

# **The Influence of Yoga Therapy on Anxiety**

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## **Declaration**

This dissertation 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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## Abstract

Anxiety is a major concern within society, owing to its high prevalence. It is usually treated with psychopharmacological medications, which are costly for government health departments. Although there are reports of its effectiveness and minimal expense of yoga therapy as a treatment for anxiety, such reports lack any substantial evidence base. This relative gap in the scientific literature provided motivation for the present research. It was hypothesised that the influence of yoga therapy would decrease levels of anxiety among individuals.

The study was conducted using a mixed approach, by means of a quasi-experimental design with both quantitative and qualitative methods and repeated measures ANOVA and thematic content analysis as research techniques. The experimental group consisted of a convenience sample of 18 practitioners of yoga, who practiced yoga at least twice a week for the duration of three months. The control group similarly comprised a convenience sample of 19 participants, selected from the clinical and counselling psychology masters class at the University of Zululand, who did not practice yoga over the time of the yoga therapeutic intervention.

The Beck Anxiety Inventory was administered to the experimental group and the control group prior to and immediately after the three months of intervention. Prior to the intervention of yoga therapy, the experimental group completed a qualitative questionnaire. This assessed their perceptions and experiences of yoga, as well as their experience of the influence of yoga therapy on anxiety. The influence of yoga intervention was evaluated by the difference in anxiety levels prior to and immediately succeeding the intervention.

The data from the Beck Anxiety Inventory was analysed quantitatively through the use of the Statistical Package for the Social Sciences (SPSS). The qualitative questionnaires were evaluated according to thematic analysis.

The quantitative results indicated that, although regular yoga therapy was associated with significant decreases in anxiety over a period of three months, these changes were not significant when compared with a control group. Hence no causative inferences can be made. However, the analysis revealed significant between group differences for age and education, indicating that older and more educated participants' anxiety scores decreased significantly more than those of younger and less educated participants.

The qualitative results from the experimental group revealed positive outcomes. The participants reported that yoga practice provided relief from anxiety by means of encouraging them to remain focussed in the present moment, gain a sense of equilibrium in life, as well as feel calm and relaxed.

Although further randomised controlled studies with larger samples are needed, this research provided some scientific evidence that yoga therapy may be an effective intervention for decreasing perceived anxiety as a potentially cost effective intervention for anxiety reduction.

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## **Chapter 1: Introduction**

### ***Tadasana*<sup>1</sup> (Mountain pose)**

*(The posture adopted at the commencement of a yoga practice)*

#### **1.1 *Drishhti* (Point of focus)**

This study proposes to understand the influence of yoga therapy on anxiety. It will explore whether the practice of yoga may decrease an individual's level of anxiety.

This chapter will begin by examining different perspectives of yoga. This will be followed by the motivation and the reasoning behind this study and give an explanation on why yoga was considered as a possible intervention for the reduction of anxiety. The statement of the problem will then be addressed, and, in conclusion, the aim of this study shall be briefly outlined.

This research is structured around the philosophy of Patanjali's eight limbs of yoga, which will be discussed in detail in the following chapter. Ken Wilber's Integral Approach shall be used as a point of reference within this research. Wilber developed his integral approach which is dedicated to looking at all aspects of life, and in this case yoga, according to his four-quadrant paradigm. His approach to integral yoga is from a holistic perspective, where he honours the whole spectrum of consciousness (Wilber, 1997). Wilber was inspired by Sri Aurobindo (1872-1955), who coined the term "Integral Yoga." Aurobindo was known as India's greatest modern philosopher-sage. He was able to develop a sophisticated "integral yoga," due to having had

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<sup>1</sup> The headings of the chapters have been given names of yoga postures, and are not a direct translation of the English headings.

access to scientific data on evolution (Wilber, 2001). Aurobindo proclaimed that the goal of “integral yoga,” is to achieve an inner self-development, in which those who follow it, may discover the One Self in all, and evolve a higher sense of consciousness (Aurobindo, 2003).

## **1.2 Meaning within**

The word “yoga” is a Sanskrit term which means the union of the body, mind and soul (Iyengar, 1982). Afghah and Kiani-Dehkordi (2005) define yoga as a holistic practice that integrates the physical, mental, spiritual and emotional elements of the self. It follows from the meaning of the word, therefore, that its practice induces a sense of complete equilibrium and harmony within the social and material environment of the practitioner.

The recurring theme in the introductory literature about yoga is the integration of the various components of our being; the union and reconciliation of body, mind and spirit.

The practice of yoga has been conceived as a therapy and, hence, the term “yoga therapy” may be understood as using the practice and techniques of yoga to create, stimulate, as well as maintain an optimum state of physical, emotional, mental and spiritual health (Lasater, n.d). The term "yoga therapy," therefore, contemplates the practice of yoga as a means of maintaining or promoting a state of health that, at once, positively affects the body, mind and soul, as it were.

This study compares two groups, one of which practises yoga ("the practitioners") and the other of which does not ("the non-practitioners"), in order to investigate whether trends can be identified between the practitioners of yoga, and the non-practitioners, and to establish whether

the practitioners evidence comparatively lower levels of anxiety as measured against the non-practitioners. It should be mentioned that the yoga practitioners do not engage in the practice of yoga with the express objective of reducing anxiety levels but simply practice yoga for whatever reasons may be personal to them.

While the subjects of the investigation practice yoga purely as a pastime, the inference is sought to be drawn as to whether this is therapeutic and whether, accordingly, yoga may be usefully applied as an intervention for anxiety. This could then be usefully referred to as yoga therapy and used as a non-invasive and cost effective therapy.

Anxiety, according to Khan, Singh and Salman (2005), is characterised by a disagreeable and ambiguous feeling which is accompanied by undesired changes in one's physical state, such as feelings of dizziness, experiencing headaches, stomach discomfort, perspiration, palpitations, an increase in blood pressure, agitation and shaking.

Forbes *et al.* (2008) describe anxiety to be debilitating; in that it impairs individual functioning on a cognitive, emotional and occupational level. The symptoms of anxiety often prevent sufferers from being proactive in attaining the necessary social support that is required for symptom improvement and good health.

### 1.3 Motivation for the study

The researcher has practised yoga for the past five years, and has been intrigued by its healing and calming effects. This observation has given rise to the question of whether it could be empirically established that yoga therapy influences levels of anxiety. The significance of this question, if answered in the affirmative, is that it may throw more light on the question of yoga therapy being recognised as an accepted means of managing anxiety levels.

The unhealthy and stressful lifestyles, prevalent in the present-day communities, can elicit responses, such as the over prescription of drugs, or abuse of patent remedies, which can, in turn, lead to substance abuse, and the cost of remediation may give rise to significant public expenditure (Forbes *et al.*, 2008). If alternative methods of preventing, or managing anxiety enjoyed wider acceptance, healthier lifestyles and improved quality of life could benefit society and the government, financially. Yoga therapy may be seen as a cost effective intervention to reduce anxiety that may save significant expense in healthcare budgets.

This research may be beneficial, as groundwork in developing existing, accessible and financially viable method of decreasing anxiety, thereby offering the community well-being and benefits.

The practice of psychology in contemporary South Africa is in the process of undergoing a major shift from western, clinical frameworks to community-based preventative health care. Mental health services have been located within the domain of primary health care which focuses on policies that are both promotive of physical and mental well-being as well as preventative of ill-health (ANC 1994; Averasturi 1998; Denill, King, Lock & Swanepoel 1995; Freeman 2004). The challenge presented by this shift, includes the provision of affordable, accessible and relevant health care to a multi-cultural, multi-lingual society currently undergoing rapid social change (Cromhout, 2005, p. 1).

One current trend in psychology is towards ‘positive psychology.’ By this is meant a perspective or approach contending that psychological disciplines should not be limited to the study of pathology and dysfunction within individuals, but should also be directed towards the study of understanding functional individuals in terms of their personalities and characteristics, as well. Hence treatment is not restricted to helping the damaged individual, but encompasses nurturing healthy individuals as well (Egan, 2002). The practice of yoga as an intervention to relieve anxiety may be seen from the perspective of positive psychology. By incorporating the practice of yoga into an individual’s daily routine, a healthy and holistic lifestyle may be promoted.

Yoga therapy may be an affordable and accessible healthcare intervention that has the potential to prevent ill-health and promote well-being.

While a vast amount of research has been done on anxiety, less has been done in understanding the inter-relationship between yoga and anxiety in the South African context. Therefore, the researcher believes it would be of interest and psychologically relevant to survey the topic of how yoga therapy may influence anxiety in a South African context.

Yoga therapy may be seen as an intervention to decrease anxiety and to reconnect the mind, body and spirit (Bhavanani, 2005). Bhavanani (2005) emphasises that yoga presents an escape from stress and offers a holistic solution to the stress epidemic society is faced with. Yoga presents itself as a holistic lifestyle that this research views as workable intervention in the treatment of anxiety symptoms. Its examination, with particular reference to the management of anxiety in a South African context, may serve to contribute to the laying down of a foundation for

yoga therapy to be recognised as a readily available and cost effective treatment for reducing anxiety.

#### **1.4 Why yoga as an intervention?**

Why yoga? One can conjure up any number of disciplines that contemplate the improvement of the human condition. Perhaps one might argue that if one lived a puritanical life, subscribing to one of the world religions, such as Buddhism, Christianity, or Islam, practising the discipline in mind and body, that this would inevitably result in a state of emotional and physical well-being. This may be so but it is not the purpose of this research to comment on, or compare such beliefs or practices.

Yoga is a discipline that has ancient origins, enjoys a wide recognition and has, as one of its important tenets, the inseparability of the various dimensions of our existence, the mind, the body and the spirit (Khan *et al.*, 2005).

A further consideration is that yoga is not a religion and hence is not affected by prejudices to which many other religious dogmas are subjected. The practice of yoga may be incorporated suitably into an individual's choice of religion or spiritual practice (Khan *et al.*, 2005).

Breathing is central to our existence and is fundamental to the practice of yoga. It is the one common element we share with our fellow beings, human, animal, and vegetable. Breath may be described as the essence of life. An infant's first inhalation of breath at birth defines his or her

entry into this world and the final exhalation of breath marks the closure on life (Chopra & Simon, 2004).

The role of breath in yoga is primary. A yoga teacher once said to the researcher, if all our senses were taken away from us; hearing, sight, touch, taste and smell we could still have quality of life. However, if our breath was taken away for us, our human bodies would cease to exist. Hence breath forms an integral part of our being.

This research has been designed around Patanjali's eight limbs of yoga, of which breath forms an essential part, (see 2.3.4). *Pranayama* is the structure of yoga breathing (Louw, 2008), and it is thus a vital part of the holistic practice of yoga.

### **1.5 The statement of the problem**

Modern times have brought a measure of disillusionment with existing value structures and beliefs. Despite the existence of modern technologies and welfare states, natural and man-made disasters are common, suffering is widespread and there is a general recognition that humanity is in need of healing and transformation (Chopra & Simon, 2004).

It will not be contended that the practice of yoga will, in itself, cure the troubles of the world.

Yoga involves the conscious bringing together of the components of our existence and, from this union of the mind, body and soul, a consciousness that is in alignment with the environment and in harmony with our surroundings. Being able to achieve a state of reconciliation with one's own personal condition, the people around one and the circumstances that affect one, could positively

focus the individual in mind and body, empower the individual to respond, where response may assist, or enable him or her by way of a philosophical framework to accept certain realities.

The practice of yogic principles may provide the individual with relief from overwhelming daily anxiety which accompanies the doubts and disillusionment of modern times.

### **1.6 Research question**

The question that this research seeks to answer is: Does yoga therapy reduce practitioners' anxiety levels?

### **1.7 The hypothesis**

It is hypothesised that the practice of yoga, in a group of practitioners of yoga, will result in lower self-perceived levels of anxiety, compared to that of a control group. Thus two dimensions of this research hypothesis may be distinguished: that is, that yoga will be associated with significant decreases in perceived anxiety both over time (within group effect) and as compared to a control group who do not practise yoga (between group effect). Furthermore it was expected that qualitative data would provide further meaning in relation to any perceived changes.

### **1.8 Aim of the study**

The aim of this study is to establish whether the research hypothesis that yoga can decrease anxiety is supported or not. This will be investigated by comparing two groups, one that practises yoga and one that does not practise yoga.

### **1.9 *Namaste* (conclusion)**

While the practice of yoga is uniformly perceived as being associated with mental, spiritual and physical well-being, this empirical study aims at establishing whether there is empirical evidence for the argument that, for sufferers of anxiety, yoga may offer a workable, accessible and economic form of relief that is not complicated by the ingestion of medication.

## **Chapter 2: Literature Review**

### ***Jnana (Knowledge)***

#### ***2.1 Drishti***

Before addressing the question, it is necessary in this chapter to consider the ancient history and disciplines that underlie yoga, current perspectives on yoga and ways in which it is practised.

According to Chopra and Simon (2004), living life according to the principles of yoga, may enhance one's integration between one's body and mind, and in essence develop balance and flexibility in life to help deal with the challenges humanity is confronted with. Experiencing the journey of life through the practice of yogic principles may reveal the wisdom of one's creativity and intuition and thus develop an awareness of how individual thoughts, speech and deeds influence and are influenced by that individual's environment. In the wake of this awareness, one may contribute to the collective awakening of world consciousness. In essence, consciousness leads to thought and thought leads to action. Change initiated through awareness, awareness of one's infinite creativity that is innate within all individuals, to catalyse the transformation we want to experience individually and for generations to come (Chopra & Simon, 2004).

Yoga may be incorporated into one's life and thus be experienced within a holistic lifestyle. Chopra and Simon (2004) emphasise that through the principles of yoga, the individual may "apply the deep wisdom of yoga to daily life" (p. 4). Therefore, it is contended, that the ancient

tradition of yoga has the potential to instill healing and transformation within individuals and in essence extend this to our fellow beings and environment.

Wilber (1997) advises, in his integral approach, that our present culture is in need of timeless ancient wisdom. By opening him or herself up to the timeless principles of yoga, and living life according to the wisdom of yoga, healing and transformation may be attained through embracing the whole spectrum of consciousness.

## **2.2 History and philosophy of yoga**

*“Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow”* (Saraswati, 1999, p. 1).

The discipline of yoga has a fascinating yet complex history, which may be traced back over ten thousand years (Saraswati, 1999). The true origin of yoga can only be speculated about, as there are numerous historical myths and legends that contemplate its true nature. Some conjectures go as far as to suggest that the great Gods from above taught the practice of yoga to mankind (Shankar, 2006). Shankar (2006) states that yoga is essentially so ancient, that references are alluded to it in the *Vedas* (this is explained further on), such as in prehistoric texts like the *Bhagawad Gita*.

Iyengar (1982) suggests that yogic philosophy, Chapter 6 of the *Bhagawad Gita*, contemplates yoga as a means of liberation from the worldly senses of pain and sorrow. The text suggests that the yogic state is achieved when the mind, the intellect and the self (or consciousness) are under

complete control and are liberated from impatient desire, and are then able to rest in the "Spirit within." Through this process the individual is able to become a *yukta*, meaning one in communion with God (Iyengar, 1982). In essence, this state of yoga is achieved "when the restlessness of the mind, intellect and self is stilled through the practice of yoga, the yogi by the grace of the Spirit within himself finds fulfilment" (Iyengar, 1982, p. 19).

Iyengar (1982) proceeds to explain that yoga is, in itself, multifaceted, and thus has a multitude of meanings, which all lead the way to discovering inner peace and bliss. The *Bhagawad Gita* pays homage to further interpretations of yoga, in particular, *karma* Yoga, which shall be discussed in further detail. It professes that work is a privilege and should not be undertaken purely to receive its material benefits or to realise selfish desires. On no account should one be influenced by failure or accomplishment within one's work (Iyengar, 1982).

Iyengar (1982) extends the meaning of the term yoga, by suggesting that it can be viewed as wisdom in skilful living, harmony and moderation. Essentially, yoga is not for individuals who bathe in excess or deprive themselves. To the contrary, it encourages moderation in all spheres of life, including working, resting and waking (Iyengar, 1982). Effectively, by living a balanced and moderate existence, one may live a life of harmony and peace.

Wilber (1981) suggests that the ultimate immanent and transcendent reality in yoga is linking personal Spirit (*Atman*) with Universal Spirit (*Brahman*). In essence this means that yoga is the spirit of 'oneness,' or of *Atman-Brahman*. Yoga may be understood to be unity consciousness, where there is a holistic awareness of no-boundary. Therefore there are no boundaries and there

is no separateness within the field of yoga, it is viewed as holistically universal, as *Brahman* (Wilber, 1981).

It is important to gain insight into the history of the philosophy of yoga. Speculation suggests that the original practices of yogic traditions were formulated and developed by the ancient sages, to enable mankind to become conscious of divine potential (Saraswati, 1999), as well as to assist in preparing the body for extended hours of meditation (Williams, 2005). Saraswati (1999) states that, historically, the techniques of yoga were kept secret from the general public and were not written down in text. Accordingly, the dedicated gurus and teachers of yoga passed down the knowledge of the practice from one generation to the next through word of mouth (Shankar, 2006). It was thus through verbal tradition and guidance that the original yogic practices have been preserved through the ages.

The first recorded texts that were written on the topic of yoga were the ancient *Tantras* and following these, the *Vedas*, which date back to the Indus Valley culture (Saraswati, 1999). Saraswati (1999) explains that the ancient Vedic scriptures collectively make up and formulate the *Vedanta*. The doctrine of the *Vedanta* dates back to about 2000BC and describes the Indian historical and philosophical traditions of Eastern yogic practices. It is said that Shankara (788-820AD) was an important and influential interpreter of the *Vedanta*, who portrayed it from a 'non-dualistic' perspective (Meyer, Moore & Viljoen, 2008). The quintessence of the *Vedanta* as articulated by Shankara, suggests that *Brahman* (the Absolute) is alone real; this world is effectively unreal, a figment of our consciousness; while the *Jiva* (the individual soul) is not different or separate from *Brahman* (Sivananda, 1997). Therefore in brief, all living souls are essentially One and are intimately connected. This perspective is the embodiment of Wilber's

integral theory, where *Brahman* is the Spirit of being. The *Vedanta* provided a foundation for Patanjali's *Yoga Sutras*.

### **2.3 Patanjali's eight limbs of yoga**

Approximately 2000 years ago, the Indian sage Patanjali, devised and codified the *Yoga Sutras*; texts which provided a comprehensive theoretical and philosophical foundation for yoga (Butera, 2009). Patanjali's *Yoga Sutras* offered a discipline that prescribed a set of principles and practices to regulate the mind in order to achieve inner peace (Shankar, 2006). These *Yoga Sutras* are described as the eight limbs of yoga, or the eight-fold path that formed a framework, which guided the practice of yoga (Saraswati, 1999).

Patanjali's eight limbs of yoga were designed to create a sense of awareness that flows from the external universe to the internal self, while maintaining an awareness that the individual holistically is one (*Atman*) with the universe. Hence this embodied Universal Spirit and/or the Absolute (*Brahman*) (Wilber, 1981). The eight-fold path included: *yamas*; universal morals and guidelines for engaging with others and *niyamas*; personal disciplines. These were followed by *asanas*, bodily postures and attitudes; *pranayama*, control and regulation over breathing; *pratyahara*, withdrawing one's senses from the world and redirecting the senses inward to create awareness. *Dharana*, concentration on one's attention and intention; *dhyana*, development and cultivation of inner awareness through meditation, and *Samadhi*, spiritual absorption and union with the Divine (Shankar, 2006). It was considered critical to grasp the underlying meaning of each of the concepts within the *Yoga Sutras*, as together they formed a holistic meaning which

allowed the individual to find one's unique union with the Divine. Patanjali's eight limbs of yoga have been received and accepted into present day practice of the discipline.

### 2.3.1 *Yamas*

It is necessary to explain in detail each of the eight limbs of yoga within the *Yoga Sutras*. Patanjali emphasised that the first five limbs are the preparatory external components of yoga, while the last three limbs are internal and essential features of yoga (Shankar, 2006). According to Shankar (2006) there are five critical characteristics that are composed within the *yamas*. Firstly, *ahimsa*, which means non-violence. In the yogic context, *ahimsa* requires that one should refrain from harming others by hurtful speech, physical abuse and unkind thoughts. Secondly, *satya*, meaning truthfulness, requires truthfulness in thought, speech and action. The importance of reflecting on what we say as well as how we say it, and in what way we think, speak and act and how it may affect others. The virtue of holding in one's speech rather than indulging in hurtful speech is stressed (Doran, n.d). Thirdly, *asteya*; non-theft; which means not taking anything that does not belong to you or what is not given to you. This prohibition extends to nonmaterial things such as the time and attention of others (Chopra & Simon, 2004). The fourth element within the *yamas* is *brahmacharya*; celibacy, which dictates that an individual should abstain from sex and well as from permitting thoughts about sex (Shankar, 2006). The last of the *yamas* is *aparigraha*; non-gathering, non-acquisitiveness and neutralising the desire to obtain and hoard wealth. A yogi may fulfil his primary needs but should not become distracted by the material world of attachment to physical objects and wealth (Shankar, 2006).

The five characteristics of the *yamas* have the common characteristic that the prohibitions are aimed at the material as well as the non-material, being our thoughts and our speech. The *yamas*

consist of moral virtues which contribute towards the holistic growth of an individual on ones path to yogic consciousness.

### 2.3.2 *Niyamas*

Patanjali's *Yoga Sutra yamas* is followed by *niyamas*; which consists of five personal elements that guides the attitudes one has towards oneself as one develops a system for living consciously (Chopra & Simon, 2004).

The first *niyama* is *shoucha*; which means cleanliness of the mind and the body. Cleanliness of the body requires keeping one's body healthy and well-functioning. Cleanliness of the mind implies the observation of all five *yamas* which are in order to attain an inner purity (Shankar, 2006). Importantly, *shoucha* incorporates practising *asana* and *pranayama*. *Asanas* tone the body and eliminate impurities and toxins as a result of over-indulgence, while *pranayama* fulfils the function of cleansing and aerating the lungs, sending oxygen to the blood and purifying the nerves (Iyengar, 1982). Secondly, *santosh*a; which means present moment awareness and contentment, requires the philosophical acceptance of one's lot, rather than resentment about what one does not have (Chopra & Simon, 2004). Essentially "a mind that is not content cannot concentrate, and the yogi feels the lack of nothing and so he is naturally content" (Iyengar, 1982, p. 37). The third *niyama* is *tapas*; which entails purification, self-discipline and austerity which serve to attain eventual unification with the Divine (Iyengar, 1982). The fourth *niyama*, is *svadhyama*, which contemplates reading and educating oneself with religious literature. Shankar (2006) explains that by reading religious texts an individual is able to rise above ignorance by attaining insight into dilemmas, while at the same time it cleanses the mind. The final *niyama* is

*ishwara-pranidhana*; which is devotion. This means being able to rely on the Divine, by attributing the results of whatever one does to Divine intervention (Shankar, 2006).

The *yamas* and *niyamas* are important because they are able to cleanse the mind from impurities and distracting thoughts, and thus prepare the individual for the *asanas*, *pranayama* and *bandhas* (Shankar, 2006).

### 2.3.3 *Asanas*

Patanjali's third limb of yoga referred to *asanas* or postures. The Sanskrit definition for *asana* is 'staying' or 'abiding' in positions that are comfortable and sturdy, which are used as a means to still the mind in preparation for meditation (Saraswati, 1999).

Saraswati (1999) asserts that in the ancient yogic scriptures there were initially 8 400 000 *asanas*, which embodied 8 400 000 different incarnations that beings must each pass through before being freed from the cycle of birth and death. The *asanas* symbolise the evolutionary progression, progressing from the simplest life forms, through the orders, to the most intricate, being the human being (Saraswati, 1999). Through the ages the number of *asanas* has been reduced to a mere 84 (Butera, 2009). Iyengar (1982) notes, that the name of each of the *asanas* highlights underlying principles of evolution. Iyengar (1982) explains how the postures or *asanas* begin with the most simplistic of elements, such as vegetation, and are given names like *vrksa* (tree) and *padma* (lotus), ascend the order to insects, such as *salabha* (locust), to aquatic animals like *matsya* (fish) and *bheka* (frog), proceed to birds and mammals, such as *baka* (heron), *hamsa* (swan), *svana* (dog) and *usstra* (camel), then move on to the human embryonic state (*garbha-*

*pinda*) and finally, the ancient sages are acknowledged, and *asanas* are named after them, such as Bharadvaja, Kapila and Vasistha.

Iyengar (1982) explains that during the practice of yoga, the yogi's body may assume many *asanas*, each of which represents various creatures of creation, thus paying respect to the God of creation. The yogi's mind is educated so as not to feel disrespect towards any creature, because he acknowledges that throughout the entire scope of creation, from the insect to the magnitude of the sage, the same Universal Spirit evidences itself in all forms (Iyengar, 1982). Therefore a yogi has the ability to find unity within diversity. In quintessence, "true *asana* is that in which the thought of *Brahman* flows effortlessly and incessantly through the mind of the *sadhaka*" (Iyengar, 1982, p. 42).

The mastery of harmonising the *asanas* lays a solid foundation for the comprehension of *pranayama*, which is Patanjali's fourth dimension on the yogic path.

#### **2.3.4 *Pranayama***

*Pranayama* is defined by reflecting on its two root-word origins. *Prana* means 'vital energy' or 'life force,' which is innate in all things animate and inanimate. *Ayama* means 'expansion' (Saraswati, 1999). Accordingly, *pranayama* is the "extension of breath and its control" (Iyengar, 1982, p. 43).

Yogic philosophies place the essence of breath as the *vital force* or *prana* (Wilber, 1981). It is the energy of *prana* that instills life within our souls. Patanjali suggests that in order to enliven the *prana* within, one needs to experience conscious breathing techniques known as *pranayama*

(Chopra & Simon, 2004). *Pranayama* may be attained by mastering the life force of breath (Chopra & Simon, 2004).

Saraswati (1999) explains that through the practice of *pranayama* the yogi may activate his life force and achieve an elevated state of vibratory energy.

The centrality of breath and breathing in disciplines outside of yogic philosophies warrant consideration. Edwards (2004) points out that the original Ancient Greek definition of psychology can be traced back to ‘*logos*’ of the ‘*psyche*’ or study of the essential aspects of life, such as breath, soul, spirit, consciousness, vitality and energy that leaves at physical death and continues in some other form (Edwards, 2004). The word ‘*logos*’ translates into words such as logic, language, meaning and science. Therefore, in one essential and literal sense, psychology can be defined as the study and use of such “breath” (Edwards, 2008). Essentially it follows that it is the process of breathing that connects all beings and makes us One (*Atman*). Therefore, it seems vital that the meaning of breath and the science of breathing should be understood from a holistic perspective.

From a fundamentalist Christian perspective, it was the element of breath that transformed and animated man at the moment of his creation (Edwards, 2009). Genesis 2: verse 7 reads as follows, “*The Lord God formed the man from the dust of the ground and breathed into his nostrils the breath of life, and the man became a living being*” (Life Application Study Bible, 1991).

In terms of yogic philosophies, it is believed that thoughts and emotions may influence the body, while the state of the body influences thoughts and emotions. Thus steady and slow breathing may be associated with mental calmness, and so one may be able to steady the mind by steadying one's breathing (Gilbert, 1999). Chopra and Simon (2004) elaborate on this intimate connection between the breath and the mind. They suggest that when the mind is still and tranquil, so is the breath. In turn when the mind is unsettled, the breath is disorderly.

The significance of breath is further recognised by Kariba Ekken, a seventeenth-century mystic who stated that,

if you would foster a calm spirit, first regulate your breathing; for when that is under control, the heart will be at peace; but when the breathing is sporadic, then it will be troubled. Therefore, before attempting anything, first regulate your breathing on which your temper will be softened, your spirit calmed (Iyengar, 1982, p. 44).

*Pranayama* conceptualises the inextricable interrelationship, or union, between consciousness and the mind, on the one hand, and the function of breath inhalation and exhalation, on the other. Wilber (1981) explains that inhalation involves drawing in the vital force from the throat down to the abdomen, thus instilling the body with energy and life. This is followed by exhalation, where one releases and radiates this force in the form of delicate pleasure and bliss throughout the mind-body. This mindful experience of *pranayama* connects one to the universe and embraces the essence of *Brahman*, or fundamental Spirit in Wilber's integral scope of thought.

Saraswati (1999) explains that there are four fundamental facets of breathing within *pranayama*, namely inhalation (*pooraka*), exhalation (*rechaka*), internal breath retention (*antar kumbhaka*) and external breath retention (*bahir kumbhaka*). These are used while practicing the different techniques of *pranayama*.

The most common type of *pranayama* is *ujjayi* breathing. The word *ujjayi* describes how the chest needs to be held during breathing; it should be held up and be expanded, similar to how a proud warrior carries himself (Young, 1988). Brown and Gerbarg (2005) suggest that *ujjayi* is sometimes called ‘victorious breath’ and may be referred to as ‘ocean breath.’ This is because its sound is reminiscent of the sound created by ocean waves, as the laryngeal muscles contract and the glottis slightly closes. It is a slow breath, with two to four breaths per minute. This technique increases the airway resistance during the inhalation and exhalation, while it controls the airflow so as to ensure that each stage of the breathing sequence may be extended to a precise count (Brown & Gerbarg, 2005). The benefits of *ujjayi* are vast, but in short, it tones the organs, aerates the lungs, assists against coronary problems as well as helping to calm emotions (Young, 1988).

A further type of *pranayama* is *kumbhaka*. During *kumbhaka* one takes an inhalation and holds the breath for a few seconds, and then takes a lengthy and steady exhalation (Young, 1988). Louw (2008) emphasises that the exhalation is extremely important, as one has to control the air flow so that it is smooth and slow. Young (1988) suggests that the benefits of *kumbhaka* are that it oxygenates the blood, purifies stale air within the lungs, has curative effects on the stomach, liver and blood, and relieves bad breath.

*Kapalabhati* breathing is known as the breath of fire, for the reason that it has the capacity to heat and energize the body (Louw, 2008). Edwards (2004) explains that during *kapalabhati*, one takes a deep breath followed by pulling the abdomen in with a sequence of approximately ten brief yet vigorous exhalations from only one nostril, whilst keeping the alternative nostril blocked before taking an inhalation. *Kapalabhati* is said to be beneficial in that it helps to clear the sinuses,

assists digestion and excretion by quivering the brain around within the cushion of its' cerebrospinal fluids (Edwards, 2004).

*Nadi sodana* breathing is otherwise known as alternative nostril breathing. This is done by holding the thumb and ring finger of the right hand over the nose, and using alternative fingers to close the alternative nostrils, and breathing (inhaling then exhaling) slowly and smoothly alternatively through the left then the right nostril (Louw, 2008). Gilbert (1999) contends that the philosophy behind *nadi sodana* breathing is that it raises *kundalini*, which is a type of ultimate energy that is present at the base of the spine. Hence when one breathes equally through both nostrils, it is believed to cleanse the two channels that run on both sides of the spine, parallel to the sympathetic ganglionic chain. This process is believed to stimulate the *prana* to rise through the central canal within the spine and ascend to the crown of the head, which generates a sense of ecstasy (Gilbert, 1999). Hence *nadi sodana* breathing results in transformation of consciousness. By alternate nostril breathing, the left and right hemispheres of the brain are stimulated via the crossover effect of the olfactory nerves which supply the left and right hemispheres of the brain (Edwards, 2004). This promotes neuro-respiratory health (Chopra & Simon, 2004). According to Gilbert (1999), the benefits of *nadi sodana* breathing are that it results in calmness, emotional balance and heightened concentration. It also stabilises the nervous system and encourages restful sleep.

As discussed, and so too in the paragraphs that follow, various breathing techniques are explained and different beneficial health effects are claimed. These effects are based on scientific research, however it is not the intention of this work to contend for, or to argue, or test the truth or validity of these contentions.

*Bhramari* breathing, also known as humming bee breath, should be practised with the eyes closed and the lips gently sealed, while the teeth should be slightly separated. This is in order for the sound vibration to be felt and heard clearly within the brain (Saraswati, 1999). Saraswati (1999) explains that during *bhramari* breathing, one breathes in through the nose, and exhales gradually with control while making a deep yet steady and smooth humming sound like a bee. *Bhramari* breathing provides stress relief and serves to ease anger, anxiety, insomnia and blood pressure (Saraswati, 1999).

*Bhastrika* breathing, which can also be referred to as bellow breathing, is a further type of *pranayama*. This is practiced by breathing in and then forcefully breathing out through the nose with the use of the abdominal muscles. This is followed by relaxing the abdominal muscles (Saraswati, 1999). The advantages of *bhastrika* breathing are that it purifies and rejuvenates the mind, while it improves concentration and circulation within the body (Edwards, 2004).

*Sitali* breathing, which is otherwise known as cooling breath, is practised by sticking the tongue outside the mouth and forming a tube with it. Breath is inhaled through this tube, then the tongue is drawn back inside the mouth, the mouth is closed, and then the breath is exhaled through the nose (Louw, 2008). *Sitali* breathing is beneficial in that it cools the breath and soothes the nerves (Young, 1988) while it furthermore improves digestion and the functioning of the liver (Edwards, 2004).

*Pranayama* is an essential component of Patanjali's eight-fold path of yoga. It is imperative that the techniques are practised precisely. "Although breathing is mainly an unconscious process,

conscious control of it may be taken at any time. Consequently, it forms a bridge between the conscious and the unconscious areas of the mind” (Saraswati, 1999, p. 367). According to Iyengar (1982), the life of a yogi is not measured by the number of days he lives, but rather by the number of breaths he experiences. Hence if yogis practise the prescribed techniques of *pranayama*, they will have a healthy respiratory system, a calm and balanced nervous system and experience reduced cravings. As the yogis’ desires and cravings become reduced, their minds may experience a sense of liberation and their senses become controlled (Iyengar, 1982).

### **2.3.5 Pratyahara**

*Pratyahara* may be described as the process of redirecting one’s senses inward and increasing one’s awareness towards the subtle elements of bodily senses, including sound, touch, sight, taste and smell (Chopra & Simon, 2004). These authors maintain that all of one’s experiences are essentially within consciousness and it is for this reason that the great yogis from the East are known to have said “I am not in the world; the world is in me” (Chopra & Simon, 2004, p. 43). *Pratyahara* is the practise of tuning into one’s delicate sensory experiences, which are known as *tanmatras*. By developing this awareness, one may access the seeds of pure sound, sensation, sight, taste as well as scent. The action of going within and into the essence of the individual's consciousness, allows one to access these impulses and directly experience the wisdom within the world of form and phenomena as a projection of one’s awareness (Chopra & Simon, 2004). In essence, *pratyahara* may be practiced by drawing one’s awareness inward, and truly experiencing one’s sensations from within.

### **2.3.6 Dharana**

Iyengar (1982) explains that once the body has been calmed through the practice of *asanas*, the mind has been stilled through *pranayama*, and the senses have been brought under one's awareness through *pratyahara*, then *dharana* may be applied to the sequence. *Dharana* may be understood to be the mastery of attaining attention and intention (Chopra & Simon, 2004). Within this field the yogi must refine his attention, and by achieving this he is able to facilitate the process of healing and transformation within the body and mind.

According to Chopra and Simon (2004), as soon as one activates an idea within one's attention, then one's intentions have a great influence over what manifests in that person's life. Hence yogic beliefs specify that as soon as an individual becomes clear about his/her intentions, he/she will see them actualise in their life. In essence, *dharana* is striving towards achieving a state of attention and intention within thought, and being aware of how these thoughts manifest themselves in life, to ultimately accomplish healing and transformation. This process entails the identification or visualisation of an idea and elevating this to an intention that may imply certain actual outcomes that will emanate from the idea.

### **2.3.7 Dhyana**

*Dhyana* may be explained as the process of experiencing awareness. This may be expanded on by signifying the expression of recognising that one is in this world but not of this world (Chopra & Simon, 2004). Life consists of experiences, thoughts, feelings, environments and happenings that undergo constant change; hence the only steady feature within our existence is perpetual change (Chopra & Simon, 2004). It is thus evident that life may be viewed as momentary and unpredictable. Through acknowledging *dhyana* or awareness, individuals may remain focused

and prevent losing the self in the objects of experiences. The soul; the essence of one's being may maintain awareness through meditation. Through meditation the individual learns to observe his/her thoughts, feelings and sensations that occur within awareness and not become consumed by reacting to them. Thus meditation teaches the individual to remain centred and experience inner awareness (Chopra & Simon, 2004). Through experiencing awareness, *dhyana* is achieved.

### **2.3.8 *Samadhi***

The state of *samadhi* means being able to settle in the pure, unboundedness of awareness, where one exceeds time, space, the past, the future, going beyond individuality and entering the sphere of eternity and infinity (Chopra & Simon, 2004).

Wilber (1981) extends on this concept of infinity, by using the analogy, that quantum physicists view the notion of reality as being boundless, where all aspects of being are interwoven and connected. He goes on to suggest that this is how the Biblical figure, Adam, should have viewed the world before he drew his fatal boundaries without, the universe having been classified, bounded, mapped and meta-mapped.

Within the English literary experience, William Blake, perhaps, had insight into this state when he penned the following:

"To see a World in a Grain of Sand,

And a Heaven in a Wildflower,

Hold Infinity in the palm of your hand,

And Eternity in an hour" (Blake, *Auguries of Innocence*, 1927).

From this perspective of infinity, by immersing oneself into the state of *samadhi*, one may transfer one's internal point of reference from the ego to the spirit (Chopra & Simon, 2004). In Mahayana Buddhism the universe is given the metaphor of an infinite net of jewels, where the reflection of each jewel is contained in all the other jewels, and all the reflections are all contained within each other (Wilber, 1981). Reflecting on this idea, the Buddhists say that the universe is "all in one and one in all" (Wilber, 1981, p. 39). Essentially, according to Chopra and Simon (2004), *samadhi* encompasses the philosophy of yoga, which is to be aware of oneself as a spiritual being that is disguised as a human being. Hence one may be established in union, and experience harmony within the evolutionary stream of existence.

## **2.4 Different schools of yoga**

The participants, who took part in this research project, practiced and taught different types of yoga. It is thus necessary for the following main schools of yoga to be explained.

### **2.4.1 *Bhakti* Yoga**

In ancient Indian tradition it was postulated that the ultimate goal of life is to achieve a state of *mukti*, which is defined as being in a state that is free from misery and sorrow. Yoga was postulated as a means of reaching *mukti* and attaining salvation (Shankar, 2006). Shankar (2006) suggests that through the practice of *bhakti* yoga it may be possible for an individual to achieve *mukti* or salvation. This can be achieved if one becomes a *vairagi*, meaning one who gives up all desires and ambition.

*Bhakti* yoga is based on the belief that there is a higher power who is the supreme and merciful God, who created the universe. Shankar (2006) explains that in the practice of *bhakti* yoga, the devotee is required to become eligible for attaining the grace and mercy of God, through devotion as well as through the practice of virtues. Therefore, one has to surrender all motives to the Divine power, and relinquish all responsibility of the good or bad outcomes of what one does, in the name of the Divine God. It is essential for those who practice *bhakti* yoga to be religious in nature, live in harmony with others while doing no harm, read religious texts and commit to a simplistic life while focusing on God (Shankar, 2006). Shankar (2006) suggests that *bhakti* yoga is appealing because it instills a sense of security within the devotee, as the devotee develops a dependence on God, the Supreme Creator.

#### **2.4.2 Karma Yoga**

The principles instilled in *karma* yoga suggest that through *karma*, one may be able to fulfil the ultimate goal of salvation (*mukti*) (Shankar, 2006). Cooper (2004) suggests that the law of karma dictates that, as you give, so will you receive. This means that negative thinking and actions return to one, as do acts of kindness, thoughtfulness, love, care and generosity. This has the Biblical ring of "as you sow, so shall you reap." Shankar (2004) suggests that *karma* yoga implies doing one's duties, without any reservations or expectation of benefits or rewards for acts. *Karma* yogis devote all of their energy towards high-quality deeds, and do not focus on the rewards or pleasures of their actions. In quintessence, *karma* yogis do not pursue pleasure but, instead, deny themselves in the belief that this is rewarded by pleasure that follows them in all that they do (Shankar, 2004).

### **2.4.3 Raja Yoga**

According to Shankar (2004) *raja* yoga may also be called *jnana* yoga, *dhyana* yoga or *ashtanga* yoga. This school of yoga is based on Patanjali's eight limbs of yoga, as described in the *Yoga Sutras*. Patanjali expresses that through the dedicated practice of *raja* yoga, one may be able to cleanse oneself of impurities within the body and the mind, this leads to knowledge and freedom from ignorance. *Raja* yoga, therefore, paves a path towards wisdom, in being able to see and understand the world clearly without bias (Shankar, 2004).

### **2.4.4 Hatha Yoga**

*Hatha* yoga was developed by Krishnamacharya during the early twentieth century. It is a disciplined school of yoga that places focus on postures (*asanas*), breathing (*pranayama*) and meditation. *Hatha* yoga is popular in Western society, while other schools of yoga are based on variations of *hatha* yoga (da Silva, Ravindran & Ravindran, 2009).

### **2.4.5 Iyengar Yoga**

Iyengar yoga was developed by B.K.S Iyengar, and is a type of *hatha* yoga. Iyengar yoga places great emphasis on precise alignment and sustained postures (which are assisted by props such as straps, chairs and pillows) as well as focusing on breathing and meditation (da Silva *et al.*, 2009).

### **2.4.6 Kundalini Yoga**

*Kundalini* yoga focuses on psychic feminine energy points within the body (chakras), which, when awakened through *Sahaja* yoga meditation proceeds up and through the body, cleansing and achieving a sense of self-realisation (da Silva *et al.*, 2009).

In the nature of the practice of yoga, disciplines have and will continue to evolve but they remain rooted in the various schools of yoga, based on the original principles of the *Yoga Sutras*.

## **2.5 Perspectives on anxiety**

Anxiety may be seen to be inter-twined within the experience of human life (Khan *et al.*, 2005). Anxiety has become part of the human experience in everyday modern existence. Sadock and Sadock (2007) explain that anxiety is the experience of an unpleasant yet vague sense of apprehension. This is accompanied by autonomic symptoms such as a headache, and experiencing perspiration, palpitations, tightness of the chest, stomach discomfort and restlessness, and is indicated by a lack of ability to sit down or stand still for long durations of time.

Sadock and Sadock (2007) note that the experience of anxiety consists of two components, the awareness of physiological sensations and manifestations such as palpitations and sweating, on the one hand, and, on the other, the awareness of feelings of nervousness or fright. Those in the presence of an anxious person may not be aware of that individual's anxiety, or they may not appreciate the intensity of the anxiety.

Anxiety has the potential to affect an individual's thinking, perception and learning abilities (Sadock & Sadock, 2007). Anxiety may cause confusion and distortions of perception in terms of time, space and meanings of events. The distortions that are experienced may disrupt learning, by affecting or decreasing concentration, lowering recall, and weakening the ability to make

associations between items. It is a debilitating state that erodes the individual's sense of well-being and is associated with levels of unhappiness.

Within acceptable and manageable levels, it is natural for individuals to experience anxiety in everyday life situations as it is a normal reaction to stressful or even dangerous situations. Normal anxiety may be useful in that it encourages individuals to take the necessary action to prevent a threatening or harmful situation.

Anxiety may be distinguished in terms of two categories, namely trait anxiety and state anxiety. Trait anxiety, as the expression implies, refers to a personality feature, a pre-disposition, or trait for an individual to have feelings of anxiety, even though there may be no objective reason for that individual to feel anxious. While state anxiety is given rise to by facts or circumstances which, objectively perceived, give that individual reason to feel anxious (Edelman, 2006).

Edelman (2006) suggests that trait anxiety may be present when an individual is predisposed to being anxious, as a result of anxiety being inherent within the individual's personality. Individuals who suffer from trait anxiety perceive their surrounding environment as insecure, they foresee danger in everyday situations, and they over-emphasise the likelihood of awful experiences happening.

State anxiety occurs as a result of perceptions of threat. It may be a false belief that something disturbing will occur. This is a temporary state that disappears once the threat has passed (Edelman, 2006). Everyday examples of situations that initiate state anxiety include work or academic stress, concern about finance, illness within the family or a job interview. According to

Edelman (2006), our Stone Age ancestors saw anxiety as a perceived threat to their everyday survival. However in this modern era, the majority of incidences of anxiety are as a result of perceived threat to one's emotional safety or material, rather than physical safety. Edelman (2006) highlights that despite the fact that the majority of circumstances that trigger state anxiety do not present an immediate threat to the individual's physical survival, one often reacts as if his or her life is in jeopardy. Continual states of anxiety can give rise to physical consequences such as stomach complications, tension headaches and panic attacks (Edelman, 2006). This points to a link between anxiety and its physical manifestations, in the form of poor health or illness.

## **2.6 Fear in relation to anxiety**

According to Sadock and Sadock (2007), anxiety is described as an alerting signal, which warns the individual of looming danger, and this allows the individual to initiate action to deal with the threat. Fear however, needs to be differentiated from anxiety. "Fear is a response to a known, external, definite or nonconflictual threat; anxiety is the response to a threat that is unknown, internal, vague, or conflictual" (Sadock & Sadock, 2007, p. 579). Essentially the significant psychological difference between these emotional responses, is that fear is an immediate and sudden response to a stimulus that gives rise to it, while anxiety is insidious (Sadock & Sadock, 2007).

## **2.7 Stress in relation to anxiety**

The accumulation of the characteristic symptoms of anxiety may result in an individual suffering from stress (American Psychiatric Association, 2000). Anxiety can cause stress and if it is not

controlled it may lead to stress. According to Sadock and Sadock (2007) stress is described as the condition that disturbs the regular physiological or psychological functioning of an individual. These authors define stress as anything that may be real, symbolic or imagined that has the potential to threaten an individual's survival. In essence, the human body responds to stressful circumstances by activating a variety of responses that seek out to reduce the impact of the stressor and re-establish balance within the body (Sadock & Sadock, 2007).

Kumari, Kumar and Gauraha (2005) explain stress to be the body's physical as well as psychological reaction to stressors. Furthermore these authors define stress to be any interference that disturbs an individual's healthy physical and psychological well-being. In a sense, stress and anxiety may be seen to be similar because they both result in discomfort and impairment in physiological and psychological functioning.

## **2.8 Measurement of anxiety**

Given the prevalence of anxiety in modern society (Forbes *et al.*, 2008), it is inevitable that models have been devised to attempt to empirically quantify or measure levels of anxiety. The Beck Anxiety Inventory (BAI) is an example of an empirical measure that is used to quantitatively measure anxiety levels in individuals. The BAI shall be discussed in the methodology chapter of this research.

## 2.9 Light on research

The intervention of yoga therapy may be seen as a workable solution to combat the suffering of anxiety, and it may be a healthier alternative to the ingestion of medication to manage anxiety.

Forbes *et al.* (2008) suggest that about 40% of the adult population in the United States of America suffer from anxiety. Conventional anxiety treatment comprises psychotherapy and medication. Forbes *et al.* (2008) argue that yoga has a remarkable potential to influence the treatment of anxiety.

By addressing clients' physical bodies along with thoughts and emotions, the practice of yoga can narrow this gap between insight and change. Yoga offers clients techniques that they can practice on their own and, in a relatively short time, outside of the context of therapeutic sessions. This gives clients a more active role in their healing process, reducing their dependency on the healthcare system and increasing their chances of remission (Forbes *et al.*, 2008, p. 87).

This extract is, in a sense, reminiscent of the different perspectives of yoga in recognising the association of the physical component of the individual with the mental or emotional one.

The Centre for Integrative Yoga Therapeutics; a yoga therapy centre in Boston, in the United States of America, has achieved prominence in the use of yoga therapy as a treatment for anxiety. Sufferers of anxiety who have been referred to this institution have positively reported on the outcome that the intervention of yoga has achieved, in addition to psychotherapy or medication. Sufferers of anxiety who have had yoga therapy have reported that it enhances their feeling of well-being, and their gaining knowledge of yogic techniques has enabled them to integrate it into their lives and practice it on their own (Forbes *et al.*, 2008).

In the United States of America, research has been conducted on the effectiveness of yoga therapy for anxiety, and there is an expanding base of evidence confirming that participating in yoga therapy helps to reduce anxiety (Forbes *et al.*, 2008). Forbes *et al.* (2008) continue by explaining that yoga helps to decrease anxiety in a variety of dimensions such as thoughts, emotions and the functioning of the central nervous system.

Research suggests that yoga in the technique of *asana pranayama* and relaxation methods, has been able to dramatically diminish situational and chronic anxiety in the time span of 10 days (Forbes *et al.*, 2008). A further study indicated that when yoga was practised by psychiatric patients, they noticed dramatic improvements in their mood, in the fields of tension-anxiety, depression-dejection, anger-hostility, fatigue-inertia and confusion-bewilderment (Forbes *et al.*, 2008). Another study was conducted and revealed that the practice of yoga had an effect on the functioning of the brain and the automatic nervous system (Streeter *et al.*, 2007). This research will be discussed below.

Biologically, anxiety may be seen to be closely linked to lower levels of the neurotransmitter, gamma-aminobutyric acid (GABA) (Forbes *et al.*, 2008). Research by Streeter *et al.* (2007) has been conducted which points to yoga practice being associated with an increase in GABA levels in the brain. This research by Streeter *et al.* (2007), perhaps, offers a biochemical basis for the hypothesis of this dissertation.

This research is relevant in our society. According to the World Health Organisation (WHO), mental illness accounts for up to 15% of worldwide disease. Anxiety contributes to this statistic (Streeter *et al.*, 2007). In essence, research has suggested that decreased GABA activity is related

to the pathology of anxiety, while an increase in GABA activity is correlated with symptom reduction in anxiety. The literature of this study supports the suggestion that the participation in yoga is linked with the decrease of anxiety symptoms. The results of this study demonstrated that the level of GABA in the brain increased by 27% after an hour yoga practice of *asanas* by experienced practitioners (Streeter *et al.*, 2007).

From a critical perspective, the results of a 27% increase in GABA levels could not be convincingly inferred onto the general population, because the study was conducted on experienced yoga practitioners. Furthermore, the exact 27% increase in GABA levels in the above study may not be inferred onto the experimental group specific to this dissertation. This is because unlike the inclusion criterion of this dissertation, the above study's strengths lie in the inclusion of a precise population who had been screened and who were all free of psychiatric and neurological illness as well as psychoactive medications. However, looking beyond the inclusion criteria, the above study provides fairly convincing evidence that the practice of yoga has the potential to increase GABA levels in the brain.

In essence, yoga may be seen to be an inexpensive, extensively accessible intervention, with no side effects. Furthermore, it is efficient in alleviating the symptoms of anxiety, which are related to low GABA states; hence the intervention of yoga has apparent public health benefits (Streeter *et al.*, 2007).

Further recent studies have been conducted by Streeter *et al.* (2010), to enquire if changes in mood, anxiety and GABA levels are specific to yoga practice or if they may be related to physical activity in general. In this study, healthy participants were randomised to a yoga

intervention or a walking intervention, for an hour, three times a week for the period of 12 weeks. The results of this study revealed that the yoga participants reported greater improvement in mood and greater decreases in anxiety levels, in comparison to the walking group (Streeter *et al.*, 2010). As opposed to the walking group, the yoga group showed positive correlations between the changes in the anxiety scales as well as the changes in GABA levels in the brain. Thus, the 12 week yoga therapy intervention was seen to be associated with greater reduction of perceived anxiety levels, than in comparison to the metabolically matched walking exercise intervention. In view of this dissertation, Streeter's *et al.* (2010) study suggests that yoga therapy has the potential to increase GABA levels in the brain, which is associated with a decrease in anxiety levels. Hence, yoga therapy may be seen to have the same effects as psychopharmacological medication, which is traditionally prescribed to decrease levels of anxiety within individuals. Therefore, this study supports the premise of this dissertation, suggesting that yoga therapy is an appropriate, cost effective intervention for the treatment of anxiety.

Smith, Hancock, Blake-Mortimer & Eckert (2007) conducted a study where they undertook a randomised comparative trial of yoga and relaxation to measure the effects of reduction in anxiety and stress levels. The aim of their study was to compare a group of participants who practiced hatha yoga with another group of participants who took part in progressive muscle relaxation therapy for the treatment of anxiety and stress. Measurement of anxiety and stress levels were taken before and after the 10 week intervention program. This study used the 10-item version of the State Trait Inventory (STPI) questionnaire to measure anxiety. The STPI measured the participants' anxiety levels on a four point scale, which was rated from 'not at all' to 'very much so' with the possible score of 10 to 40 points, of which, 40 points indicated extremely anxious (Smith *et al.*, 2007). This comparative trial study was different to the study of this

dissertation in numerous ways. Firstly, this comparative study used greater numbers of participants and the group members were randomly assigned to the two treatment programs. The duration of the comparative trial study was slightly shorter; it was 10 weeks, as opposed to the 3 months of this dissertation's study. The participants in the comparative trial study attended a one hour yoga session once a week, while the participants in the study of this dissertation, attended yoga sessions at least twice a week, sometimes more depending on personal choice. The comparative trial study only used quantitative measures, namely the STPI to measure anxiety, the General Health Questionnaire 12 (GHQ-12) to measure psychological stress and the SF-36 to measure quality of life. In comparison, this dissertation's study used both qualitative and quantitative assessment tools to measure anxiety, specifically the Beck Anxiety Inventory (BAI) as a quantitative method. Comparatively speaking, for this dissertation the BAI was seen to be more appropriate to use, than the STPI. The researchers concluded that the comparative trial of yoga and relaxation to reduce stress and anxiety, indicated that yoga practice appears to deliver a comparable improvement in anxiety and stress in relation to progressive muscle relaxation method (Smith *et al.*, 2007).

According to Smith *et al.* (2007), the following benefits of yoga practice are apparent. Standing *asanas* and supine (lying down) *asanas* strengthen the body and improve digestion. Inverted *asanas* such as headstands and shoulder stands have been proved to strengthen the nervous system and the limbic system (emotional functions), while forward bends may be commonly known to be calming and soothing. In essence the latter mentioned benefits of yoga can be seen to assist the yoga practitioner multidimensionally; hence physically, biologically, emotionally and psychologically.

Forbes *et al.* (2008) describe anxiety as debilitating; in that it impairs individual functioning on a cognitive, emotional and occupational level. They contend that that the actual symptoms of anxiety often prevent sufferers from being proactive in attaining the necessary social support that is required for symptom improvement and good health. This has significant consequences from a public health perspective. By way of example, in the United States of America, the combined economic cost of anxiety and depression totals up to \$72 billion per year (Forbes *et al.*, 2008). There is nothing to suggest the position is significantly different in South Africa, in relative terms. It is suggested that yoga therapy may serve as a cost effective response in dealing with anxiety and stress related disorders.

## **2.10 *Namaste* (conclusion)**

In essence, this chapter discussed the historical and theoretical background of yoga, as well as the various types of yoga. It shed light on the aspects of anxiety and reflected on previous research that has been conducted on the relationship between yoga therapy and anxiety. The following chapter will discuss the methodological approach of this study.

## **Chapter 3: Methodology**

### ***Konasana III (Windmill pose)***

#### **3.1 *Drishti***

The discussion in the literature review addressed the theoretical perspective and research background of this dissertation. This sought to explore whether the practice of yoga may decrease anxiety within individuals.

In the following chapter, the nature of the research is examined. It will highlight the research design, and examine the data collection methods, which were designed to ensure it was ethically and methodically appropriate.

#### **3.2 Research question**

The question that this research seeks to answer is: Does yoga therapy reduce individuals' anxiety?

#### **3.3 Research design and methodology**

This study used both quantitative and qualitative research measures (mixed methods). Quantitative methods use statistical procedures to conduct research. A strength of quantitative research is that it is objective, hence it was decided to use quantitative measures so that the

research could remain objective (de Vos, Strydom, Fouche & Delport, 2008), thereby avoiding possible bias. By following quantitative measures, the research was able to be conducted in a predetermined manner, which had been developed before the study began. Furthermore, the procedures for the data collection were applied in a standardised and consistent manner (de Vos *et al.*, 2008).

Additionally, it was decided that it would be useful to use qualitative research methods. Qualitative methods are subjective and seek to understand the experiences of the phenomena they seek to study (de Vos *et al.*, 2008). According to Creswell (1998), qualitative research is unique in that it allows the researcher into the context within which the phenomena may be studied. An advantage of using qualitative measures was that it was possible for the researcher to gain a first-hand and holistic understanding of the subjects under study (de Vos *et al.*, 2008). Within qualitative research, Creswell (1998) prescribes five strategies of enquiry that may be utilised to design qualitative research, namely biography, phenomenology, grounded theory, ethnography as well as case study. This research employed a phenomenological approach. Phenomenological research seeks to portray the meaning of experiences of the phenomena for different people. This may be achieved by systematically collecting the data, and, in due course, meanings, themes and descriptions of the various experiences are analysed within a specific context (de Vos *et al.*, 2008). In this research, the phenomena were individual experiences of yoga therapy, and more specifically, the influence of yoga therapy on anxiety.

The research therefore used a mixed approach, by means of a quasi-experimental design with both quantitative and qualitative methods and repeated measures ANOVA and thematic content analysis as research techniques respectively. According to Terre Blanche, Durrheim and Painter

(1999), quasi-experimental designs are used in studies that cannot or do not use random assignment, such as in the research of this dissertation. The experimental group consisted of individuals who regularly practised yoga at least twice a week, while the control group consisted of individuals who did not practise yoga. Both the experimental group and the control group were pre-tested using a quantitative method. Additionally the experimental group filled in a qualitative questionnaire. Then for three months the experimental group was given the intervention of *yoga therapy* while the control group was not given *yoga therapy*. The control group was given a placebo during the pre-test and post-test sessions. A description of the placebo will be provided in the 'procedure' section of this chapter. After three months both the experimental group and the control group were post-tested with the same quantitative method.

### **3.4 Ethical considerations**

Ethical issues are significant in the field of research, and remained a consideration throughout the research process. As the research was dealing with the sensitive topic of anxiety, the researcher put the well-being of participants as its highest priority. To ensure this, the ethical principles put forth by Terre Blanche *et al.* (1999) were followed, these include: consent, privacy and confidentiality, competence and ethical reporting.

Firstly, the researcher obtained informed consent from the experimental group and the control group. The participants were each given an informed consent, confidentiality and information form to sign. This was also signed by the researcher. This is attached in Appendix A. It was recognised that consent extends beyond simply signing a consent form, and is a two-way exchange of communication where participants are given the opportunity to ask questions, and to

understand the goals, risks, characteristics and advantages of the study. In the interest of confidentiality and privacy of the participants, their names remained confidential. Because of the sensitive nature of the research, involving anxiety, it was important that the researcher was aware of possible symptoms that the participants may have experienced. If the researcher noticed signs of distress or discomfort in her participants during the course of the research, it was her responsibility to investigate the possible need to refer the participant for further counselling. The researcher has an honours qualification in psychology, has experience in research methodology, and this made her a suitable and competent person to undertake this research.

None of the subjects in either of the two groups presented signs of undue anxiety or distress, hence none of the participants required a referral for counselling.

A further ethical consideration was to offer yoga therapy to the control group after the post-testing had taken place. Lastly, the researcher was aware that ethical reporting of results was of paramount importance, therefore due care was taken to avoid misunderstanding and misinterpretation (Terre Blanche *et al.*, 1999).

### **3.5 Sampling method and participants**

According to de Vos *et al.* (2008), a sample can be defined as a small section of the entire set of individuals which combined make up the subject of the study. The sample is studied in an attempt to understand the population from which it was chosen. de Vos *et al.* (2008) explain that “we are interested in describing the sample not primarily as an end in itself, but rather as a means of helping us to explain some facet of the population” (p. 194).

The research project consisted of 18 participants in the experimental group. They had a mean age of 41.6 years old, with an age range of 26 to 59 years old. The characteristics of the sample consisted of 16 females and 2 males, who had an average of 15.8 years of formal education. In this sample there were 15 participants with English as their home language and 3 participants with Afrikaans as their home language.

These participants were selected according to non-random convenience sampling. The reason this sampling method was chosen was because the sample had to consist of practitioners of yoga, and it had to take into account certain inclusion and exclusion criteria.

The inclusion criteria for the experimental group included consent to taking part in the research, a clear understanding as to the nature of the research and the simple fact that they practiced yoga, which is not a very common practise in the area where the research was undertaken. These criteria were supported by the ethical guidelines of research.

Participants were required to practice yoga at least twice a week, and be willing to continue their practice for the three month duration of the research. These criteria needed to be fulfilled in order for the research results to achieve an acceptable degree of validity.

The exclusion criteria for the experimental group were that participants could not be non-practitioners of yoga. This criterion needed to be fulfilled in order for the research question to be answered accurately.

The non-random convenience sample for the experimental group was obtained by contacting the local Mtunzini yoga teacher, in the village of Mtunzini, KwaZulu Natal, Mrs Pat Louw, and securing her, and her yoga students' consent to participate in the research project. Mrs Pat Louw responded positively, enabling the non-random convenience sample experimental group to be obtained. It was critical that there should be no drop-outs and, to cover this risk, more participants were recruited from further afield. The inclusion criteria guided the researcher on who to contact, and so more non-random convenience samples were included. These participants included students of yoga as well as experienced teachers of yoga.

The control group consisted of 19 participants. They had a mean age of 32.7 years old, and an age range of 22 to 59 years old. The characteristics of the sample consisted of 11 females and 8 males, who had an average of 17.7 years of formal education. In this sample there were 10 participants with an African home language, 6 participants with English as their home language and 3 participants with Afrikaans as their home language.

The sample group was selected according to non-random convenience sampling. The choice of sample method was chosen in order to meet the inclusion criterion. The inclusion criterion was that participants must not take part in the practice of yoga for the three month duration of the project. This sample was obtained from the counselling and clinical psychology masters class at the University of Zululand in KwaDlangezwa. In order to increase the number of participants within this group, family members of some of the students also agreed to participate in the control group.

### **3.6 Data collection**

Extensive data was collected from both the experimental group and the control group in the form of quantitative methods that were conducted both pre-test and post-test, using the Beck Anxiety Inventory (BAI). This may be found in Appendix B. The experimental group also completed a qualitative questionnaire during the pre-test phase of the research. The qualitative questionnaire may be found in Appendix C, and the participants' responses to the questionnaire were recorded in Appendix D. The qualitative inquiry formed part of the phenomenological data, where the study "attempted to understand people's perceptions, perspectives and understanding of a particular situation" (de Vos *et al.*, 2008, p. 264). In this case, the phenomenological data explored the yoga practitioners' perceptions and experiences of yoga. Of particular interest was their experience and perception of the influence of yoga therapy on anxiety.

### **3.7 Quantitative instrument**

As mentioned previously, the research tool that was employed was the BAI (Beck & Steer, 1993), as a quantitative measure to assess the experimental group and control groups' levels of anxiety. Additional biographical items of information that this test required were the participants' age, gender, home language and years of formal education. In terms of the administration procedure, the BAI may be administered in a group context or individually. The research tool was administered in a group setting. There was no time limit for the test; however it was possible to complete it in a short time period. The participants completed the self-report questionnaire on the 21-item inventory, which was designed to measure the severity of anxiety. The symptoms of anxiety were listed, and the participants were required to indicate whether they had experienced

these symptoms during the past week, including on the day of administration, in terms of the following measures: 'not at all,' 'mildly,' 'moderately' or 'severely.' In terms of the scoring procedure, depending on the participants' responses, they were scored according to a four-point scale: not at all = 0, mildly = 1, moderately = 2 and severely = 3. The scores were then added up and the participants obtained a score ranging between 0 and 63, the higher the score the more intense the level of anxiety. Regarding interpretation, the test developers provided certain cut-off scores for varying levels of anxiety, so depending on the final score obtained, each participant was ranked at varying extremes of anxiety, ranging from 'minimal,' 'mild,' moderate' and 'severe.'

It should be taken into account that the BAI has not been standardised on the South African population (Pillay, Edwards, Sargent & Dhlomo, 2001). This scale has established good internal consistency and reliability, as well as high concurrent validity with other measures of anxiety. It also has the ability to differentiate anxiety disorders from other non-affective psychiatric disorders (Rybarczyk, DeMarco, DeLaCruz, Lapidos & Fortner, 2001).

A motivation for choosing to use the Beck Anxiety Inventory as opposed to choosing a different anxiety measure, was that the BAI has suitable psychometric properties, and it has thus been used successfully in the past with non-clinical samples (Dent & Salkovskis, 1986; Lovibond & Lovibond, 1995). This research specifically used non-clinical samples, therefore the BAI was an appropriate choice, having regard to the generalised nature of the research enquiry, that is, whether the practice of yoga served to reduce levels of anxiety.

Another scale that may be used to measure anxiety, is the Hamilton Rating Scale for Anxiety (HAM-A). Like the BAI, this measure may be utilised to examine the severity of anxiety. The anxiety symptoms are listed and it is scored with a rating scale of the following: none = 0, mild = 1, moderate = 2, severe = 3 and grossly disabling = 4. A score of above nine is considered as borderline in pathological terms. This scale is helpful when measuring the effects of treatment, and, more specifically, with pharmacological agents (Sadock & Sadock, 2007). Therefore, resulting view of the intention of this research, measuring anxiety in non-pathological participants for non-clinical reasons, it was decided to not use the HAM-A, as the BAI was decidedly more applicable.

### **3.8 Qualitative questionnaire**

A qualitative questionnaire (see appendix C) was developed to assess the experimental group members' experiences and perceptions towards yoga, and particularly their understanding and feelings towards the influence of yoga therapy on anxiety. The questionnaire was rationally thought out and well prepared in a way that it gradually extended the enquiry of the participants' perceptions towards yoga therapy.

### **3.9 Procedure**

A research proposal was compiled in January 2010 and was presented to the Ethics Committee of the University of Zululand. The proposal was approved by the Research Committee.

In order to establish rapport with the Mtunzini yoga group, the researcher began attending the local yoga classes on 2 February 2010. On 4 February 2010 the research proposal was explained in detail to the Mtunzini yoga group, who were interested and enthusiastic about participating in the project.

Before the yoga class began on 9 February 2010, the eight participants read the information and informed consent form, and signed it (see appendix A). Confidentiality of all the participants was promised. The experimental group then completed the BAI (see appendix B), and once completed they continued with the yoga class. At the end of the yoga class these participants were given an in-depth qualitative questionnaire (see appendix C) to take home and complete. They returned this questionnaire to the researcher at the next yoga class the following week, being the 16 February 2010.

Since the researcher could only obtain eight participants for the experimental group within the Mtunzini yoga group, the researcher contacted other potential subjects, known to the researcher as practitioners of yoga and invited them to also participate. These participants were from further afield. They comprised of four yoga students and six yoga teachers, who came from East London, Port Elizabeth, Grahamstown and Hogsback, all within the Eastern Cape Province. The information and consent form, the BAI, as well as the qualitative questionnaire were emailed to them, they filled these in and either emailed or faxed their forms back to the researcher. Hence the researcher was able to obtain 18 participants in the experimental group. These participants all partook in the yoga therapy intervention for the three month duration of this research project.

The researcher decided to obtain the control group from the clinical and counselling psychology masters class of the University of Zululand. On 8 February 2010, the researcher explained the research project to the prospective control group, who were interested in participating in the project. On 9 February 2010, 14 members of the control group were given the information and consent form to read and sign. Following this they were provided with the BAI to complete. Thereafter the researcher guided the control group through a gentle relaxing breathing exercise, and then each member was given a cupcake that was baked for them by the researcher. The breathing exercise and the cupcakes served as the pre-test placebo that the control group was provided with for the research project.

In order to increase the size of the control group, the family members of some of the participants were invited to participate in the study. Five people who fitted the criteria were invited to participate, and so the researcher conducted the same placebo procedure as described above with the additional participants. Thereafter, the 19 participants within the control group were not given any yoga therapy intervention for the three month duration of the research project.

After the three month period of the research, on 6 May 2010, the researcher asked the experimental group of the Mtunzini yoga group to assist with the follow up of the research project, by completing the post-test BAI after yoga class. The researcher then emailed the other participants within the experimental group, and asked them to similarly complete the BAI. On the same day, the researcher organised a session with all the members of the control group, at the psychology department of the University of Zululand. As a follow up intervention or placebo, the researcher first guided the participants through a relaxing breathing exercise, and then each participant was given a few marshmallows to enjoy. After this, the participants all completed the

post-test of the BAI. In order to comply with the ethical procedures of this research, the members of the control group were all offered the opportunity to attend yoga classes.

After the participants had all provided the researcher with their post-test BAI forms, the scores were calculated and ready to be analysed using the Statistical Package for the Social Sciences (SPSS).

### **3.10 *Namaste***

This chapter explored the research methodology that was implemented in this research project. It discussed the research design, as well as the data collection methods and procedure. The following chapter will highlight the results of the research and discuss the findings.

## **Chapter 4: Results and Discussion**

### ***Mayurasana (Peacock pose)***

#### ***4.1 Drishti***

This chapter seeks to interpret the results and draw conclusions from the responses. It will explore both the quantitative as well as the qualitative results, and consider the relationship that arose between these two sets of results.

#### **4.2 Quantitative data analysis**

The data from the BAI was analysed quantitatively using the Statistical Package for the Social Sciences (SPSS). The researcher consulted a statistician to assist in the interpretation of the results from the quantitative outcomes obtained. Statistical analysis was performed within and between the experimental group and the control group.

### 4.3 Quantitative findings

Table 4.1 below reflects a summary of the means and standard deviations of the results of the Beck Anxiety Inventory.

**Table 4.1: Summary of the Means and Standard Deviations of the Beck Anxiety Inventory**

Group	Age	Gender	Education	Language	T1	T2
Control	32.7 (14.0)	0.4 (0.5)	17.7 (2.7)	1.7 (1.1)	8.9 (5.3)	14.4 (9.3)
Experimental	41.6 (11.4)	0.1 (.03)	15.8 (2.5)	0.8 (0.4)	9.4 (8.5)	6.3 (6.6)
Total	37 (13.3)	0.3 (0.5)	16.8 (2.7)	1.3 (0.9)	9.2 (7.0)	10.7 (8.9)

Table 4.1 refers to the summary means and standard deviations (in brackets) for the 19 control group members and 18 experimental group members with regard to the variables of age, gender, education, language, pre-test (T1) and post-test (T1) self perceptions of anxiety as measured in terms of scores on the Standardised Beck Anxiety Scale. For all analyses, probability level was set at the conventional .05 level of significance.

Analysis of variance with repeated measures indicated no significant differences between the experimental and control groups with regard to any change in perceived anxiety over time as assessed on pre-test (T1) and post-test (T1) measures of Beck's Anxiety Scale ( $F=,2.52$   $p=.0.12$ ). However results are clearly in the hypothesized direction, reaching the 12% rather than the 5% level of significance. Inspection of Table 1 indicated that this change was associated with both an increase in perceived anxiety in the control group and a decrease in perceived anxiety in the experimental group. Furthermore paired sample *t*-tests confirmed significant decreases in anxiety

in the experimental group ( $t=2.55$ ,  $p=.02$ ) as well as significant increases in anxiety in the control group ( $t=2.89$ ,  $p=.01$ ).

Therefore although the main research hypothesis could only be partially supported, that is, regular yoga therapy was associated with significant decreases in anxiety over a period of three months, these changes did not quite reach the accepted 5% significance level when compared with a control group. Thus no causative inferences can be made. However, in view of the relatively small numbers and trends in the expected direction, it seems quite likely that further experimental interventions with larger numbers may be associated with more significant between group changes. The fact that 14 individual members of the experimental group's anxiety scores decreased or stayed the same whereas only 4 of the control group's anxiety scores decreased or stayed the same is supportive of this prediction with regard to future research with larger numbers of participants.

The repeated measures analysis of variance was performed with age, gender, education and language as covariates. This analysis revealed significant between group results for age ( $F=8.2$ ,  $p=.008$ ) and education ( $F=5.5$ ,  $p=.03$ ). These findings indicate that older and more educated participants' anxiety scores decreased significantly more than those of younger and less educated participants. In view of the small numbers and the strong possibility that this particular type of yoga intervention was biased, benefitting older and more educated participants, further evidence based research is needed in order to make any firm or generalised inferences in this regard.

#### 4.4 Qualitative data analysis

The research made use of thematic analysis to analyse the qualitative data. According to Boyatzis (1998), the aim of thematic analysis is to systematically construct themes within the data, while examining and understanding the phenomena that is being studied. de Vos *et al.* (2008) explain that this process requires heightened awareness of the data and focussed attention on the data. It is essential that the researcher has expertise in identifying the salient themes, and reoccurring ideas, as well as the patterns of belief that may connect the people and settings. Encompassed within this process of thematic analysis, is the importance of reading and re-reading the scripts until the researcher formulates common categories, themes and patterns that appear in the text (de Vos *et al.*, 2008). It was through the use of thematic analysis that the qualitative data was analysed and interpreted.

The raw data from the experimental group's qualitative questionnaire was prepared for analysis in the following way:

- (a) Each member was randomly assigned a number.
- (b) The participants' responses were recorded verbatim in tables in Appendix D. Confidentiality and anonymity were respected.
- (c) The demographic details of the participants' were classified according to age, gender and home language.
- (d) The questions were divided into three categories, which were dependent on the nature of the themes of the questions, in other words, theory driven thematic analysis.
- (e) The participants were divided into two groups, namely yoga students and yoga teachers.
- (f) Each response to all the questions was read and re-read several times.

(g) Salient themes, reoccurring ideas and patterns were studied.

**Table 4.2: Summary of the Ages of the Experimental Group**

Ages of participants	Number of participants
24-29	4
30-35	1
36-40	4
41-45	2
46-50	3
51-60	4

**Table 4.3: Summary of the Gender of the Participants**

Number of female participants	Number of male participants
16	2

**Table 4.4: Summary of the Home Languages of the Participants**

English home language	Afrikaans home language
15	3

#### **4.5 Qualitative findings and discussion**

The qualitative findings of this study indicated that yoga therapy effectively decreased the anxiety levels within the experimental group over time. These findings are supported by previous studies, which have additionally revealed that the practice of yoga may be attributed to a reduction in perceived anxiety levels (Forbes *et al.*, 2008; Smith *et al.*, 2007 & Streeter *et al.*, 2007). Previous research contained in the literature review enhances the strength of the findings that yoga therapy reduces perceived anxiety within individuals.

The qualitative findings were assessed through the use of thematic analysis of responses to the questionnaire by the experimental group. The experimental group consisted of yoga students and yoga teachers.

In terms of the length of time that the participants had been practising yoga, the yoga teachers' practice ranged from nine years to twenty-five years, while the yoga students' length of practice ranged from six months to twenty years. The participants' ages ranged from twenty-four to sixty years. The findings suggested that the participants who were older than thirty and who had more years of yoga experience behind them, had a deeper sense of understanding and insight into their perceptions and experience of yoga. This may be attributed to their greater exposure to the practice of yoga and a deeper understanding of the integral life principles of yoga. These participants were most likely to have had insight into the yogic life practices, which are described by Patanjali in his eight limbs of yoga (Chopra & Simon, 2004).

The qualitative questionnaire required the participants to reflect on why they decided to take up the practice of yoga. This was an instrumental question in that it required the participants to stimulate reflection. The most salient theme that presented within the responses was a need for calmness and tranquillity within their lives. This alludes to a need to escape from the state of anxiety, and experience stillness and peace during yoga practice. This is premised on the thinking that on the other side of the "anxiety coin" is a mental state of calm and tranquillity. This points to the realisation that the practice of yoga in the view of these respondents was seen as a means to manage and lessen feelings of anxiety and to induce a level of calm and tranquillity in their lives.

One of the participants mentioned that yoga was initially appealing to him from a philosophical perspective, in that the "*ideologies of yoga as a lifestyle, such as the notion of non-violence*" was attractive to him. This response echoes Patanjali's first limb of yoga; *yama*, which focuses on moral stature in dealing with others (Chopra and Simon, 2004). This also highlights the first fundamental feature of the *yamas*, that is *ahimsa*, which is the practise of living one's life according to the principle of non-violence, adopting a considerate stance of doing no harm.

Another motivation for practising yoga, was to assist the respondent in understanding the ego, and how it affected his daily life. This response encompasses Patanjali's eighth limb of yoga, *samadhi*; which is the spiritual union with the Divine. Chopra and Simon (2004) explain that through the regular practice of *asanas* (postures) and *pranayama* (yoga breathing), *dharana* (mastery of attention and intention) may be attained. In this line of yogic thinking, once *dharana* has been reached, the mind becomes prepared for *dhyana* (inner awareness through meditation) and *samadhi*. Experiencing *samadhi*, enables the individual to transform his or her internal point of reference from the ego to the spirit. Chopra and Simon (2004) suggest that the experience of

*samadhi* is an essential goal of yoga. In this state of being, the mind does not differentiate between the self and the non-self and so experiences a pure sense of consciousness and awareness. One then becomes aware of the inner state as a spiritual being. The practice of yoga, for this respondent, provided a means of reconciliation between himself and his environment.

The qualitative questionnaire required the participants to reflect on their life context, and recall their circumstances approximately six months before they initially began their practice of yoga. The majority of the participants' responses recollected life stressors, including starting a new job, starting university, moving location of residence or town, getting married, being pregnant and experiencing child birth. These mentioned life events, often representing change, may be viewed as stressful, and hence it is only natural for them to evoke anxiety within the individual. Holmes and Rahe developed the Social Readjustment Rating Scale, which lists life events that are associated with stress (Sadock & Sadock, 2007). The participants' responses correlated with this scale. In essence, the stressful life events may be seen to be linked to anxiety, while their decision to partake in yoga may have been a means for their anxiety to be alleviated.

One participant stated that in her life circumstances, she suffered from burn-out and major depressive disorder and was on anti-depressant medication for a year. She found that her yoga practice helped her to cope with her state of mind and it alleviated her depressive symptoms. She replaced her psychopharmacological anti-depressant medication with her yoga practice, and, from her perspective, healed herself through the life practice of yoga. Forbes *et al.* (2008) contend that yoga therapy is an effective treatment for anxiety, because it has the potential to treat and heal individuals on a physical, cognitive and emotional level. This is what this participant conveyed that she had achieved; through her yoga practice she healed herself physically,

cognitively and emotionally. Subjective as this personal account is, it points to the premise of this dissertation that yoga therapy serves as an effective substitute for psychopharmacological medication. Forbes *et al.* (2008) explain that psychopharmacological medication has side effects, is often highly addictive, may result in withdrawal and the individual may possibly experience a return of the anxiety symptoms when the medication is terminated or interrupted. Therefore, through understanding the consequences of psychopharmacological medication, yoga therapy presents itself as an alternative. The experience of the above participant serves to support the premise of this research, that yoga therapy may be an efficient and cost effective substitute for psychopharmacological treatment for anxiety.

The participants were requested to describe their expected benefits of yoga and whether yoga had fulfilled their expectations. These responses reflected the holistic experiences of their yoga practice. One of the salient themes that arose throughout all the responses was that of physical vitality. The participants expressed that the practice of yoga had given them physical strength, together with increased suppleness and improved flexibility. Chopra and Simon (2004) confirm these observations. Flexibility is an integral aspect of yoga. During the practice of the *asanas*, the individual is able to attain heightened flexibility physically and emotionally. A flexible body and a flexible mind allow the individual to adapt successfully to inescapable circumstances of change in everyday life (Chopra & Simon, 2004). The discipline recognises the interconnectedness of the body and the mind, the physical and the mental.

The physical benefits of yoga are obtained from the *asana* component of yoga, which is attributed to Patanjali's third limb of yoga. The *asanas* are significant in yoga practice because they instill a sense of discipline within the practitioner. During this process the *asanas* relieve

tension in the body and the mind. The body and mind interact holistically. As the body experiences the various postures, the muscles unconsciously release tension in the mind and the nervous system (P. Louw, personal communication, September 2, 2010). Through this dynamic process, the individual is able to experience a sense of absolute equilibrium within the mind and body.

The participants' experiences of yoga went beyond the physiological benefits, and reflected insight into the psychological and spiritual realms of yoga. A theme that echoed through most of the responses, was that yoga provided a sense of calmness from within. Their experiences encompassed feeling "*centred and meditative leading to calmness,*" "*a calmer demeanour,*" "*being able to remain calm in difficult situations,*" and "*my mind remains still and calm.*" Through the practice of the eight limbs of yoga, Shankara has shone light on how practitioners can use the principles of yoga to remain calm and centred when our modern lifestyles seem chaotic and turbulent (Chopra & Simon, 2004).

Chopra and Simon (2004) explain that the practice of yoga is a science of balanced living. It provides an anchor to a calm domain of life, enabling people who live in the modern technological age to remain centred and connected to their natural humanity. In relation to Chopra and Simon's explanation, it was interesting to note that a few of the yoga teachers and one of the yoga students who participated in this study indicated that they live their lives according to yogic principles. In the qualitative questionnaire, the yoga teachers expressed that yoga "*has become a lifestyle,*" and "*I feel that yoga changed the way I live.*" Another student of yoga wrote that "*I have a greater sense of compassion for all living beings, the person I am today is a direct result of practicing yoga.*" Firstly, this response may be seen to correlate with

Patanjali's first branch of yoga; *yama*. Chopra and Simon (2004) explain that the *yamas* are the universal guidelines for dealing with others, hence the participant's response reflects compassion and respect towards other beings. Secondly, this response may be understood in relation to reflecting upon the idea of yoga as a science of balanced living, where respect is shown towards all beings. The ancient sages named the multitude of yoga *asanas* after all beings who they believed passed through the various reincarnations before they were freed from the cycle of birth and death. They did this as a symbol of respect to all earthly beings. The latter participant's response may be looked at in relation to the mentioned approach that was assumed by the ancient sages. Thirdly, the above response reflects the insight of Iyengar (1982), who extends the meaning of yoga, to be viewed as wisdom in skilful living. Furthermore, the above response echoes Wilber's (1997) integral approach, which suggests that by opening oneself up to the timeless ideologies of yoga, and living one's life according to the wisdom of yoga, then healing and transformation is possible through embracing the entire spectrum of consciousness.

Notable, for present purposes, was the response that their yoga practice, resulted in perceived reductions of stress. Participants expressed that yoga assisted them in bringing "*a sense of control amidst the madness of living,*" "*improved ability to deal with stress,*" "*the ability to be able to cope with the pressures of life,*" and "*cope with stress.*" These experiences are validated by Chopra and Simon (2004), who maintain that yoga practice provides the benefit of relieving stress. The above described experiences of yoga practice, maintain the salient theme that yoga has the potential to bring about physical vitality, emotional and spiritual prosperity as well as reduce stress levels.

The participants were requested to express how they felt prior to their yoga practice as well as how they felt after their yoga practice. In general, preceding their yoga practice, the majority of the participants felt fatigued, describing themselves as *“tense and irritable,” “stressed, fragmented, unfocussed, lethargic,” “stiff, a bit tired,” “tired, low and empty,” “rushed, tired, nervous,”* and *“fraught, anxious, unfocussed, disconnected.”* Hence, there was a common theme of feelings of apathy, fatigue and distraction prior to their yoga practice.

The participants reported that following their yoga session, they usually experience feeling *“relaxed but energised,” “calm and relaxed,” “it helps me reflect on myself,” “relaxed and refocused,” “clear headed and refreshed, relaxed and tranquil,” “more centred,” “I feel calm and my thoughts are clear,” “I feel rejuvenated and freshened,”* and *“peaceful, calm and relaxed.”* These responses indicate that after yoga practice, the most salient feelings were those on inner tranquillity and equilibrium between the body and mind.

These responses were congruent with the participants’ previously mentioned perspectives of their experiences of yoga. Furthermore, one of the participants responded to this question by saying that *“after a yoga session I have this sense of expansiveness, as though the limits of my being is far beyond my physical body.”* This resonates with Patanjali’s eighth branch of yoga; *Samadhi*. Wilber (1983) encapsulates this experience by suggesting that during this state the individual becomes profoundly egoless or released from the distinct sense of self. One experiences the essence of being One with all; *Brahman-Atman*. Patanjali proclaims that this is the ultimate goal of yoga (Chopra & Simon, 2004).

*Pranayama* is an integral part of the practice of yoga, and thus it was relevant to ask the participants about their experience of breathing techniques during their yoga practice. The majority of the participants acknowledged the significance of breathing in yoga, however only two participants mentioned their preferred type of breathing, namely *ujjayi* breathing and *nadi sodhana* breathing. *Ujjayi* breathing is slow and focused breathing through the nostrils that is controlled at the throat (Louw, 2008). *Nadi sodhana* breathing is otherwise known as alternative nostril breathing and is discussed in the literature review. One participant correctly states that *nadi sodhana* breathing “creates equilibrium between the two hemispheres of the brain.” This may be supported firstly by Chopra and Simon (2004) who maintain that *pranayama* is a powerful instrument to boost neuro-respiratory integration, and secondly by Gilbert (1999), who suggests that cyclical alternation between the right and the left brain dominance is enabled by nasal breathing.

An aspect that was raised by one of the participants was that breath “is the life force (*prana*).” The yoga philosophers support this and suggest that the essence of breath is *vital force* or *prana* (Wilber, 1981). It was interesting to note that the more experienced yoga practitioners indicated that yoga breathing enables one to experience awareness and inner focus. These responses suggested that through *pranayama*, one is able to “move into an awareness of an inward space and focus,” and “become very aware of your breath and how important it is for everything in your life.” Further responses indicated that *pranayama* “steadies the mind,” “assists with maintaining control and focus,” “clarifies the mind,” “forces you to remain in the present moment,” “helps me to relax and focus” and “helps with attaining a calm body and mind.” In essence, a salient theme of mindfulness and awareness arose within the participants’ responses to this question. In terms of Wilber’s integral scope of thought, this mindful experience of

*pranayama* connects one to the universe and embraces the essence of *Brahman*, being One with all existence (Wilber 1981).

Conscious breathing is embedded in the experience of *pranayama*.

Conscious breathing means focussing your attention on the perceptual exchange that is taking place between your personal body and the extended body of your environment. You exchange ten billion trillion atoms with your surroundings with every breath you take. The atoms you inhale every day have traversed the bodies of living beings across the universe and across time. Within you right now, you have carbon atoms that once inhabited the body of a cheetah in Africa, a dolphin in the South Pacific, a palm tree in Tahiti, or an Australian Aborigine. Ultimately, every particle in your body was stardust, created at the dawn of the universe. Your breathing is a continuous testimony to the Law of Giving and Receiving (Chopra & Simon, 2004, p. 103).

A fundamental component of *pranayama* was highlighted by one of the yoga teacher participants, who said that “*our breath reflects our state of mind – a stressed, agitated mind is reflected in short, shallow, irregular breathing.*” This response may be affirmed by numerous sources. Gilbert (1999) suggests that one of the fundamental principles of *pranayama*, is that the nature of one’s breath is a reflection of one’s state of mind. Hence a distressed mind is associated with irregular breathing, while a calm mind leads to smooth and balanced breathing. Chopra and Simon (2004) agree that when the mind is still, the breath may remain steady, but when the mind is not at rest, then the breath becomes uneven. This concept of mind-breath interaction has been accepted by yogis and philosophers alike for centuries, hence Kariba Ekken, a seventeenth-century mystic stated that “before attempting anything, first regulate your breathing on which your temper will be softened, your spirit calmed” (Iyengar, 1982, p. 44). In everyday experience, this has a ring of truth.

The participants were finally asked, to share their experiences of the influence of their yoga practice on anxiety. This formed the most significant part of the questionnaire, because it aimed to answer the fundamental question of this research.

The participants' responses were diverse. Although they all experienced anxiety relief through the medium of their yoga practice from different perspectives, recurrent themes were noticed throughout the responses. It was evident that numerous participants experienced a sense of relief from physical symptoms, due to their regular yoga practice.

Participants responded in the following way.

- *“I often gather my anxious feelings in my digestive system. Yoga has physically made a big impact on my anxiety by reducing it.”*
- *“Regular practice certainly has a positive effect on my anxiety levels. I have also had medical/physical reasons for my anxiety. Yoga- particularly forward bends seem to lower my heart rate.”*
- *“A forward bend class will remove any anxiety I may have had at the start of the class”*
- *“My entire nervous system has a chance to recover during the session.”*
- *“Yoga helps all the organs, glands etc. to function better.”*
- *“I have also taught students that have been very anxious or stressed at the beginning of the class due to depression, bi-polar, loss of a family member etc. By the time they have completed the class: their eyes are brighter, their skin is softer/ relaxed/ less frown marks, they walk taller and sometimes even with a spring in their step. They seem more*

*interested and receptive to the other students interacting with them, there is a lightness about them”*

It is evident from the anecdotal responses, quoted above, that these participants have had positive experiences from their yoga practice, having an effect on their anxiety levels and in relation to their physical symptoms. One of the participants alluded to the fact that she experiences her feelings of anxiety in her digestive system, and that her yoga practice has assisted in alleviating this. Research by Smith *et al.* (2007) supports this, suggesting that standing postures and supine (lying down) postures assist in improving digestive functioning in the body.

Two participants mentioned that incorporating forward bends into their yoga practice routine benefits them by means of lowering the heart rate and decreasing perceived anxiety respectively. Literature suggests that forward bends are known to promote calming and soothing effects within the body (Smith *et al.*, 2007). da Silva *et al.* (2009) suggests that controlled breathing has a positive effect on the autonomic functions within the body, such as heart rate, emotion, stress and cognition. This contention is borne out by respondents who said that yoga practice assists in letting the nervous system recover, and maintaining good functioning of the organs. Literature supports the participants’ experiences in that according to Forbes *et al.* (2008), yoga calms and balances the nervous system, and Young (1988) maintains that yoga techniques tone the organs and calm the emotions. Mastering *pranayama* techniques and *asanas* are integral to the practice of yoga, and so form the link between body-mind integration that is central to yoga (Chopra & Simon, 2004).

Certain responses pointed to feelings of physical well-being and health after their yoga class. Chopra and Simon (2004) explain that the central purpose of yoga is being aware of the integration of the environmental, physical, emotional, psychological and spiritual aspects of life. This accords with the observation of a teacher participant, that after yoga classes the participant notices a difference in the physical being of her students. Through the medium of yoga, this teacher participant appears to convey to her students this multidimensional aspect of yoga. Furthermore, the description of the physical state of her students conveys a feeling of contentment. According to Chopra and Simon (2004), contentment or *santosha* is an essential component of *niyama*; Patanjali's second branch of yoga. According to Patanjali, contentment is a complete acceptance and awareness of the present moment (Chopra & Simon, 2004). This is a significant asset to the practice of yoga, and it is positive to see this element emerge within students of yoga.

Contentment or *santosha*, as an essential feature of yoga, embedded itself as a salient theme within the participants' experiences of yoga and relief from their perceived anxiety. The following responses highlight this prominent element within the respondents, of their yoga practice being a way of temporarily escaping from the chaos of modern living, and being able to experience the present moment.

- *“Yoga brings me down to earth. It helps me to stop thinking about small things that worry me and I can focus on the immediate moment.”*
- *“My mind has to focus on something else.”*
- *“Fully focussing on my postures...I'm forced to keep focus.”*

- *“I would say yoga is essential for anyone suffering from anxiety. It brings you back to the moment and helps you think clearly.”*
- *“yoga helps me to control my anxiety concerning future events helping me to focus on the present”*
- *“Yoga is a form of meditation because you cannot think about your problems while focussing on postures, breathing and balance. It therefore allows a respite from the worries of the world.”*

The above responses from the participants all allude to a recurrent characteristic of yoga establishing a focus on the present moment and the experience of being in the "here and now." As briefly stated above, this yogic experience of being fully present is fundamental in Patanjali's second branch of yoga, *niyama*, under the category of *santosha* or contentment. The basics of contentment have been mentioned briefly. However, according to Chopra and Simon (2004), this fragrance of present moment awareness arises when one surrenders the need for control, authority and approval from others. Hence one's present moment focus or contentment is reflected in the absence of dependence on power, sensation and security. "Through the practice of yoga, your experience of the present moment quiets the mental turbulence that disturbs your contentment – contentment that reflects a state of being in which your peace is dependent of situations and circumstances happening around you" (Simon & Chopra, 2004, p.37). Thus it is evident that the experience of contentment, offered by yoga practice, allowed the participants to relinquish their thoughts and worries concerning the past and future, and it required them to focus purely on the present moment.

Acknowledgement of the present moment, during the participants' yoga practice, talks to the experience of witnessing awareness. This is reflected in Patanjali's seventh branch of yoga; *dhyana*. According to Chopra and Simon (2004), *dhyana* is the cultivation of a sense of awareness, where, in the midst of life's changing and unpredictable circumstances, it is the individuals being, the conscious soul that witnesses these goings on. Thus, through focussing on the present moment during their yoga practice, the participants were able to be centred, aware and conscious of their state of being.

The significance of the salient theme of the participants experiencing present moment awareness, during their yoga practice, as means of escaping from their perceived anxiety, should be understood from Wilber's perspective. According to Wilber (1981), the present moment may be understood as a no-boundary moment. This is because the past and the future do not exist outside of this moment, therefore there are no boundaries within this moment; nothing came before it and nothing comes after it. Thus, one never experiences a beginning to this moment, and one never experiences an end to it. It has been said by the *Platform Sutra*, that

in this moment there is nothing which comes to be. In this moment there is nothing which ceases to be. Thus there is no birth-and-death to be brought to an end. Thus the absolute peace in this present moment. Though it is at this moment, there is no boundary or limit to this moment, and herein is eternal delight (Wilber, 1981, p.69).

In the above quotation, the author conveys that awareness floats in the eternal present moment, where all time is embraced. One should not be bound by the past and future, because in essence the present encapsulates the past and future (Wilber, 1981). The participants' responses encapsulate this notion in a simple manner, in the way that through their yoga practice, they are able to be fully aware and experience the present moment.

Wilber's contribution to the field of consciousness is immense, and goes beyond the limits of this dissertation. Wilber emphasises the significance of experiencing the present moment; a recurrent theme within the yogic experiences of the participants, allowing them to escape from feelings of anxiety.

In summary, Wilber suggests that awareness of the present moment, enables one to dissolve boundaries and promote unification of facets of self and open up the field of awareness, moving away from restricting parts of life. This was conveyed through the participants' responses, that it was the experience of being focussed in the present moment that made their yoga practices sacred to them.

Patanjali maintained that *pranayama* formed an integral component of yoga practice, therefore it was not surprising that this featured as a salient theme in the participants' experiences of anxiety.

The following responses were noted in relation to *pranayama* and anxiety.

- *"I have found that when I am in a stressful situation e.g. going to the dentist, yoga breathing and relaxing helps me to get through the unpleasantness of the dental procedures."*
- *"Breathing techniques are a simple way to calm mental activity at any time and in any circumstance throughout our daily lives."*
- *"Anxiety influences my breathing."*
- *"Without breathwork, yoga would simply be a gymnastics practice. Our breath influences our state of mind-a stressed, agitated mind is reflected in short, irregular breathing."*

The participants' experience of *pranayama* was discussed previously in this chapter in the question posed to them concerning *pranayama*. However, since *pranayama* arose as a theme within this specific question on anxiety, it will be discussed briefly.

As stated by one of the participants, yoga would be just another physical exercise if it were not for the breathing techniques. It is thus the element of *pranayama* that distinguishes yoga from other physical activities. One of the participants stated that a stressed, anxious mind is reflected in irregular breathing. This concept of an anxious mind being directly linked to breathing was considered in a previous question.

Two of the participants mentioned that they use the techniques of *pranayama*, and apply them to situations in daily life as well as in anxiety provoking situations such as going to the dentist. Chopra and Simon (2004) emphasise that yoga may be seen as a lifestyle, and hence the yogic principles, such as *pranayama*, may be incorporated into one's daily living. Forbes *et al.* (2008) agree, and suggest that *pranayama* techniques translate into the ability to practice mindfulness "off the mat." Thus the 'life force' of *pranayama* forms an integral part of yogic life practice and may be understood as useful in terms of reducing anxiety in stressful life situations.

In terms of yoga presenting itself as an escape from anxiety, the participants suggested that through yoga practice they are able to experience relaxation and calmness. The following responses revealed a salient theme of yoga being a means of relaxation.

- *"Yoga has physically made a big impact on my anxiety, it helps me to feel more relaxed and in control."*

- *“After just one session I feel more relaxed, I am calmed by knowing I have consistent ‘rest’ in my busy schedule. During stressful moments in my day I enjoy knowing I will relax at yoga.”*
- *“relaxation time cures the anxiety for lasting effect until a good couple of hours after class.”*
- *“I don’t think I suffer from anxiety but am definitely a lot calmer that I can remember.”*
- *“Regular practice certainly has a positive effect on my anxiety levels. Relax and make me feel less anxious.”*
- *“Yoga practice has a calming effect, however it requires constant practice, discipline and determination.”*

These responses tend to indicate that yoga practice clearly assists its practitioners in terms of feeling a sense of calmness and experiencing relaxation. Previously in this chapter, the theme of yoga’s calming characteristic was discussed under participants’ experiences of their yoga practice. According to Chopra and Simon (2004), yoga embodies a sense of calmness about it, and through yoga, practitioners are able to remain calm, centred and in touch with their environment through the life practice of yoga. Forbes *et al.* (2008) suggest that yoga has the ability to promote mindfulness within the individual, and through this, calmness and balance are instilled within the practitioner. From the foregoing, it can be seen that relaxation comes through as an important outcome and benefit of yoga.

In terms of understanding the experience of the influence of yoga practice on anxiety, one of the participants provided a unique explanation that was different from the other participants' perspectives on anxiety. The following response was provided:

*“Anxiety is rooted in fear. The fear of death is a primordial fear – not only death of the body, but also death of the ego. The ego exerts great effort to remain in control of our realities and creates disassociation between mind, body and spiritual self. Yoga, on the other hand, creates a link between our mind, body and spirituality. Yoga is the antithesis to the ego. Yoga allows a person to reconnect all aspects of themselves in a way that results in a reality of wholeness. Yoga also helped me to realise that I am not this body and that, as a spiritual being, I will actually never die. The fear of death is simply a fear of the body dying. When one realises that we are not defined by our physical reality, then one is free of the anxiety that this physical reality will end.”*

In yogic terms, this response evidences an advanced appreciation of the author's being and someone whose self perception is greatly influenced by yogic philosophies.

That *“anxiety is rooted in fear”* shows an appreciation of the distinction between fear and anxiety. Sadock and Sadock (2007) convey that fear is an individual's response to a known, external threat, while anxiety is a response to an unknown, internal threat.

The notion of the “ego” disassociating the mind, body and spirit and the understanding of the integrative effect of the belief in the principles of yoga seem to have provided the particular respondent with a philosophical realisation and reconciliation of the three mentioned aspects of his life.

This resonates in Chopra and Simon (2004), where, in yogic terms the ego is referred to as the *ahankara*. The ego is essentially one's self-image, and the way that the individual projects who he/she is to him/herself and to the people around him/her (Chopra & Simon, 2004).

This respondent's perspective speaks to Patanjali's eight limbs of yoga, where the eighth limb, *Samadhi*, is the antithesis of the ego. Through experiencing *Samadhi*, one achieves an unbounded sense of awareness, a reality that is beyond individuality, a sense of being One with the universe (Chopra & Simon, 2004).

According to Wilber (1998), this state may be defined as *Atman-Brahman*; being One with the Universal Spirit. When this state of consciousness is achieved through regular yoga practice and meditation, one's internal point of reference is transferred from ego to spirit. It is thus in this state that fear and anxiety cease to exist (Chopra & Simon, 2004). The above participant suggests that through yoga, one is able to rise above the ego.

This participant professes that through yoga, he has been able to rise above the ego. Furthermore, the participant reflects Chopra and Simon's view, that yoga creates a union between the mind, body and spirit. It has been through the medium of yoga, that the participant has realised that one is not one's body, but a spiritual being in a human body. This perspective is also conveyed by Chopra and Simon (2004).

This participant's perspective of the fear of death as purely a fear of the body dying, and that one is not defined by one's physical body, suggests that he has travelled far down the yogic road and has a sophisticated grasp of the discipline.

Bringing this back to the question of whether yoga offers the particular respondent a relief from anxiety, it would seem that he is further down the track and has a sound philosophical basis for dealing with anxiety. He seems to be close to Wilber's place of arrival where there is unity consciousness, where there is a holistic awareness of no-boundary and, therefore, there are no boundaries or separateness within the field of yoga. It is viewed as holistically universal, as *Brahman* (Wilber, 1981).

According to the above qualitative findings and discussion, there is a significant link between yoga practice and anxiety, suggesting that yoga therapy has the potential to reduce levels of perceived anxiety on numerous levels. Current treatments for anxiety comprises medication and psychotherapy (Forbes *et al.*, 2008), hence a motivation for this study was to enquire if yoga therapy could be used as an alternative treatment intervention to reduce anxiety.

#### **4.6 Linking the quantitative findings with the qualitative findings**

It is necessary that the quantitative findings of this study be considered in relation to the qualitative findings. The quantitative findings suggest a decrease in perceived anxiety in the experimental group, and an increase in perceived anxiety in the control group. However, in spite of these within group changes over the three month research period, there were no significant between group changes. Thus while the central hypothesis of this study could only be supported

to some degree, that is, consistent yoga therapy was linked with a decrease in perceived anxiety over the duration of three months, these were not significant when compared with a control group. For this reason no causative inferences may be made.

Yet due to the small number of participants and trends in the anticipated direction, it appears to be likely that similar additional research with increased numbers of participants may result in greater significant between group changes.

As mentioned previously, the results revealed significant between group differences for age and education. This indicated that older and more educated participants' anxiety scores decreased significantly more than the younger and less educated participants. Again, due to the few participants, additional empirical research is required in order to make any generalised inferences in this regard. In terms of comparison, the qualitative findings suggested that the participants who were older than thirty and who had the advantage of having more years of yoga experience, had a deeper sense of understanding and insight into their perceptions and experience of yoga.

Ultimately though, in the quantitative findings, the hypothesis of this research may only be partially supported.

The qualitative findings suggest, unquestionably, that regular yoga therapy is a significant intervention that has a positive influence in decreasing perceived anxiety levels within the participants. The participants indicated that their yoga practice provided them with relief from anxiety, by way of encouraging present moment awareness and acknowledgement of the importance of their breathing in terms of the body and mind interconnection. Furthermore, their

yoga practice delivered them with relief from physical symptoms, and enabled them to experience a great sense of relaxation. In terms of the philosophy of yoga, Patanjali's yogic system provided the participants with a balanced lifestyle, where a comprehensive holistic path of living was defined.

In essence, the qualitative findings of this study suggest that the research hypothesis has been supported with consistent evidence as to the beneficial effect of yoga on perceptions of anxiety.

#### **4.7 Empirical evidence supporting the findings**

The overall results of this study suggest that yoga therapy has the potential to treat anxiety, and hence alleviate anxiety from a physical, psychological and spiritual perspective. There is a growing body of evidence that now recognises what yoga therapists and instructors have for a long time been seeing in their clients and experiencing themselves, that is, that yoga is not only helpful for physical symptoms, but for psychological issues such as anxiety as well (Forbes *et al.*, 2008). The results of this study revealed that the participants experienced relief from the psychological and physical symptoms of anxiety, in terms of physical bodily experiences of health, and the application of yogic principles in daily living. Practising slow, steady breathing in anxiety provoking situations assisted in alleviating physical and psychological manifestations of anxiety. The results, further, suggested that yoga practice provided spiritual relief from anxiety, through the means of *pranayama* and through experiencing awareness and appreciation of present moment consciousness. Thus, it should be re-emphasised that Forbes *et al.* (2008) advocate that the practice of yoga has the potential to treat anxiety by addressing clients' physical bodies together with their thoughts and emotions.

Ken Wilber has, in relatively recent times developed and popularised the concept of yoga being received and integrated into present day life, as a complete life discipline. His writings and thoughts have played an important part in giving credence and practical application to the ancient yogic disciplines.

Wilber's concept of an "integral approach", which perceives yoga as an all embracing life discipline was inspired by Aurobindo. According to Wilber, yoga is an all embracing discipline, which should be practised on a physical, cognitive, emotional and spiritual level. Through this integral process, yoga may be seen as a dynamic experience of consciousness, which encompasses an awareness of the essence of being Universally One (Wilber, 1981). By embracing the Universal Spirit of yoga, the symptoms of anxiety may be relieved through the awareness that yoga creates within the individual.

Wilber's integral approach was inspired by Sri Aurobindo, who devised the term 'integral yoga.' Aurobindo's 'integral yoga' promoted the development of a higher sense of consciousness, where the individual feels a shared experience of being One (*Atman-Brahman*) with the Universe. This is a recurrent theme in the yogic beliefs and the participants of this research suggested that their experience of yoga, tended to develop a sense of centred awareness within the present moment, thus providing them with relief from anxiety.

A motivation for this study was to provide empirical evidence to show that yoga therapy may be used as a cost effective alternative to psychopharmacological medication. Thus government health departments may be able to achieve savings by using yoga therapy as an alternative

intervention for the treatment of anxiety. As mentioned previously, one of the participants in this study shared the fact that she had replaced her anti-depressant medication with her yoga practice, and had experienced positive results. According to Forbes *et al.* (2008), current treatments for anxiety comprise medication and psychotherapy. Commonly used psychopharmacological medications for the treatment of anxiety are anti-anxiety medications, anti-depressants and beta-blockers. These medications have side-effects, some are addictive and may lead to withdrawal or a reoccurrence of the anxiety symptoms when the medication is terminated or interrupted (Forbes *et al.*, 2008).

Streeter *et al.* (2010) provides additional empirical evidence in support of this research and suggests that yoga therapy delivers an economical substitute to the consumption of psychopharmacological medication in combatting symptoms of anxiety. Medication traditionally reduces anxiety, by chemically increasing the GABA levels within the brain. Streeter *et al.* (2010) suggests that yoga practice has the same effect of reducing anxiety, by means of naturally inducing an increase of GABA production in the brain. Additional evidence suggests that in comparison to the intervention of walking, yoga therapy produces more GABA secretion within the brain, with a significant decrease in anxiety symptoms (Streeter *et al.*, 2010). This research re-enforces the argument that yoga therapy may beneficially serve to reduce anxiety within individuals.

Also supporting the premise of this research, da Silva *et al.* (2009) adds that yoga has the benefit of being cost effective and non-invasive. It has minimum risk of adverse effects or drug interactions, does not need medical supervision for practice, and has the additional advantage of enhancing physical fitness. The mentioned advantages have the added benefits of enhancing

client performance and compliance, and may assist sufferers who may be intolerant to or apprehensive to use medication (da Silva *et al.*, 2009).

The above reasoning all supports the premise that yoga therapy is an effective alternative for psychopharmacological medication in terms of treatment for anxiety.

#### **4.8 *Namaste***

The quantitative findings suggested that the hypothesis of this study may only be partially supported. The qualitative findings suggested that the intervention of yoga therapy has the potential to reduce individuals' perceived levels of anxiety. Taken as a whole, this research indicates that yoga therapy may be viewed as a cost effective alternative to the ingestion of psychopharmacological medication in terms of treatment for anxiety.

## **Chapter 5: Conclusion**

### ***Shavasana (Corpse pose)***

#### ***5.1 Drishti***

This chapter seeks to draw conclusions on the research topic, recognise the limitations of the project, and in the light of what has been learnt, suggests directions for further research in this area of enquiry.

#### **5.2 Main findings**

Due to the high prevalence of individuals suffering from anxiety, it is a major concern within society. Anxiety is debilitating on an individual level, with the symptoms causing significant impairment in cognitive, emotional and occupational functioning. A current response to anxiety includes the “quick fix” ingestion of psychopharmacological medication. Medication is expensive for government health care departments, as it is for private persons. A growing body of evidence indicates that yoga therapy is effective in treating psychological illnesses such as anxiety (Forbes *et al.*, 2008). Empirical evidence to support the claim that yoga therapy is a cost effective intervention for alleviating the symptoms of anxiety is lacking. This relative gap in scientific literature provided a motivation for this study. The hypothesis of this research was that yoga therapy would decrease levels of anxiety both within individuals over time and as compared with a control group that did not practise yoga.

The proposition that participation in yoga therapy would be associated with a reduction in anxiety levels over the three month test period was only partially supported. It did not show a statistically significant reduction in anxiety levels in the experimental group, as compared to the control group. The variances did, however, indicate an increase in perceived anxiety in the control group and a decrease in perceived anxiety in the experimental group.

These trends may be associated with a number of factors, including;

- the relatively small size of the two samples;
- the fact that the control group was “loaded” with Masters’ students, who may have felt greater levels of anxiety as their course progressed.

The outcomes did, however, indicate that the yoga practitioners were, as a group, subject to lesser levels of anxiety. While the results indicated that between the first administration of the test and the second, there was no significant change in levels of anxiety, the experimental group, who practised yoga regularly, had lower levels of anxiety.

The qualitative findings suggested that the hypothesis of this research was proved to be correct, that is that regular yoga therapy was significantly effective in terms of decreasing perceived anxiety levels within the participants.

The participants indicated that their yoga practice provided them with noticeable relief from anxiety, by helping the participants to be aware and focussed in the present moment, be conscious of their breathing as well as feel calm and relaxed. Furthermore, Patanjali’s philosophical

principles of yogic life practice encouraged the participants to live their lives according to ethical, healthy and spiritual life guidelines.

This study provided empirical evidence that yoga therapy may be an effective treatment intervention for decreasing perceived anxiety as a potentially cost effective intervention for anxiety reduction.

### **5.3 Limitations and implications**

It is important to be aware of the limitations of one's study and to acknowledge shortcomings and what one could have done differently. Precautions were taken to minimise methodological flaws, however, the following limitations were present in this study.

This study was limited because it did not use randomised control groups. Instead this study selected to use convenience sampling. The reason for this was because this research was conducted in a rural setting, where yoga practitioners were not present in vast numbers, and so samples that were easily available had to be carefully selected.

A further limitation that affected this research was that of time constraints. There was a strict time limitation and this meant that the yoga intervention had to be kept to the three month duration. However, it may be reassuring to know that the yoga practitioner participants of this study did not stop practising yoga after the termination of this study. Yoga practice remains an integral part of their lifestyle.

The relatively small samples were a limitation, and quantitatively speaking, this prevented the study from making firm or generalised inferences. As this "favoured" older and more educated participants, further randomised controlled studies with larger samples would be needed to make more generalised inferences.

Other limiting factors included the following;

- a preponderance of females over males;
- the sample was not representative of the ethnic spread in South Africa;
- both samples were weighted in favour of persons with better than average levels of education.

Moreover, qualitative techniques were only used in the pre-test stage of this research, thus it may be viewed as a limitation that qualitative techniques were not included in the post-test stage of this research for neither the experimental group nor the control group.

Another consideration in terms of external variables, was that the control group was asked if they include physical exercise in their daily routine, and if they take any medication for anxiety. However, it was a limitation of this study, in that it failed to ask the participants in the experimental group if they include extra physical exercise in their daily routine (besides yoga practice), or if they take any medication for anxiety.

A further shortcoming of this research was that it overlooked the possibility of asking the participants what their understanding of anxiety was. In hindsight, the qualitative questionnaire should have asked the participants to explain their subjective understandings of anxiety.

An additional limitation to this study was that in retrospection, it should have asked the participants if they had had any previous psychological intervention to deal with any possible anxiety they had experienced in the past. This would have added value to the background information of the participants.

Lastly, there was a shortcoming in the quantitative psychological assessment tool that was used in this study. Despite the fact that the Beck Anxiety Inventory (BAI) has acceptable psychometric properties and it has previously been used successfully with nonclinical samples, it was limiting in that the BAI has not been standardised on South Africans (Pillay *et al.*, 2001). Hence the assessment tool used in this study may be viewed as a possible shortcoming.

#### **5.4 Recommendations for further research**

The recommendations for possible further research were based on the limitations of this study and on the findings that arose while reviewing past scientific literature on anxiety and its relationship to yoga therapy.

With the benefit of hindsight, perhaps further research in this area of interest should be directed along the following lines, also aiming to explore whether yoga therapy may serve as a viable alternative to medication for the control of anxiety. The basic design would be as follows;

- secure commitment from a relatively substantial sample group who were in circumstances that are likely to induce anxiety, perhaps a volunteer group of honours students who may be registered for various courses;
- administer a test that is sensitive to the measurement of anxiety, as part of a broader battery of tests, aimed at "masking" the true intention of the test;
- secure the commitment from a significant portion of the sample to attend yoga classes for a given period of time;
- administer the test at the conclusion of the period.

While it may be a tall order to secure a test group that would spend time on yoga, an approach along these lines would have the effect of "filtering out" the benefits that seasoned students of yoga would, otherwise, go into the test with. Needless to say, ideally, various other shortcomings with regard to the representivity of the sample, referred to above, could be considered.

In view of the shortcomings of this study with regards to the limited number of samples used, it would be of benefit to conduct further similar research with larger numbers of participants. In this research, due to the relatively small number of participants and the trends in the anticipated direction, it appears quite possible that additional experimental interventions with increased participants may be likely to be associated with significant between group changes.

An additional reason for conducting further research with increased numbers of participants, would be because this research indicated significant between group results for age and level of

education. Hence suggesting possible bias, as it indicated that the older and the more educated participants benefitted more from the intervention. Thus further studies using more participants would be able to confirm this in order for the results to be generalised and for inferences to be made in this regard.

It would be of interest to conduct further similar research while implementing the intervention of yoga therapy over a longer duration of time. This research suggested that the intervention of yoga therapy was beneficial in anxiety reduction over just three months, hence a longer intervention of perhaps six months or twelve months may have added benefits.

Due to the high prevalence of individuals suffering from anxiety, it would be of benefit to offer a yoga intervention program to individuals who suffer from anxiety due to the nature of their occupation, for instance policemen or nurses.

A possible further study could be an extension on the research that Smith *et al.* (2007) conducted; which was a comparative trial of yoga and relaxation to reduce stress and anxiety. The study was conducted to compare the treatment of hatha yoga with a progressive muscle relaxation method in order to treat individuals who were experiencing mild to moderate levels of stress and anxiety. Further extensions on this study could be done by prolonging the research duration beyond the time span of ten weeks. More men could be included in the research, as the original research included mainly female participants. Overall, much of the previous research that has used yoga therapy as an alternative intervention for the treatment of anxiety, has generally been applied to women, and so studies including more male participants would be of psychological relevance.

### ***5.5 Namaste***

This chapter briefly discussed the main findings that were gathered within this study. In addition it reflected on the limitations that were found to be present in this study. In conclusion it explored recommendations for possible further research within this field of study.

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**Appendix A Information letter and Consent form**

Dear Participant

I am doing my Masters in Counselling Psychology at the University of Zululand. Thank you so much for being prepared to take part in my research project, where I will be investigating the influence of yoga therapy on anxiety.

Kind regards  
Lindsay Clark

**CONSENT FORM**

By signing below, I (*full name*)..... agree to take part in a research study entitled: The influence of yoga therapy on anxiety.

I declare that:

- I have read or had read to me this information and consent form and that it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that participation in this study is voluntary and I have not been forced to take part.
- I understand that all information gathered from the study will remain confidential and anonymous.
- I may choose to withdraw from the study at any time and I will not be penalised or prejudiced in any way.
- I understand that no potential risks exist for myself if I participate in this study.
- I understand that the information gathered in the study will be published; however, none of the presented information will be linked to me directly in any way.
- I understand that I will be required to complete questionnaires.
- I am prepared to be contacted after +/- 3 months for the follow up.

Signed at (*place*) ..... on (*date*) ..... 2010.

.....

.....

Signature of participant

Lindsay Clark

**Appendix B****Beck Anxiety Inventory**

Name:

Age:

Gender:

Home language:

Years of formal education:

Contact number:

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 It did not bother me much	Moderately It was very unpleasant, but I could stand it	Severely I could barely stand it
1	Numbness or tingling				
2	Feeling hot				
3	Wobbliness in legs				
4	Unable to relax				
5	Fear of the worst happening				
6	Dizziness or lightheaded				
7	Heart pounding or racing				
8	Unsteady				
9	Terrified				
10	Nervous				
11	Feeling of choking				
12	Hands trembling				
13	Shaky				
14	Fear of losing control				
15	Difficulty breathing				
16	Fear of dying				
17	Scared				
18	Indigestion or discomfort in abdomen				
19	Faint				
20	Face flushed				
21	Sweating (not due to heat)				

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

## Appendix C

## Yoga Therapy Research Questions

Name:

Age:

Gender:

Home language:

Contact number:

Type of yoga you practise:

Please write as much or as little as you feel is necessary to fully answer each question. If you require more space, use the extra pages provided.

1. How long have you been practising yoga?
  
2. What made you decide to take up yoga in the first place?
  
3. In the 6 months before you started yoga, can you remember a specific or general life event that affected you? Example: moving house, a death, marriage, new job or child birth.
  
4. What benefits did/do you expect from the practice of yoga?
  
5. Has yoga practice lived up to your expectations?

yes	No
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Please provide further information on your answer.

6. Please describe how you feel before your yoga session.

Think about how you feel physically, emotionally & spiritually.

7. Please describe how you feel immediately after your yoga session.

Again you may want to consider how you feel physically, emotionally & spiritually.

8. Please share your experience of breathing techniques during your yoga sessions.

9. Please share your experience of the influence of yoga practice on anxiety. Please think carefully about this question, because it is a very important question for this research.

Thank you so much for your participation in my research

**Appendix D      Qualitative responses of participants as raw data**

**Yoga Students**

**Table 1: Beginning yoga- Personal responses**

	<b>Number of years practiced yoga for</b>	<b>Decision to begin yoga</b>	<b>Life context</b>	<b>Expected benefits</b>	<b>Has yoga lived up to your expectations</b>
4	7 years	Need for a meditative, quiet form of exercise that brings me into the present moment.	Moving house, pregnancy, marriage, childbirth, starting a business, closing it down and doing extensive alterations to our house while living in it.	Centred, meditative & disciplined practice leading to calmness, suppleness, control and sense of well-being. Toning, core-strength and general strength training. Increased circulation and release of toxins. Meeting like-minded people.	Yes. My life has a sense of control amidst the madness of living.
2	6 months	Wanted to try something new.	New job, moved to new town.	Have fun, learn something new.	Yes. I learnt a lot, have lots of fun, feel stronger and healthier.
12	10 years on and off.	Availability	Moved house.	Relaxation and suppleness of muscles.	Yes. Always feel rejuvenated after a session.
3	2007 – 10 classes Started again 04/02/10.	Needed to keep my body supple. Have noticed that running has caused shortening and stiffness and as a result I am prone to injury.	Started new job 04/01/10, my own private practice. Gave up two salaries I relied on for four years.	Flexibility. Body awareness A “me” activity to get away from business of life and to be relaxed.	Yes. I have only had one session, I already felt better the next day – I enjoyed the “time-out”.
16	20 years	Relaxation, Posture, general well-being.	Cannot remember.	To cope with stress, incorrect posture. To enhance	Yes

				suppleness, well-being general health.	
1	6 years on and off.	Stress relief mostly, but I also wanted to improve flexibility.	No. I am a highly strung person. I had just started varsity and moved away from home etc.	A feeling of calm. I hoped to clear my mind of worry for a while. Improved flexibility.	Yes. I have found a difference in my anxiety levels and physical tension when I stop yoga for a while.
11	On and off for 10 years.	Exercise with calm approach.	Yes, trauma of giving birth to a baby and losing her 3 days later.	Physical vitality. Capacity for physical agility improvement. Calmness, peace while doing the exercises. General well-being maintained on regular basis.	Yes. Improves everything on all levels.
8	3 and a half years.	Did karate for a number of years, stopped after having kids, decided to take up something more calming.	Started a new job.	Physical benefits, exercise. I have scoliosis and hope that yoga will slow down negativity.	Yes. Used to suffer from a lot of lower back pain. I find that if I don't do yoga for a while it comes back.
15	3 and a half years.	I knew that my mom had done yoga in the 80's, there was this book lying around the house and yoga has always appealed to me.		Decreased anxiety, mental focus, physical strength, general well-being and suppleness.	Yes. I love Yoga! But it is not easy / a walk in the park. You must put effort in, in order to receive the benefits.
5	Approximately 9 years – intermittently.	Stress. The need for balance in my life, extra flexibility, strength for sport (paddling).		Improved ability to deal with stress, greater balance, control of my life, improved flexibility, improved sleep patterns.	Yes. I feel the benefits when I practice regularly – unfortunately I don't always get to do it regularly and often "lapse" for a period of months.

17	15 years	<p>Yoga was initially appealing from a philosophical perspective, not because of the physical benefits. I was drawn to the ideologies of yoga as a lifestyle, such as the notion of non-violence (i.e. vegetarian diet) and approaches to understanding the ego in our daily interactions. Monitoring the ego directly results in the reduction of suffering in one's life and relationships. I was initially drawn to yoga as a means to reduce psychological and emotional discomforts.</p>	<p>I moved to a new location, started university and my partner at the time introduced me to <i>Kundalini</i> yoga.</p>	<p>There are more benefits than I could possibly list here. The main benefit that I experience from practicing yoga is a constant state of mental and emotional equilibrium. My mind does not "race" around any longer – it remains still and calm even when external circumstances change. My emotions are more steady and balanced and I have a greater sense of compassion for all living beings. The person I am today is a direct result of practicing yoga for 15 years!</p>	<p>Yes. I remember thinking before my first yoga class that people look odd in the various yoga positions or <i>asanas</i>. I was intimidated by how flexible yogis were, but I realised after a few classes that my body was more flexible than I knew. As I mentioned earlier, I was drawn to yoga for the emotional and psychological benefits, but I soon realised that the <i>asanas</i> are an amazing way to keep the body (muscles and endocrine system) in shape as well. The benefits of yoga have gone far beyond what I had ever expected.</p>
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**Table 2: The experience of yoga practice**

	<b>Feelings before a yoga practice</b>	<b>Feelings after a yoga practice</b>	<b>Experience of breathing techniques during yoga practice</b>
4	I usually feel tired, low and empty; usually wired, hyperactive having done zillion things in one day.	I always feel relaxed but energized, definitely happier and lighter, also more in tune with myself- often feel I could continue into meditative state after relaxation.	I experience clarity of mind, a general sense of lightness which could be described as 'refreshed' due to 'new oxygen' reaching my lungs, my air circulation has improved considerably since I began yoga, especially after <i>pranayama</i> . Breathing deeply enhances meditation and feels clearing. At first I was self conscious about <i>ujjayi</i> breathing but now I love it – slow, measured breathing forces you to remain in the present moment.
2	Usually tired, rushed and hungry. Emotionally often drained, sometimes excited. Spiritually scattered, not really spiritually minded at all.	Physically- exercised. Emotionally – calm and relaxed Spiritually – calm, hopeful and lot more aware of spirituality than before the session.	It's the best part of the session. Helps me to relax and focus and I have started to do it at home as well.
12	Tired at times, sometimes reluctant.	Usually good.	No particular impact.
3	Bothered, thinking of list of things to do on the next day. Rushed, un-relaxed physically.	My body feels warm and the 'stretch' feeling in my joints lasts into the evening. Emotionally I feel relaxed and slightly 'selfish'. It helps me reflect on myself.	I don't think I am very good at these yet. I enjoy the pauses given for breathing – I don't ever get the chance to just close my eyes and 'not think.'
16	I do a lot of computer work and I am usually quite stressed.	I feel more relaxed, my posture and balance are better.	The breathing techniques help with attaining a calm body and mind.
1	Physically tense, emotionally grumpy, generally because I have just come from work, sometimes frustrated, worried. Spiritually mind is abuzz with many	Physically far more relaxed. Emotionally calmer, comparatively Spiritually grounded.	Need to focus consciously on my breathing in beginning, so it's a good thing when my teacher starts with breathing exercises. As class progresses, I clear my mind, focus on my body and breathe

	different thoughts, “up in the air” so to speak.		more easily, as I need to. Have learnt that breathing more deeply and easily helps me to benefit more from each stretch. This compels me to focus on breathing, therefore relaxing into the stretches.
11	Stiff, stuffy, stressed.	Agile and loosened up, clear headed and refreshed, relaxed and tranquil.	Not good at it. Haven't grasped yet. Am slow and need to be taught same breathing over and over each time. Breathing is not explained to me slowly and carefully enough, not individually unless I ask for private lessons.
8	Physically fine, but otherwise tired – my days are very busy – dealing with clients and queries at work all day long.	Quite relaxed and refocused.	I am more aware of breathing and how to breathe now than before. I believed I have not yet mastered it all.
15	Physically: stiff, a bit tired, emotionally fraught, anxious. Spiritually: unfocused, disconnected.	More calm, less stressed, more connected, in tune with my body, my issues are put in perspective, physically tired (in a good way).	Teachers haven't focused too much on breathing so I don't have too much experience of techniques but breathing is vital to perform the <i>asanas</i> properly. Proper breathing does decrease anxiety. I just wish I could remember to do it more often.
5	Stressed, fragmented, unfocused, lethargic.	Generally more relaxed, "spaced out," more centred, but on occasion quite emotionally volatile, almost irrational and irritable (probably associated with backbends which I really don't enjoy).	I enjoy the relaxation but sometimes find this hard as I suffer from asthma and allergies and my breathing is sometimes laboured or my nose blocked. I find it hard to keep focused on my breathing and enjoy more "structured" sessions which vary the breathing regularly.
17	I feel centred and drawn within myself before a yoga session. I know how deep I go within myself when I practice yoga, so before a session begins I	After a yoga session I feel better than any other time in my routine life. I feel calm and my thoughts are clear. Mental activities begin to flood back into my mind about an hour or so after a yoga session,	I practice <i>nadi sudi</i> or alternate nostril breathing when I do yoga at home. <i>Nadi sudi</i> is often taught in yoga classes for beginner students, but not in the Iyengar yoga.

	<p>already slip into a still and quiet mental and emotional space.</p>	<p>but I am able to understand the mental activity more clearly. Stuff that made no sense to me before a yoga session is suddenly illuminated with precise clarity. After a yoga session I have this sense of expansiveness, as though the limits of my being is far beyond my physical body.</p>	<p>This breathing practice creates equilibrium between the two hemispheres of the brain, which creates an immense sense of clarity. Otherwise, I focus on extending my exhales so they are twice as long as my inhales. Breathing techniques are a simple way to calm mental activity at any time and in any circumstance throughout our daily lives.</p>
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**Table 3: Participants view on how yoga influences anxiety**

<b>Experience of the influence of yoga practice on anxiety</b>	
4	Yoga is a form of meditation because you cannot think about your problems while focusing on postures, breathing and balance. It therefore allows a respite from the worries of the world. The more you practice yoga, the less you will be affected by the world and the better you will feel about yourself, your body, control issues and the big picture.
2	I often gather my anxious feelings in my digestive system, it seems. Anxiety influences my breathing as well. Yoga has physically made a big impact on my anxiety by reducing it, it helps me to feel more relaxed and in control.
12	I have not found the link. The relaxation effect is not sufficient when I am very stressed.
3	I think the reputation of yoga helping with anxiety prompted me to join to assist in reducing my stress levels. After just one session I feel more relaxed, I am calmed by knowing I have consistent “rest” in my busy schedule. During stressful moments in my day I enjoy knowing I will relax at yoga.
16	I do not experience anxiety.
1	Yoga brings me down to earth. I am a highly strung person by nature. It helps me to stop thinking about small things that worry me and I can focus on the immediate moment instead. Feel more confident afterwards. My uncertainties disappear. Feel more inclined to smile, to share. This helps me to remember what really matters.
11	Anxiety is the one and only thing I suffer from and always have – since all my above traumas started. From fully focusing on my postures and doing it in class – where I’m forced to keep the focus, it prolongs a stretch of relaxation time that is long enough to cure the anxiety for lasting effect until a good couple of hours after class.
8	I don’t think I suffer from anxiety but am definitely a lot calmer that I can remember.
15	Yoga has really helped. Not every time, but after virtually every class that I have attended the rest of that day has gone well. I would recommend yoga for anybody who struggles with anxiety.
5	Regular practice certainly has a positive effect on my anxiety levels. I enjoy in particular, solo sessions, as I find this most beneficial. I have also had medical / physical reasons for my anxiety which I am now taking medicate for (hyperthyroid). Yoga – particular forward bends seem to lower my heart rate, relax and make me feel less anxious.
17	Anxiety is rooted in fear. The fear of death is a primordial fear – not only death of the body, but also death of the ego. The ego exerts great effort to remain in control of our realities and creates disassociation between mind, body and spiritual self. Yoga, on the other hand, creates a link between our mind, body and spirituality. Yoga is the antithesis to the ego. Yoga allows a person to reconnect all aspects of themselves in a way that results in a reality of wholeness. Yoga also helped me to realise that I am not this body and that, as a spiritual being, I will actually never die. The fear of death is simply a fear of the body dying. When one realises that we are not defined by our physical reality, then one is free of the anxiety that this physical reality will end.

## Yoga Teachers

**Table 4: Beginning yoga- Personal responses**

	<b>Number of years practiced yoga for</b>	<b>Decision to begin yoga</b>	<b>Life context</b>	<b>Expected benefits</b>	<b>Has yoga lived up to your expectations</b>
13	More than ten years – on and off.	Someone gave me a book on yoga when I was staying in a Zulu hut in Msinga and it seemed like a good time to try it.	Can't remember.	Increased flexibility.	Yes. It has gone further and affected other aspects of my life – being able to remain calm in difficult situations.
9	Ten years on my own, learning it out of books. I did my Yoga teachers training ten years ago so all in all, 20 years.	I have always enjoyed stretching and doing physical activities, like ice skating and modern dance. Yoga complimented these activities.	Yes, I suffered with burn out and depression and was put onto anti-depressants for a year. I did not want to stay on any permanent drugs so I looked for alternate ways to cope.	Yoga always calms me, makes me less stressed and more focused to be in the moment.	Yes, Yoga for me is like having a full body massage. It relieves all tension and stiff muscles. It has a calming effect and makes me feel good about myself.
18	16 years.	Can't remember. I think I was always attracted to yoga.	Move to Johannesburg and started my first job.	Good physical health and the ability to be able to cope with the pressures of life with steadiness and confidence.	Yes. I am still here. Healthy and relatively content, not underground and not in an institute.
6	14 years.	Curiosity, need to do something physical.	New job.	Flexibility and strength.	Yes, it has provided far more than what expected, peace of mind, health benefits, it has become a lifestyle.

7	Approximately 9 years.	Decided to try a Yoga class at my local fitness club and incorporate it into my existing exercise routine. Initially I enjoyed the challenge of the postures.	Initiated a court case against the company I had been working for on the grounds of unfair labour practice. At that stage I had been working for the company for 12 years (the case dragged out for about 5 years). My marriage was an unhappy, restless place.	Initially my expectations were focused more on physical achievements (i.e. increased flexibility, increased stamina, strength etc.) A calmer demeanour. Less inclined to react in anger. An awareness of my breathing and monitoring / adjusting my breathing (calm, slow, deep). This has now become my "normal" way to breathe ...abdominal breathing.	Yes. About three years ago I qualified as a Yoga instructor. I currently teach an average of 10 classes a week. Per week I work with an average of 100 yoga practitioners (I'd guess about 85 are regulars) In this time I have had the privilege of seeing the positive effects of a regular yoga practice in my Yoga students – many claiming that Yoga has changed their life. Sadly, since I started teaching and with increased classes and less time, my personal practice has stopped. That is, I still participate in the physical practice as I demonstrate to the class – but there is no focus on the breath, on the posture, on the body as I instruct. However, this being said, I still maintain a good level of flexibility and the additional benefits mentioned above I have still managed to maintain. I am certain that these benefits would deepen once I include a regular personal practice!
14	15 years	Yoga has always been something that I wanted to be involved with. Unfortunately it took a while	I started and new job and moved home to East London.	I try not to expect anything from my Yoga practice. The	Yes. Well yes and no – I feel that Yoga changed the way I look at life and the way I live ...but to quote one of my teachers "Be careful

		before Yoga found me.		benefits seem to be the by-product of my practice. I find that if I go into a session wanting to achieve something it has the opposite effect.	of what you are looking for you may not like what you find."
10	25 years.	Curiosity. I began in a gym taking a yoga class after aerobics classes. The aerobics soon fell by the wayside and I only did Yoga.	No.	I went into the classes without any expectations. I loved Yoga from the first class, it just appealed to my nature. It was fine to work to my capacity, but at the same time I was encouraged to go further and deeper, always keeping me interested and challenged.	Yes.

**Table 5: The experience of yoga practice**

	<b>Feelings before a yoga practice</b>	<b>Feelings after a yoga practice</b>	<b>Experience of breathing techniques during yoga practice</b>
13	Sometimes I feel as if I haven't breathed properly all day because of the stressful activities going on. I often feel very rushed and tired.	Usually I feel rejuvenated and freshened – as if I had my mind on other things – not the worrying things of the day and that gives me a break and helps me to build up strength again.	It makes me slow down, move into an awareness of an inward space and focus on my body instead of my worries.
9	I feel tense and irritable at times. I need to just be in my own space.	Definitely peaceful, calm and relaxed.	The breath and synchronization is wonderful, it is what sets yoga apart from other forms of exercise. It is the life force ( <i>prana</i> ). Yoga helped me to give up smoking through this awareness. You become very aware of your breath and how important it is for everything in your life. Again it is such an amazing and calming factor for mind, body and spirit.
18	Rushed, tired, nervous.	Sometimes tired physically, but have mental stamina to do what needs to be done. Usually re-energised. Contented, accepting (of myself and others) Feel at peace and at one with myself and others.	The breath becomes more steady, slower and deeper, be it an <i>asana</i> class or a specific breathing class.
6	Physical – tight. Emotional – active mind Spiritually – not very connected.	Physically – free Emotionally – at peace and stable Spiritually – strong connection to "spirit."	Vital part of the yoga practice. Beautiful, steadies the mind.
7	Physically – Aware of areas of tension, in need of a good stretch Emotionally – May vary, but due to the nature of my work, often emotionally tired. Spiritually – I am very aware of my spirituality and my connection to God in general	Physical – Stretched, relaxed, physically worked Emotionally – calmer, relaxed Spiritually – Deeper awareness of my spiritual self and my connection to God	I practice <i>Ujjayi</i> breath during my Yoga practice. This is deep, controlled breathing through the nose only. The breath is controlled at the throat and is fairly audible. This breathwork assists with maintaining control and focus, not only on the breath but also on my practice.

14	<p>More outwardly focused and concerned with the external material things in life.</p>	<p>More inwardly focused and physically relaxed, my emotional state would depend on the type of practice I had completed (backbends, forward bends etc.).</p>	<p><i>Pranayama</i> seems a vast subject to me and I am just a beginner. I practice mainly <i>Viloma</i> and <i>Ujjayi</i> breathing. Sometimes in my practice, I feel that I reach a point where everything seems to become very focused, almost to a single point... this only lasts for a moment. After a <i>Pranayama</i> session I feel extremely relaxed, my mind tends to be in a dreamlike state and I tend to be less aware of my surroundings.</p>
10	<p>Every day is different. Usually I go to the mat early in the morning, having prepared a session in my mind and roughly following it. If I go to a class, my mind is clear so as to receive the teachings of the day. I am usually even-tempered and emotionally stable. I look forward to the session as it is a sacred space in my day, one of "being."</p>	<p>Depending on the session, I usually feel relaxed, yet physically challenged after a class. I feel a sense of well-being after each session. My spine has straightened (I have scoliosis) and I walk taller, leaving me with a positive attitude. A lightness in the brain. There is almost a sense of space throughout my body and mind. My chest opened, thus my emotional centre is more receptive. I sometimes feel a thread is pulled through my body holding me together – body, mind and soul. There is a connection to mother earth and the universe.</p>	<p>Going into all <i>asanas</i> is done on an exhalation, coming out of an <i>asana</i> is done on an inhalation. I use the breath to go deeper into a posture e.g. In a forward bend, I will inhale to lengthen the spine and surrender to the extension of an exhalation. The body and mind then become more receptive to the <i>asana</i>. If I increase the exhalations, I feel a greater sense of calm. However, if I increase the inhalations, I feel more energized and vibrant. If I find an <i>asana</i> a great challenger and my breath becomes short, I try to make the breath even, thus creating space, poise and rhythm in the posture, eventually creating calmness in the body and brain.</p>

**Table 6: Participants view on how yoga influences anxiety**

<b>Experience of the influence of yoga practice on anxiety</b>	
13	I have found that when I am in a stressful situation e.g. going to the dentist, yoga breathing and relaxing helps me to get through the unpleasantness of the dental procedures. Also, the yoga session helps me to cope with stress because I feel as if my entire nervous system has a chance to recover during the session as my mind has to focus on something else.
9	I would say that yoga is essential for anyone suffering from anxiety. It brings you back to the moment and helps you think clearly. I would say I am quick tempered at times, am impatient and a perfectionist. Yoga helps me to control these emotions. I don't think I am an overly anxious person but I do think Yoga would be very good for anxiety.
18	Yoga helps me to control my anxiety concerning future events helping me to focus on the present.
6	Yoga practice has a calming effect, however it requires constant practice, discipline and determination. The whole body benefits, Yoga helps all the organs, glands etc. to function better.
7	The use of breath forms a very important part of any true Yoga practice (moving into and out of postures, once in a posture – allowing your breath to guide you as you challenge yourself deeper into a posture). Without breathwork, yoga would simply be a gymnastics practice. It has been proven over and over again that our breath reflects our state of mind – a stressed, agitated mind is reflected in short, shallow, irregular breathing. Limiting the intake of oxygen and upsetting the gaseous oxygen/carbon dioxide balance. This further stresses the body and mind. With a regular Yoga practice, one is made aware of one's breathing.
14	A Yoga session can add to or subtract from my state of anxiety. This would depend on the sequence and type of <i>asanas</i> being used. A backbend session has an extreme effect on me. I usually do not sleep very well, if at all after a hard backbend class. At the opposite extreme, a forward bend class will remove any anxiety I may have had at the start of the class.
10	In my own personal practice I certainly feel more relaxed after a session. I remember when my children were small, advising me to go to yoga once I started getting tense! The results were even obvious to them. My husband caused much tension in my life. Yoga helped me to gain equilibrium in my daily routine. Nothing seemed too great a challenge after Yoga. Yoga has taught me to be accepting to whatever challenges lie ahead. I have also taught students that have been very anxious or stressed at the beginning of the class due to depression, bi-polar, loss of a family member etc. By the time they have completed their class: <p style="text-align: center;">Their eyes are brighter;  their skin is softer / relaxed / less frown marks;  they walk taller and sometimes even with a spring in their step;  they seem more interested and receptive to the other students interacting with them; and  there is a lightness about them.</p>

