

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

INCREASING HOMEWORK COMPLIANCE  
BY USING THE GUIDING MODEL FOR  
PRACTICE:  
AN ANALOGUE STUDY

A thesis presented in partial fulfilment of the requirements for  
the Master of Arts  
At Massey University, Albany

ANNA CONNOLLY

2008

## Abstract

Homework assignments are considered a fundamental component of Cognitive Behavioural Therapy and are believed to be significant in assisting to produce and maintain treatment gains. However, gaining clients compliance to homework tasks remains a significant challenge. An analogue study of a single session relaxation intervention was conducted to test the guiding model for practice (Kazantzis, MacEwan & Dattilio, 2005); designed to provide therapists with a step-by-step guide of how to systematically administer homework in therapy. Forty four participants were randomly assigned to one of two conditions. The systematic condition ( $n = 21$ ) was designed to administer homework following the guiding model, while the non-systematic condition ( $n = 23$ ) followed standard therapy practice. Hypotheses posited that participants in the systematic group would display greater levels of engagement in homework; would have more positive beliefs in completing the homework; that greater adherence to the homework would correlate positively with reductions in anxiety; and that the systematic group would show a greater reduction in anxiety. In relation to engagement in homework the results found a statistically significant difference in the mean ranks of homework compliance between the two groups. The Mann-Whitney U result was 182 ( $z = -1.48$ ) with an associated probability of .14, showing that participants in the systematic group did have higher levels of homework compliance. A MANOVA calculation was used to assess the systematic group for more positive beliefs in completing homework. The results found significant differences in two of the four Homework Rating Scale II (HRS) subscales; behaviour:  $F(1, 42) = 1.83, p = .184$ , partial eta squared = .042; and consequences/synthesis:  $F(1, 42) = 2.93, p = .094$ , partial eta squared = .065. The other two subscales of the HRS; beliefs and situation, were not administered differently between groups, providing further support for the difference of homework administration. Partial support was found for correlations between homework practice and anxiety. While three of the four correlations were significant, it was found that state anxiety actually increased as practice increased, however, trait anxiety was found to reduce as homework levels increased. No significant group differences were found in anxiety reduction. Implications of these findings are discussed.

## Acknowledgements

I would firstly like to express my gratitude to Dr. Nikolaos Kazantzis for the support and depth of knowledge that he shared during the research process. Nik also organised the vast amount of training that was required in order for this project to be undertaken, including providing a number of training sessions himself. Nik's time commitment to this project and his feedback along the way has been invaluable.

I would also like to thank my research colleagues Jeanne, Carol, Michael and Rachel who voluntarily gave up their time to rate the audiotapes and ensure that the project could be completed. Jeanne was extremely supportive and offered her time, textbooks and advice throughout the project. Thank you so much. A warm and well-deserved thank you must also go to Margo who offered her time and knowledge throughout the statistical process required for this project. I'm sure I would still be there today if it wasn't for your support and assistance.

Lastly, I wish to thank my husband Eilian and my two sons Cody and Luke. Thanks must also go to my parents Christine and Kerry for their ongoing support, encouragement, knowledge and love throughout this long process. It has not gone unnoticed and I could not have achieved this study without you.

# TABLE OF CONTENTS

Abstract .....	ii
Acknowledgements .....	.iii
List of Tables .....	.viii
List of Figures .....	.x

## CHAPTER 1

### INTRODUCTION

1.1. Overview of Chapters .....	1
1.2. Homework Definition .....	3
1.3. Homework Compliance .....	5

## CHAPTER 2

### THEORETICAL DETERMINANTS OF HOMEWORK COMPLIANCE

2.1 Respondent (Classical) Conditioning .....	7
2.2 Operant Conditioning .....	9
2.3 Generalisation and Maintenance .....	9
2.4 Cognitive Theories .....	10

## CHAPTER 3

### EMPIRICAL BASIS OF HOMEWORK COMPLIANCE

3.1 Treatment Outcome and Homework Compliance .....	16
3.2 Therapist Factors and Homework Compliance .....	18
3.3 Client Factors and Homework Compliance .....	21

# TABLE OF CONTENTS (Continued)

## CHAPTER 4

### MODELS OF THE ADMINISTRATION OF HOMEWORK IN PRACTICE

- 4.1 Existing Models and Recommendations for Practice. . . . .24
- 4.2 Guiding Model for Practice. . . . .27

## CHAPTER 5

### THE PRESENT STUDY

- 5.1 Research Objectives. . . . .31
- 5.2 Standardised Homework. . . . .32
- 5.3 Design. . . . .34
- 5.4 Sample. . . . .35
- 5.5 Anxiety. . . . .36

## CHAPTER 6

### COMPLIANCE ASSESSMENT

- 6.1 Overview of Compliance Assessment. . . . .38
- 6.2 Homework Rating Scale II. . . . .39

## CHAPTER 7

### METHOD

- 7.1 Sample. . . . .43
- 7.2 Researcher. . . . .46
- 7.3 Setting. . . . .46
- 7.4 Experimental Design. . . . .47
- 7.5 Relaxation Technique. . . . .47

## TABLE OF CONTENTS (Continued)

7.6	Relaxation Training Conditions. . . . .	49
7.6.1	Systematic Administration Condition. . . . .	49
7.6.2	Non-Systematic Administration Condition. . . . .	61
7.7	Procedure. . . . .	63
7.8	Measures. . . . .	65
7.8.1	Client Adherence Measure. . . . .	65
7.8.2	Researchers Adherence Measure. . . . .	65
7.8.3	Anxiety Measure. . . . .	66

### CHAPTER 8

#### STATISTICAL ANALYSIS PROCEDURE

8.1	The Mann-Whitney, MANOVA, MANCOVA and Spearman's rho Procedures. . . . .	67
8.2	Statistical Power and Standardised Mean Difference . . . . .	70

### CHAPTER 9

#### RESULTS

9.1	Inter-rater agreement. . . . .	73
9.2	Adherence to Homework . . . . .	79
9.3	Beliefs in completing homework. . . . .	82
9.4	The effects of homework adherence on anxiety. . . . .	84
9.5	Changes to the levels of anxiety. . . . .	86

# TABLE OF CONTENTS (Continued)

## CHAPTER 10

### DISCUSSION

10.1	Overview of studies aims. . . . .	88
10.2	Analysis overview. . . . .	88
10.3	Inter-rater Agreement. . . . .	89
10.4	Adherence to the Homework. . . . .	92
10.5	Beliefs in Completing Homework. . . . .	94
10.6	The effects of homework adherence on anxiety. . . . .	98
10.7	Changes to the levels of anxiety. . . . .	100
10.8	Clinical Implications. . . . .	101
10.9	Limitations. . . . .	102
10.10	Implications for Future Research. . . . .	106
10.11	Conclusion. . . . .	106
<b>REFERENCES.</b>	. . . . .	<b>108</b>
<b>APPENDIX A</b>	Information Sheet and Consent Form. . . . .	<b>121</b>
<b>APPENDIX B</b>	Participant Feedback. . . . .	<b>125</b>
<b>APPENDIX C</b>	Rationale and Procedure for the Relaxation Technique. . . . .	<b>128</b>
<b>APPENDIX D</b>	Class Presentation used to Recruit Participants. . . . .	<b>131</b>
<b>APPENDIX E</b>	Telephone Screening Questionnaire. . . . .	<b>137</b>
<b>APPENDIX F</b>	Session Two Handout – Extending your relaxation skills. . . . .	<b>139</b>
<b>APPENDIX G</b>	Advertisement for Recruiting Participants. . . . .	<b>143</b>

## LIST OF TABLES

<b>Table 1</b>	Subscales of the HRS II. . . . .	40
<b>Table 2</b>	Descriptive data on Participants. . . . .	45
<b>Table 3</b>	Rater by Rater Cross-Tabulations for HAACS Adherence Measure for Rater Pair 1. . . . .	73
<b>Table 4</b>	Rater by Rater Cross-Tabulations for HAACS Adherence Measure for Rater Pair 2. . . . .	73
<b>Table 5</b>	Percent of between-Rater Agreement for HAACS Adherence Ratings for Rater Pair 1. . . . .	74
<b>Table 6</b>	Percent of between-Rater Agreement for HAACS Adherence Ratings for Rater Pair 1. . . . .	75
<b>Table 7</b>	Frequency of Researcher's Behaviour Adherence and Rater Agreement for HAACS Design & Assign Sections for the Systematic Condition. . . . .	77
<b>Table 8</b>	Frequency of Researcher's Behaviour Adherence and Rater Agreement for HAACS Design & Assign Sections for the Non-Systematic Condition. . . . .	78
<b>Table 9</b>	Percentage Analysis of the Frequency of Homework . . . . .	80
<b>Table 10</b>	Mean Scores and Standard Deviations for measures of the HRS II as a Function of Group Membership. . . . .	83
<b>Table 11</b>	Intercorrelations for the four HRS II Subscales for the Systematic and Non-Systematic Groups. . . . .	84

## LIST OF TABLES (Continued)

<b>Table 12</b>	Intercorrelations for the STAI Scores and Quantity of Homework Completed. . . . .	86
<b>Table 13</b>	Mean Scores and Standard Deviations for Measures of the STAI as a function of Group Membership. . . . .	87
<b>Table 14</b>	Correlation Coefficients for Relations between STAI State and Trait Scores as a function of Group Membership. . . . .	87

## LIST OF FIGURES

Figure 1	Transtheoretical Model. . . . .	14
Figure 2	Integrating homework into therapy using the guiding model for practice. . .	28
Figure 3	The Generic Cognitive Model of Anxiety. . . . .	50
Figure 4	The Five Part Model. . . . .	51
Figure 5	Session One- Homework Design. . . . .	53
Figure 6	Session One – Homework Assign. . . . .	56
Figure 7	Session Two – Homework Review. . . . .	60

# CHAPTER 1

## Introduction

### *1.1 Overview of chapters*

The present study aims to assess a newly designed ‘guiding model for practice’ developed to assist therapists with increasing their clients’ uptake of homework. Thus, this introductory chapter aims to provide an overview of homework and its utility within Cognitive Behavioural Therapy (CBT), together with the issues faced in gaining clients’ compliance with homework tasks.

Chapter 2 provides a summary of the behavioural and cognitive theoretical determinants of homework compliance. It presents an overview of classical and operant conditioning, as well as the generalisation and maintenance of homework. The chapter concludes with an overview of cognitive theories including discussion of social learning and social cognition models.

Chapter 3 outlines the empirical support for the use of homework within Cognitive Behavioural Therapy. It highlights the utility of homework assignments and argues that sufficient evidence exists to suggest that the outcome of treatment is significantly enhanced when clients complete their homework. Treatment outcomes of therapy, with and without the use of homework, is presented, as is empirical research around homework compliance and therapist and client factors.

Models and heuristics designed to increase the uptake of homework are presented in Chapter 4. A brief review and critique of key models and their recommendations for practice is discussed, before the new guiding model for practice is outlined.

The aims of the present study are presented in Chapter 5. It summarises the importance of homework in therapy and outlines the research objectives of the study. The four hypotheses of the study are considered and discussed. The necessity of standardising the homework is outlined and an overview provided on relaxation — the homework intervention utilised in the study. The rationale is presented for using an analogue design, before briefly outlining the sample required for the study. Due to the possibility that many of the participants may have high levels of anxiety or stress in their lives, the chapter concludes with a short overview of anxiety.

Chapter 6 examines the challenges of how to accurately measure homework compliance. There are a number of issues that occur when using a single item measure and these are discussed before introducing the Homework Rating Scale II. This newly designed measure enables the client to provide a self-report on both the quality and quantity of the homework. Its utility and design are discussed.

The method used in this study is outlined in Chapter 7. Included within this section is a comprehensive description of the systematic and non-systematic protocols utilised in this study in teaching relaxation. An outline of the procedure and measures is also provided.

Chapter 8 offers an overview of the statistical analysis procedures conducted using the Statistical Package for the Social Sciences (SPSS) version 13.0. Included within this chapter is a consideration of the importance and use of statistical power.

The results for the study can be found in Chapter 9. These are separated and presented in four sections, each relating to one hypothesis. In addition, the results of the analysis of the inter-rater agreement and researcher adherence to the protocols are presented.

Finally, Chapter 10 presents an overall discussion of the results, again separated into the hypotheses, the inter-rater agreement and researcher adherence sections. The chapter also examines possible clinical implications of the guiding model for practice. An analysis of the study's limitations is provided, as are the implications for future research. Chapter 10 concludes with a summary of the results of the study and their potential application.

## ***1.2 Homework definition***

Homework is the generic term used for a wide range of activities that are completed by clients in between therapy sessions. More specifically, it refers to therapeutic tasks that assist the client to maintain, as well as generalise, in-session learning to their everyday situations in which their problems exist (Kazantzis & L'Abate, 2005). Homework is an important component of many therapies. Surveys of therapist opinions and attitudes support the importance of homework assignments when treating various problems independent of theoretical orientation (Kazantzis, Lampropoulos & Deane, 2003; Kazantzis & Deane, 1998; Kazantzis & Deane, 1999), including experiential therapies (Greenberg, Watson & Goldman, 1988), systematic forms of therapy (e.g., Boscolo,

Cecchin, Hoffman & Penn, 1987), behavioural therapy (Shelton & Levy, 1981b), solution-focused therapies (e.g., DeJong & Berg, 2002), dynamic therapies (Badgio, Halperin & Barber, 1999) and Cognitive Behavioural Therapy (Beck, Rush, Shaw & Emery, 1979).

Homework assignments are viewed as a key component of Cognitive Behavioural Therapy (Kazantzis & L'Abate, 2005). Compliance with homework enhances a client's ability to develop their coping skills and aims over time to enable the client to become independent of the therapist. Research has found that clients who comply with homework recommendations, within the cognitive therapy paradigm, benefit more than clients who do not (Bryant, Simons & Thase, 1999). Furthermore, it is theorised that if therapists gain compliance for homework tasks, they may also achieve higher levels of motivation, involvement and commitment from clients, ultimately introducing a tangible and understandable change process into the clients' coping style (Scheel, Hanson & Razzhavaikina, 2004).

There is a wide range of tasks that constitute homework. However, a broad definition of homework is assignments that are generally planned therapeutic activities, where the specific activities are selected predominantly from the empirically supported Cognitive Behavioural Therapy model for that client's particular presenting problem (i.e., depression) (Kazantzis, MacEwan & Dattilio, 2005). The task is then tailored to meet the client's specific needs based on their individual conceptualisation. The aim is for the homework assignments to be tailored and designed collaboratively with a focus on the client's goals for therapy (Kazantzis, MacEwan & Dattilio, 2005). Specifically within Cognitive Behavioural Therapy, however — as also within various other therapies — homework denotes the main process in which clients experience change both behaviourally and cognitively. Through the use of homework, clients are able to learn new skills,

practice them within their own environment, and experiment with new behaviours and thought patterns. For example, a client may present to therapy with social anxiety. If it was established that the anxiety was mediated by a deficit of social skills, then the homework may revolve around some social skills practice (Friedberg & McClure, 2003).

### ***1.3 Homework compliance***

Homework is considered important in therapy as it engages the client in working towards their goals between therapy sessions (Kazantzis & Lampropoulos, 2002). This can enable a client to become self-sufficient and integrate a number of healthy strategies more quickly into their everyday lives (Kazantzis & L'Abate, 2005). Several studies suggest that homework compliance is related to better outcomes (see further Chapter 3), thus supporting the importance for clients to comply with the homework tasks set them. However, engaging clients in homework represents a significant challenge, with client non-completion of homework identified as a frequent occurrence (Leahy, 2002; Gilbertson, 2001).

Within CBT, while homework is considered a vital component of the therapy, existing data do not explain *how* homework produces effects on CBT outcomes. A clear theoretical and empirical understanding of the mechanisms by which homework produces its effects is required. Such an understanding would form the foundation for evidence-based guidelines to improve the process psychologists use to integrate homework into CBT, thus supporting an increase in levels of homework compliance and more positive outcomes for clients.

There are a number of theoretical determinants that relate to homework compliance. Chapter 2 reviews the behavioural theories of respondent (classical)

conditioning, operant conditioning, and the cognitive theories. Its aim is to outline the theoretical basis of the factors that can impact on an individual's compliance with homework tasks.

## CHAPTER 2

### Theoretical Determinants of Homework Compliance

In 1979 Beck and his associates outlined a number of factors that were important in the process of therapy. One of those key factors was homework. Within Cognitive Behavioural Therapy today it is considered important for clients to take ownership of their learning and extend their therapy between sessions by completing the homework assignments discussed and planned in session. While homework assignments are widely used by practitioners, achieving clients' engagement in the homework remains a considerable challenge. As will be outlined in this section, there remains a lack of understanding and knowledge of precisely *how* homework produces its effects; as well as of *what* the key components are that assist in the successful administration of homework during the therapy session, to best gain clients' engagement in the homework task. Various models developed around administering homework have been criticised for their lack of understanding of the theoretical and empirical mechanisms by which homework produces its effects. The purpose of this chapter is to outline the key behavioural and cognitive theories that are relative to homework and that can provide the foundation of the use of homework within CBT.

#### ***2.1 Respondent (Classical) conditioning***

Classical conditioning is a type of learning where a neutral stimulus known as the conditioned stimulus (CS) is paired with an unconditioned stimulus (UCS) to bring about a conditioned response (CR). Prior to any learning, the UCS would bring about an unconditioned response (UCR). The theorist Ivan Pavlov (1849–1936) used food as his unconditioned stimulus, which brought about salivation (an UCR) from the dogs in his

experiments (Lefrancois, 1994). This response was identified as reflexive rather than learned. During learning, the dogs would hear a bell before they were fed (CS), then presented with food (UCS), which brought about the UCR as before. After learning had occurred, the bell (CS) was rung but no food was presented; however, the dogs still responded through salivation and hence a CR had been developed. Pavlov therefore found that through conditioning and pairing a CS with an UCS he could eventually bring about a conditioned response.

The effect of the conditioning process described above is that a conditioned response can be extinguished by maintaining exposure to the conditioned stimulus while simultaneously reducing or eliminating the conditioned response.

With regard to homework assignments, classical conditioning processes are apparent in the behavioural tasks used during the treatment of disorders such as depression and anxiety. In the treatment of anxiety specifically the aim may be to expose and desensitise a client to a situation or object that causes them a high level of anxiety. For example, in utilising a systematic desensitisation process the client would be exposed to the situation or object they feared, so that their fear could extinguish over time. Initially they would receive an extremely low level of exposure so as not to provoke a high level of anxiety; however, gradually, over time, the intensity of the stimulus would be increased, until such time that anxiety is no longer provoked. This exposure can be conducted during sessions, and graduated tasks can be set for homework between sessions. Relaxation procedures are often introduced when using systematic desensitisation, as it enables a new response to be developed (relaxation) which counter-conditions the previous conditioned response (anxiety).

## ***2.2 Operant conditioning***

Operant conditioning — a process where responses are modified by their consequences (Barlow & Durand, 2002) — is another form of learning. That is, an individual's behaviour changes because of what follows the behaviour. The law of effect states that behaviour is either weakened or strengthened depending on the consequences of that behaviour. The theory being that consequences that are negative will reduce the behaviour, while consequences that are positive will increase the behaviour, and consequences that are neither negative nor positive will extinguish the behaviour (Kazantzis & L'Abate, 2005). If the theory of operant conditioning is considered within the context of homework, the clinician can set a homework task for the client that enables them to test possible functions of certain behaviours and assess the consequences.

In summary, utilising the classical and operant conditioning principles within homework tasks means that behaviours may operate to change cognitions, reduce physical symptoms, or impact on emotions. It may enable a feeling of progress or success for that individual and can determine the extent to which the behaviour is repeated (Kazantzis & Ronan, 2006).

## ***2.3 Generalisation and maintenance***

The ideal outcome of homework is to see the skills learnt during therapy practised for homework and have them generalised to the client's world. Within the behavioural paradigm the theoretical principle of generalisation applies to a transfer of skills from one setting to another (Kazantzis & L'Abate, 2005). It is also ideal to have these skills or behaviours maintained over time (Martin & Pear, 2003). A specific example of this occurrence would be a client who is taught a Progressive Muscle Relaxation technique in

session in order to assist in reducing their level of anxiety. They are then asked to practise this technique for their homework between sessions. After practising the skill at home and gaining a sense of mastery with the technique, the client then successfully utilises this newly acquired skill during stressful or anxious times in their life. Generalisation has truly taken place when they adapt the technique to fit their individual needs. For example, they may reduce the 16 different muscle groups down to 6 groups, so that relaxation can be gained in a much shorter time frame, enabling them to use the technique within other environments (e.g., at work) when stressed or anxious. Here, the participant has achieved more than simply practise and complete the homework task, they have acquired and begun to master a new skill, and from this skill gained benefits and positive outcomes (consequences). In developing a faster method of achieving relaxation, they have adapted the technique to suit their lifestyle. Thus, they have successfully generalised a skill to meet their own specific needs. This is an ideal outcome as opposed to having to learn a new skill or behaviour for every problem or situation they encounter. This new behaviour or skill acquired through homework is thus maintained over time, rather than being forgotten and potentially needing to be relearned on a later occasion (no maintenance).

#### ***2.4 Cognitive theories***

While behavioural theories certainly have some value, cognitive theorists propose that a behavioural focus is too simplistic. Cognitive theories emphasise that what is important in the learning process is the occurrence of complex cognitive and emotional processing of information (Barlow & Durand, 2002).

In considering homework within the context of cognitive theory, the social learning theories (Crosbie-Burnett & Lewis, 1993) fit most closely. While there are several theories based around social learning, they all comprise three key views:

- 1) Response consequences influence the probability that an individual will perform a specific behaviour again in a particular situation;
- 2) People learn by both observing others and participating; and
- 3) People are most likely to model behaviour demonstrated by those they identify with most.

The 'theory of reasoned action' (Ajzen & Fishbein, 1977), which has subsequently been revised as the 'theory of planned behaviour' (Ajzen, 1985, 1988) is useful to look at within the context of homework. This theory emphasises three aspects of behavioural intention: attitude toward doing the activity, perception of subjective norms about the behaviour, and perceived behavioural control. It highlights that a client's motivation is affected by how difficult the activity appears, as well as how much they can gain from engaging in the homework task. To facilitate the successful integration of homework into therapy, Beck et al. (1979) provided guidelines recommending therapists to work with their clients on a number of things. These included providing the client with a rationale for the homework task, considering the client's ability and their potential difficulties in carrying out the task, working with the client to problem-solve possible obstacles they may encounter, and talking with the client about their attitudes and beliefs in carrying out the homework assignment.

Social learning theory proposes that a balance between the costs and benefits of the activity governs a client's motivation or intention to engage in a homework assignment.

The theory postulates that each client will have highly individualised beliefs relating to the perceived costs and benefits of each homework assignment and that this will be based on the meaning they personally relate to it. The cost relates to the perceived difficulty or distress they believe it will cause, while the benefit relates to the perceived gains that may be achieved in understanding or skills acquired by completing the homework (Kazantzis & L'Abate, 2005).

Theories within the cognitive paradigm also suggest that a client's beliefs about the difficulty of the homework task can impact on their adherence. Therefore, a client's beliefs throughout all stages of considering the homework task through to homework completion can have meaning theoretically in relation to homework adherence (Kazantzis & Ronan, 2006).

Bandura (1986) further developed these foundations of social learning theory and called it social cognitive theory. He posited that people learn by watching how others behave, observing the consequences and then modelling the behaviour (Martin & Pear, 2003). His social cognitive theory emphasises that an individual develops cognitive strategies based on prior experiences that can determine future actions (Martin & Pear, 2003). That is, behavioural antecedents and consequences are moderated by our cognitions (Kazantzis & Ronan, 2006). Bandura's work also called attention to a bi-directional link between cognitive, emotional, behavioural, and physiological characteristics of an individual's experience. Within the context of homework, the therapist is encouraged to work collaboratively with the client to develop strategies that are applicable to them and their presenting problem. They then assign a homework task and suggest an experimental focus in order for the client to practise and learn from the experience. With practice the

client will ideally gain a sense of mastery and ultimately utilise the strategy in place of previous maladaptive behaviours.

There have been a number of social cognition models that have been formulated with regard to explaining health behaviours. The 'Health Belief Model' (Rosenstock, 1974) and the "Protection Motivation Theory" (Rippetoe & Rogers, 1987; Rogers & Prentice-Dunn, 1997) are reasonably similar motivational models of health behaviour. They suggest that an individual's behaviour is based on a personal cost/benefit analysis of the likely outcomes of various courses of action (Conner & Norman, 1996).

More recently, theorists have proposed multi-stage models of health behaviour. One such model developed in order to understand and explain clients' behaviours is the transtheoretical model (DiClemente et al., 1991; Prochaska & DiClemente, 1982). It offers a framework that describes how changes in people's behaviour may occur. Considering this model within the context of homework, clients can be at various stages of readiness to change. These stages are outlined below in Figure 1.

<b>Stages:</b>	<b>Description of Stage:</b>	<b>Example:</b>
Stage 1	Pre-contemplative stage	Not actively thinking about the homework task
Stage 2	Contemplative stage	Actively thinking about the homework task
Stage 3	Decision stage	Planning to carry out the homework task
Stage 4	Action stage	Putting their plan into action and carrying out the homework task
Stage 5	Maintenance stage	Continue practising the activity in their own time

*Figure 1.* Transtheoretical model

There are other similar models that generally differentiate between planning and action stages — such as the seven-stage ‘Precaution Adoption Process’ (Weinstein, 1988), the ‘Health Action Process Approach’ (Schwarzer, 1992), and the ‘Rubicon Model’ (Heckhausen, 1991). However, multi-stage models have been criticised for a lack of specific operational definitions for what actually happens in each stage in terms of social cognitive change (Armitage & Conner, 2000). Furthermore, within the context of homework adherence, knowledge is required on the variables that are hypothesised to be important in a client actually progressing from one stage to the next (Kazantzis & L’Abate, 2005).

The 'self-regulation theory of illness cognition' is one social cognition model that overtly focuses on the role of emotion as a predictor of health-protective behaviour (Leventhal, 1970). The model suggests that a threat triggers parallel motives in order to cope with the health threat and the subsequent emotional reaction. This advocates that the emotional reaction operates as a motivational factor towards the behaviour — thus suggesting that, with homework, assignments that focus on the presenting problem (threat) and reduce the emotional reaction (i.e., distress) are more likely to result in client adherence (Leventhal, Nerenz & Steele, 1984).

Another of the social cognitive models with relevance to homework is the 'elaboration likelihood model' (Petty & Cacioppo, 1981). This is a persuasion-based model that posits that attitudes can be formed by different routes. Thus, when clients are motivated to process thoughtfully, their cognitive responses to message content becomes important. This suggestion implies that persuasive messages from the therapist may be all that is necessary in order for the client to develop a positive attitude towards the homework task.

In summary, there are various theories and models developed over time that provide a theoretical basis for the use of homework within Cognitive Behavioural Therapy. The behaviour theory foundations lie with the classical and operant conditioning principles suggesting how homework produces its effects. The cognitive theories previously outlined highlight the variety of cognitive mediating factors involved in the learning process and broadly propose various ideas for how homework might best be implemented within therapy to ensure clients adhere to homework between sessions.

## CHAPTER 3

### **Empirical Basis of Homework Compliance**

The goal of this chapter is to outline the empirical foundations of homework compliance. The chapter will present a review of the empirical research that has been conducted on treatment outcome and homework compliance, therapist behaviours and homework compliance, and client variables and homework compliance. The review of the empirical research will provide the foundation of knowledge required to understand the ‘guiding model for practice’ and its potential importance in gaining a more in-depth knowledge of the ingredients that are vital in increasing clients’ compliance with homework assignments. The importance of homework compliance is reflected in the empirical findings, which show that clients are more likely to benefit from therapy if they adhere to their homework assignments. Further, homework is believed to enable clients to learn, practise and apply adaptive behaviours and skills between sessions within their own environments.

#### ***3.1 Treatment outcome and homework compliance***

There has been an increase in research over the past few decades on the role that homework plays in psychotherapy. Various studies have examined therapies — both with and without homework assignments — with the aim of examining what effects, if any, homework may have had. The results have been inconsistent. Some studies have found that homework has produced statistically significant effects on treatment outcome when compared to conditions without homework (Kazdin & Mascitelli, 1982), while others have not detected any effects, or have failed to reach statistical significance (e.g., Blanchard, et al., 1991). A statistical power analysis of 27 studies (Kazantzis, 2000) found that some of

the studies were not sufficiently sensitive to detect any homework effects. Consequently, a meta-analysis of the 27 studies (N= 1702) was designed to overcome these power issues (Kazantzis, Dean & Ronan, 2000). The results indicate a strong relationship between the use of homework assignments and improved treatment outcomes, producing a standardised mean difference of .36. This suggests that, in practice, of those clients who complied with the homework, 68% would be likely to improve in therapy.

In relation to treatment outcome, there is controversy surrounding the quantity (amount of time spent) versus the quality (degree of learning) of homework. Research by Schmidt and Woolaway-Bickel (2000), which studied 48 patients with panic disorder, found that therapist ratings of homework *quality* were better predictors of outcome than the therapist ratings of homework *quantity*. A similar study of patients with panic disorder (Woods, Chambless & Steketee, 2002) found that quantity levels of homework compliance did not predict outcome. However, one of the two outcome measures on the quality ratings of homework compliance had a negative effect, suggesting that a higher quality of homework was a negative predictor of outcome. Another study (Bogalo & Moss-Morris, 2006) evaluated the role of engagement with homework tasks in a brief self-help CBT based intervention for irritable bowel syndrome. At the end of treatment their results showed that there were no significant differences between improvers and non-improvers in either the quality or quantity of homework completed. Yet the three month post treatment results found people who had symptom improvement had completed significantly more homework during their treatment. Furthermore the quality of this homework was greater than people who had not improved. Research conducted in 2005 by Rees, McEvoy, and Nathan, investigated both the quantity and the quality of homework completed during a 10-week group CBT treatment program for anxious and depressed patients. They found that

both quantity and quality of homework completed did predict outcome on measures of depression, anxiety and quality of life at post-treatment as well as at 1-month follow-up. The strongest results were found for the amount of homework completed. The implications of these results led the researchers to suggest that clinicians should encourage patients to complete homework even if the homework content is not completely accurate.

In conclusion, the varied results of treatment outcomes found in relation to the quality and quantity of homework completed suggests that both remain important and require further focus from researchers. What is clear is that there is strong empirical support which indicates that CBT with homework is more effective than CBT without homework (Bryant et al., 1999). Furthermore, research has shown that clients who do more homework have better outcomes than those who do little or no homework (Kazantzis, Ronan & Deane, 2001). These results provide a strong empirical rationale that supports the importance of homework within CBT.

### ***3.2 Therapist factors and homework compliance***

More recently there has been a focus on therapist behaviours and their possible impact on a client's compliance with homework assignments. This section will outline various studies completed in this area, and Chapter 4 will provide further information in relation to the various models and guidelines that have been hypothesised to assist in successfully gaining client compliance with homework assignments.

Some of the research has suggested that there are certain unhelpful therapist behaviours. One review suggested that therapists need to make clients aware that commitment, repeated practice, and hard work is required to achieve gains (Burns &

Auerbach, 1992). Research by Scheel, Hanson and Razzhavaikina (2004) outlined that non-compliance can occur if the therapist has specified homework that is not acceptable to the client. Additionally, even if it is acceptable, it still does not necessarily mean that the client will actually comply. Not reviewing previous homework with the client during session is another behaviour that appears to reduce the importance of, and compliance with, the homework task (Kazantzis, et al., 2005).

A number of therapist behaviours that increase homework compliance have been suggested. Beck et al., (1979) recommended the importance of providing the client with a strong rationale that was directly linked to their therapy goals and, by doing so, gaining the client's commitment to completing the homework. There have been a small number of studies that have aimed to identify therapist behaviours that can predict homework compliance. One such study (Startup & Edmonds, 1994), despite establishing a link between compliance and outcome, found that providing a rationale, client collaboration and clarity of explanation did not operate as predictors of homework compliance. In contrast, a revision of therapist competence ratings by Bryant, Simons & Thase (1999) found that reviewing homework assignments by therapists in session was positively related to homework compliance. Providing clients with a written copy of the homework assignment has been found to significantly improve rates of homework compliance in psychotherapy (Cox, Tisdelle & Culbert, 1988). Further, it's suggested that having an accurate understanding of what the homework involves is vital. A recent investigation found that there was only a 41% agreement level of recall between the therapist and the client of the homework recommendation (Scheel et al., 2004), suggesting a lack of clarity and specificity in relation to setting the homework task.

While there are a number of conflicting results in relation to both helpful and unhelpful therapist behaviours, there have been numerous recommendations regarding increasing homework compliance. Some of these include factors such as: writing out homework recommendations in session in order to reduce confusion (Scheel et al., 2004); providing a rationale for completing homework (Beck et al., 1979); gaining acceptability of the homework task (Conoley et al., 1994); and tailoring the homework to the individual (Beck et al., 1979).

While various therapist behaviours have been studied for their potential impact on homework compliance, research has also focused on investigating the factors required to enable a strong therapeutic relationship to develop. A number of positive therapist factors — such as warmth, genuineness, empathy, and curiosity — are believed to improve therapy outcome (Beck et al., 1979; Kazantzis et al., 2005). A recent study conducted with patients with psychosis sought, among other things, to examine the therapeutic alliance in relation to homework compliance (Dunn, Morrison & Bentall, 2006). It found that the therapeutic alliance did predict the level of homework compliance.

However, while many of these proposed factors appear important to gaining homework compliance, they should not be assumed to represent competence across all treatments (Waltz, Addis, Koerner & Jacobson, 1993). Despite the fact that treatment manuals have been developed in order to make the delivery of therapies purer and more consistent (Waltz et al., 1993), this does not automatically guarantee a level of competence or adherence within that treatment. This, in fact, requires a measurement of the aspects considered vital for *that* particular therapy.

In summary, the empirical research to date has resulted in some inconsistencies with regard to factors that are potentially helpful or unhelpful therapist behaviours. However, some of the studies designs have not been based on the underlying theoretical foundations for homework. Despite this shortcoming, they do provide important preliminary information about some of the process factors that may impact on homework compliance.

### ***3.3 Client factors and homework compliance***

There are a limited number of studies that have investigated the interaction between client and therapist factors with regard to predicting homework compliance. One such study, conducted by Worthington (1986), aimed to identify predictors of homework compliance. The results suggested that the client's prior history of homework compliance, early client involvement in homework assignments and the client's attitude to homework were the only predictors of compliance.

Consideration has also been given to some client factors that may impact on homework compliance. Two factors that have been investigated are levels of symptomology and comorbid disorders. In taking into account a client's levels of symptomology, it has been suggested that those with higher levels of distress may feel a greater need to work towards resolving their problems. One study that examined the link between client symptom severity and homework compliance found that in 56 patients with social phobia symptom severity was linked with compliance (Edelman & Chambless, 1993). However, this result was not replicated in a later study that involved clients with agoraphobia (Edelman & Chambless, 1995). Various other studies have provided conflicting results with regard to symptom severity. The theoretical basis of homework

compliance postulates that a client's decision to comply with a homework task is based on the perceived costs and benefits for them personally, as well as their beliefs about the task and their understanding of their ability to perform the task (Kazantzis & L'Abate, 2005). In addition, there are situational factors that can also have an impact — factors such as physiological, emotional, and cognitive symptoms — and can operate as triggers of homework compliance. Kazantzis, Deane, Ronan and Lampropoulos (2005) proposed that correlational studies assessing client factors such as symptom severity and homework compliance are likely to be missing key underlying theoretical foundations that operate to determine whether a client is likely to comply with a homework assignment.

Similarly, comorbid disorders are also thought to impact on homework compliance. One study investigating client compliance with exposure treatments for post-traumatic stress disorder found that compliance was related to severity of comorbid depression as well as to initial symptom severity (Scott & Stradling, 1997).

In 1994 a model of acceptability was developed (Conoley, Padula, Payton & Daniels, 1994) to investigate which variables might be important when gaining clients' acceptance in completing homework. The model required a matching between: (1) the problem and the recommendation; (2) the level that the recommendation was built on the client's strengths; and (3) the difficulty level of the recommendation. Seven raters viewing 37 archived videotaped counselling sessions tested the model. Using multiple regression analysis, the results suggested that the three variables did indeed contribute to predicting whether a client would implement the therapist's recommendation.

Other studies that have considered the therapist's process of designing and assigning the homework task, suggest that client beliefs regarding the difficulty and costs

of the task (i.e., effort, time, and complexity), the benefits of the task, the degree of encouragement from the therapist, and the ability to build on their existing skills (i.e., generalise or maintain behaviour) all influence the homework's acceptability (Conoley, et al., 1994). One such study (Mahrer, Gagnon, Fairweather, Boulet & Herring, 1994) assessed 31 session transcripts from psychologists and found that a number of therapy processes were associated with a client's commitment to carry out the homework. Those processes were: therapist encouragement, discussion of the client's willingness and readiness to carry out the homework task, defining the task in a specific and concrete way, seeking a contractual agreement from the client, and therapist follow-up of a client-initiated idea. All of these processes were found to impact on the client's level of commitment to the homework. The results of both of these studies (Conoley et al., 1994; Mahrer et al., 1994) provides empirical support for the guiding model for practice, which will be further introduced in Chapter 4.

In conclusion, while most studies to date have investigated one or two factors that could have an impact on client levels of homework compliance, many of the results have been conflicting or inconsistent. It has been recommended that future researchers place their focus on the theoretical foundations of homework and for research to focus on psychotherapy process issues, rather than whether homework compliance is associated with outcomes (Kazantzis et al., 2005). The following chapter provides an overview of the various models and heuristics that have been developed in relation to homework compliance before introducing a new guiding model for practice.

## CHAPTER 4

### Models of the Administration of Homework in Practice

#### *4.1 Existing models and recommendations for practice*

Within the CBT paradigm the administering of homework was outlined, albeit implicitly, by Beck, Rush, Shaw & Emery in 1979. Beck et al. (1979) highlighted the importance of a systematic approach to administering homework, as well as providing a number of key components required to successfully set homework tasks. The components included: strengthening the therapeutic relationship by collaboratively engaging the client in the development of the homework task itself; presenting each task as an experiment; providing a rationale for each homework task; providing a homework task that was clear, concise, and tailored specifically to the individual and their problems that were discussed in session; eliciting the client's reactions (thoughts and feelings) in regard to the homework both before and after they attempt it; and collaboratively problem-solving possible difficulties the client may have with the homework. They also recommended a review of the homework set in the previous session.

Gaining a client's compliance with homework has been an ongoing issue, and in 1981 Shelton & Levy (1981b) outlined a number of reasons for non-adherence to homework that were based on empirical work that proposed to improve medication compliance. These included: a mismatch of the client's abilities and the assignment difficulty; the setting of unrealistic goals from the therapist; a lack of positive reinforcement for completed homework; a lack of commitment from the client; and the client's expectations of therapy. Based on this knowledge, Shelton and Levy (1981a) developed a model with 11 propositions intended to increase the client's compliance with homework, recommending

that therapists use these as a checklist to work through in session. Their propositions for the therapists were:

- To ensure assignments contained specific detail regarding response and stimulus elements relevant to the desired behaviour;
- To give direct skills training when necessary;
- To ensure that homework compliance was reinforced;
- To commence with small homework requests and gradually increase the assignments;
- To use cueing;
- To gain a public commitment to comply from the client;
- To assist the client develop a private commitment to comply;
- To use cognitive rehearsal strategies to improve success with assignments;
- To try to anticipate and reduce the negative effects of compliance;
- To closely monitor compliance by using as many sources as possible;
- To use paradoxical strategies when necessary.

Adapted from *Behavioral Assignments and Treatment Compliance: A handbook of Clinical Strategies* by J.L. Shelton and R.L. Levy (1981).

In addition to these propositions, Shelton and Levy (1981a) recommended that therapists ascertain from their clients when, where, how often and for how long the homework should be practised. However, a more recent survey (Kazantzis & Deane, 1999) found that only a small number of CBT practitioners actually routinely followed Shelton & Levy's model when assigning homework.

As outlined in Chapter 2, the behavioural principles of classical and operant conditioning, generalisation and maintenance, together with various social cognitive models, offer a theoretical understanding of homework and provide the basis for the use of homework with CBT. The empirical research to date has provided support for homework based on clients' outcomes and has started to investigate various client, therapist, and task features that appear vital to homework compliance. It would make sense, then, that a homework model for practice would incorporate all these various characteristics in an attempt to guide practitioners and a more detailed understanding of the key features required to ensure homework compliance. Based on the existing knowledge of homework adherence from theoretical work and research, Detweiler and Whisman (1999) partially achieved this objective in their heuristic for understanding homework adherence. The heuristic was designed to incorporate characteristics of the therapist, characteristics of the client, and task characteristics, as well as their interrelationships — namely the client-therapist relationship, the description of the homework task, and the match between the client and the task. Using this heuristic framework, Detweiler & Whisman (1999) reviewed and reported on the existing research in each area and developed testable hypotheses for future research. The results of their research provided support for various aspects of each of the three characteristics. However, while the work of Detweiler and Whisman is an improvement on past models in that it aggregates the client, therapist, and task characteristics of past research, it is still limited by its lack of foundation on the theoretical components of homework. Furthermore, it does not provide a clear set of procedures for therapists to follow to ensure a systematic administration of all the factors that may increase clients' homework adherence.

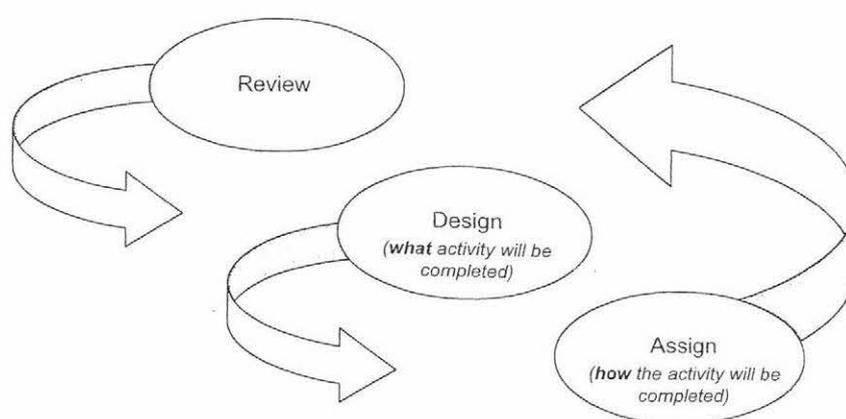
In response to this void, Malouff and Shutte (2004) developed a model offering a list of strategies for therapists that provide suggestions for increasing a client's homework compliance. The model offers six conditions to assist in facilitating homework adherence. These are: (1) the client understands what, how, where, and when to do the homework; (2) the client has the ability to do the homework; (3) the client has a degree of self-efficacy regarding the homework; (4) the client has a level of motivation for completing the homework that outweighs the obstacles to such completion; (5) the client has the opportunity to do the homework; and (6) the client remembers to do the homework. In conjunction, they provide 40 strategies to increase homework adherence based on their model.

Malouff and Shutte's model has offered a set of strategies for use within practice that, to date, other models have failed to achieve. Furthermore, in addition to their six clear conditions to assist in homework adherence, their 40 strategies provide examples and guidance for various situations that practitioners may face. While these factors appear strengths that previous models lack, a serious limitation once again is that the theoretical foundations of homework do not appear to have been considered or incorporated into their strategies. In critique of the recommendations offered by Malouff and colleagues, Kazantzis, Dattilio and MacEwan (2005) emphasise that the homework assignment needs to be based on an individualised conceptualisation for each client, furthermore, they highlight that the role of the therapeutic relationship has not been factored into the model.

#### ***4.2 Guiding model for practice***

As homework is a key component of the eclectic mix of therapies available in New Zealand today (Kazantzis, Lampropoulos & Deane, 2003; Kazantzis & Deane, 1998;

Kazantzis & Deane, 1999), further guidance on how to successfully administer homework is clearly needed. To that end, a new guiding model for practice has recently been developed by Kazantzis, MacEwan and Dattilio (2005). This model conceptualises the process of recommending and setting homework in three key stages: (1) designing the homework; (2) assigning the homework; and (3) reviewing the homework (see Figure 2). A number of recommended steps are to be followed in each of these three stages.



*Figure 2.* Integrating homework into therapy using the guiding model for practice (reproduced from Kazantzis, MacEwan & Dattilio, 2005).

Designed to overcome issues encountered by many of the previous models, the guiding model for practice attempts to offer a consolidated and explicit template that steers the practitioner through the numerous recommendations that exist in the literature with regard to homework adherence. Thus, it provides therapists with step-by-step guidelines to be adapted for use with each client according to their individualised conceptualisation. In comparison to previous models, the approach of Kazantzis et al., (2005) has four vital improvements: (1) a grounding in the foundations of both behavioural and cognitive theory; (2) a focus on key aspects of the therapist and therapist beliefs; (3) a focus on key

aspects of the therapeutic relationship; and (4) an emphasis on the use of individual conceptualisation, enabling the content and process of homework administration to be tailored to the specific needs of the client.

The guiding model for practice is the model that will be investigated in this study. The model will be used with one group of participants and compared to a second group of participants where the model will not be used to administer homework. Both groups will be taught relaxation which is also the homework task. The aim of this research is to assess if the new guiding model for practice does indeed increase clients compliance with homework. The present study will now be outlined in Chapter 5.

## CHAPTER 5

### The Present Study

As the preceding chapters have established, research demonstrates that homework enhances CBT outcomes. Homework assignments are a key aspect of helping clients gain and generalise skills to their everyday lives. However, engaging clients in homework represents a significant challenge, with non-completion of homework identified as a frequent occurrence. While numerous suggestions and models have been developed to assist practitioners with the process of administering homework in practice, to date these have not been grounded in the theoretical determinants of homework nor provided the flexibility of tailoring them to each client's individual conceptualisation. A new guiding model for practice (Kazantzis et al., 2005) has been developed in an attempt to overcome these limitations and to provide practitioners with a step-by-step model to assist with the process of administering homework in session.

This chapter sets out the research objectives of the present study including an outline of the four hypotheses. It also contains a definition and rationale for using relaxation, which was selected as the homework intervention for the study. An outline of the sample selected, together with the rationale behind the analogue design of the study, is also presented. The chapter concludes with an overview of anxiety in relation to the individuals who volunteered for the study. A brief definition of anxiety, how it can develop, and possible forms of treatment are provided.

## **5.1 Research objectives**

The broad aim of this research project is to test two of the three key steps of the guiding model for practice (Kazantzis et al., 2005), these being the designing and assigning stages of homework. The overall goal is to assess whether there is an increase in participants' homework compliance when following the protocol set out by the guiding model — i.e., following a systematic process of administering homework. This proposition will be tested by comparing a systematic versus a non-systematic planning of homework. These two conditions will be examined in detail in the methods section in Chapter 7.

There are 4 hypotheses designed to assess differences between the systematic (guiding model for practice) and non-systematic conditions. These are:

1. Participants in the systematic group will have higher levels of homework compliance;
2. Participants in the systematic group will have more positive beliefs in completing the homework;
3. Greater adherence to the homework will correlate positively with reductions in anxiety; and
4. Participants in the systematic group will show a greater reduction in anxiety.

The design and assign stages of the guiding model for practice under investigation have a number of recommended steps. The design stage has 8 key steps, while the assign stage has 6 key steps, all of which the systematic condition followed. Conversely, the non-systematic condition was designed to follow the regular occurrence of administering homework, as is generally conducted within a 'standard therapy' session. The procedures within this condition were based on self-report data gathered from practitioners in relation

to how homework is generally administered among today's practising psychologists (Kazantzis & Deane, 1999; Kazantzis, Lampropoulos & Deane, 2005). This present research was not designed as a study of therapy but study of as a single-session relaxation intervention.

## **5.2 Standardised homework**

The homework task set for both conditions was required to be standardised to reduce potential confounds and ensure the methodological rigour of the study. Relaxation was selected as the homework intervention as it could be standardised and is considered a low-risk intervention. Additionally, it does not require an identified disorder in order to benefit an individual, yet is also a technique used within psychotherapy. Thus, the results will have implications for clinical practice. The homework task of relaxation will now be outlined.

Derived from the Latin *relaxare*, the word 'relax' means 'to loosen' (Romas & Sharma, 1995). It is believed that through the process of 'loosening', we are able to restore the energy levels that have been depleted through our daily activities. Thus, relaxation is extremely important for individuals to maintain normal functioning. When our bodies function normally, relaxation is gained through sleep (Romas & Sharma, 1995). However, in stressful or anxious times we require additional strategies to assist us in conserving and restoring our energy levels.

Various relaxation strategies have been identified and proven effective adjuncts to the prevention as well as the management of occupational stress (Scheufele, 2000). Relaxation has also been used as part of the treatment and management of a variety of medical and

psychological disorders including, but not limited to, irritable bowel syndrome (Blanchard, 2001), migraines and headaches (Taylor, Farquhar, Nelson & Agras, 1977), hypertension (Hoelscher, Lichstein & Rosenthal, 1984), insomnia (Borkovec & Fowles, 1973), generalised anxiety (Rouillon, 2004; Fisher & Durham, 1999; Ost, 1985), various forms of cancer (Zaza, Sellick & Hillier, 2005; Robb, Williams, Duvivier & Newham, 2006), schizophrenia (Hesse, Sanchez, Ortiz & Pareja, 2005), asthma (Nickel, et al., 2005), and night eating syndrome (Pawlow, O'Neill & Malcolm, 2003). In addition, relaxation therapy has been found to contribute to the prevention and treatment of disease (Johnston, 1991).

Relaxation can be practised on an individual basis or in a group environment and is generally viewed as a valuable strategy to reduce levels of stress and tension or as a technique to be used in conjunction with other forms of treatment (D'Souza, 2003; Nickel et al., 2005; Zaza, Sellick & Hillier, 2005; Bambrink, 2004; Johnston, 1991). The particular technique selected for use within the present study is Progressive Muscle Relaxation, which was developed by Edmund Jacobson in the 1930's. In conjunction with other techniques, it has been used successfully as a technique in psychotherapy, behavioural therapy, and psychiatric treatment (Stetter, 2004). It has also been used on its own for its psychosomatic properties and is a well-established and scientifically based component in the treatment of psychosomatic, psychic, or psychiatric disorders excluding severe dementia and psychosis (Stetter, 2004). The specifics of the technique can be found in the methods section in Chapter 7.

### *5.3 Design*

This study aims to operate as a preliminary investigation in the process of assessing the guiding model for practice; and as such, an analogue study was considered the most appropriate form of design. An analogue design entailed that the sample was derived from individuals from within the non-clinical population. That is, the sample was screened to ensure that participants met set criteria, one of which was that they had not been previously identified with a mental health disorder. The full criteria of the study are described in the methods section in Chapter 7. Thus, while the study operated outside of the clinical population, the theoretical basis of the model was still tested.

While analogue studies have received some criticism, there have been numerous studies conducted that utilise analogue methods, with a large diversity as to their process. A recent analogue study focused on the therapist's empathetic processes (Hatcher et al., 2005) in order to assess whether psychotherapists can bridge perceived differences between their clients' life experiences and their own. The study recruited 93 experienced therapists to view 5 videotaped extracts based on actual cases. The results showed that while gender differences were found on measures of empathy, the therapist's ability to use reference points from their own experience may help to facilitate empathy. While this example of an analogue study utilised both fully qualified therapists and real-life cases — and therefore more closely modelled the clinical setting — there are also many analogue studies that do not.

While in the past analogue studies have been criticised for their lack of external validity — that is, their ability to generalise to the clinical situation (Kazdin, 1978) — this research was not designed as such. As a preliminary study in the process of assessing the

guiding model, it did not use clinical patients and is therefore not generalisable to a clinical setting. Nevertheless, in order to maintain internal validity, the study upheld a stringent methodology, requiring that all sessions were taped and assessed independently, thus ensuring that adherence to the protocol was closely monitored. Furthermore, standardisation of the training was upheld through the use of a standardised tape/CD developed by the researcher. Operating as a pilot study, the project was designed to assess the model's effectiveness on the general population; additional research can then be conducted using participants from the clinical population, which will more closely model a standard clinical setting.

#### **5.4 Sample**

The present study targeted participants from the general (i.e., non-clinical) population who experienced some stress, tension, or anxiety in their lives and sought to learn a relaxation technique. A non-clinical sample was selected for a number of reasons. Firstly, and most importantly, it was unethical to offer relaxation as a stand-alone treatment option for those with clinical levels of anxiety. Secondly, the study was not designed to offer additional treatment options nor was the researcher trained to provide these. Thirdly, those with an identified disorder may currently be on medication or be receiving psychotherapy treatment, both of which may operate as confounds to the study. Therefore, to ensure methodological rigour and maintain ethical standards, participants in the study were selected from within the non-clinical population.

## **5.5 Anxiety**

Stress, worry, and anxiety are common symptoms of the busy lives people lead today, many of whom operate with levels that are elevated but not rated at a clinical level. However, it was considered that those likely to volunteer themselves for the study would do so because of their existing feelings of stress or anxiety. For this reason, a brief overview of anxiety is provided.

Anxiety can be operationally defined as a future-oriented mood state, which is generally characterised by somatic symptoms of physical tension, together with apprehension about the future (Barlow & Durand, 2002). Moderate amounts of anxiety can prove useful, as we generally perform better when we are slightly anxious. Anxiety also plays a role when dangerous situations occur, due to its capacity to signal the body that immediate action must be taken (e.g., the fight or flight response). However, there are also excessive levels of anxiety that can occur and become maladaptive.

The line between a healthy level of anxiety and an unhealthy or pathological level of anxiety can be hard to determine. Various factors need to be considered, such as its intensity and duration, together with the individual's preoccupation with anxiety. Another factor is the quality of the anxiety provoking experience — that is, whether it is overwhelming or distressing for the individual, or merely unpleasant. In addition, the effects of the anxiety on the individual's behaviour and their general functioning need to also be assessed (Starcevic, 2005).

Anxiety can develop from a range of factors including life events, personality, genetics, and brain chemistry (Lysaker & Whitney, 2006). When anxiety reaches

excessive levels a disorder can develop. Anxiety disorders were introduced as a mental health disorder in 1980 and added as a distinct nosological group in the third edition of the Diagnostic and Statistical Manual of Mental Disorders. Anxiety disorders are the most common psychiatric illness to affect both adults and children (Barlow & Durand, 2002). There are a number of anxiety disorders — such as generalised anxiety disorder, obsessive-compulsive disorder, post-traumatic stress disorder, and social anxiety disorder. Each disorder has its own characterisations; for example, generalised anxiety disorder is characterised by excessive and unrealistic worry that lasts for six months or longer (Barlow & Durand, 2002).

While the goal of any anxiety treatment is to reduce the negative impact of anxiety, some of the treatment strategies require focusing on the worry or anxiety. Anxiety related homework assignments vary depending on the form of anxiety the client experiences. The homework may include practicing anxiety management strategies such as relaxation, deep breathing, muscle relaxation and mindfulness (Starcevic, 2005). Other homework assignments can be tasks such as monitoring anxiety levels, constructing exposure hierarchies, identifying and challenging automatic thoughts and engaging in various exposure situations (Leahy, 2005). There is promising evidence that a CBT treatment for some forms of anxiety, such as Generalised Anxiety Disorder (GAD) is effective and that client gains are maintained after the termination of treatment (Butler, Fennell, Robson, and Gerlder, 1991; Borkovec, Newman, Pincus, and Lytle, 2002).

## CHAPTER 6

### Compliance Assessment

#### *6.1 Overview of compliance assessment*

There is strong empirical support that homework enhances therapy outcomes. However, ensuring that clients adhere to homework remains a challenge. Homework compliance can be operationally defined as the extent to which a client's between-session behaviours follow the planned homework assignment from the previous session (Kazantzis, Deane & Ronan, 2005). However, with the range of potential homework tasks assigned, how is compliance best measured? With such variations in homework tasks it appears quite difficult for one universal metric of 'low', 'medium' or 'high' level of compliance to be used. Furthermore, it is believed that while some clinicians actively measure homework compliance, they may only be measuring a portion of the process. Indeed, many clinicians appear to rely on the *quantity* of homework completed only, forgoing any measure of its *quality*. It has been suggested that what should be determined as useful homework completion should ideally be related to the aims of the particular homework assignment for that client (Kazantzis, Deane & Ronan, 2005).

To date, there have been a number of methods designed for measuring homework completion. A review of these (Kazantzis, Deane & Ronan, 2004) found that client self-report was the most frequently utilised method. In the majority of cases, single-item global ratings of homework compliance are the most consistently used format for measuring homework compliance (38% of all studies). However, in the review conducted by Kazantzis et al. (2004) it was found that only 4 studies utilised the same self-report measure of homework compliance. This measure developed by Primakoff, Epstein & Covi

(1986), was developed in response to research design problems that resulted from a failure to assess and control for differential homework compliance. Primakoff et al., (1986) highlighted that design problems can not only limit a study's internal validity, but also make it difficult to compare studies that are allegedly similar, yet produce quite different results.

Consequently, self-report and single-item measures of homework compliance have been found to produce inconsistencies (e.g. Kazdin & Mascitelli, 1982), making it difficult to achieve direct comparisons between studies. Additionally, the single-item measures promote a focus on the assessment of the quantity of homework compliance rather than the quality of learning potentially being achieved by homework completion. While the quantity of the homework remains important, what is potentially a vital outcome of homework compliance is the acquisition of a new skill and a client's subsequent ability to maintain and generalise this skill within their everyday life.

## ***6.2 Homework Rating Scale II***

A measure has recently been developed that enables the client to provide a self-report on both the quality *and* quantity of the homework they have completed. The Homework Rating Scale II (HRS II; Kazantzis, Deane & Ronan, 2004) is a 12-item client self-report scale formulated to measure a number of factors relevant to the process of designing the homework, engaging in the homework, and reviewing the experience of having attempted the homework. Items are rated using a 5-point Likert scale. The construction of the HRS II was based on the theoretical and empirical foundations for homework (Kazantzis et al., 2005). Factor analysis of the HRS II within the statistical package AMOS specified that there were 4 factors or subscales that made up the HRS II

measure (Kazantzis et al., 2006). These subscales were used in the current study and are listed below in Table 1.

The behaviour subscale measures both the quantity and quality of homework completed. When clients carry out homework assignments, they often do so to varying degrees. Each client has different capabilities and beliefs about tasks and will therefore complete assignments at a different pace and skill level to another client. However, for each client it is clinically helpful to know how much homework has been completed and to what level of achievement.

Table 1

*Subscales of the HRS II*

<b>HRS II Subscales:</b>	<b>Items from the HRS:</b>
Behaviour	Quantity
	Quality
Synthesis/Consequence	Match with therapy goals
	Progress
	Difficulty
	Sense of Pleasure
	Sense of Mastery
Beliefs	Rationale
	Comprehension
	Specificity
	Collaboration
Situation	Obstacles

The synthesis/consequence subscale is made up of a match with therapy goals, progress, difficulty, sense of pleasure, and sense of mastery. Cognitive theories highlight the importance of investigating the clients' beliefs about the homework tasks as they may very well have beliefs or attitudes about both the task itself and their ability to successfully complete it. As previously outlined, behavioural and cognitive theories propose strong links between behaviour and its consequences and the subsequent costs versus the benefits of the behaviour. The HRS II assesses clients' beliefs in relation to these proposed links by asking about their perceived levels of difficulty in completing the homework task, how much they enjoyed doing the activity (pleasure), and whether they gained a sense of control over their problems as a result of completing the homework (mastery). Further, cognitive theories suggest that after engaging in an activity clients employ a synthesising process that allows them to learn and form conclusions based on their learning. The foundation for any homework assignment is that the client learns from their experience, and part of this learning process requires reflection on the task and consideration of whether it was helpful in assisting them to progress towards their therapy goals.

The beliefs subscale is made up of 4 of the HRS II questions: rationale, comprehension, specificity, and collaboration. Cognitive theory postulates that clients' beliefs are often based on their previous experiences and the experiences of others. Often, when these beliefs are further investigated they are found to be consistent with the client's presentation and conceptualisation (Kazantzis, Deane & Ronan, 2005). For therapists, this knowledge can be useful in linking the homework to a past experience in order to make the homework task more achievable for the client. Within this context, the HRS II assesses the degree to which the client understood the reason for completing the homework (rationale), the degree to which they understood what to do for the homework (comprehension), how

well they understood the guidelines for carrying out the homework (specificity), and whether they felt actively involved in planning the homework task (collaboration).

The last subscale, situation, is made up of the HRS II question around obstacles, which asks clients to rate the extent to which they may have experienced obstacles in completing the homework assignment. It is often found that, despite careful planning of the homework task, there are still obstacles that get in the way of completing the task. Obstacles can occur for practical reasons or they can develop from emotional, physiological, or cognitive triggers — factors that can all determine whether the homework will be completed or not.

The HRS II is utilised in the present study as the key measure of participants' homework compliance. It was considered an appropriate tool as it measures both quality and quantity of homework and is also based on the theoretical determinants of compliance. While new, the HRS II has gained some psychometric support, details of which can be found in the methods section in the following chapter.

## CHAPTER 7

### Method

#### *7.1 Sample*

Eighty individuals responded to the advertising and presentations (16 males and 64 females); of these, 31 did not meet the inclusion or exclusion criteria for eligibility into the study, 3 responded after data collection had been concluded, 1 did not attend for the first session, and 2 did not complete both sessions. The remaining 44 participants (36 females and 8 males) met all criteria and completed the study.

The inclusion criteria for the study required adult status (aged between 18 and 65 years of age); fluency in English — in order to be able to understand instructions when being taught the relaxation technique; an ability to travel to Massey University's Albany campus for both sessions; and having access to a tape or CD player to be able to practise the relaxation technique between sessions. Participants were excluded if they had previous experience with the Progressive Muscle Relaxation technique as this could operate as a potential confound to the study due to possible preconceived ideas of the technique's utility for them. Participant safety was considered paramount to the study, and therefore volunteers were excluded if they had a health issue that could potentially cause them harm when tensing various muscle groups within the procedure (e.g., high blood pressure). Individuals were also excluded if they had been diagnosed with a mental health disorder, if they were receiving or contemplating some form of psychiatric, psychological, or counselling treatment, or if they were taking any psychiatric medication or recreational drugs. A past mental health diagnosis, current use of drugs, or psychological treatment approach was considered potential confounds, as they could have an impact on the present

study's results. Additionally, various medications and/or drugs affect central nervous system activity, which also could potentially have operated as a confound in the study.

Table 2 outlines the demographic information for the 44 participants in the present sample. The majority of the participants were female ( $n = 36$ ), with a smaller number of males representing the data ( $n = 8$ ). The participants' ages ranged from 18 to 62 with a mean of 38.6 years of age. The majority of the participants were employed (61%), with a high proportion of the remaining participants identifying themselves as students (27%). The participants identified themselves with a wide range of cultures, with 59% affiliating themselves as New Zealand Europeans. Participants indicated that 38% were single, 36% were married, and 16% were divorced.

The Massey University Human Ethics Committee approved the study. The participants were provided with a description of the study (see Appendix A for information sheet and consent form); however, there was some deception, as the participants were blind to the knowledge that there were two conditions. This was necessary to ensure the confidentiality of the conditions, thereby reducing potential confounds that could have been caused through participant expectations.

The feedback from the participants at the conclusion of the study was positive with regard to both learning relaxation and the protocol used for the study. Detailed feedback from participants can be found in Appendix B.

Table 2

*Descriptive Data on Participants (N = 44)*

Variable	<i>n</i>	%
Gender		
Male	8	18
Female	36	82
Ethnicity		
New Zealand European	26	60
New Zealand European and Maori	2	5
Maori	1	2
Sri Lankan	1	2
Papa New Guinean	1	2
British	4	9
Chinese	3	7
French	1	2
Romanian	1	2
German	2	5
Macedonian	1	2
Malaysian-Chinese	1	2
Relationship Status		
Single	17	39
Married	16	37
Separated	1	2
Divorced	7	16
Independent parent	1	2
De facto	1	2
Dating	1	2
Employment		
Employed	27	61
Unemployed	2	5
Student	12	27
Self-employed	2	5
Full-time parent	1	2

## **7.2 Researcher**

The researcher collecting the data completed a Bachelor of Arts with a major in Psychology at Massey University in 2004. In order to undertake this project, the researcher was required to complete several CBT training courses, as well as courses in the protocol under investigation. Training included a two-day intensive training workshop on Cognitive Behavioural Therapy by one of the study co-ordinators, Professor Keith Dobson. It also included a 5-day intensive postgraduate training course entitled 'Theory and Practice of Cognitive Behavioural Therapy' at Massey University. This is an applied training course involving role-play demonstrations, role plays, and supervision in techniques. Additionally, the researcher took part in two protocol-training workshops that focused on the use of homework assignments in Cognitive Behavioural Therapy run by Dr Nikolaos Kazantzis. These were applied training workshops involving role-play demonstrations (both by video and in-vivo) of the study protocol, and individual feedback on the protocol adherence scale.

Within this project, the researcher was the only person involved with the participants. This entailed managing the recruitment process, handling enquiries, ensuring the selection criteria were met, and booking participants in and conducting both sessions for the two conditions. In addition, the CD or tape of the relaxation procedure (used for in-session training and homework) was developed and recorded by the researcher (based on the Bernstein, Borkovec & Hazlett-Stevens, 2000 text).

## **7.3 Setting**

The study was conducted at Massey University's Centre for Psychology in Albany. Each participant was provided with a warm and quiet clinical environment in which to

learn relaxation. The same room and La-Z-Boy chair was used each time, enabling standardisation of the environmental conditions.

#### ***7.4 Experimental design***

A randomised controlled independent samples design was employed for this analogue study. Using a single blind protocol, participants were randomly assigned to one of two conditions: systematic administration of homework and non-systematic administration of homework. These two conditions are fully outlined in section 7.6 of this chapter. Each participant was seen individually, and met with the researcher on two occasions.

#### ***7.5 Relaxation technique***

Relaxation was selected as the homework assignment for this study. It was selected as a suitable intervention for a number of reasons. Firstly, relaxation has previously been successfully utilised in brief therapies as either the focus of the therapy, or part of the therapy (Barrow, 1982; Parnell, 1998; Whitehead, 2005). Secondly, relaxation is a technique that can be standardised. Standardisation was vital to this study to reduce any possible confounds between the two conditions and to ensure that all participants were practising the same form of relaxation for homework. To achieve this objective, identical tapes and CDs were produced and used for teaching the technique during the session; these same tapes and CDs were provided to the participants to enable them to practise between sessions (i.e. homework). Thirdly, relaxation can provide benefits by assisting people to learn how to relax their bodies and potentially reduce their levels of tension, stress, and anxiety. That is, it offered the participants a chance to learn something that might benefit them, at no cost other than time. Relaxation is also a technique that can be mastered with

practice and is therefore a suitable homework task — i.e., to be practiced between sessions. Fourthly, and finally, relaxation is also a suitable technique for self-referred individuals from the non-clinical population to learn, which was the study sample required.

The specific method of relaxation selected for this study was the Progressive Muscle Relaxation (PMR) technique. It is a method that systematically tenses and releases muscle groups throughout the body. It encourages the individual to pay close attention to the feelings associated with both tension and relaxation, enabling the recognition of tension and relaxation as they appear in everyday situations (Bernstein, Borkovec & Hazlett-Stevens, 2000). The rationale behind the production of tension in the body is that everyone operates with a certain level of tension in their bodies daily and each of us develops a certain adaptation level, at which our bodies operate under on a normal day. The aim of the PMR technique is to be able to discriminate between a relaxed and tense state (Romas & Sharms, 1995) and to teach individuals to reduce their muscle tension to a level below that which they normally operate under. With practice, they can do this at any time they wish to do so. This method has been found to be successful in achieving relaxation of the skeletal muscles as well as the mind (Romas & Sharma, 1995).

In the present study the PMR technique was used as the homework intervention to assess for homework compliance. The technique was taught during the session and a tape or CD provided to the participant for practice at home.

## **7.6 Relaxation training conditions**

### ***7.6.1 Systematic condition:***

The 'guiding model for practice' developed by Kazantzis, MacEwan and Dattilio (2005) provides a step by-step guide on how to systematically administer homework within a therapy session. The systematic condition of the present study, which was adapted by Nikolaos Kazantzis and Anna Connolly, follows this protocol. The guiding model has three key stages: designing the homework; assigning the homework; and reviewing past homework. The first stage of the protocol was to design the homework with the client in session, which had 8 key steps (see Figure 5).

As a guiding framework, the sessions with the participants were based on generic Cognitive Behavioural Therapy sessions. While, ideally, within a clinical setting the homework task is selected collaboratively with the client and tailored to their specific requirements, for the purposes of this study the Progressive Muscle Relaxation technique operated as the standardised homework task. A standardised task was required to ensure that fair comparisons between participants could be made as well as to reduce potential confounds that could have occurred when reviewing, designing, and assigning different homework tasks.

The first session began by discussing the reasons the participant had volunteered for the study. This included discussion around their current coping strategies and beliefs about the stress or anxiety in their life. For example: 'When you find yourself stressed after a busy day at work, is there anything you do to help relieve that stress?' or 'Are there specific things that you have tried that help you relax when you find yourself anxious

about upcoming exams?’ This approach enabled the researcher to introduce relaxation as a potential coping strategy.

The second step involved introducing the generic cognitive model of anxiety (see Figure 3). This demonstrates the relationship between an increased level of stress and a decreased ability to cope.

$$\text{Stress} = \begin{array}{l} \uparrow \text{ sense of being overwhelmed} \\ \downarrow \text{ ability to cope} \end{array}$$

*Figure 3.* The generic cognitive model of anxiety (sourced from CBT Training Course, Massey University)

The researcher would then assist the participant in formulating an individual situational conceptualisation of a recent stressful event in their life using the 5-part model. The 5-part model (Figure 4) offers a clear format in which the participant can view the impact the stress has on them. Utilising this information, the relaxation technique was then introduced as a new behaviour, which may impact on the physiological, emotional, and cognitive factors outlined in the 5-part model. The new behaviour (relaxation) was then discussed as a possible strategy for assisting the participant with their specific issue (i.e., for stress or anxiety). A collaborative process was established by eliciting the participants’ attitudes towards relaxation.

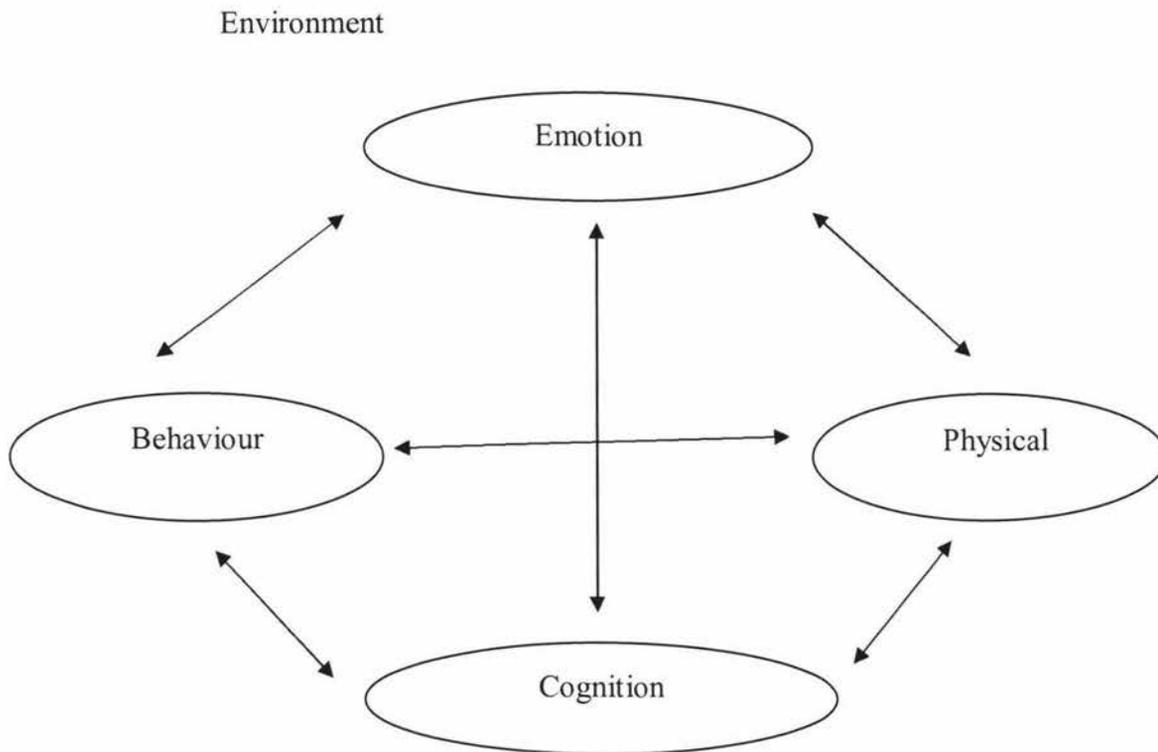


Figure 4: Five part model. Adapted from Patient Workbook. Beck Institute for Cognitive Therapy and Research.

At this stage, the PMR technique was discussed and outlined to the participants. A generic rationale was provided, highlighting the empirical support for the relaxation technique and its potential benefits (see Appendix C), and this was linked to the participants' specific relaxation goals. Research has found that a homework assignment that is not linked to the client's specific problem can result in a reduced sense of relevance and sense of ownership for them, leading to a reduction in the rate of completing the homework task (Moore & Garland, 2003).

The participants were instructed in how to achieve tension within the 16 muscle groups. Once this was practised a full relaxation session took place, using the standardised relaxation tape.

Discussion around the client's ability and perceived task difficulty is the next step of the guiding model for practice. As previously outlined in the theoretical foundations of homework compliance, participants' beliefs about the homework are considered vital in relation to its relevance and usefulness for them. Belief in their ability to achieve the task is also important, as it is suggested that these beliefs may establish whether or not the homework will be completed. Therefore, after practising the relaxation technique the participant was asked to evaluate their experience. "How did you find the relaxation experience? Did you have any difficulties in achieving the tension and relaxation throughout the process?" Any problems or difficulties were then discussed and resolved.

The guiding model for practice then outlines the use of guided imagery as an explicit way to enable the participant to imagine themselves practising the relaxation technique within their own environment. The rationale behind utilising this technique is that it provides the participant with experiential learning while still in the session, enabling them to emotionally and cognitively process the experience before it actually takes place. Further, it encourages them to experiment as part of the homework practice to determine what works best for them. During the guided imagery process individuals often start to identify their beliefs about practising the relaxation, eliciting their potential triggers or cues for completing the homework. For example, the researcher asks: "What else is going through your mind just before you start the relaxation tape?" This question can draw out issues and obstacles — such as the participant feeling they 'don't have time for this' — that need to be considered and resolved.

<b>Systematic</b>	<b>Non-Systematic</b>	<b>Homework Design</b>	<b>Example</b>
✓	X	<b>Guided Discovery to identify Coping Strategies and Beliefs</b>	Question the client's current coping strategies and belief around relaxation (e.g., 'Are there specific things that you have tried that help you relax when you find yourself anxious about your upcoming exams?')
✓	X	<b>Use Disorder-Specific Cognitive Model and Individualised Conceptualisation</b>	Use of the 5-part model (environment, emotions, physiological, cognitive, and behaviour) to discuss a particular time when they were stressed, to demonstrate how a change in behaviour impacts on the other factors.
✓	✓	<b>Collaboratively Select Tasks</b>	Brief discussion around the Progressive Muscle Relaxation technique. Check that they want to progress with it. Possibly discuss why relaxation exercises may be helpful in their everyday life.
✓	✓	<b>Present a Rationale that aligns with Clients' Treatment Goals</b>	Link relaxation technique back to participants' goals (i.e., of reducing levels of tension and anxiety and/or strategy to assist coping with stress).
✓	✓	<b>Ask about Client's Ability and Perceived Task Difficulty</b>	Query the participants' ability to gain the tension in the various muscle groups and understanding of how to do the technique. This can be done during the explanation and practice of the 16 muscle groups as well as after the actual practice session using the tape. Any difficulties need to be discussed and worked through openly.
✓	✓	<b>In-session Practice of Task</b>	A full practice of the task with the participants in a relaxed position, with eyes closed. The same tape is used for every participant.
✓	X	<b>Guided Imagery to Begin Experiential Learning</b>	Presented as an opportunity to have an experience of imagining practising the technique. Assists them to see how it may fit into their life, it may also help identify their beliefs about the relaxation and highlight possible obstacles they may face.
✓	X	<b>Situational Conceptualisation to Identify Beliefs &amp; Situational Triggers</b>	Often discussed within the guided imagery and reinforced afterwards (i.e., their beliefs towards the relaxation now they have practised it.) The trigger for them to practise the relaxation is highlighted and reinforced (i.e., 'When you start thinking about going to bed, that is your trigger to practise the relaxation').

Figure 5. Session One — Homework Design

The second stage of the guiding model's protocol was to assign the homework with the client in session, which had six key procedures (see Figure 6). Assigning the homework involved working with the participant to ascertain how the task was going to be practically possible for them. The first step was to ensure that the participant had a clear rationale for actually practising the relaxation for homework. The best way to ascertain whether this was the case was to simply ask the participant. For example: "I wonder if you wouldn't mind summarising why it would be good for you to practise this relaxation technique you have just learned." Along with ensuring the participant had a clear rationale, summarising is a technique often used in CBT as it enables both the therapist (in this case, the researcher) and the client (here, the participant) to ensure that they both have a similar understanding of why the homework task is suitable and worthwhile for the client. Once the rationale has been outlined, it is time to move forward and assign the relaxation technique for homework.

The result of homework that has not been clearly planned and discussed in session is often a lack of compliance from the client due to confusion about the task. It is helpful to be specific about what is required for homework and to consider the details around how the homework can be practically completed. In the systematic condition, following the guiding model for practice, the researcher and participant worked through the specifics of when, where, and how often they would listen to the CD/tape and practise the relaxation technique. In discussing this practicality openly and explicitly, the participant was enabled to consider how, in reality, the technique was going to fit into their life. As experts on their own daily routines, the participants were encouraged to lead this discussion. Furthermore, their detailed input could enhance the collaboration, as well as their understanding and commitment to the homework task. Discussion also occurred regarding

how regularly the participant could carry out the homework. Each participant was told: “Ideally, relaxation is practised on a daily basis; however, it is not always practical. How often do you think you can practise?” This process enabled the participant to make a clear decision regarding the completion of the homework, as appropriate to them. Once these four key points (when, where, how often, and how long) had been discussed and decided upon, the participants had a precise concept of what they had agreed to complete for homework.

Despite planning the homework in detail, there are often obstacles that hinder homework completion. Thus, it is also important to consider potential obstacles that may thwart the completion of homework. The rationale behind anticipating potential obstacles is to be able to discuss and plan, during session, options for overcoming them. In a situation where participants do not believe they will encounter obstacles curiosity was expressed regarding their certainty, highlighting that most people do experience some difficulty in completing their homework. This process normalised potential problems and provided an open forum for discussing possible issues and their solutions.

The regular practice of the relaxation technique assigned for homework is designed to teach the participant how to reduce their levels of tension. Consistent with the scientist-as-practitioner concept, this practice was presented to the participant as an experiment. Introducing an experimental focus suggests that information (data) can be gathered by the participant, enabling them to assess any benefits gained through practising the relaxation technique. The theory of operant conditioning suggests that positive consequences of practising the relaxation will lead to increases of this behaviour. Thus, if the participant

<b>Systematic</b>	<b>Non-systematic</b>	<b>Homework Assign</b>	<b>Example</b>
✓	✓	<b>Ask Client to Summarise Rationale in Relation to Therapy Goals</b>	Participants asked to summarise what relaxation means for them. Often more implicit than explicit within conversation.
✓	✓ ½ x ½	<b>Collaborate to Specify How the Task Will be Practically Possible (i.e., when, where, how often, and how long it will take)</b>	The homework assignment form is completed in collaboration with the participant. This involves discussion and agreement on when they will practise the relaxation, where they will practice (i.e., a place that is comfortable, with no interruptions and that has access to tape/CD player), how often they will practise (i.e., daily), and confirmation that it takes approximately 20 minutes.
✓	✓	<b>Consider Potential Difficulties</b>	Querying and clarifying what possible obstacles they may confront in trying to practise the relaxation. This often either supports the existing plan in place or highlights that it may need to be revised to be realistic.
✓	X	<b>Emphasise Learning ‘Experimental’ Focus</b>	An open discussion that the week of practice is viewed as an experiment, enabling them to go away and practise the relaxation so that the second session, in a week’s time, can be used to discuss their experiences, difficulties, and obstacles.
✓	X	<b>Summarise Task &amp; Obtain Rating of Readiness, Importance, and Confidence</b>	When completing the homework form the task is summarised and a rating is obtained of how ready, how important, and how confident the participant is in completing the homework (relaxation) task.
✓	X	<b>Make a Written Note of the Homework for the Client (homework form)</b>	The homework form is completed together with the client. This includes a description of the homework, an outline of the learning goal, when, where, and how often they will practice the relaxation, and how long it will take them. A copy of the homework form is given to the participant together with a tape/CD of the relaxation technique. The therapist also keeps a copy.

Figure 6. Session One — Homework Assign

finds they benefit by having lower levels of stress or anxiety through practising the relaxation they are likely to continue with the behaviour.

Having discussed the homework and collaboratively agreed upon the task, the next important stage was to have a written copy of the assignment. There is empirical support to suggest that those clients who receive written copies outlining their assignments have higher homework compliance (Cox, Tisdell, & Culbert, 1988). The homework assignment form (Kazantzis, Deane, & Ronan, 2005) was used to capture information about the relaxation intervention, its learning goal, and the details of when, where, and how often the relaxation technique was to be practised. The form operated as a written summary of how the homework was going to be integrated into the participant's life. Furthermore, it was utilised to enable collaborative discussion around the specifics of when, where, and how often the relaxation would be practised. The form also included rating scales whereby the participant rated their level of readiness to carry out the assignment, its level of importance for them, and their degree of confidence in their ability to execute the assignment. The scales ranged from 0 (indicating 'not at all confident') to 100 (indicating 'totally confident'). If the participant's rating was below 70, the homework was renegotiated, as this score highlights a lack of certainty about being able to complete the homework in its current form. Additionally, if clients rated themselves at 100, surprise was expressed and their assessment explored further to ensure that potential barriers had been fully considered and discussed. Once all the ratings and any renegotiations were finalised, the balance of the form was completed, with a copy being given to the participant and one kept on file.

The last phase of the protocol was to review past homework, which required 6 procedures to be followed (see Figure 7). Within this study, the homework review was

conducted at the second session held one week later, giving the participant 7 days in which to practise the relaxation for homework.

Traditionally, the focus of homework review has been on quantity — that is, on how much of the homework has been completed. However, this model focused not only on quantity but also on quality — i.e., was the learning goal met? Therefore, the second session commenced with the researcher asking the participants if they had completed the homework the agreed number of times (quantity), as well as how well they had completed it (quality). The Homework Rating Scale II (Kazantzis, Deane & Ronan, 2005) measure was used to review participants' experiences with the homework. Praise was bestowed for each attempt made at practising the relaxation technique. The quantity of sessions completed and partially completed was then collated.

Despite careful design and assigning of the task, sometimes homework was not completed or only partially completed. However, it has been emphasised that much can also be learned from the client not engaging in the homework (Beck et al., 1979). It is believed that a therapist's emphasis on highlighting the homework as an 'experiment' can often determine whether a client will openly discuss homework non-completion (Kazantzis et al., 2005). Ensuing discussions around non-completion can reveal the client's beliefs about the homework task. For example, the homework may be perceived as irrelevant or ineffective, or it may simply have been misunderstood (Kazantzis et al., 2005). Sometimes homework non-completion can indicate that the therapy is not on the right path, requiring the case conceptualisation and the therapy goals to be modified (Kazantzis et al., 2005). Discussion of homework non-completion can also reveal factors such as negative automatic thoughts, schemas, and compensatory strategies. These factors may provide

more information that was not previously identified and can contribute to the development of the client's individualised conceptualisation (Kazantzis et al., 2005).

In summary, individual discussion of the non-completion of the homework can create a mutual understanding of the client's responses within the context of their beliefs previously identified in their cognitive conceptualisation. This also affords an opportunity to discuss difficulties that occurred, allowing some problem-solving to take place and placing the participant in the position of being able to try to practise the technique again. As the tape/CD was not required to be returned, the participant was enabled to continue using it and to further enhance and maintain any benefits.

The utility of therapists reviewing homework has received some empirical support. Specifically, a study by Bryant, Simons, & Thase (1999) found that reviewing homework resulted in a significant correlation with compliance. Within a standard CBT session a review of the homework set the previous week would occur early on in the session. However, in the present study the homework had to be designed and assigned first; thus, the review stage occurred on the second meeting with the participant. For this reason, the review stage of the guiding model for practice was not monitored for adherence within the study. Notwithstanding this factor, it was still considered important to have the review phase included in the study. This enabled the results to be gathered, as well as show respect to the participants for their efforts in completing the homework.

<b>Systematic</b>	<b>Non-systematic</b>	<b>Homework Review</b>	<b>Example</b>
✓	✓	<b>Discuss Non-Completion and Quantity and Quality of Completion</b>	Discussion with the participant around how their practice of the relaxation went. This includes how many times they completed the relaxation and how the experience was for them.
✓	✓	<b>Provide Verbal Reinforcement for <u>any</u> portion Carried Out</b>	Providing the participant with praise for any of the relaxation homework they attempted.
✓	✓	<b>Situational Conceptualisation to Identify Beliefs about the Consequences to Homework (i.e., synthesis of learning)</b>	Discussion with the participant regarding a specific situation in which the relaxation technique was completed. From their experience gained during the week of practising the technique the participant will form a belief regarding the benefits and the costs involved of practising relaxation.
✓	✓	<b>Use Individualised Conceptualisation to Make Sense of Non-Completion</b>	Discuss the participant's response to homework non-completion, enabling sense to be made of their response, within the context of their beliefs previously identified in their cognitive conceptualisation.
✓	✓	<b>Problem-Solve Obstacles</b>	Discussion around the obstacles that the participant encountered and collaboratively coming up with possible solutions.
✓	✓	<b>Record Homework Completion in Session Notes</b>	Working through the Homework Rating Scale with the participant to ensure an accurate record of the number of sessions completed and their experiences with the relaxation.

Figure 7. Session Two — Homework Review

### ***7.6.2 Non-systematic administration condition***

The second relaxation training condition, namely the non-systematic administration condition, did not administer homework systematically; instead, it was based on actual practices used within the clinical environment (i.e., a standard therapy session). The procedures within this condition were based on self-report data gathered from practitioners in relation to how homework is generally administered among today's practising psychologists (Kazantzis & Deane, 1999; Kazantzis, Lampropoulos & Deane, 2005).

In order to examine the differences between the systematic and non-systematic administration conditions of homework, it was necessary to standardise the non-systematic condition, while still ensuring that it accurately reflected the practices of therapists in the field. Thus, the same three phases of the guiding model for practice were followed (design, assign, and review); however, only some of the same steps, as would occur in a "standard therapy session" were included at each stage of the single-session relaxation intervention.

Within the design phase of the non-systematic administration of homework, 4 of the 8 procedures were included (see Figure 5). Research has found that psychologists are reliable in presenting a rationale that aligned with the client's treatment goals (Kazantzis & Deane, 1999). Therefore, this step was included in this condition in the same manner as it was included in the systematic condition. Additionally, the same therapeutic relationship that encouraged a strong partnership was maintained throughout the non-systematic condition. Research data shows that therapists do consider their clients' abilities when designing a homework task (Kazantzis & Deane, 1999); therefore, this same consideration was given to each participant, ensuring that the relaxation technique was appropriate for them. In addition to this, it was important to practise the relaxation task with the client during the session. Thus,

both the pre-practice that familiarises the participant in how to tense the 16 muscle groups and the full relaxation practice took place.

Conversely, there are procedures from the systematic condition that are not traditionally included within a “standard therapy session”; thus, these were not included in the non-systematic condition. The 4 procedures not included in the assign stage of the protocol were guided discovery to identify coping strategies and beliefs, using a disorder-specific cognitive model (5-part model) and individualised conceptualisation, guided imagery to begin experiential learning, and situational conceptualisation to identify the participants’ beliefs and their situational triggers.

Once again guided by the research (Kazantzis & Deane, 1999), the second stage of assigning the homework within the non-systematic condition included only two of the same procedures. These were to assess what the client’s attitude was towards the homework (i.e., summarise their rationale for doing the relaxation), and to consider any potential difficulties that they came across and problem- solve these together.

In the systematic condition assigning homework was very detailed. However, research (Kazantzis & Deane, 1999) has demonstrated that while therapists regularly specified how often the homework should be done, they do not specify when and where homework should be completed or how long the homework ought to take. Therefore, in the non-systematic condition how often the homework would be practised was discussed and agreed upon. However, no discussion occurred in relation to when and where the homework would take place. As the CD/tape was twenty minutes long and had already been practiced, the length of

time taken for the homework was known by the participants. Additionally, no written format of the homework was used in this condition.

The third stage involved homework review. There is empirical support for the utility of reviewing homework (Bryant, Simons & Thase, 1999), and as this stage was not monitored for adherence, or part of the assessment process for the study, it was included in its entirety for the non-systematic condition. It was also considered ethical to do so. Therefore all 6 steps suggested by the guiding model for practice were included. Furthermore, this ensured that the gathering of the results of the homework was standardised for both conditions.

In summary, this research was designed as an analogue study of a single session relaxation intervention, and as such used a sample from the normal, rather than the clinical, population. While the results cannot be generalised to the clinical population, both conditions were carefully designed to match as closely as possible to 1) a standard therapy session (non-systematic planning of homework) assessing 'normal' homework conditions and 2) an enhanced therapy session (systematic condition) assessing the new guiding model for practice.

### ***7.7 Procedure***

Participants were recruited over a 5-month period through newspaper advertisements, flyers placed on a range of public and university notice boards, email advertising through Massey University's psychology mail list, and PowerPoint presentations conducted by the researcher to a variety of psychology, anthropology and physics undergraduate university classes held at Massey University's Albany campus (see Appendix D for the presentation).

Participants who passed a telephone-screening questionnaire of eligibility were scheduled to meet with the researcher (see Appendix E). At the first session participants were

provided with the information sheet to read and consent form to sign. They were then required to complete the State Trait Anxiety Inventory (STAI) (Spielberger, 1983) questionnaire, utilised to assess their state and trait levels of anxiety. Each participant was then randomly assigned to one of two conditions (systematic or non-systematic administration of homework). Participants were blind to the existence of two conditions. They then completed the first session and were provided with a CD/tape of the relaxation exercise to take away and practise with at home. This first session was audio-taped for assessment of the researcher's adherence to the protocol.

In the second session, designed to take place one week later, participants completed another STAI questionnaire to once again assess their state and trait levels of anxiety. The participants also completed the Homework Rating Scale II measure — a self-report questionnaire asking about their experiences and beliefs regarding the between-session practice (see measures 7.8). Participants then met with the researcher and had the opportunity to discuss their experiences in practising the relaxation exercise.

The participants were able to keep the CD/tape for continued use and were also provided with a handout that would enable them to continue to develop the procedure should they choose to (see Appendix F). They were also offered the opportunity to receive the results at the conclusion of the study.

## **7.8 Measures**

### **7.8.1 Client adherence measure**

The Homework Rating Scale-Revised (HRS II; Kazantzis, Deane & Ronan, 2004) was completed at the beginning of the second session and was used to discuss the experiences the client had with the relaxation technique. As outlined in Chapter 6, the HRS II is a 12-item client self-report scale that is designed to measure a number of factors relevant to the process of designing the homework, engaging in the homework, and reviewing the experience of having attempted the homework. Items are rated using a 5-point Likert scale. The HRS demonstrates excellent internal consistency with a Cronbachs alpha of .87 and item total correlations range between .44 and .70 (Kazantzis et al., 2006). The internal consistency for the HRS II for this study was .75.

### **7.8.2 Researcher's adherence measure**

In order to measure the researcher's adherence to the protocol the Homework Adherence and Competency Scale (HAACS; Kazantzis, Wedge & Dobson, 2004) was used. The HAACS is designed to assess therapist competence and adherence in the administration of homework in CBT (design, assign, and review). The HAACS has 19 items each offering a dichotomous choice of yes = 1 or no = 2 as to whether or not the behaviour is observed. The adherence index is presented as a percentage score (i.e., the total number of observed behaviours is divided by the maximum possible score of 14 and multiplied by 100). The competency of the researcher was not assessed due to funding issues.

While the HAACS is a newly designed measure, research suggests that it is used with an excellent degree of reliability for adherence (.77) when rated by independent observers

(Kazantzis et al., 2006). The internal consistency of the HAACS for this study for rater-pair one was .97 and for rater-pair two was .94.

### ***7.8.3 Anxiety measure***

The State Trait Anxiety Inventory (STAI; Spielberger, 1983) has been used extensively in research as well as in clinical practice. It is comprised of separate self-report scales for measuring both state and trait anxiety. The S-Anxiety scale consists of 20 statements that the participants were asked to complete in relation to how they feel 'right now, at this moment'. The T-Anxiety scale consists of 20 statements that participants were asked to complete in relation to how they *generally* feel. Normative data was available for working adults and college students, which made up our sample population.

The published reliability of the STAI is reasonably good, with test-retest reliability for college students over 30- and 60-day periods ranging between .73 and .86 for T-Anxiety (Spielberger, 1983). As expected, S-Anxiety test-retest reliability is lower, ranging from .51 for males to .36 for females (Spielberger, 1983). A lower range is expected, as individuals state that anxiety is a changeable construct. Due to expected fluctuations, internal consistency is more important. The published state anxiety median coefficients range is between .88 and .93 and the median trait anxiety coefficient range is between .92 and .94 indicating strong internal consistency (Spielberger, 1983). The internal consistency for the STAI for the present sample was .88.

## CHAPTER 8

### Statistical Analysis Procedure

The general aim of this study was to assess whether there were any differences in homework adherence in relation to how the homework was administered during the session with the participant. This required the study's design to have two different conditions that could be compared. These two conditions were the systematic condition and the non-systematic condition. The systematic condition was developed to follow the 'guiding model for practice' (Kazantzis et al., 2005), a step-by-step model of how to systematically administer homework. The non-systematic condition was developed to follow the process of administering homework found within a 'standard therapy' session, as defined by practitioner self-report (Kazantzis & Deane, 1999). Relaxation was the homework intervention assigned for both conditions. To assess for differences between the systematic and non-systematic conditions, analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 13.0. Various forms of analysis were conducted to test the four hypotheses; these included the: Mann-Whitney U test, one-way between-groups multivariate analysis of variance (MANOVA), one-way between-groups multivariate analysis of co-variance (MANCOVA), and Spearman's rho correlations. Where appropriate the effect size or standardised mean difference of the result was outlined.

#### ***8.1 The Mann-Whitney, MANOVA, MANCOVA, and Spearman's rho procedures***

Hypothesis one theorised that participants in the systematic group would have higher levels of homework compliance. To assess this theory two indexes of homework compliance were examined. The analysis of the first index of homework completion used a simple frequency count and percentage analysis of the totals, neither of which required the use of

SPSS. While chi square analysis, which measures the association between two categorical variables, could have been a suitable test, the data did not meet its key assumption of having no more than 25% of cells with an expected frequency of less than 5. This occurred because participants were able to choose the number of times they wanted to practice the homework, resulting in a selection of between 3 and 14 practices. The analysis of the second index of homework compliance for hypothesis one initially planned on using the independent *t* test to ascertain differences in homework compliance between the two conditions (systematic and non-systematic administration of homework). However, a histogram for the two conditions was inspected separately and data was found to be skewed and participant numbers small. Thus, the *t* test was unsuitable to use for the analysis, and the most appropriate statistical test was the Mann-Whitney U. The Mann-Whitney U test is equivalent to the independent groups *t* test and tests the hypothesis that two independent samples come from populations having the same distribution (Coakes & Steed, 2003).

A one-way between-groups multivariate analysis of variance (MANOVA) and a one-way between-groups multivariate analysis of co-variance (MANCOVA) were used as the form of analysis most appropriate to test the theories of hypotheses two and four. Hypotheses two theorised that participants in the systematic group would have more positive beliefs in completing the homework and hypothesis four believed those in the systematic group would have a greater reduction in anxiety. Both the MANOVA and MANCOVA calculations used Pillai's Trace as the criterion, as this statistic is considered more robust when the data comes from a small sample size with unequal numbers in each condition (Pallant, 2001), as was the case with the present study ( $n = 21$  and  $n = 23$ ). MANCOVA calculations were used in hypothesis four, in place of a MANOVA, as co-variates were required to serve as a control. The MANOVA and MANCOVA methods enable preliminary assumption testing to be

conducted. The independence of participant responses from both groups was assumed, as each participant was randomly placed into one of the two conditions only. Additionally, the experimental design utilised a single blind design where the participants were not informed of the two conditions. Multivariate normality was assumed intact as there was a sample size of more than 20 in each cell ( $N = 44$ ). Multivariate outliers were evaluated using Mahalanobis' distance with no significant outliers found. The multivariate homogeneity of variance-covariance matrices assumption is extremely sensitive and is considered violated if the Box M's test is significant ( $p < .001$ ) (Coakes & Steed, 2003). This assumption was not violated in the current study. The multicollinearity and singularity assumptions are considered violated if the dependent variables are highly correlated. High correlations are considered to be levels of .80 or .90 (Pallant, 2001). There were no violations of the multicollinearity and singularity assumptions.

The MANOVA and MANCOVA analyses test the involvement of multiple dependent variables; thus they tell us whether there is any effect of the independent variables on a linear combination of the dependent variables (Dancey & Reidy, 2004). Therefore, in order to examine the individual dependent variables (univariate F-tests) and assess their contribution to the significance of a multivariate effect, a Bonferroni adjustment can be used (Coakes & Steed, 2003). This technique adjusts for experiment-wise error and decreases the chance of making a type I error. This analysis was used to examine the relative contribution of each of the dependent variables to the multivariate difference. The formula used and applied for this was  $\alpha/\text{number of tests}$ .

Hypothesis three theorised that greater adherence to the relaxation homework would correlate positively with reductions in anxiety. A Spearman's rho correlational analysis was conducted for hypothesis three, to ascertain whether a relationship existed between homework

adherence and reductions in anxiety. This correlation coefficient was used because some of the data violated the normal distribution assumption required to utilise Pearson's  $r$ . This calculation enabled us to determine the direction of the relationship and its strength.

## ***8.2 Statistical power and standardised mean difference***

Research investigating the effects of relaxation training has documented efficacy with a multitude of conditions including asthma (Nickel et al., 2005), tension headaches (D'Souza, 2003), night eating syndrome (Pawlow, O'Neil & Malcolm, 2003), and anxiety (Brambrink, 2004), to name a few. Further, relaxation therapies have been advocated as useful techniques in psychotherapy, behavioural therapy, and psychiatric treatment (Stetter, 2004). In 2000, a meta-analysis of 27 studies was conducted to look at the effects of homework assignments on treatment outcome as well as the relationship between homework compliance and therapy outcome (Kazantzis, Deane & Ronan, 2000). The results of this meta-analysis found that relaxation homework produced a small effect size or standardised mean difference of .29. Thus, with the knowledge that a small effect size was sought, it became important to look at the statistical power of the study.

The statistical power of an experiment is the probability that the research will produce significant results if the hypothesis is supported (Aron & Aron, 1994). When determining statistical power there are a number of key issues that need to be considered. These include: how big an effect size the research hypotheses predict; how many subjects will be used in the experiment; and what level of significance will be chosen. In this instance, as previously outlined, the researcher was able to anticipate a certain effect size, specify the desired power level, and set a significance criterion in order for the sample size to be determined. However, while the standard significance criterion is .05, there have been arguments that within

exploratory research Type I and Type II errors can be equally serious (Whittington & Podd, 1996). Therefore, due to the exploratory nature of the current preliminary study, it was considered inappropriate to set the probability of making a Type I error at  $p > .05$ , and alpha was therefore set a priori at  $p < .3$ . Consequently, power was set at .8 to detect a small effect size of .29, and alpha was set at .3. A priori calculation using a program for calculating power called GPOWER (Erdfelder, Faul & Buchner, 1996) calculated that 90 participants in total would be required to assess for differences between the two groups. Unfortunately, a sample size of 90 could not be recruited due to practical limitations on the study. These included time-frame restraints, and issues with recruiting participants that met the study's criteria. Initially, it was found that over 50% of individuals responding to the study had suffered depression or anxiety or had previously learnt the relaxation technique and were therefore not eligible to participate. Due to these issues, it was not viable to recruit the 90 participants required to gain a power level of .8.

Nevertheless, for Hypothesis one, two and four effect sizes were calculated. The effect size or standardised mean difference provides information on the size of the differences between two groups (Dancey & Reidy, 2004). That is, it outlines what the magnitude of the effect is, or lack thereof. For this present study the measure of effect  $d$  was utilised;  $d$  measures the extent to which the two means differ, in terms of standard deviations. It is calculated as follows:  $(X_1 - X_2) / \text{mean SD}$ . In this instance confidence intervals were also calculated, outlining that there is a 95% confidence level that the results of the sample means falls between the range provided. No effect size was calculated for hypothesis three as this was a correlational analysis.

## CHAPTER 9

### Results

#### *9.1 Inter-rater agreement*

Analysis was conducted to evaluate the integrity of the protocol being tested in this study. Two steps were taken to achieve this evaluation. Firstly, the whole of the first session was assessed for inter-rater agreement and reported on. Secondly, each step required for the design and assign aspects of the protocol was assessed for inter-rater agreement and reported on.

In order to measure adherence to the protocol, a total of 14 randomly selected audio-tapes from both conditions of session one (design and assign) were rated (32% of total sessions). Four independent raters conducted the ratings. The four raters were split into two rater-pairs and randomly assigned one half of the 14 tapes. Inter-rater agreement was examined separately for each rater-pair. The raters used the Homework Adherence and Competence Scale (HAACS) measure for the assessment, which utilises a dichotomous format for their questions. This requires the rater to choose either yes or no with regard to the researcher's behaviour in terms of adherence to the protocol. In order to have confidence in analyses that utilises this data, there needs to be a high level of agreement between the raters. Generally, rater agreement between 60 and 74 percent is considered good, and agreement over 75 percent is considered excellent (Cicchetti, 1994). As an initial check of rater agreement, cross-tabulations were used to assess the ratings between the rater-pairs (rater-pair 1 and rater-pair 2). This produced a total of 196 pairings (i.e., 2 raters, 14 items x 7 tapes). Table 3 presents the cross-tabulations of the adherence ratings for the HAACS for rater-pair 1 and Table 4 presents the cross-tabulations of the adherence ratings for the HAACS for rater-pair 2.

Table 3

*Rater by Rater Cross-Tabulation for HAACS Adherence Measure for Rater-Pair 1*

		Rater 2		
		Yes	No	Total
Rater 1	Yes	63	4	67
	No	3	28	31
	Total	66	32	98

*Note.*  $n = 7$ . HAACS = Homework Adherence and Competence Scale.

Table 4

*Rater by Rater Cross-Tabulation for HAACS Adherence Measure for Rater-Pair 2*

		Rater 4		
		Yes	No	Total
Rater 3	Yes	73	8	81
	No	4	13	17
	Total	77	21	98

*Note.*  $n = 7$ . HAACS = Homework Adherence and Competence Scale.

Inter-rater agreement was measured by Cohen's kappa, which is the ratio of the proportion of agreement divided by the maximum number of times they could agree. The cross-tabulations in Table 5 below show an overall percentage agreement of 93% for rater-pair 1 where  $Kappa = .84, p < .001$ . A Kappa of  $> .70$  is considered an acceptable level of inter-rater agreement (Fleiss, 1973). Thus, a result of 93% shows an excellent level of inter-rater agreement.

Table 5

*Percent of Between-Rater Agreement for HAACS Adherence Ratings for Rater-Pair 1*

Rating	Between-Rater Agreement (%) <sup>a</sup>
Yes	64
No	28
Total	93

*Note.*  $n = 7$ . HAACS = Homework Adherence and Competence Scale.

<sup>a</sup>Between-rater agreement is based on the percentage of total ratings, where total agreement represents the sum of percent agreement for yes and no ratings.

The results of the percentage of between-rater agreement for rater-pair 2 are displayed below in Table 6. The cross-tabulations results found an overall percentage agreement of 88% with  $Kappa = .61, p < .001$ . While agreement was less for rater-pair 2 than rater-pair 1, this still shows an excellent level of inter-rater agreement.

Table 6

*Percent of Between-Rater Agreement for HAACS Adherence Ratings for Rater-Pair 2*

Rating	Between-Rater Agreement (%) <sup>a</sup>
Yes	75
No	13
Total	88

*Note.*  $n = 7$ . HAACS = Homework Adherence and Competence Scale.

<sup>a</sup>Between-rater agreement is based on the percentage of total ratings, where total agreement represents the sum of percent agreement for yes and no ratings.

The second step of analysing inter-rater agreement of the protocol required further exploration of the researchers' adherence to each question in the design and assign phases of the protocol. The analysis utilised an adherence index of the HAACS measure. The adherence index outlines the total frequency of the behaviours evidenced in the session (noted under yes) and its relative percentage. The rater agreement highlights the percentage of inter-rater agreement (i.e., YES/YES or NO/NO) of the raters for that question. Within the HAACS measure there are 14 items with regard to the design and assign phases of the practising model that were assessed in this study. The design of this study required all 14 items to be included within each session of the systematic condition, and only 7 of the 14 items to be included within the non-systematic condition (those in **bold** in Table 8). Tables 7 and 8 present the results of each individual question for the systematic condition and the non-systematic condition respectively. Due to randomisation, an unequal number of tapes in each condition were assessed for adherence: 8 tapes in the systematic condition, and 6 tapes in the non-systematic condition. Thus, the highest level of agreement that could be reached for the systematic condition was 16 (8 tapes x 2 raters) and for the non-systematic condition was 12 (6 tapes x 2 raters).

The results show that rater agreement for adherence behaviours was greater than 75%, indicating an excellent level of agreement on an individual question basis for the systematic condition. However, the results for the non-systematic condition were far more varied. While 8 of the 14 questions had 100% agreement there were also 3 questions that only achieved 50% agreement, indicating a poor level of inter-rater agreement. (Ideally those questions that aren't in bold, would have achieved results of 0, 0, 100 respectively).

Table 7

*Frequency of Researcher's Behaviour Adherence and Rater Agreement for HAACS Design & Assign Sections for the Systematic Condition*

Behaviour (HAACS item number)	Overall	Percentage of	
	Frequency of Behaviour	Frequency of Behaviour	Rater Agreement (%)
	Yes	%	
Discuss new or revised homework (6)	16	100	100
Guided Discovery to Identify Coping Strategies and Beliefs (7)	15	94	88
Use Disorder-Specific Cognitive Model and Individualised Conceptualisation (8)	14	88	75
Collaboratively Select Tasks (9)	16	100	100
Present a Rationale that Aligns with the Client's Treatment Goals (10)	16	100	100
Ask about Client's Ability and Perceived Task Difficulty (11)	8	50	100
In-session Practice of Task (12)	16	100	100
Guided Imagery to Begin Experiential Learning (13)	16	100	100
Situational Conceptualisation to Identify Beliefs and Situational Triggers (14)	15	94	88
Ask Client to Summarise Rationale in Relation to Therapy Goals (15)	15	94	88
Collaborate to Specify How the Task will be Practically Possible (16)	16	100	100
Consider Potential Difficulties (17)	16	100	100
Emphasise Learning 'Experiment' Focus (18)	15	94	88
Summarise the homework and obtain ratings of readiness, importance, and confidence (19)	16	100	100

Table 8

*Frequency of Researcher's Behaviour Adherence and Rater Agreement for HAACS Design & Assign Sections for the Non-Systematic Condition*

Behaviour (HAACS item number)	Overall Frequency of Behaviour	Percentage of Frequency of Behaviour	
	Yes	%	Rater Agreement (%)
<b>Discuss new or revised homework (6)</b>	<b>12</b>	<b>100</b>	<b>100</b>
Guided Discovery to Identify Coping Strategies and Beliefs (7)	2	17	67
Use Disorder-Specific Cognitive Model and Individualised Conceptualisation (8)	3	25	50
<b>Collaboratively Select Tasks (9)</b>	<b>12</b>	<b>100</b>	<b>100</b>
<b>Present a Rationale that Aligns with the Client's Treatment Goals (10)</b>	<b>12</b>	<b>100</b>	<b>100</b>
<b>Ask about Client's Ability and Perceived Task Difficulty (11)</b>	<b>6</b>	<b>50</b>	<b>100</b>
<b>In-session Practice of Task (12)</b>	<b>12</b>	<b>100</b>	<b>100</b>
Guided Imagery to Begin Experiential Learning (13)	0	0	100
Situational Conceptualisation to Identify Beliefs and Situational Triggers (14)	0	0	100
<b>Ask Client to Summarise Rationale in Relation to Therapy Goals (15)</b>	<b>3</b>	<b>25</b>	<b>83</b>
<b>Collaborate to Specify How the Task will be Practically Possible (16)</b>	<b>12</b>	<b>100</b>	<b>100</b>
Consider Potential Difficulties (17)	3	25	50
Emphasise Learning 'Experiment' Focus (18)	1	8	83
Summarise the homework and obtain ratings of readiness, importance, and confidence (19)	3	25	50

## 9.2 Adherence to homework

Hypothesis one posited that participants in the systematic group would display greater levels of engagement in completing the homework. In order to test this hypothesis, two different indexes of homework compliance were utilised. The first index used data gathered on the reported quantity of homework completed (a simple count). Using this data set, a frequency analysis and a percentage analysis were conducted. The second index used the results from the HRS II quantity question. A Mann-Whitney U was the most appropriate test to use on this data set. The results will now be outlined.

The first index of homework completion used participants' self-report data compiled by the researcher. The data was a simple count of the projected quantity of homework participants said they would practise, compared to the reported quantity of homework actually completed (i.e., a simple frequency count of the number of times relaxation homework was planned to be done, compared to what was actually done). Using this rating of quantity of adherence, the mean number of times homework was practised was compared between the systematic and non-systematic conditions. The results found that the non-systematic group *planned* to practise more regularly than the systematic group ( $M = 5.8$ ,  $SD = 2.4$  and  $M = 5.2$ ,  $SD = 1.5$  respectively). However, the non-systematic group's reported level of homework completion was actually less than the systematic group. That is, the systematic group completed more relaxation practice ( $M = 5.0$ ,  $SD = 2.9$ ) than the non-systematic group ( $M = 4.8$ ,  $SD = 3.0$ ). The standard deviations show that the two groups had similar levels of variability in terms of the reported levels of homework completion. A standardised mean difference was calculated,  $d = 0.07$ ,  $CI = -0.62, 1.9$ ), indicating very little difference between group means. However, the standardised mean difference for the non-systematic group ( $d = 0.37$   $CI = -0.78, 1.52$ ) found a moderate difference between what they had planned to practice

versus what they actually did practice. Conversely, the standardised mean difference for planned versus actual homework for the systematic group was very small ( $d = 0.09$ ,  $CI = -0.85, 1.03$ ), indicating very little difference between what was planned versus what was practiced.

Further analysis of this data, using a percentage analysis of the frequency total of homework completed, had interesting results. The results showed that of the 43% of participants in the systematic group that did not complete the quantity of homework they set out to do, did however, complete an average of 75% of the of homework. While in the non-systematic group, of the 65% that did not complete the quantity of homework they set out to do, completed an average of 63%. These results are displayed below in Table 9.

Table 9

*Percentage Analysis of the Frequency of Homework in Relation to Group Membership*

Homework Completion		
Result	Systematic Group	Non-Systematic Group
Completed more than 100% of the homework	29% ( $n = 6$ )	13% ( $n = 3$ )
Completed 100% of the homework	24% ( $n = 5$ )	22% ( $n = 5$ )
Did not complete all of the homework	43% ( $n = 9$ )	65% ( $n = 15$ )

The second index of homework compliance was then used for further analysis. This data was gained from the quantity item on the Homework Rating Scale II (HRS II; Kazantzis,

Deane & Ronan, 2005) measure. The question pertained to the ability to do the homework activity, where the participant was required to select one of five options, these being: 0 = not at all; 1 = a little; 2 = some; 3 = a lot; and 4 = completely. The Mann-Whitney U is equivalent to the independent group's *t* test, but was used as the data violated the normal distribution assumption required by the *t* test. Descriptive statistic results found that participants in the systematic condition had a higher mean rank (25.33) of completing the relaxation homework than participants in the non-systematic condition (19.91). The Mann-Whitney U was found to be 182 ( $z = -1.48$ ) with an associated probability of .14. This result shows a statistically significant difference in the mean ranks of homework compliance between the systematic and non-systematic groups. Note that an alpha level of .3 was used for all statistical tests as stated earlier. In that the participants in the systematic condition showed significantly greater levels of engagement in completing the homework, this result supports the hypothesis.

In summary, the results partially support the hypothesis in that participants in the systematic group did show higher levels of homework compliance. The first index, using a simple frequency count that measured and compared quantity of homework completed, found that the systematic group did complete more homework than the non-systematic group, however, not to a statistically significant level. Conversely, the second index of homework compliance utilising the HRS II quantity question, found a statistically significant difference between the mean ranks of the two conditions. In conclusion, these results provide partial support for hypothesis one, as participants in the systematic condition did show greater levels of engagement in completing the homework.

### 9.3 Beliefs in completing homework

Hypothesis two posited that participants in the systematic group would have more positive beliefs in completing the homework. To test this assumption, a one-way between-groups multivariate analysis of variance (MANOVA) was utilised. This was performed to investigate group differences in the HRS II scores. There are four subscales of the HRS II measure (as outlined in Chapter 7) namely: beliefs, behaviour, synthesis/consequence, and situation. These subscales operated as the dependent variables for the analysis. The design of the HRS II questionnaire requires some questions to be reverse coded when scored. The independent variable was group membership (the systematic and non-systematic conditions). The results of the dependent variables were considered separately, using a Bonferroni adjusted alpha level of .075. Two of the four subscale results reached significance. The first was behaviour:  $F(1, 42) = 1.83, p = .184, \text{partial eta squared} = .042$ . A moderate mean difference was found  $d = .41$  (CI = -0.2, 1.02). The second was consequences/synthesis:  $F(1, 42) = 2.93, p = .094, \text{partial eta squared} = .065$ . This also had a moderate standardised mean difference  $d = .49$  (CI = -0.61, 1.59). An inspection of the mean scores indicated that the systematic group reported higher scores for three of the four subscales — those being beliefs, behaviour, and the synthesis/consequence subscale as outlined in Table 10.

A supplementary analysis was conducted to assess whether the trait and state anxiety levels had an effect on participants' beliefs. That is, it was feasible that some participants may have had more positive beliefs in completing the homework because they evidenced a reduction in their anxiety levels. In order to assess for this effect a regression analysis was conducted to examine whether trait or state anxiety had an effect on participants' beliefs. There was no significance found; therefore, anxiety results were not included as covariates in the analysis.

Table 10

*Mean Scores and Standard Deviations for Measures of the HRS II as a Function of Group Membership*

Group	HRS Measures							
	Beliefs		Behaviour		Synthesis & Consequence		Situation	
	M	SD	M	SD	M	SD	M	SD
Systematic	14.33	1.35	6.33	1.32	15.52	2.89	2.61	0.80
Non-Systematic	14.22	1.76	5.74	1.57	14.17	2.65	2.65	1.34
Total Scores	16.00		8.00		20.00		4.00	

Table 11 shows the intercorrelations for the four HRS II subscales based on group membership (systematic and non-systematic). The results found that the intercorrelations between the synthesis/consequence and behaviour subscales for both groups were significant to  $p < .01$ . Additionally, in the non-systematic group, the situation and behaviour subscales were negatively correlated:  $-.67$  to  $p < .01$ . The same subscales were not as strongly correlated in the systematic group ( $-.41$ ).

Table 11

*Intercorrelations for the Four HRS II Subscales for the Systematic and Non-Systematic Groups*

Measure	Beliefs	Behaviour	Synthesis & Consequence	Situation
Beliefs	--	<b>.24</b>	<b>.44*</b>	<b>-.10</b>
Behaviour	.37	--	<b>.57**</b>	<b>-.41</b>
Synthesis & Consequence	.26	.54**	--	<b>-.16</b>
Situation	-.40	-.67**	-.39	--

Note: Intercorrelations for the systematic group ( $n = 21$ ) are presented above the diagonal and are noted in **bold**, and intercorrelations for the non-systematic group ( $n = 23$ ) are presented below the diagonal.

\* $p < .05$  \*\*  $p < .01$

In summary, significant differences were found in the behaviour and the synthesis/consequence subscales. The significant differences found in the univariate analyses provide partial support of the hypothesis that participants in the systematic group would have more positive beliefs in completing the homework.

#### **9.4 The effects of homework adherence on anxiety**

In order to ascertain the impact that relaxation homework may have on the participants' levels of anxiety, hypothesis three posited that greater adherence to the relaxation homework would correlate positively with reductions in anxiety. Spearman's rho correlations

were used to conduct this analysis, as the data did not conform to the normally distributed data assumption required for a Pearson's  $r$ .

In assessing the relationship between the STAI State and Trait and the HRS Quantity and Actual Practice scores, a negative relationship was sought; as, if the results were as hypothesised, the HRS Quantity and Actual Practice scores would increase as the STAI scores decreased (i.e., as practice increases the levels of anxiety decrease). The STAI's test-retest reliability can be seen in the correlational state and trait scores in Table 12. These results derive from differences found over a period of one week only. While the STAI has reasonably good test-retest reliability over 20 days (trait anxiety ranged between .76 to .86 and state anxiety ranged between .27 to .54) and over one hour (trait anxiety ranged between .76 to .84 and state anxiety ranged between .16 to .33), there are no published results for a 7-day period.

The results show that three of the four correlations were significant. A significant positive correlation was found for the relationship between Actual Practice and STAI State, and HRS Quantity and STAI State. A significant negative correlation was found for the relationship between Actual Practice and STAI Trait. The correlations found for the state anxiety do not support the hypothesis, as positive results indicate that as the quantity of the homework increased so too did the levels of state anxiety. Conversely, the negative correlation found between actual practice and trait anxiety does support the hypothesis. This result suggests that as the levels of practice increased, the level of trait anxiety decreased.

Table 12

*Intercorrelations for the STAI Scores and Quantity of Homework Completed*

HRS Subscale	Measure	
	STAI State	STAI Trait
HRS Quantity	0.10*	0.01
Actual Practice	0.15*	-0.08*

Note: STAI = State Trait Anxiety Inventory.

HRS Quantity = participant-rated quantity of homework completed.

Actual Practice = frequency of self-reported homework completed.

\* $p < .3$

**9.5 Changes to the levels of anxiety**

The fourth and final hypothesis of the study aimed to examine the changes to the levels of anxiety. More specifically, the hypothesis posited that participants in the systematic group would show greater reduction in anxiety. In order to assess this theory, a one-way between-groups multivariate analysis of covariance was performed (MANCOVA). Two dependent variables were used: STAI state (time 2) and STAI trait (time 2). The baseline results of STAI state (time 1) and STAI trait (time 1) operated as the covariates for the calculations. The independent variable was group membership (systematic and non-systematic). The mean scores and standard deviations can be seen in Table 13 and the intercorrelation results are displayed in Table 14. The standardised mean difference ( $d = 0.30$ , CI = 20.9, 34.9) indicates the magnitude of difference between groups for the state variable was moderate. The standardised mean difference for the trait variable ( $d = 0.12$  CI = 45.5, 60.3) indicates a small difference between groups. The results of the MANCOVA found that there was no

statistically significant difference between groups on the combined dependent variables:  $F(2, 38) = 0.58, p = 0.56$ ; Pillai's trace = .03; partial eta squared = .03. The observed power level for the MANCOVA was 0.48. In sum, the last hypothesis was not supported, as there was no significant difference in the reduction of anxiety found in the systematic group.

Table 13

*Mean Scores and Standard Deviations for Measures of the STAI as a Function of Group Membership*

Measures	STAI Measures			
	STAI State		STAI Trait	
	M	SD	M	SD
Systematic	31.40	21.70	51.40	23.68
Non-Systematic	24.48	24.24	54.30	24.92

Table 14

*Correlation Coefficients for Relations between STAI State and Trait Scores as a Function of Group Membership*

Measure	STAI S2	STAI T2
STAI S2	---	<b>.71*</b>
STAI T2	.56*	---

Note: The intercorrelation for the systematic group is presented above the diagonal in **bold**, and the intercorrelation for the non-systematic group is presented below the diagonal. STAI S2 ( $n = 21$ ), STAI T2 ( $n = 21$ ); STAI S2 = State Trait Anxiety Inventory State time 2; STAI T2 = State Trait Anxiety Inventory Trait time 2.

\*  $p < .01$

## CHAPTER 10

### Discussion

#### *10.1 Overview of study's aims*

The aim of this study was to examine differences between a 'standard' session of relaxation training (non-systematic condition) and an enhanced session, which followed the 'guiding model for practice' (systematic condition; Kazantzis, MacEwan & Deane, 2005). This chapter presents a discussion of the main findings. It provides an overview of the analysis and then provides a discussion on the results of the inter-rater agreement and researcher adherence analysis. The differences between groups were examined in relation to participants' levels of adherence in completing the homework; participants' beliefs in relation to the homework; the impact of homework adherence on levels of anxiety; and overall changes in the levels of anxiety. Additionally the chapter outlines possible clinical implications of the model for practice, discusses the limitations of this study and highlights possible implications for future research. The chapter concludes with an overview of the results of the study and its outcomes.

#### *10.2 Analysis overview*

All the analyses for this study utilised an alpha level of .3, rather than the standard significance criterion of .05. The alpha coefficient is based on deviations of scores from the criterion score, rather than from the mean. The rationale for utilising a higher alpha level is that some researchers (Whittington & Podd, 1996) consider that studies that have an exploratory aspect to them are equally at risk for both Type I and Type II errors. The results show that differences between the two groups would have been missed had a lower alpha level been used. This rationale supports the use of setting the alpha a priori at  $p < .3$ . However, it

could also indicate a chance effect, as an alpha of .3 means that the certainty of the results only sits at 70%.

### ***10.3 Inter-rater agreement***

There were four raters engaged to listen to 32% of the audio-tapes in order to assess the researcher's adherence to the protocol. The results found that rater-pair 1 had 93% agreement and rater-pair 2 had 88% agreement, demonstrating excellent levels of inter-rater agreement. This result indicates that there was strong agreement on whether behaviours were evident or not evident (i.e., yes/yes or no/no) during the session.

To assess the researcher's adherence to the protocol, raters evaluated each item of the design and assign phases of the project for both the systematic and non-systematic groups of participants. An ideal result of the raters' evaluation would have demonstrated that participants in the systematic group experienced all 14 behaviours, while participants in the non-systematic group experienced only 7 of the 14 behaviours.

The raters' results show that there was excellent adherence to the protocol for the systematic group, with one exception; and that there was very good adherence to the protocol for the non-systematic condition, with two exceptions. The exception for the systematic group noted by the raters related to item 11. This item achieved a 50% frequency of behaviour rating instead of the ideal 100%. Further investigation of this result revealed that this behaviour was consistently scored as not having occurred by one pair of raters. While this difference could indicate anomalies between the rater-pairs, and potential training issues, the 100% agreement between the raters' for question 11 strongly indicates that the researcher failed to include this behaviour in every systematic session.

The results for the non-systematic condition displayed more variability in both rater agreement and in frequency of behaviours. Rater agreement results ranged from 50% to 100%, while frequency of behaviour results ranged from 0% to 100%. There were three items that only received 50% rater agreement. All three of these items related to behaviours that should not have been included in the non-systematic condition. This could indicate that rating behaviours that do not occur are harder to detect than rating behaviours that do occur. For these same three items, their frequency rating was 25% (instead of the ideal 0%), indicating that they were noted as occurring in 3 of the possible 12 times, suggesting low protocol adherence. In sum, whether the behaviour did or did not occur, the results show that there is less agreement on questions that should not have occurred in this condition.

As in the systematic condition, item 11 was problematic in the non-systematic condition. While there was 100% rater agreement, the behaviour was only evidenced 50% of the time, instead of 100%. One would assume that the possible reasons for this difference would be the same for the non-systematic as for the systematic condition.

For the non-systematic condition, 7 of the behaviours were proscribed. However, the data results show that only 2 of these 7 behaviours received the ideal 100% rater agreement and 0% frequency of behaviour. The two behaviours that this outcome occurred for were guided imagery and situational conceptualisation. Interestingly, both of these behaviours are quite specific and perhaps therefore more obvious, which indeed seems to have made it easier to note their omission within this condition.

There was one additional item that appears to have caused issues within the non-systematic condition, that being question 15. The question asks the participant to summarise

their rationale for practising the relaxation task in relation to their goals for therapy. This question should have been included in this condition; however, the low frequency result (25%), together with the high level of inter-rater agreement (83%), suggests that asking the participants to 'summarise their rationale' did not regularly occur. Despite this omission, a recent study of the HAACS measure (Munro, 2006) found that this question had a lower level of reliability, with the suggestion that possibly raters have difficulty identifying the behaviour, or that they may have evidenced a summarising of the homework but not in relation to the goals of the therapy. With regard to the present study, consideration may be required in relation to the non-clinical sample used — that is, the participants are not in therapy. Accordingly, the wording on this item may be problematic for this sample. All the same, the design of the study did require each participant to have a specific rationale and goal for learning the relaxation technique (homework). Thus, while the participants were not in therapy, the study was still designed to suit the behaviours required.

In summary, there are a number of possible interpretations for the frequency and rater agreement differences found between the results of the systematic and non-systematic conditions. It appears that researcher error occurred on some occasions, resulting in some of the prescribed behaviours not being included in the session. Additionally, the results suggest that rating proscribed behaviours was potentially more difficult than prescribed behaviours. The stronger rater agreement within the systematic condition provides some support for this reasoning. An alternative rationale is that the researcher did inadvertently include more behaviours in the non-systematic condition than was intended. It must also be considered that such inadvertence would then reduce the number of differences between the conditions — thus impacting on the results and potentially accounting for the lack of significance found in

some of the hypotheses. Together with a small sample size, this possibility could have impacted on the results.

#### **10.4 Adherence to the homework**

The first hypothesis aimed to examine differences in homework compliance between the systematic and non-systematic conditions. More specifically, hypothesis one posited that the participants in the systematic group would have higher levels of homework compliance. Several indexes of homework compliance were utilised to examine this hypothesis. Firstly, quantity of adherence was calculated. While the data showed that the systematic group did have a greater level of engagement in completing the homework, the magnitude of effect between the two groups was minimal ( $d = 0.07$ ). However, what was interesting in the results was that those in the non-systematic group initially committed to practise more times than those in the systematic group, yet actually practised an average of 1 time less than what they had intended ( $M = 5.8$ ,  $SD = 2.4$  and  $M = 4.8$ ,  $SD = 3.0$  respectively). The standardised mean difference calculation found that there was a moderate difference between planned versus actual homework compliance ( $d = .37$ ). Comparatively, the systematic group's intended levels of practice and actual levels of practice were extremely close ( $M = 5.2$ ,  $SD = 1.5$  and  $M = 5.0$ ,  $SD = 2.9$  respectively), with a very small standardised mean difference,  $d = 0.09$ .

The difference between the groups planned versus actual homework compliance can be attributed to the different administration between the systematic and non-systematic groups. More specifically, the fact that participants in the systematic group were involved in a detailed discussion around how, when, and where they would practise the relaxation enabled them to be realistic in their planning of the homework task and follow through on this planning. This

discussion and planning appears to have made the homework a more realistic and achievable goal. The same detailed discussion did not occur in the non-systematic group. This difference in how homework was administered between the two conditions could therefore be responsible for the difference in homework compliance, which has important clinical implications. It indicates that this could be a vital factor to be included in the process of administering homework to clients in session. Unfortunately, the HAACS measure used for assessing the researcher's adherence to the protocol lacked the level of specificity required to determine whether this factor (when, where, how often, and how long) was indeed administered differently between conditions. While the HAACS measure did assess this factor, it did not separate the four features; therefore, if only one feature was included in the session, the overall behaviour was marked as present. This is a limitation of the study and is discussed in further detail under limitations in 10.10.

Analysis of the frequency of homework completion showed that 53% of participants in the systematic group achieved or exceeded their agreed homework completion goal, while by comparison only 35% of the participants in the non-systematic group achieved or exceeded their agreed homework completion goal. In addition, those participants in the systematic group that did not meet homework completion goals (47%) were still able to complete 75% of the homework. In comparison, participants in the non-systematic group that did not meet their homework completion goal (65%) completed 63% of the homework.

The second index of homework compliance used data from the HRS II quantity question. The result confirms that for this data set there is a statistically significant difference in the mean ranks of homework compliance between the systematic and non-systematic groups. In sum, the results of the HRS II quantity question partially support the hypothesis

that the participants in the systematic group did have higher levels of compliance to the homework.

In conclusion, the first index designed to measure homework compliance found no significant difference in actual practice completed between conditions, however, found a moderate standardised mean difference between levels of planned homework compliance and actual homework compliance for the non-systematic condition. The second index found a statistically significant difference in homework compliance. This positive result supports a key difference between the groups in the form of the discussion around when, where, and how the homework would be practised. That is, the systematic condition's more detailed process appeared to assist participants in setting more achievable homework goals. These results support existing research, which has found that there are pitfalls in assigning vague homework (McCarthy, 1985). Beck et al. (1979) also highlighted the importance of specificity in his recommendations for therapists when setting homework. While only a pilot study, the present result highlights the importance of a more enhanced protocol to be used when setting homework, and as such has implications for clinical practice.

### ***10.5 Beliefs in completing homework***

A key theoretical foundation of homework compliance is that clients form beliefs based on a cost/benefit analysis of doing the activity (Ajzen & Fishbein, 1977; Bandura, 1986). That is, if the homework is of benefit to them they will complete it; however, if the costs are too high and the benefits too low (e.g., too much time is required to complete the homework activity for very little or no perceived gain), then they will not comply with the homework task. In the present study the aim was to investigate if there were differences in the participants' beliefs between the two conditions. The HRS II was used as the assessment

measure. The second hypothesis posited that participants in the systematic group would have more positive beliefs in completing the homework.

Examination of the univariates of the HRS II measure found there were significant differences in the behaviour and the synthesis/consequence subscales. The behaviour subscale is made up of two of the HRS II items: quantity and quality. Therefore, a significant difference in this subscale suggests that those in the systematic group had increased levels of engagement (quantity) and a higher level of learning through completing the homework well (quality) in comparison to participants in the non-systematic group. The standardised mean difference ( $d = .41$ ) suggests that the magnitude of the effect between the two groups was moderate. These results support the theory that the participants who benefited from practising the relaxation continued with the behaviour, and as a result gained a better-quality result.

Behavioural theories advocate a link between behaviours and their consequences. With regard to this study once the homework had been carried out (relaxation practice) there are immediate consequences of the behaviour. The cognitive theories suggest that the consequences of the behaviour are vital as they enable the client to evaluate the costs and benefits of the homework assignment (Kazantzis & L'Abate, 2005). In regard to the present study, there was a significant result found for the synthesis/consequence subscale, together with a moderate standardised mean difference ( $d = .49$ ). This suggests that there were immediate consequences determined by the participants. This subscale is made up of five of the HRS II items: match with therapy goals, progress, difficulty, sense of pleasure, and sense of mastery. The significant difference found in this subscale implies that those in the systematic group more readily synthesised their experiences in completing the homework and that its consequences were largely beneficial to them. The higher results in the systematic

group suggest that those participants may have had less difficulty in completing their homework task, enjoyed practising the relaxation technique (pleasure), and gained a sense of control over their problems as a consequence of this practice (mastery). Furthermore, cognitive theories propose that clients employ a synthesising process after completing a homework activity in order to learn from it and form conclusions based on this learning (Kazantzis, Deane & Ronan, 2005). In this study, the significant results proposes that the participants in the systematic group rated their relaxation practice a good match with their therapy goal and found that the homework helped them progress towards their goal (i.e., reducing their levels of stress or anxiety).

While the beliefs and situation subscales did not show significant differences between groups, this was an expected result. The questions of the HRS II that made up these two subscales were in fact kept constant in both conditions. For example, the beliefs subscale was made up of items relating to rationale, comprehension, specificity, and collaboration and the situation subscale comprised only the obstacles item. When considering each of these items separately, all but one item was administered in the same way across both conditions. Therefore, finding no significant differences between conditions supports the standardised administration and the researcher's adherence to the protocol for both groups. Additionally, it further strengthens the results indicating that there was an impact on the outcome where items were administered differently between groups.

Examination of the intercorrelations of the four subscales found that the behaviour and synthesis/consequence subscales for both the systematic and non-systematic groups were significant. These results support the theory that as participants' amount of practice and their quality of practice increased, so too did their sense of pleasure, and sense of mastery, match

with therapy goals and progress. The strongest correlation (situation and behaviour subscales) within the non-systematic condition suggests that, as obstacles reduce, the homework behaviour increases, or vice versa. This relationship further supports the theoretical foundations of homework compliance. A negative correlation was also found for this combination in the systematic group, suggesting that either fewer obstacles occurred for this group or, potentially, more effort was expended in trying to complete the homework. Either or both of these possibilities could be due to the higher level of planning that occurred within the assign stage of the protocol for the systematic group.

In summary, examination of the univariate subscales found that two subscales — behaviour and synthesis/consequence — *did* vary significantly between conditions. The differences appeared to relate to the behaviour of the participants and in their learning from their behaviour. That is, participants in the systematic group completed more homework and learned from their behaviour (practising). It could be postulated that they drew conclusions based on the consequences of their behaviour. The individual factors that make up these subscales were administered differently between conditions, further supporting the use of the model in increasing participants' beliefs around homework. The two subscales — beliefs and situation — that *did not* manifest significant differences between conditions were kept constant across conditions; thus, a lack of difference here supports consistent administration of homework between conditions for those items. In conclusion, participants' beliefs in completing the homework was found to be supported, with those in the systematic group having more positive beliefs in completing the homework within the subscales that were specifically retained in their sessions.

### ***10.6 The effects of homework adherence on anxiety***

The third hypothesis posited that greater adherence to the relaxation homework would correlate positively with reductions in anxiety. The results found small but significant relationships between three of the four variables. In considering the state anxiety results, the data found that both correlations were significant; however, both results were also positive. This finding indicates that as the level of homework practice increased so too did their state anxiety. While such a result was unexpected, there are several possible reasons for this outcome. Firstly, participants may have found that fitting the homework into their daily lives operated as a stressor for them; thus, their state anxiety increased together with the practice. Individual comments made by some participants did confirm that while they enjoyed the relaxation, they sometimes found it stressful finding the time to practice. A second possible reason for this result is that participants completed the STAI questionnaire *prior* to meeting with the researcher in the second session. Therefore, when completing the questionnaire they had not yet reported their results, and as a consequence may have been at an increased level of state anxiety. It would have been useful to see whether this result differed had the questionnaire been completed *after* meeting with the researcher. Another possible reason is that relaxation may not be effective in the treatment of non-clinical anxiety in a single-session protocol.

The trait anxiety correlations had one significant result. This occurred between the levels of actual practice and trait anxiety. This result was negative — indicating that as the quantity of homework increased, the levels of trait anxiety decreased. While state anxiety may be considered the area most likely to observe change, as these results show, trait anxiety can also evidence change. In fact, a reduction in trait anxiety is ideally what is sought, as trait anxiety refers to persistent anxiety as opposed to current mood (state) (Blomgren, Roy,

Callister & Merrill, 2005). The success of relaxation, among and in conjunction with other treatments, in effecting change on trait anxiety has been used successfully in treating clients with disorders such as generalised anxiety disorder (Arntz, 2003). While the reductions in trait anxiety found in the current study are only small, what must be considered is that in the majority of cases the change was evidenced over the short period of one week only. Whereas, the majority of empirical support for the utility of relaxation, are from studies conducted over the period of weeks or months, rather than over a one-week period. One study (Kappes, 1983) assessing effects of relaxation training on anxiety used 16 training sessions, and found the most improvement after 8 sessions. Another study found that 6 sessions of relaxation reduced levels of anxiety with schizophrenic clients (Van Hassel, Bloom & Gonzalez, 1982).

Furthermore, during the week of relaxation practice, each participant selected how often they would practise; thus, some participants practised more than others. A study investigating relaxation compliance over a four-week period (Hoelscher, Lichstein & Rosenthal, 1984) found that anxiety reduction was significantly related to the amount of relaxation completed. Another possible reason for the small anxiety reductions was that the participants within the present study came from the non-clinical population, meaning that significant results are potentially harder to obtain, as individuals' anxiety levels are generally not within a higher, clinical range. In addition to this factor, only one practice session took place with the researcher, while most research projects or treatments are conducted over a number of weeks during which numerous practice and training sessions take place, assisting the client in progressing with the technique over time.

In summary, the results partially support hypothesis three. State anxiety was found to increase as adherence to homework increased; however, small but significant reductions were found in trait anxiety as the actual practice levels increased.

### ***10.7 Changes to the levels of anxiety***

As previously discussed, the behavioural and cognitive theories in relation to homework compliance suggest that clients form conclusions based on the consequences of their behaviour. Further to hypotheses one, which suggested that participants in the systematic group would have higher levels of homework compliance, hypothesis four postulated that participants in the systematic group would also show a greater reduction in anxiety. The results of the mean scores data found that the systematic group *did* indeed have lower levels of both state and trait anxiety than the non-systematic group. However, these results were not significant. There are several possible reasons for the lack of significance obtained. Firstly, this outcome could highlight that those in the non-systematic group also gained reductions in anxiety. The data results which found that both groups achieved reductions in state and trait anxiety levels support this theory. Additionally, significant results are less likely to be found in participants from the non-clinical population, especially when assessed over the short space of one week, rather than over longer periods of time. Furthermore, there may have been power issues for this hypothesis. The results of the standardised mean difference calculations showed small to moderate levels of differences between the two conditions, while the observed power level was .48. That is, the probability of detecting a small effect or difference was only 48%. While some of the analyses have achieved significant results for the previous hypotheses, Cohen (1988) states that it is important to remember that within the same study power will vary across the different hypotheses. In summary, there are various reasons as to

why the results were not significant for hypothesis four. Further discussion on the sample size will be outlined in limitations under 10.9.

### ***10.8 Clinical implications***

The results of this study found partial support for the enhanced systematic condition in comparison to the standard non-systematic condition. This outcome suggests that a more detailed and specific approach to the administration of homework within session can have an impact on increasing clients' adherence to homework. While such an encouraging result requires further support from research that has sufficient levels of power to achieve solid conclusions, it does intimate that there are notable differences between non-systematic and systematic planning of homework.

However, as the current study was designed as a preliminary analogue study, and as such used participants from the non-clinical population, it featured many aspects that were non-representative of a clinical study. Thus, to advance the guiding model's clinical implications, further research needs to use a more representative sample from the clinical population. Furthermore, the success of the guiding model for practice needs to be assessed when using a range of homework tasks that are often used within therapy. In utilising relaxation as the pre-planned homework assignment, this pilot study measured only one homework task. Additionally, the pre-planned nature of the relaxation homework could have implications. Controversy still surrounds individually tailored assignments versus pre-planned assignments, and the effects of the guiding model on either of these is yet to be determined.

Despite the limitations of this pilot study and its subsequent inability to generalise to clinical populations, the design of the guiding model for practice — which provides a step-by-

step guide to assist with integrating homework into therapy — lends itself well to training and supervision of CBT students and practitioners. Thus, should further research find support for the guiding model for practice (systematic condition) there is potential for it be utilised within clinical practice to attain increases in clients' compliance with homework tasks.

### ***10.9 Limitations***

While this current study was designed in detail, carefully planned and the researcher worked hard to maintain its methodological rigour there are still a number of limitations that need to be discussed. These shortcomings include: small sample size leading to a reduced level of power; the use of two rater-pairs rather than one rater-pair, which potentially introduced anomalies; the inability to test the researcher's competence; the possible inflation or deflation of results through the use of measures that utilise self-report; the differences introduced with regard to the specificity of planning the homework task due to the fact that the relaxation technique was physical; a possible confound in the test-retest results; the possibility that gender had an impact on the state and trait anxiety results; the lack of specificity of the HAACS measure with one particular item.

One limitation of the study was the small sample size which consequently led to a reduced level of power for some of the hypotheses. Despite the small sample size statistically significant results were found for some of the hypotheses. However, it is important to remember that power does vary across the different hypotheses (Cohen, 1988). Thus, a lack of power could be a factor to consider for the null results found for hypothesis four. This could be resolved by conducting a second study, where more participants were assessed under exactly the same conditions. By increasing the sample size and combining the results of the

two studies, sufficient power would be achieved thereby enabling a valid conclusion to be reached.

Another possible limitation of the study was the use of four raters (i.e., two rater-pairs). The rationale behind the use of more than one rater-pair was a lack of funding to pay the raters — that is, experienced individuals who would offer their time for free were needed. It must be considered that using only one rater-pair would have ensured consistency across the tape ratings, rather than having two rater-pairs, which may have generated anomalies. In addition, as the rating of the tapes was conducted at one sitting only it would have been advantageous to have them rated throughout the study, allowing for feedback to be provided to both the raters and the researcher on the anomalies found. This approach could have potentially reduced inconsistencies.

While the study was designed to operate as a pilot study in assessing the guiding model for practice, it would have strengthened the results if the researcher's competence could also have been measured. To undertake this study and gain a good level of competence the researcher completed a number of training courses as previously outlined in chapter 7.2. However, despite this, a lack of competence in the researcher of this study may have meant that there were fewer differences between the groups — potentially negatively impacting on the results. Additionally, while this same lack of competence would have been evidenced in both groups, the systematic group did have 7 more behaviours within their sessions; thus, they may have been further negatively impacted due to a potential lack of competence on the 7 additional behaviours. Despite these possible negative implications, a key strength of the study was that there was only one researcher involved; thus, the behaviour during each session remained consistent for both conditions.

A further potential limitation of the study was the use of measures that utilised self-report. While self-report is commonly utilised within psychological research, it must also be mentioned that results can be inflated or deflated for various reasons. Although the HRS II measure uses self-report, its construction was based on the theoretical and empirical foundations for homework assignments (Kazantzis, Deane & Ronan, 2005), and to be meaningful requires clients to self-report as it is measuring their beliefs in relation to the homework task. The STAI measure also uses self-report, and as such has the same issues of over- or under-reporting. Additionally, due to the recruitment process, there was a possibility of desirability bias. The study was designed to seek individuals who were stressed or anxious and outlined the possibility of learning a relaxation technique that might help to reduce their levels of stress (see advertisement in Appendix G). This factor may have led some individuals to consciously or unconsciously inflate their initial STAI results to display higher levels of anxiety; and then, expecting to see a change (as advertised), deflated their second STAI results to indicate a reduction in stress. However, to combat this possibility the researcher did make it clear that each individual's results can vary widely.

Despite the standardised training of the relaxation exercise, the fact that it was a physical task could have operated as a potential confound on the study. When teaching the relaxation technique there were various options demonstrated of how to achieve a good level of tension in the muscles, and different techniques were found to suit different people. As these different techniques were trialled during the training session, it was found that some participants started to consider an appropriate place they could practise at home and thus what the best technique would be for them. This situation may have occurred in both conditions; but while in the systematic condition where and when the practice was to take place was

discussed and planned in great detail, it was not designed to be part of the non-systematic condition. This factor could have reduced the differences found between the two conditions. Additionally, after practising the technique and adjusting to the feelings it provoked, some participants were found to naturally start thinking and planning when they would be best to practise, while others did not. While this natural tendency was not curbed — and indeed would be considered a positive within any therapy session — within a research study where differences are trying to be maintained and controlled, it could potentially have had a negative impact by reducing the differentiation between the two conditions and subsequently affecting the end results.

There is a potential confound that must be considered in relation to the test-retest results. Three of the 44 participants could not come back one week after their first session and returned between two and three weeks later. This circumstance could have impacted on their anxiety results.

Another possible limitation of the study could be the impact of gender on the anxiety results. STAI results are often reported by gender due to the differences found between male and female anxiety levels. In the current study, of the 44 participants, 36 were female and only 8 were male (5 in the non-systematic group and 3 in the systematic group). However, due to the small sample size, the results were presented by group conditions only. While the individual participants' raw data were correctly assessed by both age and gender norms, gender may still potentially have had an impact on the outcome.

The lack of specificity of the HAACS measure to differentiate between the two conditions on the item of how, when, where, and for how long is a limitation of this study. This item represented an important difference between the two conditions, for which the

results provide some support. However, the wording of the HAACS measure on this item, requiring raters to rate the item as occurring even when only one or two of the four behaviours was present (when, where, how often, and how long), has meant that the raters were unable to specify if this difference *did* or *did not* occur in each condition. While the standardised methodology of the study meant that the researcher included the four behaviours in the systematic condition and only two of the behaviours in the non-systematic condition this was not able to be confirmed by the raters without making changes to the way this item was marked when using the HAACS measure. Future research will need to consider and resolve this issue, as it appears that this item could be a key ingredient to increasing client's adherence to homework. The inability to achieve this outcome for this study has impacted on ability to clearly link differences between the two conditions to this particular procedure within the protocol.

#### ***10.10 Implications for future research***

The results of this preliminary study show partial support for the use of the 'guiding model for practice', thus suggesting further research on the model would be valuable. While each of the items included in the model for practice have been selected due to strong theoretical support, it would be advantageous if future research could ascertain whether certain items have a greater impact on clients' homework compliance. In analysing each item individually, in addition to the model as a whole, much knowledge could be gained in supporting therapists to provide the optimal ingredients in increasing their clients' adherence to homework tasks.

Additionally, the results of the study support the utility of utilising a rating scale that assesses both the quantity and quality of homework compliance, rather than just focusing on

quantity. Gaining a more in-depth understanding of the client's experiences when they complete or don't complete the homework can only assist in providing a greater level of knowledge of what is important for the client.

### ***10.11 Conclusion***

Partial support was found for the study's four hypotheses, providing some endorsement for the more detailed approach of the systematic condition, and thus the guiding model for practice. As a preliminary study into the potential value of the model for practice, such support offers encouragement that an enhanced level of administration can have an impact on clients' homework compliance.

## References:

- Armitage, C.J., & Conner, M. (2000). Social cognition models and health behaviour: A structured review. *Psychology and Health, 15*, 173–189.
- Arntz, A. (2003). Cognitive therapy versus applied relaxation as treatment of generalized anxiety disorder. *Behaviour Research and Therapy, 41*, 633–646.
- Aron, A., & Aron, E.N. (1994). *Statistics for psychology*. Englewood Cliffs, NJ, US: Prentice-Hall.
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action-control: From cognition to behavior* (pp. 11–39). Heidelberg: Springer.
- Ajzen, I. (1988). *Attitudes, personality, and behavior*. Chicago: Dorsey Press.
- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84*, 888–914.
- Badgio, P.C., Halperin, G.A., & Barber, J.P. (1999). Acquisition of adaptive skills: Psychotherapeutic change in cognitive and dynamic therapies. *Clinical Psychology Review, 19*, 721–737.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Barlow, D.H., & Durand, V.M. (2002). *Abnormal psychology: An integrative approach*. Canada: Wadsworth Thomson Learning.
- Barrow, J.C. (1982). Coping skills training: A brief therapy approach for students with evaluative anxiety. *Journal of American College Health, 30*, 269–274.
- Beck, A.T., Rush, J.S., Shaw, B.F., & Emery, G. (1979). *Cognitive therapy for depression*. New York: Guilford.

- Bernstein, D.A., Borkovec, T.D., & Hazlett-Stevens, H. (2000). *New directions in progressive relaxation training: A guidebook for helping professionals*. Westport, Connecticut: Praeger.
- Blanchard, E.B. (2001). The Albany cognitive-behavioral treatment manual. In E.B. Blanchard (Ed.), *Irritable bowel syndrome: Psychosocial assessment and treatment* (pp. 213–246). Washington, DC: American Psychological Association.
- Blanchard, E.B., Nicholson, N.L., Taylor, A.E., Steffek, B.D., Radntiz, C.L., & Appelbaum, K.A. (1991). The role of regular home practice in the relaxation treatment of tension headache. *Journal of Consulting and Clinical Psychology, 59*, 467–470.
- Blomgren, M., Roy, N., Callister, T., & Merrill, R.M. (2005). Intensive stuttering modification therapy: A multidimensional assessment of treatment outcomes. *Journal of Speech, Language, and Hearing Research, 48*, 509–523.
- Bogalo, L., & Moss-Morris, R. (2006). The effectiveness of homework tasks in an irritable bowel syndrome cognitive behavioural self-management programme. *New Zealand Journal of Psychology, 35*, 120-125.
- Borkovec, T.D., & Fowles, D.C. (1973). Controlled investigation of the effects of progressive and hypnotic relaxation on insomnia. *Journal of Abnormal Psychology, 82*, 153–158.
- Borkovec, T.D., Newman, M.G., Pincus, A., & Lytle, R. (2002). A component analysis of cognitive behavioural therapy for generalized anxiety disorder and the role of interpersonal problems. *Journal of Consulting and Clinical Psychology, 70*, 288-298.
- Boscolo, L., Cecchin, G., Hoffman, L., & Penn, P. (1987). *Milan systemic family therapy*. New York: Basic Books.
- Brambrink, D.K. (2004). A comparative study for the treatment of anxiety in women using electromyographic biofeedback and progressive relaxation and coping with stress: A

- manual for women. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 65, 3146.
- Bryant, M.J., Simons, A.D., & Thase, M.E. (1999). Therapist skills and patient variables in homework compliance: Controlling an uncontrolled variable in cognitive therapy outcome research. *Cognitive Therapy and Research*, 23, 381–399.
- Burns, D.D., & Auerbach, A.H. (1992). Does homework compliance enhance recovery from depression? *Psychiatric Annals*, 22, 464–469.
- Butler, G., Fennell, M., Robson, P., & Gelder, M. (1991). Comparison of behaviour therapy and cognitive behaviour therapy in the treatment of generalized anxiety disorder. *Journal of Consulting and Clinical Psychology*, 59, 167-175.
- Cicchetti, D.V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment*, 6, 284–290.
- Coakes, S.J., & Steed, L.G. (2003). *SPSS Analysis without Anguish Version 11.0 For Windows*. Singapore: Wiley.
- Cohen, J. (1988). *Statistical Power Analysis for Behavioral Sciences (2<sup>nd</sup> ed.)* Englewood Cliffs, NJ, US: Prentice-Hall.
- Conner, M., & Norman, P. (1996). The role of social cognition in health behaviours. In M. Conner & P. Norman (Eds.), *Predicting health behaviour: research and practice with social cognition models* (pp. 1–22). Buckingham, England: Open University Press.
- Conoley, C.W., Padula, M.A., Payton, D.S., & Daniels, J.A. (1994). Predictors of client implementation of counsellor recommendations: Match with problem, difficulty level, and building on client strengths. *Journal of Counseling Psychology*, 41, 3–7.
- Cox, D.J., Tisdelle, D.A., & Culbert, J.P. (1988). Increasing adherence to behavioral homework assignments. *Journal of Behavioral Medicine*, 11, 519–522.

- Crosbie-Burnett, M., & Lewis, E.A. (1993). Theoretical contributions from social and cognitive-behavioral psychology. In P.G. Boss & W.J. Doherty (Eds.), *Sourcebook of family theories and methods: A contextual approach* (pp. 531–561). New York: Plenum Press.
- Dancey, C.P., & Reidy, J. (2004). *Statistics without maths for psychology: Using SPSS for Windows, third edition*. Essex: Pearson Prentice Hall.
- DeJong, P., & Berg, I.K. (2002). *Interviewing for solutions* (2nd ed.). Pacific Grove, CA: Brooks/Cole.
- Detweiler, J.B., & Whisman, M.A. (1999). The role of homework assignments in cognitive therapy for depression: Potential methods for enhancing adherence. *Clinical Psychology: Science and Practice*, 6, 267–282.
- DiClemente, C.C., Prochaska, J.O., Fairhurst, S.K., Velicer, W.F., Velasquez, M.M., & Rossi, J.S. (1991). The process of smoking cessation: An analysis of precontemplation, contemplation, and preparation stages of change. *Journal of Consulting and Clinical Psychology*, 59, 295–304.
- D'Souza, P.J. (2003). The effects of relaxation training and written emotional disclosure for people with migraine or tension headaches. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 63, 5509.
- Dunn, H., Morrison, A.P. & Bentall, R.P. (2006). Patients' experiences of homework tasks in cognitive behavioral therapy for psychosis: A qualitative analysis. *Clinical Psychology and Psychotherapy*, 9, 361–369.
- Edelman, R.E., & Chambless, D.L. (1995). Adherence during sessions and homework in cognitive-behavioural group treatment of social phobia. *Behavior Research and Therapy*, 33, 573–577.

- Erdfelder, E., Faul, F., & Buchner, A. (1996). GPOWER: A general power analysis program. *Behavior Research Methods, Instruments & Computers*, 28, 1–11.
- Fisher, P.L., & Durham, R.C. (1999). Recovery rates in generalized anxiety disorder following psychological therapy: An analysis of clinically significant change in the STAI-T across outcome studies since 1990. *Psychological Medicine*, 29, 1425–1434.
- Fleiss, J.L. (1973). *Statistical methods for rates and proportions*. New York: Wiley.
- Friedberg, R.D., & McClure, J.M. (2003). Clinical practice of cognitive therapy with children and adolescents. *Cognitive Behavioural Therapy*, 32, 47.
- Gilbertson, D.M. (2001). The effect of antecedent and consequent strategies on increasing student homework compliance and academic achievement. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 61, 6692
- Greenberg, L.S., Watson, J.C. & Goldman, R. (Eds.). (1988). *Process-experiential therapy of depression: Handbook of experiential psychotherapy*. New York: The Guilford Press.
- Hatcher, S.L., Favorite, T.K., Hardy, E.A., Goode, R.L., DeShetler, L.A. & Thomas, R.M. (2005). An analogue study of therapist empathic process: Working with difference. *Psychotherapy: Theory, Research, Practice, Training*, 42, 198–210.
- Heckhausen, H. (1991). *Motivation and action*. Berlin: Springer.
- Hesse, B.M., Sanchez, C.A., Oritz, M.A.C., & Pareja, M.A.V. (2005). Relaxation training in schizophrenic patients. *Revista Mexicana de Psicologia*, 22, 385–394.
- Hoelscher, T.J., Lichstein, K.L., & Rosenthal, T.L. (1984). Objective vs subjective assessment of relaxation compliance among anxious individuals. *Behaviour Research and Therapy*, 22, 187–193.
- Johnston, D.W. (1991). Behavioural medicine: The application of behaviour therapy to physical health. *Behavioural Psychotherapy*, 19, 100–108.

- Kappes, B.M. (1983). Sequence effects of relaxation training, EMG, and temperature biofeedback on anxiety, symptom report, and self-concept. *Journal of Clinical Psychology, 39*, 203–208.
- Kazantzis, N. (2000). Power to detect homework effects in psychotherapy outcome research. *Journal of Consulting and Clinical Psychology, 68*, 166–170.
- Kazantzis, N., Bjornholdt, A., Munro, M., Dobson, K.S., Merrick, P.L., Fletcher, R.B., Jones, D., & James, Y.H. (2006). *Development of the Homework Rating Scale: A measure of patients' beliefs about homework in cognitive therapy*. Poster session presented at the annual convention of the Association for Cognitive and Behavior Therapies, Chicago.
- Kazantzis, N., Dattilio, F.M., & MacEwan, J. (2005). In pursuit of homework adherence in behavior and cognitive behavior therapy: Comment on Malouff and Schutte. *The Behavior Therapist, 28*, 179–184.
- Kazantzis, N., & Deane, F.P. (1998). Theoretical orientations of New Zealand psychologists: An international comparison. *Journal of Psychotherapy Integration, 8*, 97–113.
- Kazantzis, N., & Deane, F. (1999). Psychologists' use of homework assignments in clinical practice. *Professional Psychology, Research & Practice, 30*, 581–585.
- Kazantzis, N., Deane, F.P., & Ronan, K.R. (2000). Homework assignments in cognitive and behavioral therapy: A meta-analysis. *Clinical Psychology: Science and Practice, 7*, 189–202.
- Kazantzis, N., Deane, F.P., & Ronan, K.R. (2004). Assessing compliance with homework assignments: Review and recommendations for clinical practice. *Journal of Clinical Psychology, 60*, 627–641.
- Kazantzis, N., Deane, F.P., & Ronan, K.R. (2005). In N. Kazantzis, F.P. Deane, K.R. Ronan & L. L'Abate (Eds.), *Using Homework Assignments in Cognitive Behavior Therapy* (pp. 61–74). New York: Routledge Taylor & Francis Group.

- Kazantzis, N., Deane, F.P., Ronan, K.R., & Lampropoulos, G.K. (2005). In N. Kazantzis, F. P. Deane, K. R. Ronan & L. L'Abate (Eds.), *Using Homework Assignments in Cognitive Behavior Therapy* (pp. 35–60). New York: Routledge Taylor & Francis Group.
- Kazantzis, N., & L'Abate, L. (2005). Theoretical Foundations. In N. Kazantzis, F.P. Deane, K.R. Ronan & L. L'Abate (Eds.), *Using Homework Assignments in Cognitive Behavior Therapy* (pp. 9-34). New York: Routledge Taylor & Francis Group.
- Kazantzis, N. & Lampropoulos, G.K. (2002). The use of homework in psychotherapy: An introduction. *Psychotherapy in Practice*, 58, 487–488.
- Kazantzis, N., Lampropoulos, G. K., & Deane, F.P. (2003). *A national survey of psychologists' attitudes towards homework assignments*. Manuscript submitted for publication.
- Kazantzis, N., Lampropoulos, G. K., & Deane, F.P. (2005). A National Survey of Practicing Psychologists' Use and Attitudes Toward Homework in Psychotherapy. *Journal of Consulting and Clinical Psychology*, 73, 742–748.
- Kazantzis, N., MacEwan, J., & Dattilio, F.M. (2005). A guiding model for practice. In N. Kazantzis, F. P. Deane, K. R. Ronan & L. L'Abate (Eds.), *Using homework assignments in cognitive behavior therapy* (pp. 357–404). New York: Routledge.
- Kazantzis, N., & Ronan, K.R. (2006). Can between-session (homework) activities be considered a common factor in psychotherapy? *Journal of Psychotherapy Integration*, 16, 115–127.
- Kazantzis, N., Ronan, K.R., & Deane, F.P. (2001). Concluding causation from correlation: Comment on Burns and Spangler (2000). *Journal of Consulting and Clinical Psychology*, 69, 1079–1083.
- Kazdin, A.E. (1978). Evaluating the generality of findings in analogue therapy research. *Journal of Consulting & Clinical Psychology*, 46, 673–686.

- Kazdin, A.E., & Mascitelli, S. (1982). Covert and overt rehearsal and homework practice in developing assertiveness. *Journal of Consulting and Clinical Psychology, 50*, 250–258.
- Leahy, R.L. (2002). Improving homework compliance in the treatment of generalized anxiety disorder. *Journal of Clinical Psychology, 58*, 499-511
- Leahy, R.L. (2005). Panic, Agoraphobia, and Generalized Anxiety. In N. Kazantzis, F. P. Deane, K. R. Ronan & L. L'Abate (Eds.), *Using homework assignments in cognitive behavior therapy* (pp. 357–404). New York: Routledge.
- Lefrancois, G.R. (1994). *Theories of Human Learning*. Pacific Grove, CA: Brooks/Cole Publishing Company.
- Leventhal, H. (1970). Findings and theory in the study of fear communications. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 119–186). New York: Academic Press.
- Leventhal, H., Nerenz, D.R. & Steele, D.J. (1984). Illness representations and coping with health threats. In A. Baum, S. E. Taylor & J. E. Singer (Eds.), *Handbook of psychology and health* (Vol. 4). Hillsdale, NJ: Erlbaum.
- Lysaker, P.H., & Whitney, K.A. (2006). Clinical and psychosocial correlates of anxiety related symptoms in schizophrenia. In C.M. Velotis (Ed.), *Anxiety Disorder Research*, (pp. 205–232). Hauppauge, NY,: Nova Science Publishers.
- Mahrer, A.R., Gagnon, R., Fairweather, D.R., Boulet, D.B. & Herring, C.B. (1994). Client commitment and resolve to carry out postsession behaviors. *Journal of Counseling Psychology, 41*, 407–414.
- Malouff, J.M. & Schutte, N.S. (2004). Strategies for increasing client completion of treatment assignments. *Behavior Therapist, 27*, 118–121.

- Martin, G. & Pear, J. (2003). *Behaviour Modification: What it is and how to do it* (Seventh Edition). Upper Saddle River, N.J.: Prentice-Hall.
- McCarthy, B.W. (1985). Use and misuse of behavioral homework exercises in sex therapy. *Journal of Sex & Marital Therapy, 11*, 185–191.
- Moore, R.G. & Garland, A. (2003). *Cognitive therapy for chronic and persistent depression*. Chichester, UK: Wiley.
- Munro, M.D. (2006). Client and Therapist Variability with Psychotherapy Homework: A preliminary Psychometric Evaluation of Two Scales. Unpublished Master's thesis, Massey University, Albany, New Zealand.
- Nickel, C., Kettler, C., Muehlbacher, M., Lahmann, C., Tritt, K.E., Rother, N., Egger, C., Rother, W.K., Loew, T.H. & Nickel, M.K. (2005). Effect of progressive muscle relaxation in adolescent female bronchial asthma patients: A randomised, double-blind, controlled study. *Journal of Psychosomatic Research, 59*, 393–398.
- Nickel, C., Lahmann, C., Tritt, K., Loew, T.H., Toth, W.K. & Nickel, M.K. (2005). Short communication: Stressed aggressive adolescents benefit from progressive muscle relaxation: A random, prospective, controlled trial. *Stress and Health: Journal of the International Society for the Investigation of Stress, 21*, 169–175.
- Ost, L. (1985). Coping techniques in the treatment of anxiety disorders: Two controlled case studies. *Behavioural Psychotherapy, 13*, 154–161.
- Pallant, J. (2001). *SPSS survival manual: A step by step guide to data analysis using SPSS (version 10)*. St Leonards, N.S.W.: Allen & Unwin.
- Parnell, L. (1998). Postpartum depression: Helping a new mother to bond. In Philip Manfield (Ed.), *Extending EMDR: A casebook of innovative applications* (pp. 37–64). New York: WW Norton & Co.

- Pawlow, L.A., O'Neil, P.M., & Malcolm, R.J. (2003). Night eating syndrome: Effects of brief relaxation training on stress, mood, hunger, and eating patterns. *International Journal of Obesity, 27*, 970–978.
- Petty, R.E., & Cacioppo, J.T. (1981). *Attitudes and persuasion: Classic and contemporary approaches*. Dubuque, IA: Brown.
- Prochaska, J.O., & DiClemente, C.C. (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research and Practice, 19*, 276–288.
- Primakoff, L., Epstein, N. & Covi, L. (1986). Homework compliance: An uncontrolled variable in cognitive therapy outcome research. *Behavior Therapy, 17*, 433–446.
- Rees, C.S., McEvoy, P., & Nathan, P.R. (2005). Relationship between homework completion and outcome in cognitive behaviour therapy. *Cognitive Behaviour Therapy, 34*, 242–247.
- Rippetoe, P.A., & Rogers, R.W. (1987). Effects of components of protection-motivation theory on adaptive and maladaptive coping with a health threat. *Journal of Personality and Social Psychology, 52*, 596–604.
- Robb, K.A., Williams, J.E., Duvivier, V., & Newham, D.J. (2006). A pain management program for chronic cancer-treatment-related pain: A preliminary study. *Journal of Pain, 7*, 82–90.
- Rogers, R.W., & Prentice-Dunn, S. (1997). Protection motivation theory. In David S. Gochman (Ed.), *Handbook of health behavior research* (pp. 113–132). New York: Plenum Press.
- Romas, J.A., & Sharma, M. (1995). *Practical stress management: A comprehensive workbook for managing change and promoting health*. Needham Heights: Allyn and Bacon.

- Rosenstock, I.M. (1974). Historical origins of the health belief model. *Health Education Monographs*, 2, 1–8.
- Rouillon, F. (2004). Long term therapy of generalized anxiety disorder. *European Psychiatry*, 19, 96–101.
- Scheel, M.J., Hanson, W.E., & Razzhavaikina, T.I. (2004). The process of recommending homework in psychotherapy: A review of therapist delivery methods, client acceptability, and factors that affect compliance. *Psychotherapy: Theory, Research, Practice, training*, 41, 38–55.
- Scheufele, P.M. (2000). The effects of progressive relaxation and music on attention, relaxation, and stress responses: An investigation of the cognitive-behavioral model of relaxation. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 60, 3845.
- Schmidt, N.B., & Woolaway-Bickel, K. (2000). The effects of treatment compliance on outcome in cognitive-behavioral therapy for panic disorder: Quality versus quantity. *Journal of Consulting and Clinical Psychology*, 68, 13–18.
- Schwarzer, R. (1992). *Self-efficacy: Thought control of action*. Washington, DC: Hemisphere Publishing.
- Scott, M.J., & Stradling, S.G. (1997). Client compliance with exposure treatments for posttraumatic stress disorder. *Journal of Traumatic Stress*, 10, 523–526.
- Shelton, J.L., & Levy, R.L. (1981a). *Behavioral assignments and treatment compliance: A handbook of clinical strategies*. Champaign, Illinois: Research Press.
- Shelton, J.L., & Levy, R.L. (1981b). A survey of the reported use of assigned homework activities in contemporary behavior therapy literature. *The Behavior Therapist*, 4, 13–14.

- Spielberger, C.D. (1983). In collaboration with Gorsuch, R. L., Lushene, R., Vagg, P. R. & Jacobs, G. A. *State-Trait Anxiety Inventory for Adults*. California: Mind Garden.
- Starcevic, V. (2005). *Anxiety Disorders in Adults: A Clinical Guide*. New York: Oxford University Press.
- Startup, M., & Edmonds, J. (1994). Compliance with homework assignments in cognitive-behavioral psychotherapy for depression: Relation to outcome and methods of enhancement. *Cognitive Therapy and Research*, 18, 567–579.
- Stetter, F. (2004). Relaxation therapies. Efficient contributions to psychotherapeutic and psychiatric treatment. *Psychotherapeutic*, 49, 281–291.
- Taylor, C.B., Farquhar, J.W., Nelson, E., & Agras, S. (1977). Relaxation therapy and high blood pressure. *Archives of General Psychiatry*, 34, 339–342.
- Van Hassel, J.H., Bloom, L.J., & Gonzalez, A.M. (1982). Anxiety management with schizophrenic outpatients. *Journal of Clinical Psychology*, 38, 280–285.
- Waltz, J., Addis, M.E., Koerner, K., & Jacobson, N. (1993). Testing the integrity of a psychotherapy protocol: Assessment of adherence and competence. *Journal of Consulting and Clinical Psychology*, 61, 620–630.
- Weinstein, N.D. (1988). The precaution adoption process. *Health Psychology*, 7, 355–386.
- Whitehead, J.L. (2005). Treating AD-related anxiety as measured by the BASC in adolescents with Asperger's disorder. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 66, 2174.
- Whittington, C.J., & Podd, J.V. (1996). Human performance and physiology: A statistical power analysis of ELF electromagnetic field research. *Bioelectromagnetics*, 45, 212.
- Woods, C.M., Chambless, E.L., & Steketee, G. (2002). Homework compliance and behavior therapy outcome for panic with agoraphobia and obsessive compulsive disorder. *Cognitive Behavioural Therapy*, 31, 88–95.

Worthington, E.L., Jr. (1986). Client compliance with homework directives during counseling.

*Journal of Counseling Psychology, 33*, 124–130.

Zaza, C., Sellick, S.M., & Hillier, L.M. (2005). Coping with cancer: What do patients do?

*Journal of Psychosocial Oncology, 23*, 55–73.

**APPENDIX A**

**Information Sheet and Consent Form**

## Information Sheet

My name is Anna Connolly and I am a postgraduate student at Massey University. I would like to invite you to take part in my relaxation study, where I would teach you a relaxation technique called Progressive Muscle Relaxation. This relaxation study is part of my work for a BA Honours degree.

### **Why should I participate?**

The research I am doing will be of interest to you if you are feeling some stress or anxiety in your life and want to do something about it. This is a great opportunity to learn a relaxation method that may help you to reduce your levels of stress or anxiety.

### **How will the study benefit me?**

Relaxation exercises are designed to help you learn how to reduce your muscular tension and to generally become more aware of tension in your body. By learning to control muscular tension you will gradually find it possible to relax. Reducing tension can help you to reduce everyday stress.

### **If I choose to take part what will I need to do?**

If you decide to take part you will need to attend two sessions that are one week apart. These are to be held at the Massey University Psychology clinic, in Albany.

In the first session you will be taught the Progressive Muscle Relaxation technique. This technique involves learning how to tense and relax 16 different muscle groups. Research demonstrates this technique is effective and most people find it useful in helping them to reduce their levels of stress and anxiety. You will also be asked to complete a questionnaire taking approximately 10 minutes, to assess your current level of anxiety. This first session will take approximately 50 minutes.

You will be asked to practise the technique with the assistance of a tape/CD between the first and second sessions. We will provide you with a tape/CD.

At the second session, held one week later, you will have the opportunity to discuss your experiences in practising the relaxation exercise. This will be a key opportunity for you to raise any questions and receive further guidance in using the relaxation technique to best suit your needs. You will also complete questionnaires on your experiences and levels of anxiety. This second session will take approximately 30 minutes.

Both sessions will be audio-taped purely for the assessment of the researcher's adherence to the procedures required for the study.

You will need to be fluent in English and aged between 18 and 65 to participate. You will also need to complete a screening questionnaire to ensure you meet other criteria for this study.

**Participant's Rights:**

You are under no obligation to accept this invitation to participate in this study. If you decide to be involved you have the right to:

- Withdraw from the study at any time. However, once you have attended the first session your data will still be used for research purposes within the study. Please be aware that both you and your data will still remain confidential even if you withdraw from the study;
- Ask any questions about the study at any time during participation;
- Provide information on the understanding that your name will not be used;
- Be given access to a summary of the project findings when it is concluded.

**Support Processes:**

If you find that your stress or anxiety is at an uncomfortable level and you require support for this please contact your General Practitioner in the first instance. Support for anxiety can be received from Raeburn House which can be contacted on 441 8989. While your stress or anxiety levels can be reduced by using relaxation techniques, this study in no way claims to operate as psychotherapy, counselling or psychological treatment and professional assistance may be required for your health benefits and general well-being.

**Project Contacts:**

If you have any questions in relation to the study, please do not hesitate to contact the researcher Anna Connolly on 414 0800 x41252 or her supervisor Dr Nikolaos Kazantzis, on 414 0800 x41224.

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application 06/034. If you have any concerns about the conduct of this research, please contact Professor Kerry Chamberlain, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 x41226, email [humanethicsnorth@massey.ac.nz](mailto:humanethicsnorth@massey.ac.nz)

**Relaxation Study**  
**Helping clients make the most out of therapy: A pilot study**

**PARTICIPANT CONSENT FORM**

**This consent form will be held for a period of five years**

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree to participate in this study under the conditions set out in the Information Sheet.

I wish/do not wish to receive information on the results at the conclusion of the study.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name – printed \_\_\_\_\_

Address: (if you wish to receive results at the conclusion of the study)

\_\_\_\_\_  
\_\_\_\_\_

Email address: \_\_\_\_\_

## **APPENDIX B**

### **Participant Feedback**

The relaxation technique was selected as the homework task because it had strong empirical support for being beneficial to those who learnt and used it regularly. It was chosen for this study as it was felt that it was an opportunity to provide research volunteers with a useful technique they could use throughout their lives. The technique can be beneficial in managing daily stress and anxiety levels.

The feedback during the data-collection phase of the study was excellent and extensive, and many of the participants gained a skill that they found beneficial in helping them reduce their levels of anxiety and stress. Throughout the process there was a great deal of feedback, some of which is noted below:

- For me relaxation means stopping to smell the roses.
- Relaxation means time for myself.
- Relaxation is an escape for me and an important part of my day.
- It was a wake-up call for me. I learnt that I was tense throughout the day and that I can't sleep well because I can't relax. Now I am able to relax, I sleep well and wake up calm.
- It only worked for me when I was stressed.
- This is another tool to help me in my life.
- I was so relaxed that I saw the image of Jesus Christ rising out of the tomb, I felt happiness and detached from everything else.
- I found it physically relaxing but not mentally.
- Not only did I find it great but my husband loved it too.
- With practice relaxation got easier to achieve.
- My whole body felt refreshed, like I had just had a nap and I felt really energised at the end of it.
- I found it quite clinical and would have enjoyed some music in the background.
- The voice on the tape was really beneficial — it made me feel like I wasn't isolated and doing it on my own. It gives me time to switch off and is important for my well-being.
- I loved it! I now have a strategy that has almost become automatic. I don't do the whole tape now, but do it quickly in about 2 minutes and come out thinking "Oh good". It also helps me to recognise when I am stressed.

- Being able to keep the tape is great as it's a resource ready to go when I need it.
- It has been great, and I fall asleep straight away after doing it.
- Relaxation is having a blank mind, a heavy body and being chilled out!

This feedback supported the initial idea that the participants would gain a helpful technique to be able to use within their everyday lives. It made the data-collection phase of the project interesting, rewarding and worthwhile.

## **Appendix C**

### **Rationale and Procedure for the Relaxation Technique**

PMR was first developed in the 1930s. It consists of learning to sequentially tense and then relax various muscle groups, while at the same time paying close attention to the feelings associated with both tension and relaxation. Learning relaxation skills is very much like learning any other kind of skill, such as learning to ride a horse or play golf, it requires practice to get good at it. So all I can do is introduce you to the technique; success will require your input to practise regularly otherwise it will be of little use.

The technique requires us to tense and then relax various groups of muscle in our bodies. Now the reason that we produce tension is that everyone has some level of tension in their bodies and we all have an adaptation level — which is what we operate under on a normal day. The goal of PMR is to help you reduce your muscle tension below your adaptation level at any time you wish to do so. So we firstly produce more tension than usually felt in that muscle group and then release it. The release creates a momentum allowing the muscle tension to drop well below its normal level. It will also allow us to feel the difference between tension and relaxation and really appreciate the difference in feeling between the two.

Research has found benefit for some people who use the PMR technique. It has assisted some people in reducing their stress levels and level of anxiety. It has also been found to be helpful for some physical conditions such as asthma, etc. Often, it has been used in conjunction with other therapy such as medication or psychotherapy. So PMR is not a technique that will fix any problems you may have, but it may help reduce the tension you are feeling and enable you to use this as a healthy coping strategy when you are feeling stressed or anxious.

### **Basic procedure of PMR:**

Progressive muscle relaxation involves a succession of steps, which must occur for each muscle group. The sequence is as follows:

1. Focus on the muscle group stated.
2. When signalled by the therapist, tense the muscle group.
3. Maintain the tension for 5 to 7 seconds.
4. When signalled by the therapist, release the muscle group.

5. Maintain attention on the muscle group as it relaxes.

There are 16 muscle groups that we work through. These are:

1. Dominant hand and forearm
2. Dominant biceps
3. Non-dominant hand and forearm
4. Non-dominant biceps
5. Forehead
6. Upper cheeks and nose
7. Lower cheeks and jaws
8. Neck and throat
9. Chest, shoulders, and upper back
10. Abdominal or stomach region
11. Dominant thigh
12. Dominant calf
13. Dominant foot
14. Non-dominant thigh
15. Non-dominant calf
16. Non-dominant foot

This information is based on the text *Progressive Relaxation Training: A Manual for the Helping Professions* by Bernstein & Borkovec (1973).

## **Appendix D**

Class Presentation used to recruit Participants

**Relaxation Study**  
***Stressed? Worried?***  
***Learn To Relax for free***

© Original Artist  
Reproduction rights obtainable from  
[www.CartoonStock.com](http://www.CartoonStock.com)



"Fred, when are you going to learn  
to relax?"

- ***Learning relaxation may benefit you by helping you to reduce your level of stress or anxiety***

# **What does it involve?**

- *To meet with me for two sessions at the Centre for Psychology in Albany Village*
- *The first session takes approx. 1 hour where I will teach you Progressive Muscle Relaxation*
- *The second session is one week later, where we will discuss your experiences*

# What's in it for me?

- *You get one-on-one instruction to enable you to learn a relaxation technique for free!*
- *Get the opportunity to see if it benefits you, by helping you to reduce your levels of stress or anxiety*
- *Get a relaxation Tape/CD to keep*
- *Get to help me with my study*

# **In conclusion if you find that you**

- *Can tell the time of day by the traffic flow in the library or*
- *If everything reminds you of something in your discipline then call me to find out about learning how to relax!*

## **How to Contact me:**

- *Anna Connolly*
- *Ph: 414 0800 X 41252*
- *Or grab a flyer from the front of the class*

## **Appendix E**

### **Telephone Screening Questionnaire**

## Telephone Screening Questionnaire

Please answer the following questions. Do not hesitate to ask if something is not clear.

- 1) Are you aged between 18 and 65?
- 2) Are you fluent in English?
- 3) Do you have access to a tape or CD player?
- 4) Can you come to Massey University's Centre for Psychology in Albany for two sessions?
- 5) Have you ever been taught the Progressive Muscle Relaxation technique before? (It requires you to tense and relax various muscle groups.)
- 6) Do you have high blood pressure?
- 7) Have you ever been diagnosed with a mental health disorder such as depression, anxiety, alcohol or substance-related disorder or a personality disorder?
- 8) Are you currently taking any psychiatric medication that might be prescribed or not prescribed by a Doctor such as sleeping tablets, antidepressants/St Johns Wort, medication for anxiety, methadone?
- 9) Do you have any reason why you should not tense your muscles within this relaxation procedure? For example, do you have a medical condition, are you pregnant?
- 10) Are you currently undergoing counselling, psychotherapy, psychological or psychiatric treatment, or contemplating such treatment?
- 11) Do you have any physical paralysis? For example, paralysis of the left side of the body.
- 12) Do you have a condition where you feel detached from yourself or your surroundings, almost as if you are dreaming or living in slow motion? (This is called a dissociative disorder.)
- 13) Are you currently taking any recreational drugs, e.g., marijuana, speed, herbal highs, heroine or other stimulants? (Relaxation is more easily acquired when learned in the absence of drugs or alcohol.)

Thank you.

These criteria were adapted from past prerequisite requirements (Bemstein & Borkovec, 1973; Cook et al., 1992).

## **Appendix F**

### **Session Two Handout – Extending your relaxation skills**

## **Progressive Muscle Relaxation:**

You have been shown how to develop the skill of relaxation. This skill, if practised, results in increasing ability to deeply relax and, if applied properly, can result in reducing general daily tension and anxiety as well as reduced periodic stress reactions to daily events.

Using your relaxation skill effectively during the day to eliminate tension and anxiety will depend on your learning to catch the very early beginnings of bodily and mental cues indicating that you are becoming anxious. The sooner you can catch a beginning cue, and the sooner you respond with relaxing that cue away, the less anxiety will develop during the day. Eventually, you may well be able to relax away such cues automatically, without even thinking about it. It will just become a way of life for you. However, to learn this, it is essential that you practise identifying and relaxing away those cues frequently during the day. Remembering to do this is the hard part. I have listed below a few ways you can remind yourself to practise this important relaxation application.

1. Every hour, stop what you are doing and attend to what your body and mind are doing. Identify any feelings of tension, any sensations of anxiety, and any distressing thoughts, then briefly let go of those feelings or thoughts; relax them away. Then continue on with what you were doing.
2. Every time you change activities (for example, when you change tasks or move to a different location), do the same thing; check out your body and mind and relax away any signs of anxiety or stress. Try to become aware of the frequent beginnings of new activities or events in your day and relax yourself when you first enter the new activity or situation.
3. Any time you notice feelings of tension, anxiety or stress or the beginnings of a worry or other distressing thoughts, practise letting go of them and relaxing them away.

Adopting a relaxed lifestyle, as described above, will take time and practice. In the beginning you may notice little or no relief from following the procedures, but as your ability to relax improves with practice, and as your ability to identify even the smallest of anxiety cues increases as you follow the procedures listed above, your skill at eliminating tension, anxiety, stress or worry from your life will increase.

In addition to these procedures, once you have practised and gained the skill of deep relaxation with the sixteen muscle groups you can start to combine them to smaller muscle groups.

### **Combining Muscle Groups in Progressive Muscle Relaxation**

Once you feel comfortable with the Progressive Muscle Relaxation technique and are capable of achieving deep relaxation with the sixteen muscle groups, you can begin to decrease the amount of time and energy necessary to achieve deep relaxation.

#### **Relaxation procedures for Seven Muscle Groups:**

The original sixteen muscle groups are combined as follows:

**One:** The muscles of the dominant arm are tensed and relaxed as a single group; that is, the hand, lower arm, and biceps are combined. To achieve this you can hold the arm out in front of you with the elbow bent at about 45 degrees and make a fist. Or alternatively leave the arm supported on the arm of the chair and bend the arm at the elbow, make a fist and press the elbow down.

**Two:** Do the same as above for the non-dominant arm.

**Three:** Combining the three facial muscle groups. To achieve this, raise the eyebrows (or frown), squint the eyes, wrinkle up the nose, bite down and pull the corners of your mouth back. This should produce tension throughout the face.

**Four:** The neck and throat, this is tensed exactly as before.

**Five:** Combining the chest, shoulders, upper back and abdomen. To achieve tension, take a deep breath, holding it in, while pulling the shoulder blades together as well as making the stomach hard.

**Six:** Combine the muscles of the thigh, calf and foot together. To do this, lift the left leg off the floor slightly while pointing the toes and turning the foot inwards.

**Seven:** Do the same as above for the non-dominant leg.

You may need to experiment with some of these combinations to ensure you are getting tension in the right muscle groups and to assess which is the best procedure for you to get adequate tension. Any procedure is acceptable as long as you get tension throughout the entire area.

### **Relaxation procedures for Four Muscle Groups:**

One: This consists of the muscles of the left and right arms, hands and biceps. Combine them into one group by using the same tensing strategy you have been using, but do both arms at once.

Two: This involves the muscles of the face and neck. To get tension throughout this area, tense all of the facial muscles while at the same time employing the tension procedure you use for tensing the neck muscles.

Three: This includes the muscles of the chest, shoulders, back and abdomen. There is no change from the seven-group procedure.

Four: The final group consists of the muscles of the left and right upper leg, calf and foot; however, this time you are tensing both legs at once using the same procedures you have used before. Please ensure that you do not lose balance; if this is a problem, tense your legs separately, creating a five-group technique.

As you learn to combine the muscle groups this should save you time and should allow relaxation to occur more quickly. However, remember that your goal is to develop the ability to easily achieve deep relaxation at any time; achieving it more quickly is a secondary benefit.

This information is taken from the text *New Directions in Progressive Relaxation Training: A Guidebook for Helping Professionals* by Bernstein, Borkovec & Hazlett-Stevens (2000).

## **Appendix G**

### **Advertisement for Recruiting Participants**

## *Stressed? Worried?*

### Learn to relax at no charge

**Participate in this Massey University study and in two sessions you can learn a relaxation technique. This technique may benefit you by helping you to reduce your level of stress or anxiety. You will also receive a relaxation tape/CD to keep. This research study has been reviewed and approved by the Massey University Human Ethics Committee. To find out more and assess your eligibility phone Anna Connolly on 414 0800 x 41252.**