

**Autogenic Training (AT) for reducing anxiety and promoting
psychological well-being**

Thesis submitted to the

**FACULTY OF ARTS
UNIVERSITY OF ZULULAND**

**in partial fulfilment of the requirements for the
MASTER OF ARTS DEGREE IN PSYCHOLOGY (COUNSELLING)**

by

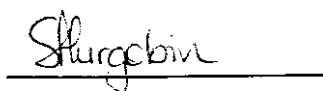
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November 2006

Declaration

This thesis is entirely my own work, and has not previously been submitted in whole or in part for the award of any qualification. All sources have been properly acknowledged.



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November 2006

Acknowledgements

I would like to thank my supervisor, Professor Steve Edwards, for his guidance and invaluable support during the course of this research.

I would like to extend my gratitude to all the participants in this research for their support and enthusiasm.

Thank you to my colleagues at the Student Counselling and Careers Centre, University of KwaZulu Natal (Pietermaritzburg), for their encouragement and support.

I would like to thank my husband, Sooviraj, for his support and encouragement during the course of my studies. Last but not least, I would like to thank my parents, in-laws, brother and sister for their continued support.

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Abstract

The present study investigated the effectiveness of Autogenic Training (AT), a relaxation technique, as a preventive measure against anxiety and as a technique to promote psychological well-being among students from the University of Zululand. Previous studies have shown that anxiety was prevalent among students on this campus. It was hypothesised that AT would decrease anxiety and increase psychological well-being.

A convenience sample and matched group design was used and it included an experimental group and a control group. The experimental group consisted of 11 postgraduate psychology students who received AT weekly for a period of 10 weeks. The control group comprised of a friend of each participant in the experimental group.

Questionnaires, the Beck Anxiety Inventory and the Scales of Psychological Well-being, were administered to both groups prior to and immediately after the 10 weeks intervention. At the end of the study, participants from the experimental group were asked about their subjective experiences of AT and its benefits. The impact of AT was assessed by the difference in anxiety levels and psychological well-being before and after the intervention.

Data from the questionnaires were analysed quantitatively using the Statistical Package for the Social Sciences (SPSS). Participants' evaluations of their subjective experiences of AT were studied qualitatively. The results of the study showed a significant reduction

in anxiety within the experimental group over time. In addition, there were significant increases in Total psychological well-being and Environmental Mastery within the same group over time. On the other hand, between groups comparisons indicated that the participants receiving AT showed a statistically significant improvement in the subscale Positive Relations With Others.

The experimental group also reported additional benefits. These included improved sleep, a feeling of being in control, increased energy levels, clarity of thoughts, better control over emotions, deeper relaxation and improved self-awareness.

This study suggests AT as an effective self-help tool and coping mechanism. It is strongly recommended that the students and people in general make AT part of their mental health promotion life-style and use it to ward off anxiety.

CHAPTER 1

1. Introduction

Hardly any human being is entirely free from stress and worry. People worry or get anxious about different things such as what may happen to their security, self-image, health, finances, education, career, family, others' opinion of them, and so on. The word 'anxiety' usually refers to worry, concern, stress, nervousness, unease and angst amongst others. Sadock and Sadock (2003) define anxiety as an unpleasant, vague sense of apprehension, often accompanied by physical symptoms such as headache, perspiration, tightness in the chest, mild stomach discomfort, indicated by an inability to sit or stand still for long. Everyone experiences anxiety from time to time because it is a normal reaction to a stressful or dangerous situation. Normal anxiety is actually helpful because it prompts a person to take the necessary steps to prevent the threat. Psychologists distinguish between two broad categories of anxiety: trait and state anxiety.

Many people are predisposed towards becoming anxious. Edelman (2006) states that this type of anxiety is referred to as trait anxiety because the predisposition is part of the individual's inherent personality. She adds that these individuals perceive the world as unsafe, are more likely to focus on possible dangers in everyday situations and tend to overestimate the likelihood that bad things will happen.

When anxiety is created by a perception of threat – a sense that something bad is going to happen, it is referred to as state anxiety. It is a temporary state that passes once the threat has disappeared (Edelman, 2006). Examples of situations that often trigger state anxiety include meeting deadlines, examination stress, demands at work, having to confront someone about an unpleasant issue, a child's illness, going for a job interview etc... From Edelman's (2006) point of view, in the vast majority of situations today (as opposed to our Stone Age ancestors), the perceived threat is to our emotional rather than our physical safety. She further adds that although most of the situations that trigger state anxiety do not present an immediate threat to our survival, we still respond as though our life is at stake. However, getting highly aroused in these situations is no longer helpful – physical changes caused by ongoing anxiety can lead to problems such as stomach trouble, jitters, tension headaches and even panic attacks (Edelman, 2006).

Test anxiety is a more specific type of state anxiety. It refers to the uneasiness, apprehension, or nervousness felt by students who have a fear of failing an examination. Many students do not actually fear the examination situation so much as they fear failure which so often accompanies test-taking (Luthe & Schultz, 1969). Test anxiety is often accompanied by physical symptoms like sweating, dizziness, headaches, racing heartbeats, nausea, and fidgeting. Students suffering from test anxiety may experience the association of grades with personal worth, fear of alienation from parents or friends, or feeling a loss of control. An optimal level of anxiety is adaptive to best complete an examination; however, when the anxiety exceeds that optimum, it results in a decline in performance (Anxietycoach.com, 2006).

Clearly, something would be wrong if an individual did not feel some anxiety in facing day-to-day stressors. So, a little bit of anxiety is good and adaptive but when it builds up, one needs to learn how to deal with it. When the degree of anxiety reaches a point whereby it begins to interfere with social, occupational/academic or other important areas of functioning and inner comfort, it can be described as pathological. Pathological anxiety operates on all levels – behavioural, cognitive, emotional and physiological – profoundly disturbing the patient’s health and mood (Anxiety-Disorder-Help.com, 2006). Intense or chronic anxiety can be a crippling condition that severely impairs our ability to do things, enjoy life and feel safe in our world (Edelman, 2006).

The recognition that anxiety and stress are major factors in illness is escalating (Goldberg, 1982). There is evidence that undue accumulated anxiety is conducive to major physical and mental disorders (Starak, 1984). In fact, problems related to anxiety are the most common reasons for people to seek the help of a psychologist or psychiatrist (Edelman, 2006). By the same token, according to Pillay, Edwards, Sargent, & Dhlomo (2001), anxiety is one of the more common psychological manifestations in the general population and is aggravated by life stress. Anxiety is found in more than 90% of patients diagnosed with depression (Anxiety-Disorder-Help.com, 2006). In addition, anxiety can exacerbate or be the cause of medical problems like asthma, pain, irritable bowel syndrome, ulcers, tension headaches and so on. From the above findings, it is of utmost importance that one learns how to manage one’s anxiety so that it does not disrupt one’s life.

The alarming fact is that people are becoming more receptive to using anxiolytics or anxiety-relieving drugs (minor tranquilisers) in relieving stress and anxiety. Twelve years back, Sue, Sue & Sue (1994) pointed out that about 1 in 10 adult uses anxiolytics at least once a year. From the trend of drug usage nowadays, it can be assumed that this figure has increased. For some people, anxiolytics is a 'safe' form of alcohol. Almost everything that happens with alcohol happens similarly with the anxiolytics, except vomiting and hangovers caused by toxic residues from the metabolism of alcohol and from the beverage itself (Werry, 1999). In addition, anxiety-relieving drugs are effective, low in cost and easy to administer. However, long-term use is discouraged because of side-effects (e.g. impaired alertness and sedation), potential for addiction, and withdrawal symptoms. Some professionals believe that benzodiazepines and other anxiolytics are greatly overprescribed and potentially addictive. The addictive nature of the benzodiazepine class became apparent in the mid 1960's when Valium (Diazepam), the first drug in the class to win the Food and Drug Administration's (FDA) approval, resulted in thousands of people who quickly showed the classic symptoms of addiction when used for more than a week or two consistently (Anxiety-Disorder-Help.com, 2006). Along those lines, Werry (1999) is of the opinion that anxiolytic drugs should be used with great caution and only for short periods.

Hence, it is crucial that one develops personal coping skills to obtain relief from anxiety without the use of medication. Anxious individuals who rely on anxiolytics, alcohol, or any other unsafe or maladaptive methods to obtain relief from anxiety need to reshape their coping responses. On a brighter and positive note, according to Carruthers (1984),

there is a rapidly increasing interest in holistic medicine in general, and its more self-help aspects, such as relaxation training and exercise, in particular. Relaxation techniques help to combat the autonomic effects of anxiety in a natural and safe way. These days with our advanced technological society and hectic pace of life, it is of utmost importance that people learn to relax.

Nowadays there is a wide array of relaxation techniques available. Relaxation is an important component in many complementary and alternative healing methods such as: meditation, yoga, tai chi, reiki, progressive muscle relaxation, breathing exercises, physical exercises, autogenic training, visualisation, and so on. All of these techniques acknowledge the importance and inseparability of mind/body relationships. "Mind and emotions directly affect health and disease: a thought or emotion can manifest itself bodily; conversely, a bodily process can translate itself into a thought or an emotion" (Johnson & Kushner, 2001, pp 257). Thus, the mind is a powerful tool for health and its power to influence the body is quite remarkable.

According to Johnson and Kushner (2001), the study of interactions between mind and body has emerged over the past 20 years, driving a paradigm shift towards a biopsychosocial/spiritual approach to disease and health, which can be distinguished from the biomedical model along several variables. Whereas the biomedical model focuses on disease, poor individual lifestyle choices and unhealthy behaviours, the biopsychosocial/spiritual model focuses on addressing the interconnected web of genetic, social, emotional, spiritual and physical factors that contribute to health (Johnson &

Kushner, 2001). As a matter of fact the World Health Organisation's (WHO) definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" parallels the biopsychosocial/spiritual model's conception of health.

The biopsychosocial/spiritual model emphasises meaning and support. A major tenet of this model is that meaning in life, relationships, and work and supportive human systems are considered primary determinants of wellness. In addition, the primary reason for change is to enhance sense of purpose, and enjoyment of life. According to this approach, the professional's role is to facilitate people's reconnection with their own internal wisdom about their bodies and lives and to create consciousness by assisting people in understanding healing life issues that underlie illness and behaviour struggles which enhances Personal Growth (Johnson & Kushner, 2001).

The principles of the biopsychosocial/spiritual model as described by Johnson and Kushner (2001) are comparable to Ryff's (1989) dimensions of psychological well-being. The question that comes to mind is - "What does it mean to be psychologically healthy?"

CHAPTER 2

2. Ryff's concept of psychological well-being

The definition of health has been widened and includes a psychological dimension. As mentioned before, the World Health Organisation (WHO) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. By the same token, Jahoda's (1958) (as cited in Ryff, 1989) positive criteria of mental health, which offer extensive descriptions of what it means to be in good psychological health were generated to replace definitions of well-being as the absence of illness.

There has been an increased interest in the study of psychological well-being which follows from the recognition that the field of psychology, since its inception, has dedicated much more attention to human unhappiness and suffering than to the causes and consequences of positive functioning (Diener, 1984) (as cited in Ryff, 1989).

When it came to identifying the basic structure of psychological well-being, discussions used to predominantly centre around the distinction between positive and negative affect and life satisfaction (Ryff & Keyes, 1995). However, psychological well-being does not equal happiness and life satisfaction. It has been argued that early conceptions of psychological well-being suffered from limited theoretical grounding, which led to the neglect of important facets of psychological health (Ryff, 1989). To understand the

concept of psychological well-being it is important to make a distinction between a happy life and a meaningful, purposeful life. As Ryff and Keyes (1995) point out, there is more to being well than feeling happy, content and satisfied with life. Realising one's objectives or purpose in life is not always easy – it calls for effort and discipline, which may at times be at odds with short-term happiness (Waterman, 1984) (as cited in Ryff, 1989).

Keyes, Shmotkin, and Ryff (2002) argue that the concept of psychological well-being draws heavily on formulations of human development and existential challenges of life. They posit that it stems from earlier theories in clinical and adult developmental psychology that highlighted the individual's potential for a meaningful life and self-realization in the face of challenge. It embodies humanistic values that elevate the human capacity to look at what makes life good (Keyes et al., 2002).

Some of the theories aimed at describing positive psychological functioning include Maslow's (1968) conception of self-actualization, Rogers's (1961) view of the fully functioning person, Jung's (1933) formulation of individuation, and Allport's (1961) conception of maturity. By the same token, life span developmental perspectives such as Erikson's (1959) psychosocial stage model, which emphasize the differing challenges faced at various phases of the life cycle, are another domain of theory for defining psychological well-being (all cited in Ryff, 1989). These theorists include some exposition of positive health in the mental health literature which generally elaborates the

negative end of psychological functioning and articulate wellness as trajectories of continued growth across the life cycle (Ryff & Keyes, 1995).

According to Keyes et al. (2002), psychological well-being therefore involves perception of engagement with existential challenges of life and examines perceived thriving with regard to those challenges, such as: establishing trusting relationships with others, having a positive attitude towards the self, having a sense of directedness in life, growing and developing as a person etc...

By reviewing the characteristics of psychological well-being described in the multiple frameworks of positive psychological functioning and by looking for the key points of convergence among the many formulations, Ryff (1989) came up with the core dimensions of an alternative formulation of psychological well-being. She suggested a multidimensional model of psychological well-being that extracted six psychological dimensions of challenged thriving, each of which articulates different challenges individuals encounter as they strive to function positively (Keyes et al., 2002). Ryff (1989) operationalised the six theory-guided dimensions of psychological well-being (see Appendix A).

Together, these dimensions encompass a span of wellness that includes positive evaluations of oneself and one's past life (Self-Acceptance), a sense of continued growth and development as a person (Personal Growth), the belief that one's life is purposeful and meaningful (Purpose in Life), the possession of quality relations with others (Positive

Relations With Others), the capacity to manage effectively one's life and surrounding world (Environmental Mastery), and a sense of self-determination (Autonomy) (Ryff & Keyes, 1995).

To comprehend the nature of wellness, Ryff (1989) investigated age and gender differences along the different dimensions of psychological well-being and found the following trends: Environmental Mastery and Autonomy increase with age, particularly from young adulthood to midlife. On the other hand, Purpose in Life and Personal Growth decrease as one gets older, especially from midlife to old age. There were no age differences for Self-Acceptance and Positive Relations With Others between the different age groups. As far as gender differences were concerned, Ryff's (1989) findings were that women scored significantly higher than men on the dimensions of Positive Relations With Others and Personal Growth. These findings were replicated in subsequent studies (Ryff & Keyes, 1995).

CHAPTER 3

3. Literature review on Autogenic Training

3.1 Historical perspective

The origins of autogenic training (AT) lie in the research into sleep and hypnosis that was carried out in the period 1890-1900 at the Berlin Institute by Oskar Vogt, a renowned brain physiologist (Kanji, 1997). Vogt observed that intelligent and critically minded individuals who had undergone a series of hypnotic sessions under his guidance were able to put themselves, for a self-determined period of time, into a state which appeared similar to a hypnotic state. While in these 'self-induced states', they experienced that their introspective self observation was greatly enhanced, thus enabling them to produce psychoanalytically valuable material more easily (Schultz & Luthe, 1959). In addition, these individuals reported that the 'autohypnotic' exercises had a remarkable recuperative and uplifting effect. Vogt further observed that these short-term mental exercises, when practised a few times during the day, reduced stressor effects such as fatigue and tension. An impression was gained that a person's overall efficiency could be improved. On the basis of these observations, Vogt considered such self-directed mental exercises, which he called 'prophylactic rest-autohypnosis', to be of definite clinical value (Kanji, 1997).

Stimulated by Vogt's work, Johannes Heinrich Schultz, a German psychiatrist and neurologist, started in 1905 to study certain psychophysiologic mechanisms and potentialities of different techniques of hypnosis and autosuggestion (Schultz & Luthe,

1959). Like Vogt, he saw that the autosuggestive approach could be used for the induction of mental states which, similar to hypnosis, open up psychophysiological possibilities of clinical value. Schultz intended to find a psychotherapeutic approach that would reduce or eliminate the unfavourable implications of contemporary hypnotherapy, principally the passivity of the individual and an undesirable dependency on the therapist (Kanji, 1997).

Schultz observed that his hypnotised patients regularly reported two distinct sensations: 'a feeling of heaviness in the extremities, often involving the whole body' and 'a feeling of agreeable warmth'. He wished to establish whether or not a person could induce a psychophysiological state similar to a hypnotised state by merely imagining heaviness and warmth in the limbs. Schultz also noticed that his patients moved into a trophotropic or healing state when they practiced instructions directed at the autonomic nervous system (Bailey, 1985) (as cited in Wright, Courtney, & Crowther, 2002).

From these observations and further study of yoga methods, hypnotic suggestion, autohypnosis, and methods used by fakirs, Schultz developed the system of AT, composed of basic and advanced stages. The basic stage is composed of six standard exercises for producing sensations of heaviness and warmth in the extremities, warmth in the epigastric region, and coolness in the forehead and for regulation of heart rate and breathing. The advanced stage of AT is the healing by 'nirvana' (nirvana therapy) (Wright et al., 2002). Changes of a somatic nature are achieved by the basic AT methods.

while the spiritual states are achieved by advanced AT methods (Romen, 1987) (as cited in Wright et al., 2002).

The original AT method was extended in the 1940s when Schultz and Dr Wolfgang Luthe, a general medical practitioner and chest physician, met (Kanji, 1997). Luthe's subsequent research extended the application of the technique, so that, in addition to the six standard exercises, AT therapeutic combinations focus on organ-specific changes, intentional formulae, and meditative exercises (Luthe & Schultz, 1969). However, a level of proficiency needs to be attained in the standard exercises before one can progress to the more advanced levels of application. According to Kanji (1997), the more complex meditative exercises are not started until after 6-12 months of standard training.

Figure 1 illustrates the various combinations of autogenic approaches viz. the standard exercises and the more advanced levels of application. However, only the standard exercises are relevant for the purpose of this study.

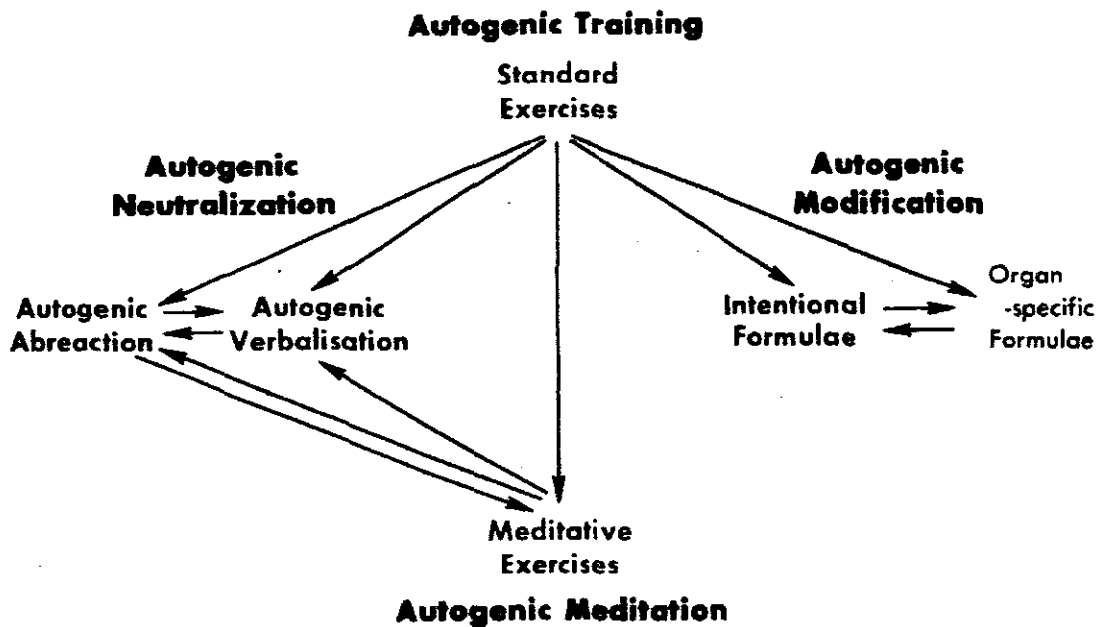


Figure 1: Schematic presentation of various combinations of autogenic approaches

Source: Schultz, J. H. & Luthe, W. (1969). *Autogenic Therapy. I: Autogenic Methods*. New York: Grune & Stratton.

3.2 What is Autogenic Training?

AT is experienced as a pleasant relaxation technique. It is simple, easy, and requires no special clothing or difficult postures. In addition, AT is not affiliated with any religion or belief system. It is a non-drug technique which can be learned easily and applied for a few minutes a day at convenient times no matter how busy the life schedule is (Carruthers, 1979). "From the Western point of view, it has the appeal of being without cultural, religious or cosmological overtones and requiring no special clothing or unusual postures or rituals. There are no external values or philosophies imposed upon those

practising autogenic training which, once learned, can be practised for the rest of a lifetime ” (Kanji, 1997, pp 162). Kanji (1997) states that through AT, a person can acquire a new and successful manner of thinking and living.

The term ‘autogenic’ literally signifies generated from within and according to Carruthers (1979) refers to two aspects of the process. Firstly, there is the basic shift from the “stressed state” in which most people now live, to a restorative, healing “autogenic state” in which the brain is better able to bring about a wide range of self-regulated readjustments of many systems within the body. He points out that the “stress responses” brought about by the “fight and flight” sympathetic system are reduced and the “rest and digest” actions of the parasympathetic system are amplified. AT aims to achieve a steadily increasing enhancement of energy and tranquillity (Kanji & Ernst, 2000). The second aspect of AT which makes its title appropriate, is that the process involves the active participation of each individual and is a form of self-help (Carruthers, 1979). He further adds that AT works on the important principle that, given the basic techniques and a degree of advice and encouragement, the trainee can proceed safely to apply the method for him/herself.

Korn (2002) suggests that AT elicits altered states of consciousness; the basic characteristics of which are mental and physical relaxation. Hence it functions at a physical and psychological level simultaneously. As a matter of fact, alpha-waves, associated with calmness, relaxation and well-being, seem to increase with the practice of AT (Linden, 1990). The AT exercises allow the mind to calm and reduce sympathetic

nervous system's response to stress and enables 'tapping' into ones own inner healing (Hidderley & Holt, 2004). By the same token, Kanji (1997) points out that the technique of AT supports the existing self-healing and self-regulating physiological functions of various body systems (homeostasis). He further adds that the emphasis is not on attempting to control or override these natural systems, but on helping them to use their inherent self-healing potential. By practising AT exercises, people are able to achieve a useful degree of voluntary control over the involuntary nervous system, restoring the balance between the sympathetic and parasympathetic divisions (Carruthers, 1984).

Carruthers (1979) draws attention to the fact that once it is possible to reduce excessive tension, a sense of wholeness and well-being is brought about by better communication between the two hemispheres of the brain which takes place during the practice of the exercises. This sense of balance is often reflected in improved physical co-ordination, creativity, and ability to concentrate. In addition, positive attitudes develop in diverse directions and, when combined with released energy, lead to a greater sense of personal confidence and enjoyment of life (Carruthers, 1979). Kanji (1997) agrees with Carruthers (1979) and points out that AT's standard formulae bring about better balance between the two brain hemispheres, leading to improved creativity at work and better communication in relationships.

Carruthers (1979) suggests that one of the most valuable areas of AT lies in its use as a powerful tool in preventive medicine. He states that with these self-regulating exercises

it is possible to maintain a state of “positive health” by recognising and correcting subtle dysfunctions before they become major diseases.

3.3 Autogenic Training – the technique

The autogenic exercises should be practised in a quiet room with reduced lighting so as to exclude the possibility of disturbance, all restricted clothing should be loosened or removed and the body should be relaxed with the eyes closed, before the mental exercises are begun (Schultz & Luthe, 1959).

AT is designed to enable the person (by himself/herself) to bring about a condition of mental and physical calm through the silent repetition of physiologically oriented phrases. Kanji (1997) describes AT as a psychophysiological form of psychotherapy which an individual carries out on him- or herself by the use of passive concentration and certain combinations of psychophysiological adapted stimuli (autogenic formulae). It involves mental repetition of brief verbal phrases intended to elicit specific bodily sensations involving heaviness and warmth, relaxed breathing and a cool forehead, among other things (Pikoff, 1984). Participants direct their attention to specific bodily areas and hear themselves think certain phrases reflecting a relaxed state (Sadock & Sadock, 2003). When applied in the state of relaxation, these phrases can influence the subconscious deeply (Hillmann, 2002).

The aim of AT is to enable the person, through passive concentration, to revert from a state of arousal associated with sympathetic activity of the autonomic nervous system to one of profound relaxation associated with parasympathetic activity (Luthe & Schultz, 1969). According to Kanji (1997), the individual's attitude, while repeating a formula in his or her mind, is deemed as 'passive concentration'. Any goal-directed effort or apprehension must be avoided. "Passive" involves requesting the participant to try to avoid voluntary forcing the results and not be concerned whether effects occur quickly or not (Reed & Meyer, 1974). Proceeding through gentle mental exercises in body awareness progressively involving the limbs, heart and circulatory systems, the breathing and nervous systems, almost any person can become skilled at experiencing passive concentration, which is the essence of the autogenic state (Carruthers, 1979).

Schultz theorised that by mentally connecting with parts of the body this would induce a psychophysiological state similar to the hypnotised state. This led to the development of *mental exercises which link the mind with the body.*

Schultz's basic AT technique consists of six standard exercises. Kanji and Ernst (2000) provide a concise description of the exercises: "The first exercise aims at muscular relaxation by repetition of a verbal formula, 'My right arm is heavy', emphasizing heaviness. Subsequent passive concentration is focused on feeling warm, initiated by the instruction 'My right arm is warm', followed by cardiac activity using the formula 'My heartbeat is calm and regular'. Then follows passive concentration on the respiratory mechanism with the formula 'It breathes me', then on warmth in the abdominal region

with ‘My solar plexus is warm’ and finally on coolness in the cranial region with ‘My forehead is cool’” (Kanji & Ernst, 2000, pp 106).

Since these exercises survive essentially unaltered today – indeed, these are the six standard exercises of modern AT – it may be said that Schultz’s research provided the cornerstone of AT (Kanji, 1997). Table 3.1 below gives the six standard exercises used in AT, sample autogenic phrases and the resulting effect(s) on the body.

Table 3.1: Autogenic Training – six standard exercises

Exercises	Examples of self-statements	Effect(s) on the body
Heavy	‘My right arm is heavy’ (left if left handed)	Creates relaxation of the muscles
Warm	‘My right arm is warm’ (alternatively left hand)	Broadens the blood vessels & creates warmth
Breathing	‘My breathing becomes quiet and regular’ or ‘It breathes me’	Creates slow, calm, regular breathing
Heart/pulse	‘My pulse beats quietly and regularly’	Creates a calmer & reduced pulse rate
Solar plexus (area between the sternum and the umbilicus)	‘The area around my solar plexus is warming up’	Creates relaxation in the abdomen organs
Forehead	‘My forehead is cool’	Creates a clear mind

Source: Leyh, C. (1999). *Autogenic training*. UK: Gigasound Ltd.

To encourage relaxation to occur, participants are encouraged to punctuate the exercises with positive affirmations like, “I am totally calm” or “I am at peace”. These words foster passive concentration. The state of passive concentration is terminated by the application of a three-step procedure: flexing the arms (and legs) vigorously, breathing deeply, and opening the eyes (Schultz & Luthe, 1959). It usually takes eight weeks to learn the technique, and home practice of the exercises is advocated (Kanji & Ernst, 2000). According to Carruthers (1984), people begin to experience the benefits of AT within two to three weeks of starting and enjoy the effects of doing something positive for themselves rather than being passively subjected to negative, generally inhibitory advice.

AT therefore is a method of self-suggestion. Autogenic means “self-regulation” and it refers to the way in which the mind can influence the body to balance the self-regulative systems that control circulation, breathing, heart rate, and so on (Holisticonline.com, 2005). The phrase acts as an internal stimulus eliciting a conditioned relaxation response. By focusing on relaxing phrases, AT conditions positive, relaxing responses, such as rhythmic breathing and heart rate and a warm, relaxed, heavy feeling throughout the body; physiological effects opposite to those of anxiety!

However, because AT requires mental concentration, competing thoughts may threaten the effectiveness of the relaxation formulas. Often during relaxation some unresolved problems that were pushed aside (such as pending examinations, performance pressure at university, financial obligations) become very intrusive and vivid because strong distractions have been removed. In addition to jeopardising the effect of relaxation

training, such intrusive thoughts can actually increase anxieties during relaxation in some participants (Linden, 1990).

The concept of relaxation-induced anxiety was propagated by Heide and Borkovec (1983) (as cited in Linden, 1990) who observed that a surprisingly large number of participants in Progressive Muscular Relaxation (PMR) became paradoxically anxious as they relaxed, given that relaxation training is conceived to serve as an anxiety reducer. These authors noted that this phenomenon was more likely to occur with participants who have high pre-training levels of generalised anxiety (Linden, 1990). According to Linden (1990), Heide and Borkovec's work (1983) is of importance to AT because of the similarities in PMR and AT rationale and the associated relaxation outcomes. The existence of similar increases in anxiety is supported by subjective reports of rising discomfort during AT (Luthe & Schultz, 1969).

Heide and Borkovec (1983) (as cited in Linden, 1990) offer a number of possible explanations for the paradox of increased anxiety during relaxation. The first explanation is that during relaxation a shift towards greater parasympathetic dominance occurs and the unfamiliarity with parasympathetic activity sensations (e.g. feelings of warmth and heaviness) may be particularly disturbing to chronically tense or anxious individuals (Linden, 1990). Also, as mentioned before, relaxation frequently brings about unfamiliar spontaneous muscular skeletal events like jerks, spasms, twitches, or restlessness which can aggravate the anxiety of the already anxious participants when they are trying to relax.

Another explanation for the paradox of increased anxiety during relaxation centres around the notion of “fear of loss of control”. Because AT is self-hypnosis that emphasises letting go, it is often associated with the loss of control. Some patients who are already anxious or overstressed may feel that they would go crazy if they ever let loose (Linden, 1990). Chronically anxious individuals may have learned to control their anxieties in the past by never letting go. They typically operate in a compulsive, rigid manner and cannot permit themselves to relax (Martin, 1951) (as cited in Linden, 1990). Linden (1990) posits that these individuals need AT the most but have the hardest time learning it. The latter recommends consistent motivation, pointing out of even the most minor progresses, while highlighting that this is a type of self-control training.

3.4 Applications of Autogenic Training

The available literature on AT suggests that AT has been effectively used for literally any medical/psychosomatic/psychiatric disorder that may possess a psychological component (Linden, 1990). The range of psychotherapy applications (both clinical and nonclinical) as listed by Luthe and Schultz (1969) includes patients with Parkinson’s disease, multiple sclerosis, brain injury, epilepsy, manic-depressive illness, schizophrenia, paranoia, anxiety, generalised anxiety disorder, stress related problems, dissociative disorder, conversion disorder, eating disorder, hypochondriasis, schizoid, compulsive and antisocial personality disorder, obsessive-compulsive behaviour, phobia, sexual deviation, addiction, enuresis, stuttering, sleep disorders, as well as individuals seeking improved performance in education, sports and industry. Medical applications include

peptic ulcer, ulcerative colitis, irritable colon, constipation, tension and migraine headache, angina pectoris, blood pressure control, bronchial asthma, pulmonary tuberculosis, diabetes mellitus, arthritis, thyroid dysfunctions, skin disorders and preparation for surgery (Luthe & Schultz, 1969).

Carruthers (1984) is to the point when referring to the applications of AT. He posits that “this system of mental training has been well documented for over fifty years and been found to be highly effective, not only in a wide range of psychosomatic and emotional disorders, but also as a powerful method in daily life for reducing the adverse effects of stress and the need for psychotropic drugs, while improving performance in a variety of situations from long-distance flying to competitive sport” (Carruthers, 1984, pp142).

Linden (1990) describes AT as the world’s most widely used self-regulation therapy. He further adds that in Japan and in German-speaking countries it is practised by a large proportion of general medical practitioners as a component in treatment for psychosomatic disease.

As a matter of fact, clinical results demonstrate that many patients suffering from a variety of long-lasting psychosomatic disorders like chronic constipation, bronchial asthma, cardio spasm, and sleep disorders have been cured or have improved considerably in periods ranging from two to eight months (Schultz & Luthe, 1959).

AT can also be of great benefit to many psychosomatic illnesses where stress, tension and anxiety play a big part (Bowden, 2002). As maintained by Schultz and Luthe (1959), AT improves self-regulatory functions and therefore not only enhances a person's overall capacity for psychophysiological adaptation but also increases bodily resistance to all kinds of stress. Linden (1990) describe AT as one of the most effective and comprehensive reducers of chronic stress and claim that it has been used for over fifty years with considerable success. A study investigating the efficacy of the AT for reducing exhaustion of caregivers in home care found that AT had significantly positive effects on reducing subjective psychosomatic symptoms such as headache, palpitation, dizziness, sleep disorders and irritation. In addition, depression and anxiety caused by long-term home care also significantly decreased (Fukuyama, Goso, Aoki, Kitajima, Sueyoshi, & Nakajima, 2000).

AT is a well-established relaxation technique and psychotherapy tool in Germany (Perlitz, Cotuk, Schiepek, Sen, Haberstock, Schmid-Schonbein, Petzold, & Flatten, 2004). In fact, AT seemed to be very effective in treating patients with a range of mental disorders such as: panic disorder (Ashihara, Tsutsumi, Osawa, & Sata, 2000), depression (Smith, 2001), developmental surface dyslexia (Palamara, 2001), and anorexia nervosa (Murotsu, Tachi, & Suzuki, 2000). Moreover, AT was among the various mind-body techniques that were found to be effective in reducing symptoms of posttraumatic stress disorder in war-traumatized high school students (Gordon, Staples, Blyta, & Bytyqi, 2004). Agoraphobics were treated with autogenic exercises and they also showed increased improvement (Cabras, la-Malfa, & Manfredi, 1984). It is generally known that

phobic reactions tend to respond very well to AT (Luthe & Schultz, 1969). Similarly, Luthe and Schultz (1969) state that hypochondriacs have been treated with excellent results. According to Gavin, Trine, & Morgan (2001), AT was very effective in reducing state anxiety and improving mood.

According to Luthe and Schultz (1969), AT for patients suffering from reactive depression seems to be particularly helpful in normalising a number of typical related symptoms which indicate disturbances of self-regulatory mechanisms in the diencephalic area. For instance, as AT progresses during the first four to six weeks, the patient's appetite improves, fatigue becomes less marked, his/her ability to make decisions improves, obsessions tend to become less troublesome and phobias subside gradually as the patient regains inner security and feels a general decrease in anxiety (Luthe & Schultz, 1969).

In a similar vein, in West Berlin, the emergency service for suicidal patients adopted AT as one of their standard approaches to psychiatric care (Luthe & Schultz, 1969). The results were positive and no relapses were observed. From the patients' remarks, the impression was gained that AT contributed to breaking up passive and negativistic attitudes. In addition, a number of desperate and hopeless patients stated later that AT gave them the feeling that they could do something active and effective to pull themselves out of the depths of despair (Luthe & Schultz, 1969).

AT allows one to control anxiety by training the autonomic system to become relaxed. In fact, it is one of the relaxation techniques that has been found to be as effective as conventional anxiolytic medication in the treatment of generalised anxiety disorder (Kohli, Varma, & Nehra, 2000). By the same token, according to Carruthers (1979), AT has been shown to reduce dependency on antidepressants, tranquillisers, sleeping tablets, blood pressure-lowering drugs, and medication of all kinds. Moreover, AT has been found to effect the stabilization of emotion (Goso, Aoki, Kitajima, Sueyoshi, Fukuyama, & Nakajima, 1999).

Schultz and Luthe (1959) have observed that certain states of anxiety and phobia and other neurotic disorders can be treated effectively with AT. Over periods ranging from a few weeks to several months, patients have reported that their anxiety, insecurity and neurotic reactions have smoothed out or have gradually lost their significance. In addition, these authors noticed that social contact became less inhibited and interpersonal relations were reported as warmer with the regular practice of AT.

From the above, AT seems highly effective with patients suffering from anxiety disorders (e.g., panic disorders, posttraumatic stress disorder). However, the applicability of AT in the case of obsessive compulsive disorder is debatable. Luthe and Schultz (1969) posit that a number of authors feel that AT cannot be applied or is of little use in the treatment of fully developed obsessional and compulsive reactions. These opinions are based largely on the patient's difficulty in maintaining passive concentration, in relaxing and on the unjustified fear that the practice of autogenic exercises leads to another negatively

oriented 'exercise compulsion'. Others have argued that AT cannot do any harm since it functions as a positively oriented ritual which may be a substitute for clinically negatively oriented ones, and as such facilitates the application of other psychotherapeutic approaches. A third group of authors have emphasised the therapeutically valuable elements (e.g., decrease of anxiety, better control over morbid thoughts, decrease of obsessive ideation) associated with the regular practice of autogenic standard exercises. However, it is generally understood that AT is usually applied in a therapeutically multidimensional effort (e.g., supportive medication, behavioural therapy, cognitive therapy etc...) (Luthe & Schultz, 1969).

The application of autogenic training to patients who suffer from schizophrenia has been regarded with deterring scepticism for many years (Luthe & Schultz, 1969). It was thought that the particular nature of autogenic training (e.g., passive concentration directed towards bodily feelings within oneself) would promote autistic dynamics, tendencies of withdrawal, increase the patient's retreat from reality, reinforce regressive behaviour, amplify hypochondriacal attitudes, further apathy and generally provide elements which would have a deteriorating effect on schizophrenic symptomatology (Luthe & Schultz, 1969). However, as time went by, there has been a change in clinical and therapeutic perspectives. Encouraging treatment results observed in isolated cases and more systematic studies of larger groups of psychotic patients who were in a non-acute recovery stage have encouraged a more positively oriented reappraisal of the applicability of autogenic training in the area of psychotic disorders. These reports supported Schultz's earlier view that autogenic training can be of assistance to relatively

stable schizophrenic patients who have entered a terminal phase of recovery from an acute episode (Luthe & Schultz, 1969).

Another useful application of AT was seen with cancer patients. Their anxiety was significantly reduced and their fighting spirit increased with an improved sense of coping (Wright et al., 2002). Likewise, Lazarus and Folkman (1984) (as cited in Wright, 2002) maintain that AT, similar to other relaxation-based cognitive-behavioural interventions, aims to reduce stress and anxiety, thus breaking the pain-anxiety-tension cycle of cancer patients and possibly facilitating adaptive coping responses by the perception of a less hostile and threatening environment.

Several controlled investigations support the efficacy of the AT technique with insomnia, Raynaud's disease and migraine headache. For instance, AT has been shown to be effective in reducing sleep onset latency in relaxation-based studies of people with insomnia (Wright, 2002). AT's effectiveness is attributed to the stabilizing effect of the autogenic exercises on the arousal-related conditions, the gradual replacement of sympathetic hyperactivity by parasympathetic dominance (Pikoff, 1984).

Kermani's (1987) (as cited in Kanji, 1997) study of HIV-infected individuals showed that AT could improve quality of life and also help to provide a more positive outlook. AT helped to control unpleasant symptoms like pain, diarrhoea, night sweats and weight loss. Most significantly, Kermani (1987) claims that the individuals in his study had an average survival rate of 18.5 months, greater than survival rates reported elsewhere

(Kanji, 1997). This finding is very important with regard to providing HIV-infected individuals with some form of coping mechanism thereby reducing their sense of helplessness.

Incorporating AT into the therapeutic program as an adjunctive or complementary supportive measure to psychotherapy to reduce anxiety can be useful (Wolberg, 1967). Krampen (1999) (as cited in Stetter & Kupper, 2002) investigated the effectiveness of additional AT in the psychotherapy of depressive disorders. He found out that those patients receiving AT and cognitive therapy showed the best outcome at follow up.

By the same token, Haward (1965) (as cited in Luthe & Schultz, 1969), measured changes of stress reactivity in three reasonably well-matched groups of neurotic patients who followed different treatment programs: (a) "psychotherapy," (b) "behaviour therapy," and (c) "behaviour therapy with autogenic training." Haward found that the third group (AT and behaviour therapy) showed statistically significant better treatment results (e.g., reduction of stress reactivity) than the other two groups. The advantages to those patients who also received AT were twofold. Firstly, their stress resistance had increased and the liability of a further neurotic disability was thereby reduced. This is important as there is evidence to show that some phobic cases tend to relapse after treatment with behaviour therapy. Secondly, instead of the abrupt termination of therapy the patients felt that the essential part of their treatment was continuing. As they worked through the remainder of the standard exercises, their maintenance visits to the clinic enabled the patient-therapist relationship to be continued and against the positive and

effective background of self-perceived progress the ensuing personality and readjustment difficulties were minimised, while ensuing problems could be dealt with satisfactorily (Luthe & Schultz, 1969). From Haward's and Krampen's studies, it can be tentatively hypothesised that autogenic training supplies essential therapeutic ingredients missing from traditional behaviour and cognitive therapy methods.

Likewise, Schultz and Luthe (1959) posit that with the help of AT unconscious material becomes more readily available. They add that dream material and memories can be more easily reproduced by AT participants than by other patients, and free association also appears to be enhanced.

On a different but relevant note, the application of AT in the field of education has been exceptionally rewarding. In recent years AT has been used with children attending advanced grades of elementary school, with high school, at the university level, during postgraduate work, and during intensive study periods prior to final examinations. Besides, school teachers and university professors also adopted AT as a measure of mental hygiene, permitting more sustained intellectual accomplishments (Luthe & Schultz, 1969).

Some of the benefits of using AT in an educational setting include: improved learning readiness, better self-discipline, better organised work, better concentration, better and friendlier contact, more productive student-teacher interaction, improved adjustment of environmental relations, less unfavourable interferences from undue emotional

involvement, and decrease or elimination of examination/test anxiety (Luthe & Schultz, 1969).

Reed and Meyer (1974) applied AT to test anxiety. The authors reckoned that since AT develops an “anti-stress response”, it might be applied to lessen test anxiety. As they had hypothesised, AT reduced test anxiety and increased perceived relaxation. Sellers (1974) (as cited in Linden, 1990) came up with similar findings – his results supported AT as effective in treating test anxiety. Carruthers (1979) concurs with the above-mentioned authors by stating that AT lessens anxiety and examination nerves. Luthe & Schultz (1969) found that the use of AT during examinations increased the ability to concentrate and produced a ‘moderate anxiety’ appropriate to the taking of examinations.

Finally, the regular practice of AT appeared to have favourable effects on a diversity of amateur sport activities like: golf, tennis, cycling, and hockey amongst others. The trainees’ observations centred usually on the following areas: better performance, better endurance and faster recuperation (Luthe & Schultz, 1969). Likewise, Carruthers (1979) and Kanji (1997) point out that regular practice of AT leads to better co-ordination and endurance, faster recuperation and a reduction of emotional upsets that tend to occur before important events.

AT has also been practised by industrial workers to counterbalance occupational stress. Luthe (1969) (as cited in Kanji, 1997) points out that the following improvements were noted after AT: more restful sleep, improved attitudes to colleagues, greater job

satisfaction, decision-making that appeared to be easier, more easily sustained concentration, keener powers of reasoning during long hours of negotiations, and an increase of initiative and increased productivity with less fatigue and faster recuperation. Carruthers (1984) argues that “in preventive medicine and the promotion of what has been called a state of *Positive Health* which is included in the World Health Organisation definition of health as “total mental, physical, and social well-being and not merely the absence of disease”, education alone has been shown to be ineffective” (Carruthers, 1984, pp 146). The author advocates mental and physical training in preventing illness and in the promoting positive health. He investigated the effectiveness of AT or physical training in preventing illness and in the promotion of positive health. His results showed improvements in the psychological ratings in several groups, particularly with AT. These measurements were supported by a generally improved sense of well-being reported by subjects in all groups, and accompanied by a decrease in symptoms of physical tension and improved ability to sleep (Carruthers, 1984).

However on a less optimistic tone, Kanji and Ernst (2000) performed a systematic review with the aim of evaluating all controlled trials of AT as a means of reducing stress and anxiety levels. Eight such trials were found and unfortunately the majority of them were methodologically flawed. The studies reported were carried out between 1976 and 1994. Even though the overall result of the systematic review suggests that AT, or what was described as AT, does reduce stress and anxiety, shortcomings and deficiencies in the studies are apparent (Kanji & Ernst, 2000).

The authors of the systematic review posit that in the majority of the studies, sample sizes were too small to be credibly representative. In addition, the gender of subjects was not reported accurately, this being a critical omission in the light of the conclusions of Schejbel *et al* (1978) (as cited in Kanji & Ernst, 2000), who found that male participants responded better to AT than their female counterparts. Kanji and Ernst (2000) further report that a flaw that might be seen as insurmountable is that the AT procedures used were mainly incomplete and tainted. The systematic review revealed that only one practitioner applied the conventional AT technique with its six standard exercises. The rest deviated from the accepted technique of AT. They state that a curious 'jackdaw' selection from the exercises that constitute Schultz and Luthe's technique was applied without any justifications or explanations. For instance, a practitioner selected heaviness and warmth formulae only while another selected heaviness, warmth, coolness and peaceful relaxation. Moreover, Kanji and Ernst's (2000) systematic review divulge that three studies were without adequate no-treatment control groups which clearly weakens them methodologically. Besides, only one study provided the proper number of AT sessions prescribed and fascinatingly this study reported a positive result in the reduction of anxiety and depression. Unfortunately though, in this particular trial there was no 'no-treatment' control group and conclusions were therefore flawed. Finally, all studies in the review claimed a correct use of outcome measures with the assumption they were all validated. However, in one study physiological measures were used instead of anxiety inventories (Kanji & Ernst, 2000).

Kanji and Ernst (2000) maintain that no firm conclusions could be drawn from their systematic review. They are of the opinion that AT, properly applied, remains to be tested in controlled trials that are correctly planned and executed.

Likewise Linden (1990) asserts that an up-to-date review on controlled AT outcomes is sorely missing from the literature. Part of it could be explained by the fact that a large proportion of the AT literature is in the German, Japanese, and Russian languages and most of this literature has never been translated into English (Linden, 1990). According to Pikoff (1984), many studies listed under AT in the medical and psychological index systems use abbreviated and/or modified versions of AT and thus subsequently renders them methodologically flawed.

According to Linden (1990), apart from the standardised use of AT which is highly recommended, AT studies also need to meet the following elementary criteria for good outcome research:

1. Inclusion of a control group or phase (either no-treatment control, placebo, alternative treatment, or within-subject control)
2. A sample size of at least five
3. Inclusion of at least one standardised, widely accepted outcome measure

Strict application of such minimal exclusion criteria reveals the many substantial flaws in AT literature (Linden, 1990). For instance, Linden (1990) points out that when all criteria

are applied and only complete AT procedures (i.e. six standard exercises) are considered, 27 of the 30 studies described by Pikoff (1984) no longer qualify.

3.5 Contraindications

With relatively few exceptions, AT can be learned by nearly everyone (Linden, 1990). According to Kanji (1997), it is not advisable to use AT with individuals who suffer from severe mental disorders, or children below the age of 5 or in situations where control of a trainee's symptoms is not possible. To these, he also adds individuals who have recently experienced myocardial infarction and those who suffer from hypoglycaemic conditions and glaucoma.

Hence, based on the literature review, it seems that Schultz's AT has been frequently used in many psychological treatment approaches and has turned out to be effective in the field of psychological disorders. Of particular interest to this study has been its effectiveness in reducing anxiety and in reducing symptoms associated with anxiety disorders. Findings are important in light of the need for effective management of anxiety before it builds up since accumulation of anxiety is conducive to major physical and mental disorders (Starak, 1984). Moreover, according to Schmidt, Lerew & Jackson (1994) (as cited in Pillay et al., 2001), research has also demonstrated that anxiety sensitivity can predict the development of panic attacks. Since the intensity of anxiety lies in a continuum from a normal healthy adaptive response in the service of survival to the most intense fear, terror and fright (Bowden, 2002), learning to cope with one's

anxiety at an early stage, when it is still at the 'normal side' of the continuum, will prevent illness associated with its build up and promote health and wellness.

On the other hand, the review of the 'available' literature¹ indicates that relatively little work has been carried out in measuring the effects of AT in promoting health and wellness. Only one study, Carruthers (1984), has addressed the impact of AT in promoting positive health. Very interestingly, it appears as though no one has investigated the effect of AT in promoting psychological well-being up till now.

While earlier in this chapter, a long list of areas of application for AT was described and a large body of literature attested to its benefits, it is important to be aware of the likelihood that some of those studies might be methodologically flawed. According to some authors (Kanji & Ernst, 2000; Linden, 1990; Pikoff, 1984) there are significant defects in the AT literature as well as a lack of an up-to-date review on controlled AT outcomes. The accumulation and description of a larger fund of well-controlled studies on AT is therefore vital (Linden, 1990). In retrospect, well-controlled clinical studies in which the original, standardised AT procedure (without modifications and abbreviations) is applied is needed to help ascertain the clinical value of AT.

¹ A large proportion of the AT literature is in the German, Japanese, and Russian languages and most of this literature has never been translated into English (Linden, 1990).

CHAPTER 4

4. Objective of the research and hypothesis

Anxiety is one of the more common psychological manifestations in the general population and a recent investigation conducted at the University of Zululand found that 22% of a sample consisting of 214 students showed anxiety symptoms suggestive of psychological distress (Pillay et al., 2001). By the same token, Edwards and Govender (2004) conducted a study on the effects of stress management on mood and came up with similar findings; stress and anxiety were prevalent among students at the University of Zululand. It is alarming that at least one out of every six students on this particular campus experienced anxiety symptoms severe enough to warrant clinical attention (Pillay et al., 2001). Such high level of anxiety among students is bound to affect their academic performance since impairment in concentration is a significant psychological symptom in individuals with high anxiety (Gelder, Gath & Mayou, 1994) (as cited in Pillay et al., 2001). Moreover, as mentioned before, accumulated anxiety can lead to physical and mental disorders. Therefore, students must be empowered to develop coping skills and manage their anxiety.

The present study was undertaken against this background. It investigated the effect of autogenic training (AT), a relaxation technique, on anxiety levels in a nonclinical population consisting of participants from the University of Zululand. The study looked at the application of AT as a tool for preventing anxiety and promoting psychological

well-being. AT approaches mental and bodily functions simultaneously and is one of the six major approaches to relaxation deployed by health professionals (the others are progressive muscle relaxation, meditation, breathing exercises, yoga stretching and imagery) (Gillani & Smith, 2001).

An assumption of this study is that participants are healthy volunteers with no known medical condition. For the purpose of this study it is crucial to distinguish between anxiety, which is a manifestation of stress, and acute anxiety state, which is a condition requiring medical intervention. As a matter of fact, in this study the pre-test anxiety levels in both groups are in the mild range (experimental group: mean 13.6 and control group: mean 14.2). Based on an examination of the literature review, it was hypothesised that AT would lower anxiety.

While Carruthers (1984) investigated the effect of AT in preventing illness and in promoting positive health, not a single study that specifically examines the effect of AT in promoting psychological well-being, was detected while reviewing the literature. Nonetheless, drawing from the diverse beneficial applications of AT as discussed in the literature review, it was hypothesised that besides lowering anxiety levels, AT would also increase psychological well-being.

Therefore this study took a different twist to those mentioned in the literature review. It examined another applicative field of AT: AT as a preventive measure against anxiety as well as AT as a technique to promote mental health and wellness. Mental health

promotion involves any action to enhance the mental well-being of individuals and primary prevention refers to interventions designed to prevent a disorder or problem occurring (Edwards, 1999). In fact, as mentioned before, the definition of health has been widened and includes a psychological dimension. AT, which is derived from the new humanistic psychology where the focus is on healthy individuals and how to improve their well being (Cassel, 1999), shows considerable promise in this regard.

It was believed that this intervention would reduce anxiety among students and would contribute to health gain through improving psychological well-being, in addition to any impact it may have on preventing mental disorders. There is a body of evidence to show that mental health promotion can contribute effectively to the prevention of certain disorders like anxiety and depression. Moreover, it can also contribute to health improvement for people whether or not they are at risk of mental illness (Nelmh.org, 2005).

Research has shown that AT is a good preventive measure against ill health if practised regularly and correctly (Holisticonline.com, 2005). In fact, it forms one basis of behavioural medicine in which the patient changes (or learns how to change) behaviour that contributes to illness (Sadock & Sadock, 2003). AT because of its self-hypnotic character promotes self-control and independence from a therapist (Linden, 1990). Besides, the term 'autogenic' also encompasses the favourable therapeutic implications related to the fact that the participant is largely responsible for carrying out his/her own treatment by performing certain mental exercises regularly, thus promoting in him/herself

certain self-normalizing functions which are directed and coordinated by his/her brain (Luthe & Schultz, 1969). Linden (1990) goes on to say that people practising AT typically learn to perceive themselves as being in control of their stress responses and this in turn impacts positively on the way they perceive potential stress triggers and how they respond to them.

Thus, from the above, it seems plausible to say that an individual practising AT is likely to acquire an increased sense of control and self-efficacy. Self-efficacy is the level of confidence one has in one's ability to accomplish some specific action (Earley, Ang, & Tan, 2006). In social cognitive theory, Bandura (1986) (cited in Wright et al., 2002) proposed that perceived self-efficacy in exercising control over potentially threatening events plays a central role in anxiety reduction. Bandura's notion of 'self-efficacy' overlaps with the coping process (Wright et al., 2002) and is highly significant in the context of this research. It means that, if AT lowers anxiety and increases psychological well-being as hypothesised, the students will gain a safe, efficient and powerful self-help tool to help them cope with the myriad of stressors they face at university which will in turn increase their sense of control and mastery as well as their self-efficacy.

CHAPTER 5

5. Methodology

Drawing from the discussion in the literature review that well-controlled clinical studies in which the original, standardised AT procedure is applied is needed to help ascertain the clinical value of AT, this particular study was carefully planned to minimise methodological flaws. This was done by making sure that Linden's (1990) elementary criteria for good outcome research were met: a control group was included in the design of the study, the experimental and control groups consisted of 11 participants each and finally, two standardised outcome measures were used, namely the Beck Anxiety Inventory and the Scales of Psychological Well-being. In addition, complete AT procedures (i.e. six standard exercises) were practised.

5.1 Design

A convenience sample and matched group design, often considered to be the 'gold' standard of clinical and epidemiological studies, was used since it is still the most acceptable evidence-based research in health promotion and disease prevention (Saraceno & Saxena, 2002). It included an experimental group and a control group and the outcomes in the two groups were compared. The impact of AT was assessed by the difference in anxiety levels and psychological well-being before and after the intervention.

5.2 Sample

The sample of this study comprised of 11 experimental group participants (mean age = 28.2 years) and 11 control group participants (mean age = 24.5 years) from the University of Zululand campus. The characteristics of the sample were as follows: 17 women and 5 men; with age range from 21 to 54 years (mean age of 26.4 years); 13 persons with African home language and 9 with an English home language; 7 with rural background and 15 with urban background.

5.3 Procedure

Following permission from the Ethics Committee of the University of Zululand, invitation slips to participate in the research were distributed on the campus of the university, of which 11 responded as interested. They were allocated to the AT experimental group and consisted of postgraduate psychology students from the university.

Participants in the AT experimental group were taught the basic principles and techniques of AT in an introductory workshop. They practiced AT on a weekly basis for a period of 10 weeks. It consisted of listening to a twenty-four minutes CD tape of AT (Leyh, C. (1999). *Autogenic training*. UK: Gigasound Ltd) while doing the relaxation exercises. They were further encouraged to practice the exercises at home. At the end of each AT session, participants were given a chance to talk about any physical sensations they might

have experienced during the training. According to Linden (1990), hearing in a group learning format that someone else has benefited from AT can serve as an extra motivator.

The control group consisted of a friend of each participant, who was also studying at the University of Zululand. An ethical dilemma in this study was that the control group did not receive AT. However, these individuals were offered the opportunity to learn AT at the end of the study if they wished to do so.

Participants were asked to sign an informed consent form (see Appendix D) to participate in the study. Confidentiality was assured.

Questionnaires were administered prior to and immediately after the 10 weeks intervention, which took place at the community psychology clinic of the University of Zululand.

At the end of the AT, participants from the experimental group were also asked to provide an overall qualitative evaluation of their subjective experiences of AT and its benefits.

5.4 Measuring instruments

The Beck Anxiety Inventory (Beck & Steer, 1993) and the Scales of Psychological Well-being (Ryff, 1989) were administered to all the participants (see Appendix B and C).

The Beck Anxiety Inventory (BAI) consists of 21 items designed to measure the severity of anxiety. Participants rate how much they have been bothered during the past week by each anxiety symptom, using a 4-point scale: 0 (*not at all*), to 3 (*severely*). The BAI yields a total score ranging between 0 and 63, with higher scores indicating greater anxiety. The test developers provide cut-off scores for different levels of anxiety, namely, mild (>9), moderate (>16), and severe (>29). The scale has demonstrated good internal consistency and reliability, high concurrent validity with other measures of anxiety, and the ability to discriminate anxiety disorders from other nonaffective psychiatric disorders (Rybarczyk, DeMarco, DeLaCruz, Lapidos, & Fortner, 2001).

The 18-items version of the Scales of Psychological Well-being (Ryff, 1989) is a self-report measure of well-being on dimensions of Autonomy, Personal Growth, Environmental Mastery, Purpose in Life, Positive Relations With Others, and Self-Acceptance. The scale includes three items from each dimension, with a mix of positive and negative items. The questions deal with how one feels about himself/herself and his/her life. On a scale from 1 to 6, participants indicate whether they agree or disagree strongly, moderately, or slightly that an item describe how they think and feel. It uses a Likert-item format and has a total rating ranging from 18 to 108. Negative items are reverse coded so that higher scores on each dimension reflect the presence of more positive appraisals. Summed scores are created from all multiple-item dimensions (Keyes et al., 2002). This version of the Scales of Psychological Well-being has been carefully standardised, is short and convenient for research and confirms the proposed theoretical

structure of psychological well-being (Ryff, 1989; Keyes et al., 2002) (as cited in Edwards, Ngcobo, & Pillay, 2004).

CHAPTER 6

6. Results

6.1 Data analysis

Data from the Beck Anxiety Inventory and the Scales of Psychological Well-being were analysed quantitatively using the Statistical Package for the Social Sciences (SPSS) programme. Statistical analysis was carried out within and between the experimental group and the control group. On the other hand, participants' reports of the physical sensations they experienced while practising AT as well as their qualitative evaluations of their subjective experiences of AT and its benefits were analysed qualitatively. Combining quantitative and qualitative methods to analyse the data provided access to richer information.

6.2 Quantitative findings

Table 6.1 below presents the summary of means on anxiety and scales of psychological well-being.

Table 6.1: Summary of means on anxiety and scales of psychological well-being

Variables	Experimental group		Control group	
	Pre test	Post test	Pre test	Post test
BAI Anxiety	13.6	6.8	14.2	14.5
Autonomy	13.1	13.4	14.3	13.5
Personal Growth	17.1	17.7	16.5	16.3
Environmental Mastery	13.8	15.2	12.7	12.9
Purpose in Life	15.8	16.2	14.9	14.8
Positive Relations With Others	15.2	16.3	13.0	13.5
Self-Acceptance	14.9	16.4	15.4	14.8
Total psychological well-being	89.9	95.1	86.8	85.8

Inspection of means indicated that all trends were in the expected direction. While within group t-testing indicated that there were significant changes within the experimental group over time with regard to three variables: Anxiety ($t=3.7, p=0.004$), Environmental Mastery ($t=2.5, p=0.03$) and Total psychological well-being ($t=2.4, p=0.038$), analysis of variance with repeated measures for between groups comparisons indicated that the experimental group was significantly more effective than the control group with regard to one variable only – Positive Relations With Others ($F=4.3, p=0.05$).

Analysis of variance with repeated measures indicated no significant differences between the groups with regard to the variables: Anxiety ($F = 0.50$), Autonomy ($F = 0.70$), Personal Growth ($F = 1.50$), Environmental Mastery ($F = 1.50$), Purpose in Life ($F = 1.10$), Self-Acceptance ($F = 0.40$), and Total psychological well-being ($F = 1.80$).

The fact that findings reached the accepted 5% significance level for only one variable (Positive Relations With Others) was probably due to the small size of the sample, and the short duration of the intervention. However, trends were clearly in the hypothesised direction of decrease in anxiety and increase in psychological well-being.

6.3 Qualitative findings

Table 6.2 below presents the salient physical sensations experienced by the participants (experimental group) during AT sessions. Those were reported at the end of the weekly sessions.

Table 6.2: Salient physical sensations experienced by participants during AT²

- Tingling at the finger tips, itching, numbness, “strange sensations”
- Falling asleep, deep snoring (as reported by other participants who did not fall asleep)
- An agreeable sensation of warmth flowing through the whole body
- Breathing very deep and slow
- Heart beat calm and regular
- Bowel movement right after the session
- Intrusive thoughts that prevent the necessary focusing on the autogenic sensations
– “my mind wanders off”

² Table 6.2 and Table 6.3: Participants’ verbatim responses are represented as “_____”

Table 6.3 below presents the participants' (experimental group) overall qualitative evaluations of their subjective experiences of AT and its benefits.

Table 6.3: Participants' overall qualitative evaluations of their subjective experiences of AT and its benefits²

- Promotes sleep – “sleep comes easy and naturally”, “sleep is better and deeper”
- Helps in controlling anger and worries – “I am not as irritable as before and I worry less. AT has changed my attitude towards life”
- Promotes deep relaxation – “I feel relaxed and more rested”, “A feeling of calmness and contentment”, “I experienced a state between being asleep and being awake”, “Inner tranquillity and harmony with distracting thoughts far away from my immediate consciousness”, “It is a great method to release stress and anxiety”, “It showed me how we are able to use our body and mind to achieve inner harmony”, “AT relaxes body and mind in an unbelievable way”, “I feel more calm and collected”
- Improves self awareness – “I felt more in touch with my inner self”
- Increases energy levels – “I feel more energised”, “I experienced revitalisation after each session”
- Promotes clarity of thoughts – “My concentration level has increased”, “I can focus for longer when I am studying”, “I can study till late at night”
- Promotes a feeling of being in control – “ I feel I am in control and in charge of my own life”, “I feel more in control of my emotions”

CHAPTER 7

7. Discussion

From the results of this study, it can be concluded that AT significantly reduced the level of anxiety and increased Total psychological well-being within the experimental group over time. This is not surprising since a myriad of studies have shown anxiety reduction by the use of AT (Hidderley & Holt, 2004; Fukuyama et al., 2000; Gavin et al., 2001; Kohli et al., 2000; Wright et al., 2002; Schultz & Luthe, 1959; Kanji, 1997; etc...). Thus the literature review adds considerable strength to the observation that AT reduces anxiety. According to Luthe and Schultz (1969), most patients with anxiety symptoms tend to improve relatively fast under AT. Their hypothesis is that the regular practice of AT breaks up a vicious circle of a psychophysiologic nature (anxiety-tension-restlessness-discontent-frustration-anxiety) through certain modifications of cortico-subcortico-hypothalamic interrelations and the normalisation of autonomic functions. Furthermore it is assumed that the self-normalising homeostatic efficiency of self-regulatory brain functions is facilitated by brain-directed processes of autogenic discharge activity occurring in association with the practice of autogenic exercises (Luthe & Schultz, 1969).

The finding that AT lowered anxiety levels within the experimental group over time is supported by qualitative data. Participants in this group were asked to evaluate their experiences of AT and its benefits (Table 6.3). The most salient benefit by far was that

AT promotes deep relaxation. They used words like: “relaxed, rested, calmness, contentment, inner tranquillity, harmony, collected” in their responses, none of which are associated with anxiety. In fact research suggests that relaxation is antagonistic to anxiety (Wright et al., 2002). Moreover, the physical sensations experienced by some participants during the AT sessions such as: tingling at fingertips, itching, deep sleep, slow breathing, warm sensation, amongst others (Table 6.2) signal relaxation (Linden, 1990).

A ‘puzzling’ physical sensation that was reported by one of the participants was that she often experienced bowel movement right after the AT sessions. This experience has been referred to as ‘puzzling’ because it has not been encountered in the review of the literature on AT. However, considering the fact that AT supports the existing self-healing and self-regulating physiological functions of various body systems (homeostasis) (Kanji, 1997), an experience like ‘bowel movement’ does seem sensible. Besides, bowel movements have been reported during the practice of Reiki, a Japanese relaxation technique (McKenzie, 1998).

Linden (1990) states that many of the physical sensations experienced by the participants during AT (Table 6.2) are normal correlates of muscular and vascular relaxation. However, they may be new, puzzling, and fear-arousing to the participant. For instance, a very popular observation made by the participants was that AT promotes sleep. Some of them even fell asleep regularly during the practice of AT. This phenomenon has been reported by other authors (Hidderley & Holt, 2004; Wright et al., 2002) and according to Luthe and Schultz (1969) is clearly to be considered a sign of overall success. AT has

been found to be very helpful for restoring disrupted sleep patterns (Wright et al., 2002). A number of factors may promote better sleep for people practising AT. One of them being the fact that AT assists in lowering the trainee's state of physiological arousal.

In a similar vein, relaxed participants often become terribly aware of an itch and may feel it even more strongly because there are fewer sensory distractions (Linden, 1990). According to Linden (1990), other sensations that may be experienced with AT participants include: brief localised spasms, erections, vaginal spasms, perceived swelling in the fingers, a sense of detachment from a limb and cramping. Luthe & Schultz (1969) refer to these experiences as "autogenic discharges".

Autogenic discharges, a phenomenon unique to AT, are perceived as sudden and unpredictable ways of "unloading" pent-up thoughts, sensory processes, and muscular activity (Luthe & Schultz, 1969). When noticed by participants, autogenic discharges are likely to be interpreted as unwanted side effects of the procedure. On the other hand, the traditional view in the AT literature is that autogenic discharges are necessary and considered to be signs of progress because they suggest a reduction in physiological/psychological inhibition (Linden, 1990). Hence, it is of utmost importance for the AT instructor to interpret the "weird" experiences of some participants in this light and provide sensible, comforting explanations (Linden, 1990).

Therefore, at the end of each AT session, participants were given a chance to talk about their experiences (Table 6.2). They were assured that these sensations are normal and

uncontrollable responses and they will decrease in intensity and frequency with practice. For instance, in the beginning a few participants found it difficult to stop their mind from wandering off. They were reminded that passive concentration is new to their brain and that intruding thoughts are quite normal. By normalising these sensations, the incidence of relaxation-induced anxiety was reduced. As mentioned before, relaxation-induced anxiety refers to the phenomenon whereby participants get paradoxically anxious as they relax, given that relaxation training is conceived to serve as an anxiety reducer.

In addition, relaxation-induced anxiety is more likely to occur with participants who have high pre-training levels of generalised anxiety (Linden, 1990). The pre-training level of anxiety in the experimental group was in the mild range (mean=13.6) and therefore the likelihood of it happening was slim.

Many of the participants' subjective experiences of AT (Table 6.3) parallel those found in the literature. Luthe and Schultz (1969) ascertain that in the course of the first two to four weeks, participants usually report that the exercises bring about a sensible relief from tension and that they feel much calmer and in general much better after having performed a set of exercises. Better sleep is noted and the participants feel more refreshed in the morning. In this study, one of the participant's responses was, "I experienced revitalisation after each session". Another student wrote, "I feel more energised". AT seems to boost up energy levels in some people and therefore it could be used as a substitute for energy drinks and tonics (e.g. 'Bioplus'). These energy drinks are very popular among students during examination time since they sustain mental performance

as well as increase energy levels. However, one must exercise caution when using them because of their high caffeine content. Moreover, not everyone can afford energy drinks and tonics. Hence, AT might provide a good and free alternative.

By the same token, AT seems to have enhanced clarity of thoughts among the participants in this study. Participants' responses included: "my concentration level has increased", "I can focus for longer when I am studying", "I can study till late at night". These benefits of AT are not unexpected since the application of AT in the educational field has been investigated on numerous occasions before (Luthe & Schultz, 1969; Reed & Meyer, 1974; Carruthers, 1979) and found to be very valuable indeed. For instance, Luthe & Schultz (1969) noted that postgraduate students preparing for final examinations or working long hours in order to meet deadlines for assignments, were able to sustain their working ability at a more satisfactory level when they practised autogenic exercises at regular intervals.

Luthe & Schultz (1969) go on to say that the improvements common to the successive period of six to ten weeks are more closely related to the participants' anxiety. As the participant's inner security and self-confidence increases, he/she feels more at ease in specific situations, less irritated by certain persons, less anxious about examinations, more positive about life in general, etc... Likewise, Carruthers (1979) points out that once it is possible to reduce excessive tension, a sense of wholeness and well-being is brought about by better communication between the two hemispheres of the brain which takes place during the practice of the exercises. He adds that this sense of balance is often

reflected by the development of positive attitudes in diverse directions and, when combined with released energy, lead to a greater sense of personal confidence and enjoyment of life. The authors' accounts are superbly illustrated by a participant's response to his experience of AT, "I am not as short-tempered as before and I worry less. AT has changed my attitude towards life". Hence, besides being a useful stress management technique because of its calming effect (Wright et al., 2002), AT which seems to help participants find an emotional balance can be an effective aid to anger management as well.

Carruthers (1984) agrees with Luthe and Schultz (1969) and maintains that people begin to experience the benefits of AT within two to three weeks of starting and enjoy the effects of doing something positive for themselves. In his research, those who were in the AT group reported the following experiences: a sense of increasing calmness and improved control over their lives together with a greater ability to concentrate and the need for less sleep (Carruthers, 1984). Likewise very similar experiences were reported by the participants in the experimental or AT group in this study (Table 6.3).

Also, often at the end of the training, participants usually 'forget' to mention their bodily complaints, which have mostly subsided or disappeared (Luthe & Schultz, 1969). No such observation was made within the AT group.

A participant mentioned the following benefit in her evaluation form, "I felt more in touch with my inner self". This comment seems to imply an improvement in self-

awareness. Even though this particular experience of AT has not been encountered in the literature review, it does make sense. The improvement in self-awareness can be explained by Kanji's (1997) account that AT enables individuals to become aware of manifestations within themselves, in their physical bodies as well as at mental and spiritual levels. He adds that they become aware of the negative patterns of life they are subject to and which persist and AT shows individuals that there are alternatives and how to find them. From this argument, it seems like AT can improve self-awareness. An increase in self-awareness can in turn foster personal growth.

According to Ryff (1989) and Ryff & Keyes (1995) Personal Growth is one of the six components of positive psychological functioning and can be described as a sense of continued growth and development as a person. The authors state that a person who scores high on Personal Growth is open to new experiences, sees improvement in self and behaviour over time and is changing in ways that reflect more self-knowledge. Even though in this study there was no significant change in Personal Growth after 10 weeks of practising AT, trends were in the expected direction.

Apart from the fact that AT reduced anxiety levels and increased Total psychological well-being within the experimental group over time, an increase in Environmental Mastery was also noticed in the same group over time. Ryff (1989) and Ryff & Keyes (1995) describe Environmental Mastery as the individual's ability to choose or create contexts suitable to his/her personal needs and values, and to make effective use of surrounding opportunities. In addition, people who score high on Environmental Mastery

have a sense of mastery and competence in managing the environment (Ryff & Keyes, 1995) and therefore have a sense of control over their external world. Thus, it can be argued that with time, it is likely that AT has increased the participants' capacity to manage their life and their surrounding world more effectively and subsequently equipped them with a better sense of control over their lives. This statement is actually backed up by qualitative data. After the period of 10 weeks, at the end of the AT sessions, when participants were asked to evaluate their subjective experiences of AT (Table 6.3), one of the benefits that emerged was that AT promotes a feeling of being in control. Comments made by participants included: " I feel I am in control and in charge of my own life" and "I feel more in control of my emotions".

The effectiveness of AT in cultivating a person's sense of control and self-efficacy has been mentioned numerous times in the literature (Carruthers, 1984; Linden, 1990; Wright et al., 2002). AT contributes to breaking up passive and negativistic attitudes besides promoting self-control and independence (Luthe & Schultz, 1969). Thus AT is likely to raise students' level of confidence in their ability to meet the many demands and manage the countless responsibilities they face in their daily life and consequently to succeed at university. Linden (1990) points out that people practising AT typically learn to perceive themselves as being in control of their stress responses and this in turn impacts positively on the way they perceive potential stress triggers and how they respond to them.

In social cognitive theory, Bandura (1986) (cited in Wright et al., 2002) proposed that perceived self-efficacy in exercising control over potentially threatening events plays a

central role in anxiety reduction. When applied in the context of this study, it can be argued that since AT increased Environmental Mastery within the experimental group over time, the participants' level of confidence in their ability to cope, adjust and succeed academically is likely to have increased indirectly. According to Bandura's theory, they would consequently feel more in control over threatening events like writing tests and examinations as well as meeting deadlines for assignments and even thesis work since participants are postgraduate students. Subsequently, their feeling of control and mastery would reduce test anxiety and anxiety hence improving performance. AT also perks up performance by increasing concentration levels (Kanji, 1997).

Mastery is closely linked to self-esteem. Rosenberg (1965) (as cited in Turner & Muller, 2004) defines self-esteem as the evaluation which the person makes and customarily maintains with regard to himself or herself: it expresses an attitude of approval or disapproval towards oneself. Hence an increase in Environmental Mastery, which is likely to be reflected in an increase in the participants' capacity to manage and control their lives, should theoretically raise their level of self-esteem. It is suspected that should the duration of the AT have been longer the variable, Self-Acceptance, which refers to positive evaluations of oneself would have increased too.

The finding that AT increased Environmental Mastery over time within the experimental group is highly significant in the context of this research. The University of Zululand, where the study was conducted, is a historically Black University which, as a legacy of apartheid, attracts mostly students of African descent (Pillay et al., 2001). Research has

shown that racism, discrimination and prejudice have high psychological costs. People who have being discriminated at often harbour low self-esteem, feelings of inferiority, and can develop a negative self-image (Sue, Sue, & Sue, 1994). The psychologically damaging effects of apartheid have been extensively documented (Duncan & Van Niekerk, 2001) (as cited in Edwards et al., 2004). Stevens and Lockhat (1997) posit that during the apartheid era African adolescents have been exposed to the imagery, symbols, values that encouraged individual achievement and social mobility, but simultaneously have been refused access to any significant material resources that allowed for this. Consequently these contradictions have impeded the development of healthy self-concepts and healthy levels of independent judgment among African South Africans. By the same token, Edwards et al. (2004) investigated psychological well-being in Black university students in South Africa and found that their sense of psychological well-being is lower than that of people elsewhere. The likelihood that the majority of African students from the University of Zululand have been discriminated at, at some point in their lives is actually high given the fact that they have lived many years of their lives under apartheid. If the effects of racial discrimination and prejudice are not addressed among those students who were oppressed, their identity development might be compromised.

According to Erikson's psychosocial developmental theory, teens negotiate the stage of 'Identity versus Role confusion' at the end of adolescence between the ages of about 13 years to about 21 years (Sadock & Sadock, 2003). It is a period of self-discovery when internal and external factors impact individuals' increasing awareness of who they are,

what they accept as true, where life is taking them, and how they fit into a complex society (Everall, Bostik, & Paulson, 2005). Everall et al. (2005) posit that the healthy resolution of teens' exploration of the world and their relationships with others results in the formation of a clear sense of personal identity that joins the past, present and future into a strong and meaningful sense of self.

Given the age at which adolescents negotiate Erikson's crucial stage of 'Identity versus Role Confusion', it seems reasonable to assume that a high percentage of the students at the University of Zululand are in the middle of their identity crisis. Although it is the post-apartheid era, the African students' past might still be affecting them in one way or another while they are negotiating their identity crisis. It is of utmost importance that they have a sense of personal worth and mastery at this decisive time in their lives to help them formulate a solid and healthy sense of identity. Failure to negotiate this stage has serious repercussions: it leaves the adolescents without a solid identity; they suffer from identity diffusion, characterised by not having a sense of self (or having a fragile sense of self), and by confusion about their place in the world. Role confusion may manifest in behavioural abnormalities like running away, criminality and overt psychosis (Sadock & Sadock, 2003). Research has shown that identity achievers enjoy greater psychological well-being, higher self-esteem, less self-consciousness, and lower levels of preoccupation with personal concerns in comparison to those who have not resolved their identity issues (Everall et al., 2005). A technique like AT, which seems to enhance Environmental Mastery, might give people a sense that their lives are under their own control in contrast to being ruled by others and possibly will restore some of the psychological damage that

resulted from the oppression. Feeling in charge of one's own life is extremely empowering and enhances self-esteem, a sense of personal worth and confidence.

A vital finding in this study was that the experimental group was significantly more effective than the control group with regard to the variable, Positive Relations With Others. According to Ryff (1989) and Ryff & Keyes (1995), people who score high on this variable have warm, satisfying, trusting relationships with others; are concerned about the welfare of others; are capable of strong empathy, affection, and intimacy; and understand give and take of human relationships. This study shows that AT fosters the possession of quality and valuable relationships with others.

Similar findings were observed by Schultz and Luthe (1959) who noticed that social contact became less inhibited and interpersonal relations were reported as warmer with the regular practice of AT. Similarly, Kanji (1997) is of the opinion that the regular practice of AT brings about a better balance between the two hemispheres of the brain leading to better communication in relationships. Kanji's own study of AT as applied to student nurses showed that trainees experienced recognised benefits, such as increasing calmness with decreased anxiety, improved relationships both at work and in their personal lives, and increased awareness of a healthier lifestyle (Kanji, 1997). Likewise, Luthe and Schultz's (1969) observed that AT favourably changes social dynamics which is reflected by improved adjustment of environmental relations, better and friendlier contact, more productive student-teacher interaction.

The implication that AT promotes warm, trusting, loving interpersonal relationships, intimacy, selflessness, altruism, a climate of caring and willingness to compromise in relationships is very significant, especially for those negotiating Erikson's stage of 'Intimacy versus Isolation'. According to Erikson's psychosocial theory of development, people go through that developmental stage between the ages of about 21 years to about 40 years. Given that the mean age of the sample in this study is 26.4 years, it can be inferred that most of the participants are at the 'Intimacy versus Isolation' stage of their life cycle. Intimacy is the ability to make and honour commitments to relationships and partnerships even when that requires sacrifice and compromise and the person who cannot tolerate the fear of ego loss arising out of experiences of self-abandonment (e.g. moments of intensity in friendships, sexual orgasm etc...) is apt to become deeply isolated and self-absorbed (Sadock & Sadock, 2003). Hence, young adults need to form intimate, loving relationships with other people to prevent loneliness and isolation. Relationships with others provide social integration, reassurance of worth, emotional aid, guidance, and reliable alliance – factors which are consistent with well-being and stress reduction (Wright et al., 2002).

For the reasons mentioned above, those who find themselves grappling to form close, satisfying relationships with others, who find it difficult to be intimate and caring or who struggle to communicate and to open up when talking to others might turn to AT to help them improve their relationships. Albeit the emphasis of the discussion has mainly been within the context of an intimate relationship, AT can be applied to improve relationships

in different spheres of life such as with colleagues at work, with lecturers at university, with family members and peers and so on.

Some of the benefits of AT which were encountered while reviewing the literature but which have not been mentioned by the participants in this study include: achieving piece of mind, enhancing health and general well-being and controlling the body's stress responses (Kanji, 1997). Wright et al. (2002) have the same opinion that AT promotes a greater overall sense of well-being and to this add that the technique is a means of increasing effort, self-encouragement and help. It is suspected that a lot of the benefits of AT were not felt by the participants because of the relatively short duration of the training.

Kanji (1997) and Wright et al. (2002) point out that AT promotes a greater overall/general sense of well-being. Along the same lines, Carruthers (1984) posits that AT enhances a state of positive health, which is included in the World Health Organisation definition of health as "total mental, physical, and social well-being and not merely the absence of disease". Hence, it is not surprising that within the experimental group a boost was observed in Total psychological well-being over time.

Edwards et al. (2004) posit that psychological well-being is influenced by personal, interpersonal, environmental factors, by changes within the context of life stages and developmental tasks; it develops through a combination of emotional regulation, personality characteristics, identity and life experience. It increases with age, education,

extraversion, and conscientiousness; and decreases through neuroticism (Keyes et al., 2002). In this study, AT did have a positive effect on Total psychological well-being within the experimental group over time. Drawing from Edwards et al.'s (2004) account, it can be speculated that one of the ways by which AT increased Total psychological well-being over time was by alleviating anxiety and positively influencing emotional regulation.

For the purpose of this study, no comparisons were made across the genders because of the unequal distribution of women to men. The sample of this study is comprised of 17 women and 5 men of which the experimental group is made up of 7 women and 4 men and the control group of 10 women and 1 man. Therefore, comparing findings across the genders on the various psychological well-being dimensions and anxiety would have yielded biased results. In addition, age differences were also not considered because of the small sample size.

CHAPTER 8

8.1 Conclusion

The aim of the present study was to investigate AT as a preventive measure against anxiety as well as AT as a technique to promote psychological well-being. It was hypothesised that AT would alleviate anxiety and increase psychological well-being.

The results of the study showed that AT decreased anxiety within the experimental group over time. In addition, an increase in Total psychological well-being and Environmental Mastery were noticed within the same group over time. However, when comparisons were made between the control group and the experimental group, the only variable that changed significantly with the practice of AT was, *Positive Relations With Others*. Nonetheless, trends were evidently in the hypothesised direction of decrease in anxiety and increase in psychological well-being.

These findings are not surprising given the fact that such a large body of literature attests to the benefits of AT, especially with regard to anxiety reduction. Of major significance to this study is the fact that earlier studies conducted at the University of Zululand have found that Black South African students have higher mean self-reports of depression and anxiety (Pillay et al., 2001) and their sense of psychological well-being is lower than that of people elsewhere (Edwards et al., 2004). Collectively, this study and the literatures preceding it suggest that AT is a powerful method to alleviate anxiety. Even though the

literature on the effects of AT on well-being is scarce, this study shows that AT is quite promising as far as increasing psychological well-being is concerned. Hence AT might be an excellent coping mechanism for the students at this university.

Along those lines, studying at university can be very exciting as well as immensely challenging. For some students, it might require a huge adjustment since it often involves moving into a whole new environment, first time away from home, newly found independence, making new friends, dating, experimenting with things in general. Hence it is of utmost importance that students learn to strike a balance between being in charge of their lives as well as juggling their many responsibilities (Environmental Mastery) and socialising (Positive Relations With Others). The findings of this study showed that AT has a positive effect on Environmental Mastery and enhances Positive Relations With Others. Therefore this relaxation technique can assist students as they negotiate and resolve life challenges in the move from adolescence to young adulthood.

As mentioned above, the results of this study showed that AT enhances Positive Relations With Others and fosters the possession of quality and valuable relationships. This finding is especially meaningful in the context of the University of Zululand in view of the fact that when investigating psychological well-being in Black South African students at the same university, Edwards et al. (2004) found that these students' mean on the variable Positive Relations With Others was lower than others. The authors linked their finding to the shift in social roles and relationships since the beginning of democracy in 1994. "This is a major adjustment to make after years of oppression and

legislation that classified Black South Africans as second class citizens” (Edwards et al., 2004, pp 1281). Therefore, AT can be a useful self-help tool in elevating the students’ Positive Relations With Others and it can assist them with making the adjustment to their new social roles and relationships following the demise of apartheid.

Apart from the fact that AT showed considerable promise with regard to reducing anxiety and increasing psychological well-being, analysis of the qualitative evaluations of the participants’ subjective experiences of AT revealed the following additional benefits: AT seems to promote sleep, deep relaxation, clarity of thoughts, self-awareness, and a feeling of being in control. In addition, it looks like AT might assist in controlling anger as well as increasing energy levels.

The benefits of AT, as gathered from this study, are pertinent to the students. It is not surprising since the application of AT in the field of education has been extremely gratifying (Luthe & Schultz, 1969; Reed & Meyer, 1974; Carruthers, 1979).

Like those mentioned in the literature review, the findings in this study demonstrate that AT is a powerful self-help tool. It can be used as a preventive measure against anxiety as well as a means of promoting psychological well-being. It is a brilliant short cut to self-improvement and one would be wise to make AT a permanent part of one’s repertoire of stress/anxiety coping skills. Hence, it can be inferred that AT will be especially helpful for students to help them cope with the myriad of stressors they face at university.

AT provides “mental refreshment” (Kanji, 1997) and “mental hygiene” (Luthe & Schultz, 1969). Incorporating AT into one’s mental health promoting life-style is very alluring and seems to be very promising in this regard.

8.2 Limitations of the study

Even though precautions were taken to minimise methodological flaws, several limitations are inherent in this study and these include:

- The data was obtained from a small sample of postgraduate university students and as such, caution should be exercised when generalising the findings to the whole student population.
- The duration of the intervention was short because of time constraints.
- There was no indication if participants in the control group practiced any form of relaxation technique.
- AT was taught via tape and according to Linden (1990), relaxation procedures are not as effective when taught via tape as when integrated into a therapeutic relationship. In addition, the aim of AT is for the individual him or herself to have full mastery of the technique rather than relying on an outside agency (Kanji & Ernst, 2000).

- The venue where AT was practised was not a noise-free training environment. According to Linden (1990), the learning of AT is facilitated by a quiet environment with minimal noise disruption. Thus, some of the participants were distracted by outside noise as gathered from the evaluation forms. Linden (1990) posits that the positive effect of AT is probably best demonstrated when the participant can continue relaxing even with a certain amount of noise in the background.
- A large proportion of the AT literature is in the German, Japanese, and Russian languages. Most of this literature has never been translated into English and has remained inaccessible to individuals without fluency in these languages (Linden, 1990). Therefore, several journal articles could not be drawn upon in the literature searches. This accounts for the scarcity of an up-to-date review on controlled AT outcomes.

8.3 Recommendations for further research

The recommendations for further research are based on the findings that came up while reviewing the literature on AT and on some of the limitations of this study.

Even though a lot of work has been done on the impact of AT on anxiety levels in the past, this study seems to be the first one to investigate the effect of AT on psychological

well-being specifically. Hence, more studies are needed to establish the value of AT in the field of psychological well-being.

As mentioned before, according to some authors (Kanji & Ernst, 2000; Linden, 1990; Pikoff, 1984) there are significant defects in the AT literature as well as a lack of an up-to-date review on controlled AT outcomes. Therefore, well-controlled clinical studies in which the original, standardised AT procedure (without modifications and abbreviations) is applied is needed in the future to help ascertain the clinical value of AT.

Based on the limitations of this study, it is recommended that a similar study be carried out with a larger sample representative of the whole student population. In addition, it is suggested that the duration of the AT intervention be longer than 10 weeks and that a quieter venue be chosen. Finally, according to some authors (Linden, 1990; Kanji & Ernst, 2000) AT is not as effective when taught via tape and thus future researchers might teach AT in a more proactive way.

References

- Asahihara, M., Tsutsumi, M., Osawa, A. & Sata, A. (2000). Efficacy of autogenic training as the group therapy in the patients with panic disorder. *Japanese Journal of Autogenic Therapy*, 19(1-2), 31-36.
- Beck, A. T. & Steer, R. A. (1993). *Beck Anxiety Inventory*. San Antonio, TX: Harcourt Brace.
- Bowden, A. D. (2002). Autogenic training – a non-drug approach to anxiety, panic attacks and insomnia. The Royal London Homeopathic Hospital. University College London Hospitals.
- Cabras, P. L., la-Malfa, G. P. & Manfredi, A. (1984). Somatic symptoms in agoraphobia: Results of treatment by autogenic training. *Medicina-Psicosomatica*, 29(4), 467-478.
- Carruthers, M. (1979). Autogenic training. *Journal of Psychosomatic Research*, 23, 437-440.
- Carruthers, M. (1984). Health promotion by mental and physical training. *British Journal of Holistic Medicine*, 1(2), 142-147.
- Cassell, R. N. (1999). Autogenic feedback training as a cognitive neuroscience to develop voluntary control in relation to health care. *Psychology: A Journal of Human Behaviour*, 36 (3-4), 26-32.
- Earley, P. C., Ang, S., & Tan, J. (2006). *CQ. Developing cultural intelligence at work*. California: Stanford business books.
- Edelman, S. (2006). *Change your thinking*. London: Vermilion.
- Edwards, S. D. (1999). Promoting mental health in Zululand, South Africa. *Community psychology: a Zululand perspective*. Kwadlangezwa: University of Zululand.
- Edwards, S. D. & Govender, N. (2004). The effects of stress management on mood. *Journal of Psychology*, 21(2), 20-25. Kwadlangezwa: University of Zululand.
- Edwards, S. D., Ngcobo, H. S. B., & Pillay, A. L. (2004). Psychological well-being in South African university students. *Psychological Reports*, 95, 1279-1282.
- Everall, R. D., Bostik, K. E., & Paulson, B. L. (2005). I'm sick of being me. Developmental themes in a suicidal adolescent. *Adolescence*, 40(160), 693-708.
- Fukuyama, Y., Goso, K., Aoki, S., Kitajima, M., Sueyoshi, M. & Nakajima, S. (2000). Efficacy of the autogenic training for reducing exhaustion of caregivers in home care. *Japanese Journal of Autogenic Therapy*, 18(2), 56-63.

- Gavin, A. W., Trine, M. R. & Morgan, W. P. (2001). Affective and metabolic responses to hypnosis, autogenic relaxation and quiet rest in the supine and seated positions. *International Journal of Clinical and Experimental Hypnosis*, 49(1), 5-18.
- Gillani, N. B., & Smith, J. C. (2001). Zen meditation and ABC relaxation theory: an exploration of relaxation states, beliefs, dispositions, and motivations. *Journal of Clinical Psychology*, 57(6), 839-846.
- Goldberg, R. J. (1982). Anxiety reduction by self-regulation: theory, practice and evaluation. *Annals of Internal Medicine*, 96, 483-487.
- Gordon, J. S., Staples, J. K., Blyta, A. & Bytyqi, M. (2004). Treatment of posttraumatic stress disorder in postwar Kosovo high school students using mind-body skills groups: a pilot study. *Journal of Traumatic Stress*, 17(2), 143-147.
- Goso, K., Aoki, S., Kitajima, M., Sueyoshi, M., Fukuyama, Y. & Nakajima, S. (1999). Influence of the autogenic training on self-efficacy. *Japanese Journal of Autogenic Therapy*, 18(1), 46-52.
- Hidderley, M. & Holt, M. (2004). A pilot randomized trial assessing the effects of autogenic training in early stage cancer patients in relation to psychological status and immune system responses. *European Journal of Oncology Nursing*, 8, 61-65.
- Hillmann, M. (2002). Autogenic training and logotherapy. *International Forum for Logotherapy*, 25(2), 73-82.
- Johnson, S. S. & Kushner, R. F. (2001). Mind/body medicine: An introduction for the generalist physician and nutritionist. *Nutrition in Clinical Care*, 4(5), 256-264.
- Kanji, N. (1997). Autogenic training. *Complementary Therapies in Medicine*, 5, 162-167.
- Kanji, N. & Ernst, E. (2000). Autogenic training for stress and anxiety: a systematic review. *Complementary Therapies in Medicine*, 8(2), 106-110.
- Keyes, C.L.M., Shmotkin, D., & Ryff, C.D. (2002). Optimizing well-being: the empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82(6), 1007-1022.
- Kohli, A., Varma, V. K. & Nehra, R. (2000). Comparison of efficacy of psychorelaxation and pharmacotherapy in generalised anxiety disorder. *Journal of Personality and Clinical studies*, 16(1), 43-48.
- Korn, E. R. (2002). Visualisation techniques and altered states of consciousness. In A. A. Sheik (Ed.), *Handbook of therapeutic imagery techniques* (pp. 41-49). Amityville, New York: Baywood Publishing Co, Inc.

- Linden, W. (1990). *Autogenic Training: a Clinical Guide*. New York: Guilford Press.
- Luthe, W. & Schultz, J. H. (1969). *Autogenic Therapy. III: Applications in Psychotherapy*. New York: Grune & Stratton.
- McKenzie, E. (1998). *Healing Reiki*. UK: Hamlyn.
- Murotsu, K., Tachi, T. & Suzuki, Y. (2000). A case of anorexia nervosa improved by conjunct autogenic training. *Japanese Journal of Autogenic Therapy*, 19(1-2), 55-61.
- Palamara, S. A. (2001). Computer and autogenic training: A single case of a college student with developmental surface dyslexia. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 61(8-B), 4421.
- Perlitz, V., Cotuk, B., Schiepek, G., Sen, A., Haberstock, S., Schmid-Schonbein, H., Petzold, E. R. & Flatten, G. (2004). Synergetics of hypnoid relaxation. *Psychotherapie-Psychosomatik Medizinische Psychologie*, 54(6), 250-258.
- Pikoff, H. (1984). A critical review of autogenic training in America. *Clinical Psychology Review*, 4(6), 619-639.
- Pillay, A. L., Edwards, S. D., Sargent, C. & Dhloomo, R. M. (2001). Anxiety among university students in South Africa. *Psychological Reports*, 88, 1182-1186.
- Reed, R. & Meyer, R. G. (1974). Reduction of test anxiety via autogenic therapy. *Psychological Reports*, 35, 649-650.
- Rybarczyk, B., DeMarco, G., DeLaCruz, M., Lapidos, S. & Fortner, B. (2001). A classroom mind/body wellness intervention for older adults with chronic illness: comparing immediate and 1-year benefits. *Behavioral Medicine*, 27, 15-27.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069-1081.
- Ryff, C. D. & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719-727.
- Sadock, B. J. & Sadock, V. A. (2003). *Synopsis of psychiatry (9th edition)*. Philadelphia: Lippincott Williams and Wilkins.
- Saraceno, B. & Saxena, S. (2002). *Prevention and promotion in mental health*. Geneva: World Health Organization.
- Schultz, J. H. & Luthe, W. (1959). *Autogenic Training: a psychophysiologic approach in psychotherapy*. New York: Grune & Stratton.

- Schultz, J. H. & Luthe, W. (1969). *Autogenic Therapy. I: Autogenic Methods*. New York: Grune & Stratton.
- Smith, J. C. (2001). *Advances in ABC relaxation: Applications and inventories*. New York: Springer publishing co.
- Starak, Y. (1984). Strategies for mind and body health in social work education and practice. *Mental Health in Australia*, 1(13), 19-22.
- Stetter, F. & Kupper, S. (2002). Autogenic training: A meta-analysis of clinical outcome studies. *Applied Psychophysiology and Biofeedback*, 27(1), 45-98.
- Stevens, G. & Lockhat, R. (1997). Coca-cola kids B reflections on black adolescent identity development in post-apartheid South Africa. *South African Journal of Psychology*, 27(4), 250-255.
- Sue, D., Sue, D. & Sue, S. (1994). *Understanding abnormal behaviour (4th edition)*. Boston: Houghton Mifflin.
- Turner, H. A. & Muller, P. A. (2004). Long-term effects of child corporal punishment on depressive symptoms in young adults. *Journal of Family Issues*, 25, 761-782.
- Werry, J. S. (1999). Anxiolytics in MRDD. *Mental Retardation and Developmental Disabilities Research Reviews*, 5, 299-304.
- Wolberg, L. R. (1967). *The Technique of Psychotherapy (Part 1)*. New York: Grune & Stratton, Inc.
- Wright, S., Courtney, U. & Crowther, D. (2002). A quantitative and qualitative pilot study of the perceived benefits of autogenic training for a group of people with cancer. *European Journal of Cancer Care*, 11(2), 122-130.

Internet references:

- Anxiety-Disorder-Help.com (2006) retrieved from www.anxiety-disorder-help.com on 26.10.06.
- Anxietycoach.com (2006) retrieved from www.anxietycoach.com on 25.10.06.
- Nelmh.org (2005) retrieved from www.nelmh.org on 26.02.05.
- Holisticonline.com (2005) retrieved from www.holistic-online.com on 26.02.05.

CD reference: Leyh, C. (1999). *Autogenic training*. UK: Gigasound Ltd.

Appendix A: Definitions of Theory-Guided Dimensions of Well-Being

Self-Acceptance

High scorer: possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about past life.

Low scorer: feels dissatisfied with self, is disappointed with what has occurred in past life, is troubled about certain personal qualities, wishes to be different than what he or she is.

Positive Relations With Others

High scorer: has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give and take of human relationships.

Low scorer: has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others.

Autonomy

High scorer: is self-determining and independent, able to resist social pressures to think and act in certain ways, regulates behaviour from within, evaluates self by personal standards.

Low scorer: is concerned about the expectations and evaluations of others, relies on judgments of others to make important decisions, conforms to social pressures to think and act in certain ways.

Environmental Mastery

High scorer: has a sense of mastery and competence in managing the environment, controls complex array of external activities, makes effective use of surrounding opportunities, able to choose or create contexts suitable to personal needs and values.

Low scorer: has difficulty managing everyday affairs, feels unable to change or improve surrounding context, is unaware of surrounding opportunities, lacks sense of control over external world.

Purpose in Life

High scorer: has goals in life and a sense of directedness, feels there is meaning to present and past life, holds beliefs that give life purpose, has aims and objectives for living.

Low scorer: lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose in past life; has no outlooks or beliefs that give life meaning.

Personal Growth

High scorer: has a feeling of continued development, sees self as growing and expanding, is open to new experiences, has sense of realising his or her potential, sees improvement in self and behaviour over time, is changing in ways that reflect more self-knowledge and effectiveness.

Low scorer: has a sense of personal stagnation, lacks sense of improvement or expansion over time, feels bored and uninterested with life, feels unable to develop new attitudes or behaviours.


Source: Ryff, C. D. & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), pp 727.

Appendix B: Beck Anxiety Inventory

AGE :	GENDER : <input type="checkbox"/> MALE / <input type="checkbox"/> FEMALE
NUMBER OF YEARS AT UNIVERSITY :	
BACKGROUND <input type="checkbox"/> RURAL / <input type="checkbox"/> URBAN	

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by each symptom during the PAST WEEK, INCLUDING TODAY, by placing an X in the corresponding space in the column next to each symptom.

	NOT AT ALL	MILDLY <small>(it did not bother me much)</small>	MODERATELY <small>(was very unpleasant, but I could stand it)</small>	SEVERELY <small>(could barely stand it)</small>
1. Numbness or tingling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Feeling hot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Wobbliness in legs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Unable to relax.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Fear of the worst happening.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Dizzy or lightheaded.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Heart pounding or racing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Unsteady.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Terrified.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Nervous.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Feelings of choking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Hands trembling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Shaky.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Fear of losing control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Difficulty breathing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Fear of dying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Scared.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Indigestion or discomfort in abdomen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Faint.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Face flushed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Sweating (not due to heat).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>


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Source: Beck, A. T. & Steer, R. A. (1993). *Beck Anxiety Inventory*. San Antonio, TX: Harcourt Brace.

Appendix D: Consent form to participate in the study

Autogenic training for preventing anxiety and promoting psychological well-being

In order to participate in this research study, it is necessary that you give your informed consent. By signing this informed consent form you are indicating that you understand the nature of the research study, your role in that research and that you agree to participate in the research

Please consider the following points before signing:

I understand that I am participating in psychological research

I understand that my participation will be anonymous and that all information I provide will remain confidential

I understand that participation in the research is voluntary but that, once the project has begun, I must commit myself and attend all the workshops

By signing this form I am stating that I understand the above information and consent freely to participate in this study

First name:

Surname:

Signature:

Date:
