complex psychological complaints. However, it would be worthwhile exploring the roles of other SC-related interventions (e.g., MBIs, CFT and MSC) with or without standard

techniques (e.g., BT) to evaluate their potential contribution to the management of complex

psychopathology. This greater focus on strength-based intervention has the potential to

encourage a sense of psychological flourishing that together with enhanced resilience

represents more than recovery from, or absence of, disorder. That is, clients may learn how to

adapt constructively in the presence of adversity (Bibeau et al., 2016; Germer & Neff, 2013;

Gilbert, 2016; Lee, 2009; Neff, 2016a; Valdez & Lilly, 2016; Warren et al., 2016).

In conclusion, this program of research represented a valuable first step in gaining a better

understanding of how the early experience of CAs, along with changes in resilience over

time, are associated with treatment outcomes for people with anxiety or depression. The use

of a clinically derived sample and longitudinal study design were key differences from

previous studies. The evaluation of both the standard CBT treatment offered locally and the

more contemporary third-wave CBT approach, that of SC in combination with traditional BT,

provided preliminary insight into ways in which treatment programs may be adapted more

appropriately to an individual's specific vulnerabilities, as has become commonplace within

mental health settings in the United Kingdom (NHS Confederation, 2008).

APPENDICES

CHAPTER 5

APPENDIX 5.1: ETHICS APPROVAL LETTERS

**Southern Adelaide Clinical
Human Research Ethics Committee**

Government of South Australia
Southern Adelaide Health Service

01 December 2011

Dear Malcolm

This is a formal correspondence from the Southern Adelaide Clinical Human Research Ethics Committee (SAC HREC). Whilst this official title of the committee has changed the committee is still properly constituted under AHEC requirements with the registration number EC00188. This committee operates in accordance with the "National Statement on Ethical Conduct in Human Research (2007)." This department only uses email correspondence for all documents unless prior arrangements have been made with the manager. No hard copy correspondence will be issued.

Application Number: 478.11

Title: A longitudinal study of outcomes achieved for participants involved in the Centre for Anxiety and Related Disorders (CARD), Flinders Medical Centre (FMC): A quality improvement program.

Chief investigator: Prof. Malcolm Battersby

The Issue: The Southern Adelaide Clinical Human Research Ethics Committee (SAC HREC) have reviewed and approved the above application. Your project may now commence. The approval extends to the following documents/changes:

- General research application
- Participant Information sheet and consent form
- Secondary contract details form
- Patient referral record
- CARD booklet for standard measures
- Assessment tool and Psycho-social history form
- Email of indemnity from John Markic/SA Health
- Letter of support from Di Norris/Southern Mental Health, dated 18 November 2011
- Email of support from A/Prof Michael Baigent/DASSA.

Approval Period: 01 December 2011 to 01 December 2014

Please retain a copy of this approval for your records.

TERMS AND CONDITIONS OF ETHICAL APPROVAL
Final ethical approval is granted subject to the researcher agreeing to meet the following terms and conditions.

As part of the Institution's responsibilities in monitoring research and complying with audit requirements, it is essential that researchers adhere to the conditions below.

Researchers have a significant responsibility to comply with the *National Statement 5.5.* in providing the SAC HREC with the required information and reporting as detailed below:

1. **Compliance** with the *National Statement on Ethical Conduct in Human Research* (2007) & the *Australian Code for the Responsible Conduct of Research* (2007).
2. **To immediately report to SAC HREC** anything that may change the ethical or scientific integrity of the project.
3. **Report Significant Adverse events (SAE's)** as per SAE requirements available at our website.
4. **Submit an annual report** on each anniversary of the date of final approval and in the correct template from the SAC HREC website.
5. **Confidentiality** of research participants MUST be maintained at all times.
6. A copy of the **signed consent form** must be given to the participant unless the project is an audit.
7. Any **reports or publications derived from the research** should be submitted to the Committee at the completion of the project.
8. All requests for **access to medical records** at any SAHS site must be accompanied by this approval email.

9. To **regularly review the SAC HREC website** and comply with all submission requirements, as they change from time to time.
10. The researchers agree to use **electronic format** for all correspondence with this department.

Yours sincerely

Monika Malik
Admin Officer
SAC HREC

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Southern Adelaide Clinical
Human Research Ethics Committee

Government of South Australia
Southern Adelaide Health Service

27 January 2012

Dear Prof. Malcolm and Zhila

This is a formal correspondence from the Southern Adelaide Clinical Human Research Ethics Committee (SAC HREC). Whilst this official title of the committee has changed the committee is still properly constituted under AHEC requirements with the registration number EC00188. This committee operates in accordance with the "National Statement on Ethical Conduct in Human Research (2007)." This department only uses email correspondence for all documents unless prior arrangements have been made with the manager.

Application Number: 478.11

Title: The Relationship between resilience and psychological distress in adults with and without adverse childhood experience.

Chief investigator: Prof. Malcolm Battersby and Zhila Javidi

The Issue: The Southern Adelaide Clinical Human Research Ethics Committee (SAC HREC) have reviewed and approved the above application. Your project may now incorporate these amendments into your research. The approval extends to the following documents/changes:

- Project amendment application form, dated 12 December 2011.
- Main – Participant Information sheet
- Sub- study: Participant information sheet and consent form

Please retain a copy of this approval for your records. You are reminded of the terms of continued ethical approval below.

TERMS AND CONDITIONS OF ETHICAL APPROVAL
Final ethical approval is granted subject to the researcher agreeing to meet the following terms and conditions.

As part of the Institution's responsibilities in monitoring research and complying with audit requirements, it is essential that researchers adhere to the conditions below.

Researchers have a significant responsibility to comply with the *National Statement 5.5.* in providing the SAC HREC with the required information and reporting as detailed below:

1. **Compliance** with the *National Statement on Ethical Conduct in Human Research* (2007) & the *Australian Code for the Responsible Conduct of Research* (2007).
2. To **immediately report to SAC HREC** anything that may change the ethical or scientific integrity of the project.
3. **Report Significant Adverse events (SAE's)** as per SAE requirements available at our website.
4. **Submit an annual report on each anniversary of the date of final approval** and in the correct template from the SAC HREC website.
5. **Confidentiality** of research participants MUST be maintained at all times.
6. A copy of the **signed consent form** must be given to the participant unless the project is an audit.
7. Any **reports or publications** derived from the research should be submitted to the Committee at the completion of the project.
8. All requests for **access to medical records** at any SAHS site must be accompanied by this approval email.
9. To **regularly review the SAC HREC website** and comply with all submission requirements, as they change from time to time.
10. The researchers agree to use **electronic format** for all correspondence with this department.

Flinders Medical Centre

Bedford Park SA 5042

Level 2

Room 2A221

Telephone

08 8204 4507

Facsimile

08 8204 4586

Yours sincerely
Monika Malik
Administration Officer
SAC HREC

APPENDIX 5.2: PARTICIPANT INFORMATION SHEETS

CENTRE FOR ANXIETY AND RELATED DISORDERS

PARTICIPANT INFORMATION SHEET

An evaluation of outcomes achieved for participants receiving treatment
provided by the Centre for Anxiety and Related Disorders (CARD)

Dear Client,

We are inviting you to participate in this research project, but whether you wish to or not is entirely up to you. Whether you take part or not, the service you receive from the Centre for Anxiety and Related Disorders (CARD), or any other, will not be affected in any way. Before you agree to take part in this study, please read the information below:

Why is this study being carried out? This project aims to evaluate the effectiveness of the treatment provided to clients attending the CARD. The information obtained will be used to assess the longer term outcomes of the program, enhance understanding about the treatment and maintenance of wellness in relation to anxiety, depression and related disorders and improve the quality of the service provided to clients.

What does giving consent mean? Giving consent means that you have signed a written consent form, having read and understood the information sheet detailing the research project. Your therapist, the Team Leader of CARD and/or the researcher are happy to answer any questions you may have. If you wish, you can also discuss your participation with anybody that may be helpful, such as relatives, friends and your personal doctor.

What will you need to do if you choose to participate? In order to help with treatment and monitor personal progress and health related improvements, all clients at CARD are asked to fill in questionnaires at the start and throughout the course of treatment. This usually takes from 30 to 45 minutes to do. Once you have finished your treatment then your therapist will offer you follow up sessions at 1 and 3 months. You will complete questionnaires on 6 occasions across this period of time, with each occasion taking about from 30 to 45 minutes. The treatment is standard practice. However, as a participant in this study we are seeking your permission to use de-identified data from your questionnaires to monitor the successfulness of the treatment for research purposes. Additionally you are consenting to all or some sessions being recorded and used for supervision, training, research within CARD and course content in the cognitive behavioural therapy postgraduate programs at Flinders University.

Are there any risks involved in participating? There is no known risk associated with your participation in the study. If you suffer injury as a result of participation in this research or study, compensation might be paid without litigation. However, such compensation is not automatic and you may have to take legal action to determine whether you should be paid.

How will your privacy be protected? All records containing personal information are kept in a locked filing system at CARD and will remain confidential. No information which could lead to your identification will be released, except as required by law. Your name will not be used to identify your response to questionnaires. Instead a numeric code will be assigned and used to compare responses. This means that the information you contribute to the study will not be identifiable as having come from you. In order to ensure your privacy only students undertaking clinical placement are able to access the recordings and all have an allied health degree. They are bound by strict confidentiality policies and have signed contracts to

maintain this agreement. Staff and students require usernames and passwords to access the recordings.

Is taking part in the study voluntary? Yes, you don't have to participate in this study if you don't want to. If you choose to participate, you are also free to withdraw from the study at any time without providing a reason – this will not affect your current or future treatment or your relationship with the service or other health services in anyway. If you decide that you no longer want to have sessions recorded you can remove consent at any time.

Is there a payment for being involved? No, you will not receive any payment for participation in this study.

If you have any further questions or would like to make a complaint: Please contact Zhila Javidi the Team Leader of CARD on (08) 8204 4779

This study has been reviewed by the **Southern Adelaide Health Service and Flinders University Clinical Research Ethics Committee.** If you wish to discuss the study with someone not directly involved, in particular in relation to policies, your rights as a participant, or should you wish to make a confidential complaint, you may contact the Ethics Committee Manager on (08) 8204 6453, or email *research.ethics@health.sa.gov.au.*

Emergency and Crisis Contacts for Immediate Health Concerns: If you would like to speak to someone regarding your immediate health concerns you can call any of the following numbers:

- Mental Health Services Emergency Crisis – 13 1465
- Emergency Department, Flinders Medical Centre - 8204 5511,
- your local hospital

CENTRE FOR ANXIETY AND RELATED DISORDERS

PARTICIPANT INFORMATION SHEET

_____

The Relationship between Resilience and Psychological Distress in Adults with and without Adverse Childhood Experiences

_____

Dear Client,

You are being invited to participate in the resilience study of the Centre for Anxiety and Related Disorders (CARD) research project. Whether you wish to or not is entirely up to you. And whether you take part or not, the service you receive from CARD or any other service will not be affected in any way.

The resilience study is interested in resilience in adults. It aims to better understand the relationships between resilience, psychological distress, level of functioning and recovery in people attending CARD. The information obtained will be used to work out if resilience can be cultivated, if and when resilience should be targeted in treatment for anxiety and depression, and to improve the quality of the service provided.

Participation in the resilience study requires completion of an additional 2 extra scales at screening and only one out of 2 scales (i.e., CD-RISC) at discharge. Hence, participant of this study requires completing the 7 scales (as part their treatment at CARD) and the resilience measure CD-RISC25 (as part of this study) twice (at screening and discharge), usually taking around 35 to 45 minutes to do. All other conditions of participation in the research outlined in the original **Participant Information Sheet** and **Consent Form** remain the same.

If you have any further questions or would like to make a complaint: Please contact Zhila Javidi the Team Leader of CARD on (08) 8204 4779

This study has been reviewed by the **Southern Adelaide Health Service and Flinders University Clinical Research Ethics Committee.** If you wish to discuss the study with someone not directly involved, in particular in relation to policies, your rights as a participant, or should you wish to make a confidential complaint, you may contact the Ethics Committee Manager on (08) 8204 6453, or email *research.ethics@health.sa.gov.au.*

Emergency and Crisis Contacts for Immediate Health Concerns: If you would like to speak to someone regarding your immediate health concerns you can call any of the following numbers:
- Mental Health Services Emergency Crisis – 13 1465
- Emergency Department, Flinders Medical Centre - 8204 5511,
- Your local hospital

APPENDIX 5.3: CONSENT FORMS

CENTRE FOR ANXIETY AND RELATED DISORDERS
CONSENT TO PARTICIPATION IN THE RESEARCH PROJECT

I,………………………………request and give consent to my involvement in the project:
(first name &surename)

An evaluation of outcomes achieved for participants receiving treatment provided by the Centre for Anxiety and Related Disorders (CARD)

I acknowledge the nature, purpose and contemplated effects of the research project, especially as far as they affect me, have been fully explained to my satisfaction by…………………………………………….. and my consent is given voluntarily.
(first name &surename of therapistt)

I acknowledge that the detail(s) of the following has been explained to me, including indications of risks; any discomfort involved; anticipation of length of time; and the frequency with which they will be performed:

☐   I have had the opportunity to ask questions about the research project and am satisfied with the answers & the explanations given to me.

☐   I understand that a therapist will ask me to fill in Questionnaires Booklet as part of treatment, discharge and follow up at 1 and 3 months.

☐   I know that my answers will not in any way affect my treatment or access to any health services I am entitled to.

☐   I know that I may withdraw from this study at any time without affecting my usual care or treatment. If I choose not to participate, it will have no impact on the services which I receive.

☐   I know that my answers will be completely confidential and no personal information, arising from study, which may identify me in any way, will be passed to any other health service or department.

☐   The data will be stored in a secure data storage area for a period of fifteen years in accordance with Flinders University requirements.

☐   I understand that the results of the research project may be published, but my identity will be kept confidential.

I have understood and am satisfied with the explanations that I have been given. I have been provided with a written information sheet. I understand that my involvement in this research project may not be of any direct benefit to me and that I may withdraw my consent at any stage without affecting my rights or the responsibilities of the researchers in any respect.

I declare that I am over the age of 18 years. I acknowledge that I have been informed that should I receive an injury as a result of taking part in this study, I may need to start legal action to determine whether I should be paid.

Signature of Research Participant : .... **Date:………..………**

I, ………………………………….have described to……………………….the research project and nature and effects of procedure(s) involved. In my opinion he/she understands the explanation and has freely given his/her consent.

Signature:…………………..Date:………………Status in Project:……………………

CENTRE FOR ANXIETY AND RELATED DISORDERS
CONSENT TO PARTICIPATION IN RESILIENCE STUDY

I, …………………………request and give consent to my involvement in the resilience study:
(first name &surename)

The Relationship between Resilience and Psychological Distress in Adults with and Without Adverse Childhood Experiences

I acknowledge the nature, purpose and contemplated effects of this study, especially as far as they affect me, have been fully explained to my satisfaction b**y………………………….....**
and my consent is given voluntarily
(first name &surename of therapistt)

I acknowledge that the detail(s) of the following have been explained to me, including indications of risks; any discomfort involved; anticipation of length of time; and the frequency with which they will be performed:

☐   I have had the opportunity to ask questions about the research project and am satisfied with the answers & the explanations given to me.
☐   I understand that a therapist will ask me to fill in Questionnaires Booklet as part of treatment, discharge and follow up at 1 and 3 months.
☐   I know that my answers will not in any way affect my treatment or access to any health services I am entitled to.
☐   I know that I may withdraw from this study at any time without affecting my usual care or treatment. If I choose not to participate, it will have no impact on the services which I receive.
☐   I know that my answers will be completely confidential and no personal information, arising from study, which may identify me in any way, will be passed to any other health service or department.
☐   The data will be stored in a secure data storage area for a period of fifteen years in accordance with Flinders University requirements.
☐   I understand that the results of the research project may be published, but my identity will be kept confidential.

I have understood and am satisfied with the explanations that I have been given. I have been provided with a written information sheet. I understand that my involvement in this research this study may not be of any direct benefit to me and that I may withdraw my consent at any stage without affecting my rights or the responsibilities of the researchers in any respect.

I declare that I am over the age of 18 years. I acknowledge that I have been informed that should I receive an injury as a result of taking part in this study, I may need to start legal action to determine whether I should be paid.

Signature of Research Participant :…………………………….Date:……...……………

I, ……………………………………….have described to………………………this research study and nature and effects of procedure(s) involved. In my opinion he/she understands the explanation and has freely given his/her consent.

Signature:_____Date:_____Status in Project:_____

APPENDIX 5.4: COGNITIVE AND BEHAVIOURAL ASSESSMENT TOOL (CBAT)

CENTRE FOR ANXIETY AND RELATED DISORDERS *COGNITIVE AND BEHAVIOURAL ASSESSMENT TOOL*	*AFFIX PATIENT LABEL HERE*

PATIENT PROFILE (*Age, occupation family *social circumstances*)

BEHVIOURAL ASSESSMENT	
WHAT *Is the problem at the moment*	
WHERE *Does the problem happen and where doesn't it happen (what are the triggers?)*	
WHEN *Does the problem happen and does it not happen (what situations does it occur in?)*	
WHY *The thoughts and perceptions of the experience. The sense or the meaning of the feared consequence. What do you think/predict will happen if you stay in the feared situation?*	
WITH WHOM *Is it better or worse? Elicit details and views as to why?*	
AVOIDANCE What situations do you avoid to prevent the problem	
REASSURANCES: What do you to obtain reassurance to avoid or reduce the anxiety, (e.g., as ask partner, doctor or use the phone)	

FREQUENCY *How often problem occurs in a given time such as a day or a month?*	**INTENSITY** *Using 0-8 scale rate worst intensity and average intensity?*	**NUMBER** *How many times does the problem occur? (Relate to OCD)*	**DURATION** *How long the experience lasts on average, what is the longest it has ever lasted*

EXCESSES: *What do you do more of because of the problem? (e.g., washing, cleaning)*	
ONSET & FLUCTUATIONS *When did the problem start- precise description of the first episode* *Any period when the problem has been consistently better or worse, and the surrounding circumstances*	
MODIFYING FACTORS: *Anything used which makes the problem better or worse (e.g., presence of other people, alcohol, drugs, caffeine)*	
MEDICATION/ SUBSTANCES: *Details of current and past prescribed medication/ substance/ alternative medication or others*	
PROTECTIVE FACTORS *Please ask client about their strengths and abilities and past success*	

IMPACT ON LIFE *What effect does the problem have What areas in particular does it effect, (eg work, social, relationships, home)*	
AIMS OF THERAPY *What are the patient's short term and long term goals from treatment*	
WHY NOW *What has prompted the patient to seek help now*	
PAST TREATMENTS *Any previous psychological or psychiatry input What has or hasn't been helpful and its duration of effect*	
SUPPORT *Social, family and work .Who the client can contact in time of crisis*	

SPECIFIC INCIDENT	**AUTONOMIC** *What happens physically in the feared situation (e.g., sweating & palpitations)*	**BEHAVIOUR** *What do you do in the feared situation motor events, escape, excesses such as washing and or checking*	**COGNITIVE** *Thoughts/Imagery Re. feared consequences; Automatic thoughts; Self talk assumptions; Cognitive avoidances*
BEFORE			
DURING			
AFTER			

COGNITIVE ASSESSMENT QUESTIONS ABOUT DEPRESSIVE COGNITIONS (NATs)	
1. What's your opinion of yourself? 2. Do you think you're better than most people, worse, or about the same? 3. Are you a good or bad person? 4. Are there things you feel guilty about? 5. Do you feel guiltier about things than most people? 6. Do you feel guilty about things which other people wouldn't feel guilty about? 7. What's your view of the future? 8. Do you think things will get better or worse? 9. Do you hope things might get better? 10. Is there any possibility that things might get better? 11. Do you see any possibility at all that things might get better, even a little bit?	

FUNCTIONAL ANALYSIS:
Specific incident or example; Situation or general mood state
& may be worse at certain times and better at other times

MAIN AUTOMATIC NEGATIVE THOUGHTS	
BEHAVIOURS • *Withdrawal or* • *avoidance,* • *lack of routine*	
PHYSICAL/BODILY SENSATIONS	
EMOTIONS	

MENTAL STATE		RISK ASSESSMENT	
Appearance		**Thoughts, intentions, & plans**	
Behaviour		**Previous attempts**	
Conversation – flow, rate & volume		**Past and/or present self-harm**	
Thought – *Form & content*		**NEURO-VEGETATIVE FEATURES**	
Affect *Quality & fluctuations*		**Concentration**	
Perception – *e.g., hallucinations*	\\	**Energy**	
Cognitive Functioning		**Sleep**	
Judgement		**Appetite**	
Insight & Rapport		**Weight**	

Clinical Global Impressions-Severity (CGI-S)	
Considering your total clinical experience with this patient population, how ill is the patient at this time?	
1. **Normal, not ill at all:** symptoms of disorder not present past seven days	☐
2. **Borderline mentally ill:** subtle or suspected pathology	☐
3. **Mildly ill:** clearly established symptoms with minimal, if any, distress or difficulty in social and occupational function	☐
4. **Moderately ill or distress:** overt symptoms causing noticeable, but modest, functional impairment	☐
5. **Markedly ill:** intrusive symptoms that distinctly impair social/occupational function or cause intrusive levels of distress	☐
6. **Severely ill:** disruptive pathology, behaviour and function are frequently influenced by symptoms, may require assistance from others	☐
7. **Among the most extremely ill patients:** pathology drastically interferes in many life functions; may be hospitalized	☐

SUMMARY STATEMENT
BASED ON DSM-5 AND ICD-10 DIAGNOSIS

Behavioural – Formulation:

Cognitive – Conceptualisation:

APPENDIX 5.5: QUESTIONNAIRE BOOKLET (SCREENING AND DISCHARGE)

Centre for Anxiety & Related Disorders (CARD)

Questionnaires Booklet Screening & Discharge

AFFIX PATIENT LABEL HERE

CONSENT: ☐ Yes   ☐ No

PC-MIS No: _____

Therapist Name _____

Date: _____

Dear Client

In order for us to provide the most effective therapy to you, we ask you to answer a set of questions about yourself and your mental health at the Screening and end of the treatment and they are:

AT Screening only:

1. Sociodemographic Data Form (only at assessment)
2. Adverse Childhood Experience (ACE)

AT Both Screening and End of Treatment:

3. Connor-Davidson Resilience Scale (CD-RISC)
4. Obsessive Compulsive Inventory (OCI-R)
5. Impact of Event Scale-Revised (IES-R)
6. Patient Health Questionnaire (PHQ9)
7. Generalised Anxiety disorder (GAD7)
8. Kessler (K10)
9. Work & Social Adjustment Scale (WSAS)

Please answer all the questions in this Booklet with an (×). Just answer them to the best of your ability. If you have any queries in relation to the questions please do not hesitate to ask your therapist.

Thank you for your co-operation

Zhila Javidi
Primary investigator
Team leader of CARD

Associate Professor Michael Baigent
Clinical director of CARD

SOCIODEMOGRAPHIC DATA FORM

(Please tick each question below)

Gender
☐ Male (C1)
☐ Female (C2)

Employment status: if necessary tick more than one box
☐ Employed –Full-time (C1)
☐ Employed –Part-time (C2)
☐ Employed –Self (C8)
☐ Unemployed on Benefits/Seeking Work (C3)
☐ Full-time Student (C4)
☐ Part-time Student (C7)
☐ Full-time Homemaker or carer(C6)
☐ Retired (C5)

Relationship Status
☐ Single (S)
☐ De Facto (R)
☐ Married (M)
☐ Separated (P)
☐ Divorced (D)
☐ Widowed(W)

Age: please write your age in year_____
☐ 18-29
☐ 30-39
☐ 40-49
☐ 50-59
☐ 60-65

Educational level
☐ Primary School (C1)
☐ Some secondary school (C2)
☐ Completed secondary school (C3)
☐ TAFE or trade certificate (C4)
☐ University undergraduate degree (C5)
☐ University postgraduate degree (C6)

Race: what best describe your primary racial background?
☐ White Australian (C)
☐ Aboriginal/ Torres Strait Islander (O)
☐ Any other white background (A &B)
☐ Asian (L)
☐ Indian (H)/Pakistani (J)/Bangladeshi (K)
☐ African (N)
☐ Middle- Eastern (Q)
☐ Pacific Islander (T)
☐ Any other ethnic background(S)
☐ Mixed ethnic background (G)

Current Medication:
Which of the following are you currently taking?
☐ Antidepressant
☐ Antipsychotic
☐ Mood stabiliser
☐ Benzodiazepine
☐ *Not Prescribed (C3)*

Roughly when did you commence your current medication?
☐ *Prescribed Taking (C2)*
  ☐ <2 weeks ago
  ☐ 3-8 weeks ago
  ☐ 9-12 weeks ago
  ☐ 3-6 months ago
  ☐ >6 month ago
☐ *Prescribed but Not Taking (C1)*

Please write the name & dose of your medication here: _____

ADVERSE CHILDHOOD EXPERIENCES (ACE)

1. During your first 18 years did a parent or other adult in the household often or very often swear at you, insult you, put you down, or humiliate you? OR Act in a way that made you afraid that you might be physically hurt?	**Yes**	**No**
2. During your first 18 years did a parent or other adult in the household often or very often push, grab, slap, or throw something at you? OR Ever hit you so hard that you had marks or were injured?	**Yes**	**No**
3. During your first 18 years did an adult, relative, family friend, stranger or person at least 5 years older than you ever touch or fondle you in a sexual way or sexually abuse you?	**Yes**	**No**
4. During your first 18 years did you often or very often feel that no one in your family loved you or thought you were important or special? OR Your family didn't look out for each other, feel close to each other, or support each other?	**Yes**	**No**
5. During your first 18 years did you often or very often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? OR Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	**Yes**	**No**
6. During your first 18 years were your parents ever separated or divorced?	**Yes**	**No**
7. During your first 18 years was your mother or stepmother often or very often pushed, grabbed, slapped, or had something thrown at her? OR Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? OR Ever repeatedly hit at least a few minutes or threatened with a gun or knife?	**Yes**	**No**
8. During your first 18 years did you live with anyone who was a problem drinker or alcoholic or who used street drugs?	**Yes**	**No**
9. During your first 18 years was a household member depressed or mentally ill, or did a household member attempt suicide?	**Yes**	**No**
10. During your first 18 years did a household member go to prison?	**Yes**	**No**

If you have answered Yes to any of the above 10 questions, do you remember how old were you at the time? _____

CONNOR-DAVIDSON RESILIENCE SCALE (CD-RISC25)

For each item, please mark an "x" in the box below that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt

0=Not at all true, 1=Rarely true, 2=Sometimes true, 3=Often true, 4=true nearly all the time

		0	1	2	3	4
1.	I am able to adapt when changes occur.	0	1	2	3	4
2.	I have at least one close and secure relationship that helps me when I am stressed.	0	1	2	3	4
3.	When there are no clear solutions to my problems, sometimes fate or God can help.	0	1	2	3	4
4.	I can deal with whatever comes my way.	0	1	2	3	4
5.	Past successes give me confidence in dealing with new challenges and difficulties.	0	1	2	3	4
6.	I try to see the humorous side of things when I am faced with problems.	0	1	2	3	4
7.	Having to cope with stress can make me stronger.	0	1	2	3	4
8.	I tend to bounce back after illness, injury, or other hardships.	0	1	2	3	4
9.	Good or bad, I believe that most things happen for a reason.	0	1	2	3	4
10.	I give my best effort no matter what the outcome may be.	0	1	2	3	4
11.	I believe I can achieve my goals, even if there are obstacles.	0	1	2	3	4
12.	Even when things look hopeless, I don't give up.	0	1	2	3	4
13.	During times of stress/crisis, I know where to turn for help.	0	1	2	3	4
14.	Under pressure, I stay focused and think clearly.	0	1	2	3	4
15.	I prefer to take the lead in solving problems rather than letting others make all the decisions.	0	1	2	3	4
16.	I am not easily discouraged by failure.	0	1	2	3	4
17.	I think of myself as a strong person when dealing with life's challenges and difficulties.	0	1	2	3	4
18.	I can make unpopular or difficult decisions that affect other people, if it is necessary.	0	1	2	3	4
19.	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	0	1	2	3	4
20.	In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	0	1	2	3	4
21.	I have a strong sense of purpose in life.	0	1	2	3	4
22.	I feel in control of my life.	0	1	2	3	4
23.	I like challenges.	0	1	2	3	4
24.	I work to attain my goals no matter what roadblocks I encounter along the way.	0	1	2	3	4
25.	I take pride in my achievements.	0	1	2	3	4

OBSESSIVE COMPULSIVE INVENTORY–REVISED (OCI-R)

The following statements refer to experiences which many people have in their everyday lives. In the column labelled *distress*, please circle the number that best describes *how much* that experience has *distressed* or *bothered* you during the past month (or other agreed time period). The numbers in this column refer to the following labels:

0 = not at all; 1 = a little; 2 = moderately; 3 = a lot; 4 = extremely

	Statement	Distress				
1.	I have saved up so many things that they get in the way.	0	1	2	3	4
2.	I check things more often than necessary.	0	1	2	3	4
3.	I get upset if objects are not arranged properly.	0	1	2	3	4
4.	I feel compelled to count while I am doing things.	0	1	2	3	4
5.	I find it difficult to touch an object when I know it has been touched by strangers or certain people.	0	1	2	3	4
6.	I find it difficult to control my own thoughts.	0	1	2	3	4
7.	I collect things I don't need.	0	1	2	3	4
8.	I repeatedly check doors, windows, drawers, etc.	0	1	2	3	4
9.	I get upset if others change the way I have arranged things.	0	1	2	3	4
10.	I feel I have to repeat certain numbers.	0	1	2	3	4
11.	I sometimes have to wash or clean myself simply because I feel contaminated.	0	1	2	3	4
12.	I am upset by unpleasant thoughts that come into my mind against my will.	0	1	2	3	4
13.	I avoid throwing things away because I am afraid I might need them later.	0	1	2	3	4
14.	I repeatedly check gas and water taps and light switches after turning them off.	0	1	2	3	4
15.	I need things to be arranged in a particular order.	0	1	2	3	4
16.	I feel that there are good and bad numbers.	0	1	2	3	4
17.	I wash my hands more often and longer than necessary.	0	1	2	3	4
18.	I frequently get nasty thoughts and have difficulty in getting rid of them.	0	1	2	3	4

IMPACT OF EVENT SCALE (IES-R)

Below is a list of difficulties people sometimes have after stressful life events.
Please read each item, and then indicate how distressing each difficulty has been for you
DURING THE PAST SEVEN DAYS with respect to your current anxiety and depression, how much
were you distressed or bothered by these difficulties?

0 = not at all; 1 = a little; 2 = moderately; 3 = a lot; 4 = extremely

1.	Any reminder brought back feelings about it	0	1	2	3	4
2.	Had trouble staying asleep	0	1	2	3	4
3.	Other things kept making me think about it	0	1	2	3	4
4.	Felt irritable and angry	0	1	2	3	4
5.	Avoided letting myself get upset when I thought about it or was reminded of it	0	1	2	3	4
6.	Thought about it when I didn't mean to	0	1	2	3	4
7.	Felt as if it hadn't happened or wasn't real	0	1	2	3	4
8.	Stayed away from reminders about it	0	1	2	3	4
9.	Pictures about it popped into my mind	0	1	2	3	4
10.	Was jumpy and easily startled	0	1	2	3	4
11.	Tried not to think about it	0	1	2	3	4
12.	Was aware that I still had a lot of feelings about it, but didn't deal with them	0	1	2	3	4
13.	Feelings about it were kind of numb	0	1	2	3	4
14.	Found myself acting or feeling as though I was back at that time	0	1	2	3	4
15.	Had trouble falling asleep	0	1	2	3	4
16.	Had waves of strong feelings about it	0	1	2	3	4
17.	Tried to remove it from my memory	0	1	2	3	4
18.	Had trouble concentrating	0	1	2	3	4
19.	Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	0	1	2	3	4
20.	Had dreams about it	0	1	2	3	4
21.	Felt watchful or on-guard	0	1	2	3	4
22.	Tried to not talk about it	0	1	2	3	4

PATIENT HEALTH QUESTIONNAIRE (PHQ9)

Over the <u>last two weeks</u>, how often have you been bothered by the following problems?

0=Not at all; 1=Several days; 2=More than half; 3=Nearly every day

1.	Little interest or pleasure in doing things	0	1	2	3
2.	Feeling down, depressed or hopeless	0	1	2	3
3.	Trouble falling or staying asleep OR sleeping too much	0	1	2	3
4.	Feeling tired or having little energy	0	1	2	3
5.	Poor appetite OR overeating	0	1	2	3
6.	Feeling bad about yourself OR that you are a failure OR have let yourself or your family down	0	1	2	3
7.	Trouble concentrating on things, such as reading a newspaper or watching television	0	1	2	3
8.	Moving or speaking so slowly that other people could have noticed OR the opposite, being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9.	Thoughts that you would be better off dead or thoughts of hurting yourself in some way	0	1	2	3

GENERALISED ANXIETY DISORDER (GAD7)

Over the <u>last two weeks</u>, how often have you been bothered by the following problems?

0=Not at all; 1=Several days; 2=More than half; 3=Nearly every day

1.	Feeling Nervous, anxious or on edge	0	1	2	3
2.	Not being able to stop or control worrying	0	1	2	3
3.	Worrying too much about different things	0	1	2	3
4.	Trouble relaxing	0	1	2	3
5.	Being so restless that it is hard to sit still	0	1	2	3
6.	Becoming easily annoyed or irritable	0	1	2	3
7.	Feeling afraid as if something awful might happen	0	1	2	3

KESSLER (K10)

The following ten questions ask about how you have been feeling in the last four weeks. For each question, please select the option that best describes the amount.

**1=None of the time; 2=A little of the time; 3=Some of the time;
4=Most of the time; 5=All of the time**

	1	2	3	4	5
1. In the last four weeks, about how often did you feel tired out for no good reason?	1	2	3	4	5
2. In the last four weeks, about how often did you feel nervous?	1	2	3	4	5
3. In the last four weeks, about how often did you feel so nervous that nothing could calm you down?	1	2	3	4	5
4. In the last four weeks, about how often did you feel hopeless?	1	2	3	4	5
5. In the last four weeks, about how often did you feel restless or fidgety?	1	2	3	4	5
6. In the last four weeks, about how often did you feel so restless you could not sit still?	1	2	3	4	5
7. In the last four weeks, about how often did you feel depressed?	1	2	3	4	5
8. In the last four weeks, about how often did you feel that everything was an effort?	1	2	3	4	5
9. In the last four weeks, about how often did you feel so sad that nothing could cheer you up?	1	2	3	4	5
10. In the last four weeks about how often did you feel worthless?	1	2	3	4	5

WORK & SOCIAL ADJUSTMENT SCALE (WSAS)

Problems sometimes affect people's ability to do day-to-day tasks in their lives. To rate their problems look at each section and determine on the scale provided how much their problem affects their ability to carry out the activity.

0 ………1 ……… 2 ………3 ……… 4 ……. 5 ……… 6 ………7……… 8

Not at all	Slightly	Definitely	Markedly	Very Severely

Work: How much does your problem effect your work or your ability to work (if you are retired please rate zero)	
Home Management: Cleaning, tidying, shopping, cooking, looking after home/children, paying bills etc.	
Social Leisure Activities: With other people, e.g. parties, pubs, outings, entertaining etc.	
Private Leisure Activities: Done alone, e.g. reading, gardening, sewing, hobbies, walking etc.	
Family and Relationships: Form and maintain close relationships with others including people that I live with.	

APPENDIX 5.6: DISCHARGE REVIEW

CLINICAL GLOBAL IMPRESSIONS-IMPROVEMENT (CGI-I)

Rate the total improvement whether or not, in your judgment, it is due entirely to CBT. Compared to his/her condition at baseline (screening) how much has he /she changed?

1. Very much improved Nearly all better; good level of functioning; minimal symptoms; represents a very substantial change.	☐
2. Much improved Notably better with significant reduction of symptoms; increase in the level of functioning but some symptoms remain.	☐
3. Minimally improved Slightly better with little or no clinically meaningful reduction of symptoms. Represents very little change in basic clinical status, level of care, or functional capacity.	☐
4. No change Symptoms remain essentially unchanged.	☐
5. Minimally worse Slightly worse but may not be clinically meaningful; may represent very little change in basic clinical status or functional capacity.	☐
6. Much worse Clinically significant increase in symptoms and diminished functioning.	☐
7. Very much worse Severe exacerbation of symptoms and loss of functioning.	☐

APPENDICES

CHAPTER 8

APPENDIX 8.1: ETHICS APPROVAL LETTER

**Southern Adelaide Clinical
Human Research Ethics Committee**

Government of South Australia
Southern Adelaide Health Service

15 June 2015

Dear Ms Zhila Javidi

This is a formal correspondence from the Southern Adelaide Clinical Human Research Ethics Committee. Whilst this official title of the committee has changed the committee is still properly constituted under AHEC requirements with the registration number EC00188. This committee operates in accordance with the "National Statement on Ethical Conduct in Human Research (2007)." This department only uses email correspondence for all documents unless prior arrangements have been made with the manager. No hard copy correspondence will be issued.

Application Number: 478.11

Title: A longitudinal study of outcomes achieved for participants involved in the Centre for Anxiety and Related Disorders (CARD), Flinders Medical Centre (FMC): A quality improvement program

Chief Investigator: Ms Zhila Javidi

Approved public heath sites: Flinders Medical Centre

The Issue: The Southern Adelaide Clinical Human Research Ethics Committee (SAC HREC) has approved the project amendment, and your project may now incorporate these amendments into your research. The approval extends to the following documents/changes:

- SAC HREC Project Amendment Application form dated 01 May 2015
- Cover Letter with lay summary of amendment
- Consent Form - Self-compassion (tracked)
- Participant Information Sheet – Self-compassion (tracked)
- PTSD Checklist – Civilian Version (PCL-C) by Weathers, FW & Ford J (1996)
- Self-Compassion Scale (SCS) by Neff, KD (2003)

This amendment approval does not alter the current SAC HREC approval period for the study: 01 December 2019

Please read the terms and conditions of ethical approval below, as researchers have a significant responsibility to comply with reporting requirements and the other stated conditions.

For example, the implications of not providing annual reports and requesting an extension for research prior to approval expiring could lead to the suspension of the research, and has further serious consequences.

Please retain a copy of this approval for your records.

Flinders Medical Centre

The Flats G5 – Rooms 3 and 4

Flinders Drive, Bedford Park SA 5042

T: 08 8204 6453

E:Research.ethics @health.sa.gov.au

TERMS AND CONDITIONS OF ETHICAL APPROVAL
Final ethical approval is granted subject to the researcher agreeing to meet the following terms and conditions.

As part of the Institution's responsibilities in monitoring research and complying with audit requirements, it is essential that researchers adhere to the conditions below.

Researchers have a significant responsibility to comply with the *National Statement 5.5.* in providing the SAC HREC with the required information and reporting as detailed below:

1. **Compliance** with the *National Statement on Ethical Conduct in Human Research* (2007) & the *Australian Code for the Responsible Conduct of Research* (2007).
2. **To immediately report to SAC HREC** anything that may change the ethical or scientific integrity of the project.
3. **If University personnel are involved in this project,** the Principal Investigator should notify the University before commencing their research to ensure compliance with University requirements including any insurance and indemnification requirements.
4. **It is the policy of the SAC HREC not to provide signed hardcopy or signed electronic approval letters,** as our office is moving to electronic documentation. The SAC HREC office provides an unsigned electronic PDF version of the study approval letter to the Chief Investigator/Study Manager via email. These email approvals are generated via the email address research.ethics@health.sa.gov.au which can be linked back to the SAC HREC.
5. **Report Significant Adverse events (SAE's)** as per SAE requirements available at our website.
6. **Submit an annual report on each anniversary of the date of final approval** and in the correct template from the SAC HREC website.
7. **Confidentiality** of research participants MUST be maintained at all times.
8. A copy of the **signed consent form** must be given to the participant unless the project is an audit.
9. Any **reports or publications derived from the research** should be submitted to the Committee at the completion of the project.
10. All requests for **access to medical records** at any SALHN site must be accompanied by this approval email.
11. To **regularly review the SAC HREC website** and comply with all submission requirements, as they change from time to time.
12. The researchers agree to use **electronic format** for all correspondence with this department.
13. Researchers are reminded that **all advertisements/flyers** need to be approved by the committee, and that no promotion of a study can commence until final ethics and executive approval has been obtained. In addition, all media contract should be coordinated through the FMC media unit.

Yours sincerely

Anna Pantelidis
Administration Officer, SAC HREC

On behalf of

Professor David Gordon
Chair, SAC HREC

APPENDIX 8.2: PARTICIPANT INFORMATION SHEET

CENTRE FOR ANXIETY AND RELATED DISORDERS
PARTICIPANT INFORMATION SHEET ABOUT THE STUDY

_____

To explore whether Cognitive Behavioural Therapy (CBT) can be successfully augmented with Self-Compassion and improve outcomes in depression and Post-Traumatic Stress Disorder (PTSD)

_____

Dear Client,

You are being invited to participate in a current sub-study of the Centre for Anxiety and Related Disorders (CARD) research project. Whether you wish to or not is entirely up to you. And whether you take part or not, the service you receive from CARD or any other service will not be affected in any way. Before you agree to take part in this study, please read the information below:

Why is this study being carried out? The study is interested in improving treatment outcome in adults with depression and/or Post traumatic Stress disorder (PTSD). Participants will receive Behavioural Therapies with addition of either Self-Compassion (SC) or Cognitive Therapy (CT). It aims to advance the understanding and relationships SC and CT outcomes in people with complex depression and PTSD referred to CARD. The information obtained will be used to work out if SC can be cultivated in cognitive Behavioural Therapy (CBT), if and when SC should be targeted in CBT intervention, and to further improve the quality of the service provided.

What does giving consent mean? Giving consent means that you have signed a written consent form, having read and understood the information sheet detailing the research project. Your therapist, the Team Leader of CARD and/or the researcher are happy to answer any questions you may have. If you wish, you can also discuss your participation with anybody that may be helpful, such as relatives, friends and your personal doctor.

What will you need to do if you choose to participate? In order to help with treatment and monitor personal progress and health related improvements, participations in this study require completion of eight standard questionnaires at screening, and discharge sessions which usually taking around 20 to 25 minutes to do. However, as a participant in this study we are seeking your permission to use de-identified data from your questionnaires to monitor the successfulness of the treatment for research purposes

Are there any risks involved in participating? There is no known risk associated with your participation in the study. If you suffer injury as a result of participation in this research or study, compensation might be paid without litigation. However, such compensation is not automatic and you may have to take legal action to determine whether you should be paid.

What will you need to do if you choose to participate? In order to help with treatment and monitor personal progress and health related improvements, participations in this study require completion of eight standard questionnaires at screening, and discharge sessions which usually taking around 20 to 25 minutes to do. However, as a participant in this study we are seeking your permission to use de-identified data from your questionnaires to monitor the successfulness of the treatment for research purposes

Are there any risks involved in participating? There is no known risk associated with your participation in the study. If you suffer injury as a result of participation in this research or study, compensation might be paid without litigation. However, such compensation is not automatic and you may have to take legal action to determine whether you should be paid.

How will your privacy be protected? All records containing personal information are kept in a locked filing system at CARD and will remain confidential. No information which could lead to your identification will be released, except as required by law. Your name will not be used to identify your response to questionnaires. Instead a numeric code will be assigned and used to compare responses. This means that the information you contribute to the study will not be identifiable as having come from you. Staff and trainee therapists are bound by strict confidentiality policies and have signed contracts to maintain this agreement. They require usernames and passwords to access the data collection.

Is taking part in the study voluntary? Yes, you don't have to participate in this study if you don't want to. If you choose to participate, you are also free to withdraw from the study at any time without providing a reason – this will not affect your current or future treatment or your relationship with the service or other health services in anyway. **Is there a payment for being involved?** No, you will not receive any payment for anticipation in this study

If you have any further questions or would like to make a complaint:
Please contact Zhila Javidi the Team Leader of CARD on (08) 8204 4779

This sub-study has been reviewed by the **Southern Adelaide Health Service and Flinders University Clinical Research Ethics Committee.** If you wish to discuss the study with someone not directly involved, in particular in relation to **policies, your rights as a participant, or should you wish to make a confidential complaint, you may contact the Ethics Committee Manager on (08) 8204 6453, or email** *research.ethics@health.sa.gov.au.*

Emergency and Crisis Contacts For Immediate Health Concerns
If you would like to speak to someone regarding your immediate health concerns you can call any of the following numbers:
- Mental Health Services Emergency Crisis – 13 1465
- Emergency Department, Flinders Medical Centre - 8204 5511, or your local hospital

APPENDIX 8.3: CONSENT FORM

CENTRE FOR ANXIETY AND RELATED DISORDERS
CONSENT TO PARTICIPATION IN THE RESEARCH SUB-STUDY

I,………………………………request and give consent to my involvement in the project:
(first name &surename)

To explore whether cognitive behavioural therapy (CBT) can be successfully augmented with, Self-compassion and improve outcomes in Depression and Post-Traumatic Stress Disorder (PTSD)

I acknowledge the nature, purpose and contemplated effects of the research project, especially as far as they affect me, have been fully explained to my satisfaction by………………………………………………….. and my consent is given voluntarily.
(first name &surename of therapistt)

I acknowledge that the detail(s) of the following have been explained to me, including indications of risks; any discomfort involved; anticipation of length of time; and the frequency with which they will be performed:

- ☐ I have had the opportunity to ask questions about the sub-study and am satisfied with the answers and the explanations given to me.
- ☐ I understand that a therapist will ask me to fill in questionnaires as part of treatment, that participation in this sub-study requires completion of 8 questionnaires.
- ☐ I know that my answers will not in any way affect my treatment or access to any health services I am entitled to.
- ☐ I know that I may withdraw from this sub-study at any time without affecting my usual care or treatment. If I choose not to participate, it will have no impact on the services which I receive.
- ☐ I know that my answers will be completely confidential and no personal information, arising from study, which may identify me in any way, will be passed to any other Health service or department.
- ☐ The data will be stored in a secure data storage area for a period of fifteen years in accordance with Flinders University requirements.
- ☐ I understand that the results of this study may be published, but my identity will be kept confidential.

I have understood and am satisfied with the explanations that I have been given. I have been provided with a written information sheet. I understand that my involvement in this research sub-study may not be of any direct benefit to me and that I may withdraw my consent at any stage without affecting my rights or the responsibilities of the researchers in any respect.

I declare that I am over the age of 18 years. I acknowledge that I have been informed that should I receive an injury as a result of taking part in this study, I may need to start legal action to determine whether I should be paid.

Signature of Research Participant : .... **Date:………..………**

I, …………………………………….have described to……………………….the research project and nature and effects of procedure(s) involved. In my opinion he/she understands the explanation and has freely given his/her consent.

Signature:…………………..Date:………………Status in Project:………………………

APPENDIX 8.4: STANDARD AND EXPERIMENTAL TREATMENT

STANDARD TREATMENT (CT and BT)	
POST-TRAUMATIC STRESS DISORDER (PTSD)	**DEPRESSIVE DISORDERS**
Baseline Measures • To be scored by client prior to screening.	**Baseline Measures** • To be scored by client prior to screening.
Information Sheet & Consent form: • To be explained by therapist, • To be read by client • If agreed to be signed by client	**Information Sheet & Consent form** • To be explained by therapist, • To be read by client • If agreed to be signed by client
Initial Screening (session1) • To complete the CBAT • To discuss planning/management of risk & safety • To discuss the rationales for Therapies such as *EBT & CT*	**Initial Screening (session1)** • To complete the CBAT • To discuss planning/management of risk & safety • To discuss the rationales for therapies such as *BA & CT*
Psychosocial History (session 2) • Past history e.g., CAs and other millstones • Establishing problem & treatment goals • To discuss hierarchy of anxiety • Therapy contract & homework	**Psychosocial History (session 2)** • Past history e.g., CAs & other millstones • Establishing problem & treatment goals • To discuss depressive symptoms • Therapy contract & homework.
Therapeutic Relationship (Session 3 to 11) • Safety, engagement, & signposting to psychosocial supports • Psychoeducation about PTSD symptoms, processes, & therapies • Collaborating on treatment sequencing e.g., to be *cooperative, to be active, & to try to generate solutions.*	**Therapeutic Relationship (Session 3 to 11)** • Safety, engagement, & signposting to psychosocial supports • Psychoeducation about Depression symptoms, processes & therapies • Collaborating on Treatment Sequencing e.g., to be *cooperative, to be active, & to try to generate solutions.*
To Structure Agenda (session 3 to 11) • Review the homework • Their progress towards the goals • Discuss feedback on the previous session • Focus on specific related issues • Plan new homework • Checking their safety • Organised the next session	**To Structure Agenda (session 3 to 11)** • Review the homework • Their progress towards the goals • Discuss feedback on the previous session • Focus on specific related issues • Plan new homework • Checking their safety • Organised the next session

STANDARD TREATMENT LOCAL PROTOCOL	
EBT and CT **RELATED TECHNIQUES**	**BA and CT** **RELATED TECHNIQUES**

EBT (session 3 to 11)
• Graded in-vivo exposure as a result of the trauma in relation to interceptive cues & avoidances behaviours
• Graded imaginal exposure to trauma memory includes narrative of the five senses, present tense and first person , it can be described in different ways
   o *Written,*
   o *Verbal, &*
   o *Recording*
• Relapse prevention strategies
 	
CT (session 3 to 11)
• Conceptualisation and strategies for trauma related to automatic negative thoughts
• Cognitive thought diary based on trauma
• Restructuring cognitions Based on trauma
• Engaging in Socratic Dialogue
• Focusing on particular themes such as *Fear, Anxiety, Safety, & Trust*
• Anxiety management/distress training.
• Relapse prevention strategies
 	
Review progress (session 12)
• Scoring the initial problem and goals;
• Summary & maintaining changes & gains from therapy
• Blueprint & re-capping relapse prevention strategies;
• Relapse prevention strategies
 	
➢ **Outcome Measures**
• To be scored by client at the end of the session 12
	BA (session 3 to 11)
	• Describe and plan activity scheduling
	• To structure client's day according to activities that avoid by client such as:
	   o *Routine,*
	   o *Necessary &*
	   o *pleasurable*
	• To start activity scheduling with short-term goals
	• To learn to treat their activity scheduling as a series of appointments with themselves.
	• Relapse prevention strategies
	
	CT (session 3 to 11)
	• Conceptualisation and strategies for depressive related to automatic negative thoughts
	• Cognitive thought diary based on depression
	• Restructuring cognitions based on depression
	• Engaging in Socratic dialogue
	• Focusing on particular themes e.g., *Sadness, Disappointment & Frustration*
	• Erroneous beliefs & distress training.
	• Relapse prevention strategies
	
	Review progress (session 12)
	• Scoring the initial problem and goals
	• Summary & maintaining changes/gains from therapy
	• Blueprint & re-capping relapse prevention strategies
	• Relapse prevention strategies
	
	Outcome Measures:
	• To be scored by client at the end of the session 12

EXPERIMENTAL TREATMENT (SC and BT) FOR THE STUDY	
POST-TRAUMATIC STRESS DISORDER (PTSD)	**DEPRESSIVE DISORDERS**
Baseline Measures: • To be scored by client. **Information Sheet & Consent form:** • To be explained by therapist, • To be read by client • If agreed to be signed by client prior to screening assessment **Initial Screening (session1):** • To complete the CBAT • To discuss planning & management of risk & safety • To discuss the rationales for therapies such as *EBT & SC* **Psychosocial History (session 2)**: • Past history e.g., CAs & other millstones • Establishing problem & treatment goals • To discuss hierarchy of anxiety, therapy contract, & homework **Establishing a Therapeutic Relationship (Session 3 to 11)** • Safety, engagement & signposting to psychosocial supports • Psychoeducation about PTSD symptoms, processes & therapies • To discuss with client collaboration on treatment sequencing such as to be cooperative, to be active, & to try to generate solutions. **Structure Agenda (session 3 to 11):** • Review the homework & goals, discuss feedback on the previous session, focus on specific related issues, & plan new homework, checking client's safety.	**Baseline Measures:** • To be scored by client. **Information Sheet & Consent form:** • To be explained by therapist, • To be read by client • If agreed to be signed by client prior to screening assessment **Initial Screening (session1):** • To complete the CBAT • To discuss planning & management of risk & safety • To discuss the rationales for therapies such as *BA & SC* **Psychosocial History (session 2)**: • Past history, e.g. CAs & other millstones • Establishing problem & treatment goals • To discuss hierarchy of anxiety, therapy contract, & homework **Establishing a Therapeutic Relationship (Session 3 to 11)** • Safety, engagement & signposting to psychosocial supports • Psychoeducation about Depression symptoms, processes & therapies • To discuss with clients collaboration on treatment sequencing such as to be cooperative, to be active, • To try to generate solutions. **Structure Agenda (session 3 to 11):** • Review the homework & goals, discuss feedback on the previous session, focus on specific related issues, plan new homework, & checking client's safety.

EXPERIMENTAL TREATMENT PROTOCAL FOR THE STUDY	
EBT and SC **RELATED TECHNIQUES**	**BA and SC** **RELATED TECHNIQUES**

EBTs (session 3 to 11)
• Graded in-vivo exposure as a result of the trauma in relation to interceptive cues & avoidances behaviours
• Graded imaginal exposure to trauma memory includes narrative of the five senses, present tense and first person , it can be described in different ways e.g., *Written, Verbal, & Recording*
• Relapse prevention strategies
 	
SC techniques (session 3 to 11):
• *SC model by Neff(2003a)*
  ▪ To gain an deeper understanding of SC and its three compound that include:
    o Self-Kindness
    o Common Humanity
    o Mindfulness
  ▪ MSC exercises to increase SC
 	
• *Activities drawn from CFT model by Gilbert (2009)*
  ▪ Practice of healthy emotional regulation strategy
  ▪ Building a compassionate image
  ▪ Compassionate letter writing to self
  ▪ Thought record for critical voice SC
  ▪ Threat & safety strategies
 	
Review progress (session 12):
• Scoring the initial problem and goals;
• Summary & maintaining changes & gains from therapy
• Blueprint & re-capping relapse prevention strategies;
• Relapse prevention strategies
 	
Outcome Measures:
• To be scored by client at the end of the session 12
	BA (session 3 to 11)
	• Describe and plan activity scheduling
	• To structure client's day according to activities that avoid by client such as *Routine, Necessary, & pleasurable*
	• To start activity scheduling with short-term goals
	• To learn to treat their activity scheduling as a series of appointments with themselves.
	• Relapse prevention strategies
	
	SC techniques (session 3 to 11):
	• *SC model by Neff(2003a)*
	  ▪ To gain an deeper understanding of SC and its three compound that include:
	    o Self-Kindness
	    o Common Humanity
	    o Mindfulness
	  ▪ MSC exercises to increase SC
	
	• *Activities drawn from CFT model by Gilbert (2009)*
	  ▪ Practice of healthy emotional regulation strategy
	  ▪ Building a compassionate image
	  ▪ Compassionate letter writing to self
	  ▪ Thought record for critical voice SC
	
	Review progress (session 12):
	• Scoring the initial problem and goals
	• Summary & maintaining changes/gains from therapy
	• Blueprint & re-capping relapse prevention strategies
	• Relapse prevention strategies
	
	Outcome Measures:
	• To be scored by client at the end of the session 12

APPENDIX 8.5: COGNITIVE AND BEHAVIOURAL ASSESSMENT TOOL (CBAT)

CENTRE FOR ANXIETY AND RELATED DISORDERS

COGNITIVE AND BEHAVIOURAL ASSESSMENT TOOL

AFFIX PATIENT LABEL HERE

PATIENT PROFILE (*Age, occupation family *social circumstances***)**

BEHVIOURAL ASSESSMENT

WHAT *Is the problem at the moment*	
WHERE *Does the problem happen and where doesn't it happen (what are the triggers?)*	
WHEN *Does the problem happen and does it not happen (what situations does it occur in?)*	
WHY *The thoughts and perceptions of the experience. The sense or the meaning of the feared consequence. What do you think/predict will happen if you stay in the feared situation?*	
WITH WHOM *Is it better or worse? Elicit details and views as to why?*	
AVOIDANCE What situations do you avoid to prevent the problem	
REASSURANCES: What do you to obtain reassurance to avoid or reduce the anxiety, (e.g., as ask partner, doctor or use the phone)	

FREQUENCY *How often problem occurs in a given time such as a day or a month?*	**INTENSITY** *Using 0-8 scale rate worst intensity and average intensity?*	**NUMBER** *How many times does the problem occur? (Relate to OCD)*	**DURATION** *How long the experience lasts on average, what is the longest it has ever lasted*

EXCESSES: *What do you do more of because of the problem? (e.g., washing, cleaning)*	
ONSET & FLUCTUATIONS *When did the problem start- precise description of the first episode Any period when the problem has been consistently better or worse, and the surrounding circumstances*	
MODIFYING FACTORS: *Anything used which makes the problem better or worse (e.g., presence of other people, alcohol, drugs, caffeine)*	
MEDICATION/ SUBSTANCES: *Details of current and past prescribed medication/ substance/ alternative medication or others*	
PROTECTIVE FACTORS *Please ask client about their strengths and abilities and past success*	

IMPACT ON LIFE *What effect does the problem have What areas in particular does it effect, (eg work, social, relationships, home)*	
AIMS OF THERAPY *What are the patient's short term and long term goals from treatment*	
WHY NOW *What has prompted the patient to seek help now*	
PAST TREATMENTS *Any previous psychological or psychiatry input What has or hasn't been helpful and its duration of effect*	
SUPPORT *Social, family and work .Who the client can contact in time of crisis*	

SPECIFIC INCIDENT	AUTONOMIC *What happens physically in the feared situation (e.g., sweating & palpitations)*	BEHAVIOUR *What do you do in the feared situation motor events, escape, excesses such as washing and or checking*	COGNITIVE *Thoughts/Imagery Re. feared consequences; Automatic thoughts; Self talk assumptions; Cognitive avoidances*
BEFORE			
DURING			
AFTER			

COGNITIVE ASSESSMENT

QUESTIONS ABOUT THOUGHT DEPRESSIVE COGNITIONS

---

1. What's your opinion of yourself?
2. Do you think you're better than most people, worse, or about the same?
3. Are you a good or bad person?
4. Are there things you feel guilty about?
5. Do you feel guiltier about things than most people?
6. Do you feel guilty about things which other people wouldn't feel guilty about?
7. What's your view of the future?
8. Do you think things will get better or worse?
9. Do you hope things might get better?
10. Is there any possibility that things might get better?
11. Do you see any possibility at all that things might get better, even a little bit?

FUNCTIONAL ANALYSIS:
Specific incident or example; Situation or general mood state; & may be worse at certain times and better at other times

MAIN AUTOMATIC NEGATIVE THOUGHTS	
BEHAVIOURS • *Withdrawal or* • *avoidance,* • *lack of routine*	
PHYSICAL/BODILY SENSATIONS	
EMOTIONS	

MENTAL STATE		RISK ASSESSMENT	
Appearance		**Thoughts, intentions, & plans**	
Behaviour		**Previous attempts**	
Conversation – flow, rate & volume		**Past and/or present self-harm**	
Thought – *Form & content*		**NEURO-VEGETATIVE FEATURES**	
Affect *Quality & fluctuations*		**Concentration**	
Perception – *e.g., hallucinations*	\\	**Energy**	
Cognitive Functioning		**Sleep**	
Judgement		**Appetite**	
Insight & Rapport		**Weight**	

Clinical Global Impressions-Severity (CGI-S)

Considering your total clinical experience with this patient population, how ill is the patient at this time?

1. **Normal, not ill at all:** symptoms of disorder not present past seven days	☐
2. **Borderline mentally ill:** subtle or suspected pathology	☐
3. **Mildly ill:** clearly established symptoms with minimal, if any, distress or difficulty in social and occupational function	☐
4. **Moderately ill or distress:** overt symptoms causing noticeable, but modest, functional impairment	☐
5. **Markedly ill:** intrusive symptoms that distinctly impair social/occupational function or cause intrusive levels of distress	☐
6. **Severely ill:** disruptive pathology, behaviour and function are frequently influenced by symptoms, may require assistance from others	☐
7. **Among the most extremely ill patients:** pathology drastically interferes in many life functions; may be hospitalized	☐

SUMMARY STATEMENT
BASED IN DSM-5 AND ICD-10 DIAGNOSIS
Behavioural – Formulation:
Cognitive –Conceptualisation:

APPENDIX 8.6: QUESTIONNAIRE BOOKLET (SCREENING AND DISCHARGE)

Centre for Anxiety & Related Disorders (CARD)

Questionnaires Booklet Screening & Discharge

AFFIX PATIENT LABEL HERE

CONSENT: ☐ Yes   ☐ No
PC-MIS No: _____
Therapist Name_____
Date: _____

Dear Client

In order for us to provide the most effective therapy to you, we ask you to answer a set of questions about yourself and your mental health at the screening and end of the treatment and they are:

AT Screening:

1. Sociodemographic Data Form (only at assessment)

2. Adverse Childhood Experience (ACE)

AT Both Screening and End of Treatment:

3. Connor-Davidson Resilience Scale (CD-RISC)

4. Self - Compassion Scale (SCS)

5. PTSD Checklist-Civilian Form (PCL-C)

6. Patient Health Questionnaire (PHQ9)

7. Work & Social Adjustment Scale (WSAS)

8. Kessler (K10)

Please answer all the questions in this Booklet with an (×). Just answer them to the best of your ability. If you have any queries in relation to the questions please do not hesitate to ask your therapist.

Thank you for your co-operation

Zhila Javidi   **Associate Professor Michael Baigent**
Primary investigator   Clinical director of CARD
Team leader of CARD

SOCIODEMOGRAPHIC DATA FORM

(Please tick each question below)

Gender

☐ Male (C1)

☐ Female (C2)

Employment status: if necessary tick more than one box

☐ Employed –Full-time (C1)

☐ Employed –Part-time (C2)

☐ Employed –Self (C8)

☐ Unemployed on Benefits or Seeking Work (C3)

☐ Full-time Student (C4)

☐ Part-time Student (C7)

☐ Full-time Homemaker or carer(C6)

☐ Retired (C5)

Relationship Status

☐ Single (S)

☐ De Facto (R)

☐ Married (M)

☐ Separated (P)

☐ Divorced (D)

☐ Widowed(W)

Age: please write your age in year_____

☐ 18-29

☐ 30-39

☐ 40-49

☐ 50-59

☐ 60-65

Educational level

☐ Primary School (C1)

☐ Some secondary school (C2)

☐ Completed secondary school (C3)

☐ TAFE or trade certificate (C4)

☐ University undergraduate degree (C5)

☐ University postgraduate degree (C6)

Race: what best describe your primary racial background?

☐ White Australian (C)

☐ Aboriginal/ Torres Strait Islander (O)

☐ Any other white background (A &B)

☐ Asian (L)

☐ Indian (H)/Pakistani (J)/Bangladeshi (K)

☐ African (N)

☐ Middle- Eastern (Q)

☐ Pacific Islander (T)

☐ Any other ethnic background(S)

☐ Mixed ethnic background (G)

Current Medication:
Which of the following are you currently taking?

☐ Antidepressant

☐ Antipsychotic

☐ Mood stabiliser

☐ Benzodiazepine

☐ *Not Prescribed (C3)*

Roughly when did you commence your current medication?

☐ *Prescribed Taking (C2)*

  ☐ <2 weeks ago

  ☐ 3-8 weeks ago

  ☐ 9-12 weeks ago

  ☐ 3-6 months ago

  ☐ >6 month ago

☐ *Prescribed but Not Taking (C1)*

Please write the name & dose of your medication here:

ADVERSE CHILDHOOD EXPERIENCES (ACE)

1. During your first 18 years did a parent or other adult in the household often or very often swear at you, insult you, put you down, or humiliate you? OR Act in a way that made you afraid that you might be physically hurt?	**Yes**	**No**
2. During your first 18 years did a parent or other adult in the household often or very often push, grab, slap, or throw something at you? OR Ever hit you so hard that you had marks or were injured?	**Yes**	**No**
3. During your first 18 years did an adult, relative, family friend, stranger or person at least 5 years older than you ever touch or fondle you in a sexual way or sexually abuse you?	**Yes**	**No**
4. During your first 18 years did you often or very often feel that no one in your family loved you or thought you were important or special? OR Your family didn't look out for each other, feel close to each other, or support each other?	**Yes**	**No**
5. During your first 18 years did you often or very often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? OR Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	**Yes**	**No**
6. During your first 18 years were your parents ever separated or divorced?	**Yes**	**No**
7. During your first 18 years was your mother or stepmother often or very often pushed, grabbed, slapped, or had something thrown at her? OR Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? OR Ever repeatedly hit at least a few minutes or threatened with a gun or knife?	**Yes**	**No**
8. During your first 18 years did you live with anyone who was a problem drinker or alcoholic or who used street drugs?	**Yes**	**No**
9. During your first 18 years was a household member depressed or mentally ill, or did a household member attempt suicide?	**Yes**	**No**
10. During your first 18 years did a household member go to prison?	**Yes**	**No**

If you have answered Yes to any of the above 10 questions, do you remember how old were you at the time? _____

CONNOR-DAVIDSON RESILIENCE SCALE (CD-RISC25)

For each item, please mark an "x" in the box below that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt

0=Not at all true, 1=Rarely true, 2=Sometimes true, 3=Often true, 4=true nearly all the time

1.	I am able to adapt when changes occur.	0	1	2	3	4
2.	I have at least one close and secure relationship that helps me when I am stressed.	0	1	2	3	4
3.	When there are no clear solutions to my problems, sometimes fate or God can help.	0	1	2	3	4
4.	I can deal with whatever comes my way.	0	1	2	3	4
5.	Past successes give me confidence in dealing with new challenges and difficulties.	0	1	2	3	4
6.	I try to see the humorous side of things when I am faced with problems.	0	1	2	3	4
7.	Having to cope with stress can make me stronger.	0	1	2	3	4
8.	I tend to bounce back after illness, injury, or other hardships.	0	1	2	3	4
9.	Good or bad, I believe that most things happen for a reason.	0	1	2	3	4
10.	I give my best effort no matter what the outcome may be.	0	1	2	3	4
11.	I believe I can achieve my goals, even if there are obstacles.	0	1	2	3	4
12.	Even when things look hopeless, I don't give up.	0	1	2	3	4
13.	During times of stress/crisis, I know where to turn for help.	0	1	2	3	4
14.	Under pressure, I stay focused and think clearly.	0	1	2	3	4
15.	I prefer to take the lead in solving problems rather than letting others make all the decisions.	0	1	2	3	4
16.	I am not easily discouraged by failure.	0	1	2	3	4
17.	I think of myself as a strong person when dealing with life's challenges and difficulties.	0	1	2	3	4
18.	I can make unpopular or difficult decisions that affect other people, if it is necessary.	0	1	2	3	4
19.	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	0	1	2	3	4
20.	In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	0	1	2	3	4
21.	I have a strong sense of purpose in life.	0	1	2	3	4
22.	I feel in control of my life.	0	1	2	3	4
23.	I like challenges.	0	1	2	3	4
24.	I work to attain my goals no matter what roadblocks I encounter along the way.	0	1	2	3	4
25.	I take pride in my achievements.	0	1	2	3	4

PTSD CHECKLIST-CIVILIAN FORM (PCL-C)

Instructions to patient: "Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully and then fill in the circle of the response to indicate how much you have been bothered by that problem **IN THE PAST MONTH**." Please fill in ONE option only for each question."

Not at all=1   A little bit=2   Moderately=3   Quite a bit=4   Extremely =5

1.	Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?	1	2	3	4	5
2.	Repeated, disturbing dreams of a stressful experience from the past?	1	2	3	4	5
3.	Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?	1	2	3	4	5
4.	Feeling very upset when something reminded you of a stressful experience from the past?	1	2	3	4	5
5.	Having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of a stressful experience from the past?	1	2	3	4	5
6.	Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it?	1	2	3	4	5
7.	Avoid activities or situations because they remind you of a stressful experience from the past?	1	2	3	4	5
8.	Trouble remembering important parts of a stressful experience from the past?	1	2	3	4	5
9.	Loss of interest in things that you used to enjoy?	1	2	3	4	5
10.	Feeling distant or cut off from other people?	1	2	3	4	5
11.	Feeling emotionally numb or being unable to have loving feelings for those close to you?	1	2	3	4	5
12.	Feeling as if your future will somehow be cut short?	1	2	3	4	5
13.	Trouble falling or staying asleep?	1	2	3	4	5
14.	Feeling irritable or having angry outbursts?	1	2	3	4	5
15.	Having difficulty concentrating?	1	2	3	4	5
16.	Being "super alert" or watchful on guard?	1	2	3	4	5
17.	Feeling jumpy or easily startled?	1	2	3	4	5

SELF-COMPASSION SCALE (SCS)

How I typically act towards myself in difficult times? Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

1=Almost never true   2=Rarely true 3= Sometimes true 4= Often true 5= Almost always true

1. I'm disapproving and judgmental about my own flaws and inadequacies.	1	2	3	4	5
2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.	1	2	3	4	5
3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.	1	2	3	4	5
4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.	1	2	3	4	5
5. I try to be loving towards myself when I'm feeling emotional pain.	1	2	3	4	5
6. When I fail at something important to me I become consumed by feelings of inadequacy.	1	2	3	4	5
7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.	1	2	3	4	5
8. When times are really difficult, I tend to be tough on myself.	1	2	3	4	5
9. When something upsets me I try to keep my emotions in balance.	1	2	3	4	5
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.	1	2	3	4	5
11. I'm intolerant and impatient towards those aspects of my personality I don't like.	1	2	3	4	5
12. When I'm going through a very hard time, I give myself the caring and tenderness I need.	1	2	3	4	5
13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.	1	2	3	4	5
14. When something painful happens I try to take a balanced view of the situation.	1	2	3	4	5
15. I try to see my failings as part of the human condition.	1	2	3	4	5
16. When I see aspects of myself that I don't like, I get down on myself.	1	2	3	4	5
17. When I fail at something important to me I try to keep things in perspective.	1	2	3	4	5
18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.	1	2	3	4	5
19. I'm kind to myself when I'm experiencing suffering.	1	2	3	4	5
20. When something upsets me I get carried away with my feelings.	1	2	3	4	5
21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.	1	2	3	4	5
22. When I'm feeling down I try to approach my feelings with curiosity and openness.	1	2	3	4	5
23. I'm tolerant of my own flaws and inadequacies.	1	2	3	4	5
24. When something painful happens I tend to blow the incident out of proportion.	1	2	3	4	5
25. When I fail at something that's important to me, I tend to feel alone in my failure.	1	2	3	4	5
26. I try to be understanding and patient towards those aspects of my personality I don't like.	1	2	3	4	5

PATIENT HEALTH QUESTIONNAIRE (PHQ9)

Over the last two weeks, how often have you been bothered by the following problems?
0=Not at all; 1=Several days; 2=More than half; 3=Nearly every day

1.	Little interest or pleasure in doing things	**0**	**1**	**2**	**3**
2.	Feeling down, depressed or hopeless	**0**	**1**	**2**	**3**
3.	Trouble falling or staying asleep OR sleeping too much	**0**	**1**	**2**	**3**
4.	Feeling tired or having little energy	**0**	**1**	**2**	**3**
5.	Poor appetite OR overeating	**0**	**1**	**2**	**3**
6.	Feeling bad about yourself OR that you are a failure OR have let yourself or your family down	**0**	**1**	**2**	**3**
7.	Trouble concentrating on things, such as reading a newspaper or watching television	**0**	**1**	**2**	**3**
8.	Moving or speaking so slowly that other people could have noticed OR the opposite, being so fidgety or restless that you have been moving around a lot more than usual	**0**	**1**	**2**	**3**
9.	Thoughts that you would be better off dead or thoughts of hurting yourself in some way	**0**	**1**	**2**	**3**

WORK & SOCIAL ADJUSTMENT SCALE (WSAS)

Problems sometimes affect people's ability to do day-to-day tasks in their lives. To rate their problems look at each section and determine on the scale provided how much their problem affects their ability to carry out the activity.

0 ....1 .... 2 ....3 .... 4 .... 5 .... 6 ....7......... 8
Not at all   Slightly   Definitely   Markedly   Very Severely

1.	**Work**: How much does your problem effect your work or your ability to work (if you are retired please rate zero)	☐
2.	**Home Management**: Cleaning, tidying, shopping, cooking, looking after home/children, paying bills etc.	☐
3.	**Social Leisure Activities**: With other people, e.g. parties, pubs, outings, entertaining etc.	☐
4.	**Private Leisure Activities**: Done alone, e.g. reading, gardening, sewing, hobbies, walking etc.	☐
5.	**Family and Relationships**: Form and maintain close relationships with others including people that I live with.	☐

KESSLER (K10)

The following ten questions ask about how you have been feeling in the last four weeks. For each question, please select the option that best describes the amount.
**1=None of the time; 2=A little of the time; 3=Some of the time;
4=Most of the time; 5=All of the time**

1.	In the last four weeks, about how often did you feel tired out for no good reason?	1	2	3	4	5
2.	In the last four weeks, about how often did you feel nervous?	1	2	3	4	5
3.	In the last four weeks, about how often did you feel so nervous that nothing could calm you down?	1	2	3	4	5
4.	In the last four weeks, about how often did you feel hopeless?	1	2	3	4	5
5.	In the last four weeks, about how often did you feel restless or fidgety?	1	2	3	4	5
6.	In the last four weeks, about how often did you feel so restless you could not sit still?	1	2	3	4	5
7.	In the last four weeks, about how often did you feel depressed?	1	2	3	4	5
8.	In the last four weeks, about how often did you feel that everything was an effort?	1	2	3	4	5
9.	In the last four weeks, about how often did you feel so sad that nothing could cheer you up?	1	2	3	4	5
10.	In the last four weeks about how often did you feel worthless?	1	2	3	4	5

APPENDIX 8.7: DISCHARGE REVIEW

CLINICAL GLOBAL IMPRESSIONS-IMPROVEMENT (CGI-I)

Rate the total improvement whether or not, in your judgment, it is due entirely to CBT. Compared to his/her condition at baseline (screening) how much has he /she changed?

1. Very much improved Nearly all better; good level of functioning; minimal symptoms; represents a very substantial change.	☐
2. Much improved Notably better with significant reduction of symptoms; increase in the level of functioning but some symptoms remain.	☐
3. Minimally improved Slightly better with little or no clinically meaningful reduction of symptoms. Represents very little change in basic clinical status, level of care, or functional capacity.	☐
4. No change Symptoms remain essentially unchanged.	☐
5. Minimally worse Slightly worse but may not be clinically meaningful; may represent very little change in basic clinical status or functional capacity.	☐
6. Much worse Clinically significant increase in symptoms and diminished functioning.	☐
7. Very much worse Severe exacerbation of symptoms and loss of functioning.	☐

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