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THE EFFECT OF A YOGIC STRESS MANAGEMENT TECHNIQUE IN A CALL CENTRE

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THE EFFECT OF
A YOGIC STRESS MANAGEMENT TECHNIQUE
IN A CALL CENTRE

Shobha Maharaj

A Research Report submitted to the Faculty of Commerce, Law and Management, University of Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Business Administration

Johannesburg, 2003

ABSTRACT

The pace of change and intense competition in business has resulted in individual well-being and organisational effectiveness being affected. A possible solution to alleviating stress amongst employees is a yogic stress-management technique, Sudarshan Kriya, which has been shown to alleviate stress at many levels.

The study evaluated the effects of Sudarshan Kriya on individual well-being and certain organisational objectives, within a call centre.

This study is a pure experimental design using pre-tests and post-tests administered to randomly selected participants.

The study showed Sudarshan Kriya was successful in reducing burnout, the number of physical symptoms of stress and rustout amongst participants. No evidence of the predicted changes in organisational objectives was found.

Although Sudarshan Kriya was successful in improving individual well-being, the predicted impact on organisational objectives were not obvious. Together with other programmes, it can be used to achieve transformation within organisations. Heightened employee well-being is reflective of organisation well-being.

DECLARATION

I, Shobha Maharaj, declare that this research report is my own, unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Shobha Maharaj
1st November, 2003

DEDICATION

In honour of my spiritual master and guide, Sri Sri Ravishankar, who has inspired me to conduct this research report.

"It is the birth right of every human being to have
a stress-free mind and a disease-free body"

Sri Sri Ravishankar

ACKNOWLEDGEMENTS

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CHAPTER ONE

1 INTRODUCTION

Hans Selye described stress as being “essentially the rate of all the wear and tear caused by life” (Selye, 1956:viii). Forty-seven years later researchers are still searching for answers to this experience of life that is a result of both good and bad events in life. This study evaluates the use of a yogic breathing technique, called Sudarshan Kriya, within the corporate environment to address work place stress.

1.1 Background to the Research

1.1.1 The pace of change and stress

Technological development together with ever-increasing globalisation has made competitive stakes higher, making the pace at which players (organisations, countries and industries) adapt to a continuously changing environment a deciding factor for survival in the global economy (Schabracq & Cooper, 2000). As a consequence employees cope with enormous change in the work place (Cooper & Robertson, 2001) resulting in employees being induced with stress (Schabracq & Cooper, 2000).

Within this context of technological change and globalisation, South Africa in it’s move from apartheid to democracy, has also experienced political, economic and social changes that have deeply influenced the life of this nation (Denton & Vloeberghs, 2003). Businesses are faced with numerous difficulties in entering the global market, for instance, fierce competition from more experienced international players as well as a “wait and see” attitude by foreign investors. Denton & Vloeberghs (2003) comment that organisations faced with huge competition expose their employees to anxiety. Negative emotions of fear, stress, denial, and anger are common. The rage and pain are understandable, as South Africans have been largely protected from international competition and change (Denton & Vloebergh, 2003). Vinassa (2003) describes South Africa as being a stressful country in which to live and work.

Given these stressful and demanding work circumstances, management have become aware that it is necessary to address stress amongst employees.

1.1.2 Organisations' approach to stress amongst employees

Berridge & Cooper (1994), in their discussion on tackling the complex issues of stressed employees, illustrate the growing role of an employee assistance programme (EAP) in keeping organisations at a high level of efficiency, quality and competitiveness. EAPs show a more socially responsible acceptance by the employer that stress experienced by employees could be related to work (Berridge & Cooper, 1994).

In response to the problem of stress and violence on the work place, the International Labour Organisation (ILO) has recently drawn up a code of practice on stress and violence in service sectors (Vaida, 2003a). Stress and violence is common amongst those working directly with people in distress that it is now being considered as part of the job. The code highlights stress that is necessary for individuals to perform work in a satisfactory manner as well as stress that is intense and repetitive to the extent that individuals experience psychological and physical illnesses. It is recommended by the ILO that governments and employers work together to prevent work place stress and violence (Vaida, 2003a)

In South Africa, many best practice companies are taking the problem of employee stress seriously, with EAPs increasingly finding a place in their human resource management strategies (Vinassa, 2003). In a recent article in a business newspaper, it has been quoted that violence at work is costing the South African economy almost R40 billion a year (Vaida, 2003b). Local work violence specialists regard this as a conservative estimate as studies have shown that both victims and witnesses lose an average of 4.5 hours per week each. Companies do not take the issue seriously enough with most denying that there is a problem (Vaida, 2003b). Denton & Vloeberghs (2003) conclude that the only long-term competitive advantage that businesses have is the ingenuity, skills and capabilities of the people they employ.

It has been seen that although efforts by business and governments to address work place stress are being made, not enough is being done to address this problem. People in an organisation are an important resource, which has the potential to become a distinguishing competitive advantage in the market place

1.1.3 People and organisational effectiveness

The business environment is becoming so intensely competitive that it is no longer acceptable to rely only on the organisation's ability to supply the market with goods or service as an offering. Entrepreneurs are being faced with the challenge of not only running a profitable organisation, but also devising a business model that will sustain itself through the most trying business cycles (Pasternack & Viscio, 1998).

In order to be a leader in the market place, the organisation needs to develop a competitive advantage over competitors in the market place. Mbigi (2000) has cited Professor Skinner of Harvard Business School as stating that studies have shown the following sources of competitive advantage:

- Knowledge of the industry gives rise to about 20% of competitive advantage;
- Technology (technical innovation) gives rise to 40% of competitive advantage, which can be copied and is therefore not sustainable;
- People and the management of them gives rise to 40% competitive advantage because people management practices are difficult to copy and transfer.

Ulrich (1998), in his discussion on organisational capabilities, concurs that in the new economy, winning will spring from organisational capabilities such as speed, responsiveness, agility, learning capacity and employee competence. Lloyd (1998) also affirms this view in his observation of a new philosophy of management emerging whereby employees are seen as key in the value-creating process.

Thompson (1967), in explaining the biological model of organisations, describes an organisation as being a natural system consisting of interdependent parts, which in turn is interdependent with a larger environment. Core to the system is self-stabilisation, which naturally governs the relationships and activities between the parts, thereby surviving disturbances from the environment (Thomas, 1967). David Nadler in his well recognised model of organisational functioning from a systems perspective further developed these ideas (Nadler, 1998). More recently, Goleman, Boyatzis & McKee (2001) mirror this analogy when they say that the mood of the organisation is affected by the mood set by the leadership and as a result financial performance is affected. Ghoshal & Bartlett (1997) write about the 'smell' of a place being refreshing when there is a context of continuous renewal. The most potent source of competitive advantage is an environment that allows people to create more value than they could elsewhere (Ghoshal & Bartlett, 1997).

Rijamampianina (1999) in his discussions about diversity management writes that people come to work from diverse backgrounds that vary according to culture, knowledge, ethnicity and demographics. They have the common need of wanting to be productive, be recognised and rewarded, be treated fairly, have job security and have a sense of belonging. In the process of interaction, explains Rijamampianina (1999), people have to develop social networks through which they are able to arrive at a common way of thinking. This is achieved through having a shared mental model, which leads to an effective organisational culture.

According to Arnold, Cooper & Robertson (1995), stress in the work place is likely to get worse as international competition increases. Much of the stress at work is caused not only by work overload and time pressures, but also by a lack of rewards and praise, and more importantly by not providing individuals with the autonomy to do their jobs as they would like. Arnold *et al* (1995) conclude their findings by suggesting that organisations should manage employees differently, treating them with respect and valuing their

contribution. This would enhance the psychological well-being and health of employees in the future.

The literature shows people in an organisation are an important resource in providing a competitive advantage that cannot be copied. The mood and context within which people are expected to operate, attention to the diversity of people and the need for a shared mental model as well as reward and recognition all contribute to the effectiveness of an organisation. Often organisations ignore these subtle threads and as a result do not embrace this unique competitive advantage.

1.1.4 A possible solution to address individual stress

It has been seen that organisations are being faced with stress and demanding circumstances, pushing their employees beyond their limits. Individuals are paying the price for working under continuously and intensely demanding working conditions. Vaida (2003a) says that individuals can no longer cope with the result that the strain of working in this manner has manifested itself in psychological and physical illnesses.

A possible solution to the management of stress within the corporate environment is a yogic stress management called Sudarshan Kriya. Sudarshan Kriya is a breathing technique taught within the structures of a training program called ‘Self Management Seminar’. This course empowers managers and employees to experience calm and focus in the midst of the any challenge or responsibility. The course is based on breathing techniques that permanently reduce stress and heighten one’s mental clarity and awareness. These simple yet powerful techniques have been shown to improve concentration, enhance creativity, increase efficiency and enable a greater sense of purpose and teamwork in the work place (www.selfmgmt.org, 2003).

Through this study the researcher aims to evaluate the use of the stress management course, Self Management Seminar involving the practice of Sudarshan Kriya, within a work place setting to alleviate stress amongst

employees. A work place setting that is service orientated with employees being exposed to the public continuously has been shown to result in higher levels of stress and exhaustion amongst the employees. It is predicted that individuals would experience reduced levels of exhaustion and improved physical well-being. The study will also measure the effect on certain organisational objectives such as absenteeism and specific performance criteria.

1.2 Introduction to the Research Topic

Globalisation and new technologies have presented business with new products and production processes that offer opportunity for expansion and growth. Businesses have found new ways of addressing the changing attitudes and needs of customers. Service-based call centres seem to be their response to the expectations and demands of their customer base (Feinberg, Hokama, Kadam & Kim, 2002 and Holdsworth & Cartwright, 2003). Although call centres are a means to increase customer satisfaction, they are stressful repetitive work environments (Feinberg *et al*, 2002), resulting in high levels of stress and turnover in the call centre industry (Holdsworth & Cartwright, 2003).

The strategy of electronic monitoring to assess employee performance conflicts with the call centre agent's (CCAs) desire to deliver quality customer service, resulting in a stressful work environment (Varca, 1999 and Holdsworth & Cartwright, 2003). Holdsworth & Cartwright (2003) have concluded in their study that working as a CCA is more stressful, less satisfying and a less psychologically and physiologically healthy occupation than that performed by the general working population. They go on to observe that the lack of empowerment also contributed negatively to job satisfaction and indirectly influenced mental and physical health. Deery, Iverson & Walsh (2002) in their study of emotional exhaustion in call centres concluded that the management of the labour process and the CCAs interaction with customers were the most relevant factors contributing to the CCAs emotional well-being and propensity to attend work.

Chung & Schneider (2002) state that the management of human resources is crucial for service organisations since the commonly defined attributes of service are intangibility, simultaneous production and delivery and customer participation in the service. Given the boundary role service employees play as service producers, information gatherers and external representatives of the organisation, managing these employees has consequences for the success of the organisation. Managed well, they contribute to organisational success by providing superior service quality, yielding improved customer loyalty and profits. Managed poorly, they suffer serious personal consequences, which can be related to many negative organisational outcomes such as poor service quality to customers and employee turnover, burnout and poor performance (Chung & Schneider, 2002). Workplace stress and violence has been found to be prevalent in the service sector as employees are in direct contact with the public (Vaida, 2003a).

The above arguments leads to the conclusion that service organisations have a fine balancing act to manage in terms of having sophisticated systems to service the customer efficiently while at the same time providing their CCAs with a relatively stress-free environment in order to achieve organisational effectiveness. As a work place setting, a customer service call centre has been shown to be an extremely stressful environment. Given the unpredictable nature of business, management is looking at innovative and creative ways of addressing these issues. Therefore Sudarshan Kriya appears to be a different was of addressing stress amongst employees.

1.3 Purpose and Rationale for the Research

The aim of the research is to explore the use of the specific breathing technique, Sudarshan Kriya, by employees in a call centre, to alleviate burnout, physical symptoms of stress and rustout. In addition, certain organisational objectives such as absenteeism and specific performance criteria will also be observed for changes.

Corporate Wellness specialists recommend that holistic approaches to mastering stress relieve the physical and psychological impact of job strain

(Vinassa, 2003). In a recent article in a leading business magazine in India, Mitra (2002) discusses the increasing trend in the corporate world in India leaning towards meditative techniques to manage stress in the workplace. These trends have led to recently coined phrases such as 'Transcendental Productivity' and the 'Spiritual Quotient' in an organisation. Corporate workers are finding meditative techniques to be mind discipline exercises designed to transform the most thought-charged minds into a form of a tranquil, focused mind for a short period. This provides a boost to the brain, de-cluttering memory, relieving stress and preparing the mind for clarity of thought later (Mitra, 2002).

Many alternative treatments are increasingly endorsed more and more by the medical profession. Yoga exercises, breathing techniques and relaxation form the basis of many of the effective treatments (U.S. News & World Report, 1991). Some stress interventions such as biofeedback, meditation and breathing techniques have been shown to calm the mind and in this way provide relief to the psychological system (Bruno, 2001). Yoga and progressive muscle relaxation is used to calm the body providing relief to the physiological system (Bruno, 2001). Social support in the form of support of friends, family and work colleagues provide interactions at a social level to address the stress we experience in our lives (Ford-Martin, 2000). These practices, it can be concluded, are focused on one of the three systems in which stress manifests itself (i.e. physiological, psychological and social systems) (Appley & Trumbull, 1986) and in this way provide some degree of stress management.

The practice of Sudarshan Kriya addresses stress at more than only the physiological system of an individual (www.artofliving.org/c-faq.html). The breath has proven to be a powerful tool to effectively regulate the mind and eliminate stresses and impurities from the body (Kochupillai, 2002). Every inhalation brings vital energy to the body and every exhalation relieves stress and eliminates toxins (www.selfmgmt.org). In this way the stresses in the physiological system are addressed. The breath is the connecting link between the mind and emotions. Every emotion creates a specific rhythm or

pattern of breath. When one is anxious, under pressure or stressed there is a deviation in the natural rhythm of the breath. This limits one's energy and mental clarity. When faced with a business or management challenge the breath becomes fast and tense with the result that creativity and decision-making abilities are impaired (www.selfmgmt.org). When contented and relaxed, the breath becomes more full and light and there is an increase in efficiency and enthusiasm. Skillful use of the breath can effortlessly transform an individual's mental and emotional state augmenting both productivity and creativity (www.artofliving.org, 2002). Thus the psychological stresses in an individual are addressed. Once the individual is able to manage their emotions and the mind in this manner, his or her interaction with others in the respective environment will improve with the result that his or her social system is also impacted by the technique. Finally, the technique is experiential and as a result is specific to an individual. It is not a generic package where some lose and others win.

From the above it can be seen the corporate world appears to be embracing the various alternative and holistic techniques to address stress. Although Sudarshan Kriya appears to be another holistic technique, it is unique in that it addresses stress on more than one aspect of an individual's life. Therefore, Sudarshan Kriya is a new age technique that has been claimed to alleviate stress within the work place.

1.4 Structure of the rest of the report

The next chapter will look at the literature supporting the definition of stress relevant to the study together with the context of stress in the work place. Other topics addressed are aspects of stress being observed in the study together with organisations' approach to stress by using interventions. Finally, Sudarshan Kriya used within various contexts is shown to alleviate stress amongst individuals. This will lead onto chapter three which presents the hypotheses for the study. The different aspects of stress and organisational objectives being observed are stated together with the predicted direction of change for each.

Chapter four outlines the research methodology used to meet the research objectives. The population, sample used, sample method, data collection methods, procedures followed as well as data analyses will be discussed.

Following this, chapter five shows the results of the study in order of the hypotheses stated. Included in this chapter is a description of the sample and descriptive statistics on the dependant variables in the study. Additional analyses showing results from additional questionnaires, the sharing session in the intervention as well as details for attendance of the sessions will be presented. The chapter concludes with a summary of the findings for the study.

A discussion of the results of the study as well as the implications for the study and the supporting theoretical base is done in chapter six. Further qualitative results are placed within context of the quantitative findings.

The report concludes with chapter seven presenting the conclusions of the study, limitations, recommendations and suggestions for future research in the light of the original research objectives.

CHAPTER TWO

2 LITERATURE REVIEW

In this chapter, the literature reviewed will arrive at a definition and concept of stress that is relevant to the current study. Thereafter, work in a call centre is shown to be stressful, with specific reference to burnout and rustout. Finally stress interventions used by organisations to address stress amongst employees is discussed. The chapter concludes with a discussion on Sudarshan Kriya and how the practice of this technique alleviates stress at more than one level.

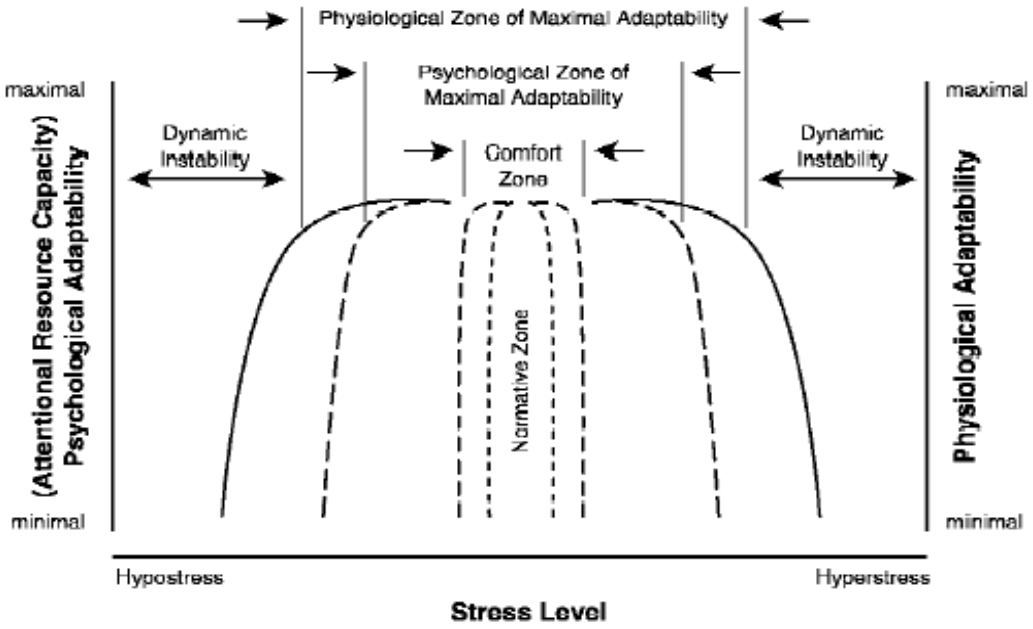
2.1 Definition and Conceptualisation of stress

Benson & Allen (1980) say that stress is difficult to define and even more difficult to quantify. They believe that stress results from environmental situations that require behavioural adjustment, ranging from petty daily annoyances to such events as significant illness, death of a close one and divorce. Ford-Martin (2000) describes stress in humans as the results of interactions perceived as straining or exceeding their adaptive capacities and threatening their well-being. Bruno (2001) describes stress as the body's normal response to anything that disturbs its natural physical, emotional or mental balance. Within an occupational context, the British Health and Safety Executive a governmental body that addresses health and safety issues, defines stress as "a reaction people have to excessive demands or pressures, arising when people try to cope with tasks, responsibilities or other types of pressure connected with their jobs, but find difficulty, strain or worry in doing so" (Pilkington, Mulholland, Cowie, Graham & Hutchinson, 2001:iii). These responses to stress include endocrinal, psychological and physical reactivity to demands which, if repeated frequently enough or is intense enough, upset the natural balance of the body (Sharpely, Reynolds, Acosta & Dua, 1996).

Stress has been shown to have physiological and psychological effects with the result that individuals respond to demands made upon them (National Academy of Sciences, 1997). Individuals have a range of adaptability, beyond which performance is compromised. Combined physical and mental demands

have an effect on stress levels. In figure one, starting from the centre individuals operate at optimal levels of stress where they are said to produce their best performance. As stress increases through the increase (hyperstress) or decrease (hypostress) of appropriate stimulation, individuals are required to use greater resources to overcome such demanding circumstances. This reduces the resources available to the individual for explicit task performance with the result that efficiency is reduced accordingly. The demands of the task itself may also result in these resources being depleted (National Academy of Sciences, 1997).

Figure 1: A model for the prediction of stress effects



Source: National Academy of Sciences (1997:131)

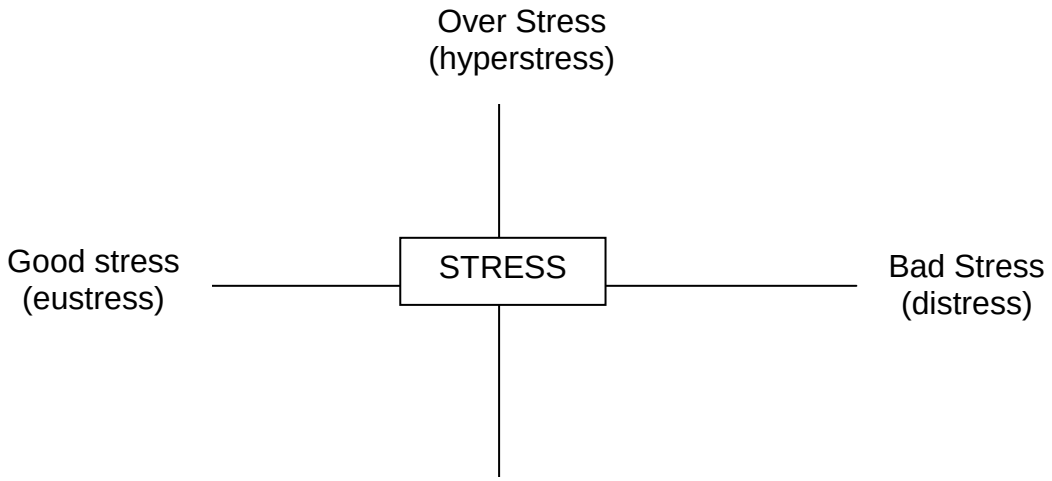
According to Selye (1983), in dealing with stress the individual must be able to

- Remove unnecessary stressors from his or her life;
- Not allow neutral events to become stressors in his or her life;
- Develop a proficiency in dealing with conditions that he or she does not want or cannot avoid;
- Seek relaxation or diversion from the demand.

In addition, the individual must learn to recognise ‘overstress’ (hyperstress), when he or she has exceeded the limits of his or her adaptability or

'understress' (hypostress), when he or she suffers from a lack of self-realisation (physical immobility, boredom and sensory deprivation). Selye (1983) further comments the stress of life has four basic variations (see figure two) of eustress, distress, hypostress and hyperstress. The goal should be to strike a balance between the equally destructive forces of hyperstress and hypostress, to find as much eustress as possible and to minimise distress. In order to achieve purpose in life, an individual must often confront unpleasant experiences, at least for some time. Walking away from unpleasantness may prove to be more distressing in the long run as the individual is deprived of ultimate success. Unnecessary distress must be avoided (Selye, 1983).

Figure 2: Selye's Model of stress



Source: Selye (1983:13)

In support of Seyle's initial thoughts on stress, Bruno (2001) says that everyone experiences stress on a daily basis and is neither good nor bad. It is neutral and non-specific and does not necessarily result from something unpleasant. Bruno (2001) goes on to say that a certain amount of stress is necessary to meet the challenges of daily life, but acute and constant exposure to stress can lead to dangerous consequences for an individual. The degree of stress experienced is relative to the intensity of the perceived demand for readjustment or adaptation (Quick, Nelson & Quick, 1990). Further support to Seyle's thinking on stress is echoed by Quick *et al* (1990) who emphasise that stressful events can lead to two outcomes,

namely individual strain and distress and individual well-being and eustress. Eustress is the healthy, positive, constructive outcome of the stress response. It includes well-being associated with growth, flexibility, adaptability and high performance levels. On the other hand, distress is unhealthy, negative, destructive outcome of the stress response (Quick *et al*, 1990).

Stress has been defined as a stimulus, a response or the result of an interaction between the stimulus and the response. This interaction is described as an imbalance between the person and the environment (Buunk, de Jonge, Ybema & Wolff, 1998 and Cooper, Dewe & O'Driscoll, 2001). More recently researchers' focus has shifted to integrate stimulus and response definitions and acknowledge the dynamic linkages between all the elements of the stress process (Cooper *et al*, 2001). Lazarus (1995) looks at stress as being relational to the result of a transaction between the individual and the environment. The focus is on the cognitive, evaluative and motivational processes (Buunk *et al*, 1998) that link the individual to the environment (Cooper *et al*, 2001).

Cooper *et al* (2001) discuss that both the response-based and stimulus-based approach to stress are flawed as they explore only various components of stress and do not address the stress process itself. Further, they ignore the individual differences in responding to a stressor. Lazarus (1995) says that only identifying environmental and personality variables are not serviceable when dealing with individuals and groups suffering from excessive stress and dysfunction. The interactional approach to stress looks at the relationship between a stimulus and a response in explaining the stress process. It is, however, limited in that it also establishes cause and effect but ignores the influence of other moderator variables (Cooper *et al*, 2001).

In the transactional approach Lazarus (1995) examines stress as a unique process between a person and the environment. Stress occurs when the environment is evaluated as either harmful, threatening or challenging through a process of environmental appraisal and individual coping. Each appraisal is based on the integration of individual's personal agenda and the subjective

realities of the situation. Coping strategies are selected via the amount of individual control one has over a particular situation. Coping and appraisal transform the relationship between the person/environment fit and the emotional response (Harris, 1995).

Cooper *et al* (2001) conceptualise the transactional model of stress as consisting of stressors, strain and outcomes. The terminology refers to stress as the overall transactional process; a stressor as the events or properties of events or stimuli that are encountered by individuals; strains as the individual's psychological, physical and behavioural responses to stressors and outcomes as the consequences of strain at both the individual and the organisational level. Therefore, stress is used to denote the overall process incorporating stressors, strains and coping responses (Cooper *et al*, 2001).

Hendrix, Summers, Leap & Steel (1995) in their stress-related health model (see Appendix 1) show that intra-organisational variables (job boredom, role conflict, supervision, job enhancement, quantitative workload and task significance), extra-organisational variables (family-spouse relationships, financial problems and life events) and individual characteristics are independent variables that impact on intervening variables such as job stress, life stress, emotional exhaustion, organisational commitment, somatic symptoms and cold/flu episodes. These intervening variables in turn influence organisational outcomes such as performance and absenteeism. It has been shown that these intra-organisational variables together with an individual's tolerance for change and life stress contribute towards job stress. Hendrix *et al* (1995) discuss in their findings that factors that increase emotional exhaustion are job stress and quantitative workload, while supervision as well as job satisfaction reduce emotional exhaustion. It was also shown that increased job stress leads to decreased job satisfaction resulting in the alleviating effects of this variable on emotional exhaustion being reduced. Life stress, emotional exhaustion and the individual characteristic of jogging contributed towards somatic symptoms while emotional exhaustion and the individual characteristic of age contributed towards cold/flu episodes. The organisational outcome of performance was enhanced by the high

significance of tasks performed while emotional exhaustion reduced performance. Life events, cold/flu episodes and somatic symptoms increased absenteeism while strong organisational commitment reduced absenteeism.

Hendrix *et al* (1995), also show that job stress is mainly affected by intra-organisational variables while life stress was affected by extra organisational variables. Major variables affecting job stress (stressors) were job boredom, job enhancement and quantitative workload. Life stress was affected primarily by family-spouse relationships and, to a lesser extent, by financial problems. Cartwright & Cooper (1997), identify primary workplace stressors as being factors intrinsic to the job itself. Gignac & Appelbaum (1997) describe these as task demands, workload and job security; roles in the organisation; relationships at work; career development issues; organisational factors (climate, structure, culture and political environment); home-work interface. Gignac & Appelbaum (1997), in addition, identify participation in decision-making, locus of control and utilisation of employee skills as stressors.

Strains or stress responses have taken various forms but can be discussed under three major categories of strains namely, physiological, psychological and behavioural responses to stressors (Cooper *et al*, 2001). A unique variety of strain experienced as a result of the dynamic transactions between individuals and their environments is known as burnout (Cooper *et al*, 2001).

Occupational stress poses a hazard to employee health and well-being and also costs businesses. These costs appear as lost productivity related to staff turnover, absenteeism, lowered performance (Pines, 1982 and Clarke & Cooper, 2000). Further, hidden costs such as the cost of training replacement staff, the burden placed on employees that are present at work as well as under-performing staff have also been identified as costs businesses (Clarke & Cooper, 2000). Further, economies are robbed of working days, while companies in coping with this problem are faced with increased costs related to security measures, health care and long-term rehabilitation. These behaviours also impair the efficiency of work places (Vaida, 2003a).

The literature shows that stress has a stressor-strain-outcomes relationship that is increasingly being observed as a transaction between the individual and his or her environment. Various stressors at the workplace serve as stimuli to individuals to cope in response. The results of such responses may have an impact on organisational outcomes such as absenteeism, turnover and performance. In responding to these stressors, individuals experience various strains such as burnout, physical symptoms and behavioural effects. It appears appropriate that a stress management technique such as Sudarshan Kriya would be effective in alleviating stress in the work place.

2.2 Work at call centres

Telephone call centres, as a work place setting, have been described as 'electronic sweatshops' (Cartwright, 2003 and Holman, 2003), 'electronic panopticon' and 'dark satanic mills of the twenty first century', creating the perception that work in call centres is boring, monotonous, demanding and stressful (Holman, 2003). Call centre work can be viewed as CCAs having high levels of sustained interpersonal interaction with customers, which can lead to burnout and employee withdrawal (Deery *et al*, 2002).

In a study conducted by Holman (2003), the use of electronic performance monitoring systems was found to contribute to anxiety, depression and emotional exhaustion when it was perceived as being too intense. CCAs are measured on the time taken to resolve customer queries, the methods used to resolve queries as well as how they speak to customers (Holman, 2002). Often organisations script the conversations CCAs should be having with customers, creating role conflict. The CCA has to speak the language prescribed by management, as opposed to expressing his/her feelings experienced, resulting in emotional dissonance (i.e. the discrepancy between what they expressed and felt on any particular occasion), which has negative consequences for employees such as emotional exhaustion and lower job satisfaction (Abraham, 1998 and Holman, 2003). In their study of emotional exhaustion in call centres, Deery *et al* (2002) found that factors that contributed to emotional exhaustion were abuse from customers, having to adhere to scripted conversation rules and the performance of emotional

labour, management focus on the number of calls taken as opposed to the quality of calls, pressure by management to minimise wrap-up time, an emphasis on speed and customer throughput, repetitive tasks together with excessive workload and the pressure to work, limited career opportunities, lack of social support from supervisors, individuals lack of positive disposition and their perceptions of their good health and finally job tenure contributed towards emotional exhaustion.

Working as a CCA is stressful given the demands of the job. Various studies show that the combined effect of the manner in which CCAs are managed and monitored, continuous interaction with the customer, factors related to the job itself and certain individual characteristics cause CCAs to experience emotional exhaustion. Emotional exhaustion has been identified as one of the elements of burnout (Pines, Aronson & Kafry, 1981; Maslach, 1982 and Paine, 1982). On the other hand, depending on the nature of work at the call centre, some CCAs may also experience their jobs to be boring and monotonous. When an employee's potential is underused the result is that performance is mediocre (McGarvey, 2002). This is considered to be rustout, which is said to be the opposite of burnout (Leider & Buchholz, 2003).

2.3 Burnout

Burnout appears to be a transactional process (Cherniss, 1980) consisting of three stages of (1) an imbalance between resources and demand (stress) (2) the immediate short-term emotional response to this imbalance characterised by feelings of anxiety, tension, fatigue and exhaustion and lastly (3) changes in attitude and behaviour such as treating clients in a detached manner. Burnout is a transactional process of job stress, worker strain and psychological accommodation. Burnout is a process in which a service provider psychologically disengages from work in response to job-related stress (Cherniss, 1980).

Maslach (1982) defines burnout as a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment that can occur amongst individuals who work with people. Pines *et al* (1981) describe

burnout as states of physical, emotional and mental exhaustion characterised physical depletion, feelings of helplessness and hopelessness, emotional drain, and the development of negative self-concept and negative attitudes towards work, life and other people. Common aspects of burnout include physical, emotional, spiritual, intellectual and interpersonal exhaustion (Paine, 1982).

Maslach (1982) says burnout is a response to the chronic emotional strain of dealing extensively with other human beings, particularly when they are troubled or having problems. Burnout is the result of constant and repeated emotional pressure associated with an intense involvement with people over long periods of time (Pines *et al*, 1981). It is a type of job stress that arises from social interaction between the helper and the recipient (Maslach, 1982).

Burnout affects clients and the organisational effectiveness of businesses, as well as the burned-out worker (Cherniss, 1980 and Pines *et al*, 1981). It leads to loss of concern for clients, loss of positive regard for co-workers and the company and emotional withdrawal from work (Cherniss, 1980). Burnout appears to be a major contributing factor in low morale, absenteeism, tardiness and high job turnover (Pines *et al*, 1981).

Burnout has been identified as a special strain of job stress. It is common amongst individuals who deal with people repeatedly and continuously. It results in the service provider becoming exhausted in many respects leading to serious and costly implications for the individual's well-being as well as organisational effectiveness.

2.4 Rustout

Leider & Buchholz (2003) describe rustout as occurring when an individual's life deteriorates through the disuse of his or her potential. Just as rust can eventually weaken and destroy the strongest of structures, so too rustout can lead to the destruction of even the strongest and most secure human beings. Rustout is the opposite of burnout: burnout is overdoing while rustout is 'underbeing' (Leider & Buchholz, 2003). Esmond (2002) describes rustout as

‘understress’, where an individual experiences situations of under stimulation having a negative effect, resulting in boredom, fatigue and dissatisfaction. Esmond (2002) associates rustout with Hans Selye’s model of stress, where understress is also referred to as hypostress. McGarvey (1997) says that rustout is a slow erosion of effectiveness and commitment that takes place over time.

On a practical note McGarvey (1997) says that the signs of rustout are when an employee no longer contributes beyond the minimum or when an employee once a regular source of good suggestions no longer speaks up. The same applies to the employee who used to volunteer for extra duties and was prepared to work during emergencies but has withdrawn from the action. From a theoretical perspective, McGarvey (1997) describes the signs of rustout as disengagement, disorientation, dis-identification and disenchantment:

- the disengaged employee has quit but stays on the payroll;
- the disidentified employee feels he or she used to be somebody but not anymore;
- the disoriented employee no longer knows where he fits in, that’s not uncommon when employee duties are realigned and reorganised;
- the disenchanted worker doesn’t feel valued. He doesn’t feel his talents are recognised.

McGarvey (1997) goes onto to say that one of the main causes for rustout is the inability to cope with the pace of change in technology and global competition in our society. Business is operating at a furious pace to stay ahead of the competition, leaving some employees frazzled. Some people find that they have fallen behind and find it impossible to catch up. This results in them having a “why bother?” attitude. This has left them with a lost sense of purpose and a lack of understanding as to how they fit into the business as a whole, which has resulted in a drop in enthusiasm and commitment. The pace of change is unlikely to change or slow down, making rustout a critical problem to be addressed (McGarvey, 1997).

A major dilemma many managers are facing is the difficulty to recognise the problems associated with over stimulation (burnout) because they also see the effects of under stimulation (rustout). The solution of one seems to be the very source of the problem for the other (Folkman, 1992). Leider & Buchholz (2003) say that the situation is chronic with more people being stale than they care to admit. The impact is twofold with organisations facing decreased productivity together with a reduced ability to meet challenges. The individual also experiences feelings of depression and an unwillingness to contribute. Rustout in organisations often follows significant change (Leider & Buchholz, 2003).

Rustout appears to be a term that has appeared recently in literature. Management is faced with the complex situation of managing the effects of both rustout and burnout. What may work for the one problem may also aggravate the other. This yet again emphasises the necessity for management to be aware and sensitive to complex human factors in the work place. This is a crucial element that could provide the competitive advantage that cannot be copied easily.

2.5 Stress interventions used to manage stress.

Varca (1999) says that most managers would agree that providing a good work environment is part of the social contract between employers and employees. Skilled workers will make an effort to serve customers well if their perceptions of the work environment are positive (Varca, 1999). Hendrix *et al* (1995) concluded that healthy organisations contained healthy employees. A positive work environment leaves employees less stressed resulting in more committed employees and lower absenteeism. The causal paths show that health and wellness programs, management development programs and organisational and job design efforts can be introduced in organisations as interventions which would impact targeted intervening variables and enhance both individual well-being and organisational effectiveness (Hendrix *et al,* 1995).

Stress interventions focus on the individual, the organisation or the individual and / or the organisational interface. There are three levels of intervention, being primary level where sources of organisational stress are reduced; secondary level stress management where training is the focus; tertiary level where health promotion and workplace counselling are the focus with the aim to modify behavioural risk factors that lead to disease and poor health. Most workplace initiatives operate at the secondary and tertiary levels, which are employee-directed as opposed to being organisational-directed. The focus is on changing behaviour of the individuals and improving their lifestyles and / or stress management (Arnold *et al*, 1995).

Berridge & Cooper (1994) in their discussions on EAPs define it as a programmatic intervention at the workplace aimed at the individual, using behavioural science knowledge and methods to identify and control work- and non-work related problems, which adversely affect job performance. The objective of the EAP is to enable the individual to return to fully contributing to work and obtaining a fully functional personal life. The EAP is intended to tackle stress in organisations in the widest sense and not only focus on job-related stress.

Although organisations have been shown to be at the root of the negative effects of stress, it appears that some proactive organisations are addressing this complex problem at various levels. The ideal solution would be to address stress at the source in the various organisational issues that are stress inducing. However, this is costly and time consuming. Often these organisational changes in order to address stressful work environments result in employees becoming mentally exhausted from such activities. This exhaustion amongst the employees still needs to be addressed even though organisational issues have been addressed.

2.6 Sudarshan Kriya and the management of stress

Sudarshan Kriya, a rhythmic breathing technique, is not a pure mediation technique. Some have defined Sudarshan Kriya as a state of relaxation while

others have defined it as a state of consciousness. It is practiced as a brief and practical self-help stress management strategy (Bhatia, 2002).

In a study conducted by Chopra (2002) to assess the impact of Sudarshan Kriya practices on the somatic symptoms of women facing marital disharmony, initial data had shown the participants suffering from pain related to somatic symptoms such as tiredness / lethargy. The results of the study reported improvements in their conditions after undergoing Sudarshan Kriya for the first time (Chopra, 2002).

Nanjundaiah (2002) observed that available effective treatments for depression have certain limitations. As a result, researchers are pursuing the role of alternative techniques in treating depression. Clinical trials of Sudarshan Kriya practices were conducted with participants suffering from depression. Results indicate that these practices have significant antidepressant effects which compare favourably with other established antidepressant medication (Nanjundaiah, 2002).

Sageman (2002) in her study of how Sudarshan Kriya can treat the cognitive, psychodynamic and neuro-psychiatric problems of post traumatic stress disorder on people affected by the September 11 attacks, states that Sudarshan Kriya provides a corrective emotional experience for healing cognitive distortions and deep emotional wounds resulting from trauma. These include feeling worthless, helpless, unwanted and unwelcome, expecting to be neglected, abused, rejected or exploited by others. The personal interview the facilitator has with each participant communicates ‘I care about you, you are important, you are welcome, your feelings and needs will be responded to and you are safe’. Sageman (2002) goes on to discuss that Sudarshan Kriya treats problems of feeling alone, abandoned and cast out by society enabling participants to rebuild a sense of caring, tolerant, interdependent community in which they are valued and accepted. This is conveyed through group exercises such as chanting together, gazing in each other’s eyes and telling each other ‘I belong to you’. Group education of the most basic values of tolerance, acceptance, social responsibility, including teaching that opposite

values are complimentary and the high value placed on service to others and sharing, together all strengthen the sense of community (Sageman, 2002).

The practice of Sudarshan Kriya has been shown to address somatic symptoms experienced by individuals as well as psychological conditions such as depression, and post traumatic stress disorder. The literature has shown the work environment can be stress inducing, resulting in individuals experiencing physical, mental and emotional exhaustion. Particularly in a call centre, it has been shown that the nature of work can be emotionally draining resulting in the high levels of stress, absenteeism and staff turnover. Therefore, the researcher is interested in studying Sudarshan Kriya as an intervention in a call centre to alleviate various components of burnout, especially emotional exhaustion and improve the physical well-being of individuals. Identified organisational outcomes such as absenteeism and certain performance criteria will also be evaluated.

CHAPTER THREE

3 HYPOTHESES

From the literature reviewed it is clear that stress in the workplace is a common occurrence. Employees are not able to recognize stressors and strains that result in both psychological and physical imbalances within an individual. Work in call centres has been shown to be extremely stressful with the result that CCAs have been shown to be at the risk of experiencing high levels of emotional exhaustion. It has also been seen that emotional exhaustion and other contributing factors related to organisational and job design cause CCAs to withdraw from their work environment voluntarily. The performance of CCAs has also been hampered due to the stressful environment in which they work as well as by certain control mechanisms adopted by management. Some creative management teams have been exploring the use of alternative therapies to address stress in the work place. Sudarshan Kriya is a yogic breathing technique, which has been shown to alleviate stress at multiple levels.

Therefore, through the current study, the researcher aimed to show that the practice of Sudarshan Kriya resulted in a reduction in levels of burnout, the physical symptoms of stress and rustout. In addition, organisational objectives such as absenteeism and certain performance criteria were observed for changes in these variables.

The dependent variables identified for the research were observed over a time period ranging from before the intervention was conducted until after the intervention was completed. Pre-test scores refer to responses to questionnaires and other organisational data before the intervention was conducted. This period is referred to as time one. Post-test scores refer to responses to questionnaires and other organisational data after the intervention was conducted. This period is referred to as time two and takes place four weeks after the intervention was conducted. Through the use of the pre-test and post-test data collected combined with relevant statistical analyses, the researcher aims to show possible relationships between the

practice of Sudarshan Kriya and improvements in both individual well-being and organisational objectives identified.

Relevant hypotheses formulated to test these predicted relationships are presented in this chapter. Christensen (1985) says that the null hypothesis represents a statement of no relationship amongst the variables being observed. The alternate hypothesis represents the predicted relationship among the variables being observed. The null hypothesis is tested as it states the exact direction of change and type of influence being predicted in the study. The aim would be to reject the null hypothesis and indirectly find support for the alternate hypothesis (Christensen, 1985).

3.1 Hypothesis One: Effects of the Intervention on Burnout

The practice of Sudarshan Kriya resulted in a statistically significant difference in the levels of burnout in the experimental group while the control group showed no statistically significant difference in levels of burnout for the same time period.

For the experimental group, a statistically significant decrease in Emotional Exhaustion and Depersonalisation and a statistically significant increase in Personal Accomplishment would reflect that the intervention was successful in producing a change in the levels of burnout.

For the control group statistically significant differences in the elements of burnout may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

The null hypotheses are

1.a) the experimental group showed no statistically significant decrease in Emotional Exhaustion between the pre-test and post-test scores;

1.b) the experimental group showed no statistically significant increase in Personal Accomplishment between the pre-test and post-test scores;

1.c) the experimental group showed no statistically significant decrease in Depersonalisation between the pre-test and post-test scores;

1.d) the control group showed a statistically significant difference in Emotional Exhaustion between the pre-test and post-test scores;

1.e) the control group showed a statistically significant difference in Personal Accomplishment between the pre-test and post-test scores;

1.f) the control group showed a statistically significant difference in Depersonalisation between the pre-test and post-test scores.

3.2 Hypothesis Two: Effects of the Intervention on the Physical Symptoms of Stress

The practice of Sudarshan Kriya resulted in a statistically significant difference in the levels of physical symptoms of stress in the experimental group while the control group showed no statistically significant difference in the levels of physical symptoms of stress for the same time period.

For the experimental group, a statistically significant increase in the number of 'no' responses and a statistically significant decrease in the number of 'yes' responses would reflect the intervention was successful in producing a change in the levels of the physical symptoms of stress.

For the control group statistically significant differences in the levels of the physical symptoms of stress may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

The null hypotheses are

2.a) the experimental group showed no statistically significant increase in the number of 'no' responses to the physical symptoms of stress between the pre-test and post-test scores;

2.b) the experimental group showed no statistically significant decrease in the number of 'yes' responses to the physical symptoms of stress between the pre-test and post-test scores;

2.c) the control group showed a statistically significant difference in the number of ‘no’ responses to the physical symptoms of stress between the pre-test and post-test scores;

2.d) the control group showed a statistically significant difference in the number of ‘yes’ responses to the physical symptoms of stress between the pre-test and post-test scores.

3.3 Hypothesis Three: Effects of the Intervention on Rustout

The practice of Sudarshan Kriya resulted in a statistically significant decrease in the levels of rustout in the experimental group while the control group showed no statistically significant difference in the levels rustout for the same time period.

For the experimental group, a statistically significant decrease in the levels of rustout would reflect the intervention was successful in producing a change in the levels of rustout.

For the control group statistically significant differences in the levels of rustout may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

The null hypotheses are

4.a) the experimental group showed no statistically significant decrease in the levels of rustout between the pre-test and post-test scores;

4.b) the control group showed a statistically significant difference in the levels of rustout between the pre-test and post-test scores.

3.4 Hypothesis Four: Effects of the Intervention on Absenteeism

The practice of Sudarshan Kriya resulted in a statistically significant decrease in absenteeism in the experimental group while the control group showed no statistically significant difference in absenteeism for the same time period.

For the experimental group, a statistically significant decrease in absenteeism would reflect the intervention was successful in producing a change in absenteeism.

For the control group statistically significant differences in absenteeism may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

The null hypotheses are

4.a) the experimental group showed no statistically significant decrease in absenteeism between the pre-test and post-test scores;

4.b) the control group showed a statistically significant difference in absenteeism between the pre-test and post-test scores.

3.5 Hypothesis Five: Effects of the Intervention on Adherence to Scripting

The practice of Sudarshan Kriya resulted in a statistically significant increase in all the categories for Adherence to Scripting in the experimental group while the control group showed no statistically significant difference in all the categories for Adherence to Scripting for the same time period.

For the experimental group, a statistically significant increase in all the categories for Adherence to Scripting would reflect the intervention was successful in producing a change in Adherence to Scripting.

For the control group s statistically significant difference for all the categories of Adherence to Scripting may possibly be attributed to the Hawthorne Effect.

The null hypotheses are

5.a) the experimental group showed no statistically significant increase in the Adherence to Scripting category ‘Fast’ between the pre-test and post-test scores;

5.b) the experimental group showed no statistically significant increase in the Adherence to Scripting category ‘Accurate’ between the pre-test and post-test scores;

5.c) the experimental group showed no statistically significant increase in the Adherence to Scripting category ‘Courteous’ between the pre-test and post-test scores;

5.d) the experimental group showed no statistically significant increase in the Adherence to Scripting category ‘Timely’ between the pre-test and post-test scores;

5.e) the experimental group showed no statistically significant increase in the Adherence to Scripting category ‘Selling’ between the pre-test and post-test scores;

5.f) the experimental group showed no statistically significant increase in the Adherence to Scripting category ‘Average’ between the pre-test and post-test scores;

5.g) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Fast’ between the pre-test and post-test scores;

5.h) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Accurate’ between the pre-test and post-test scores;

5.i) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Courteous’ between the pre-test and post-test scores;

5.j) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Timely’ between the pre-test and post-test scores;

5.k) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Selling’ between the pre-test and post-test scores;

5.l) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Average’ between the pre-test and post-test scores.

3.6 Hypothesis Six: Effects of the Intervention on Electronic Performance Monitoring

The practice of Sudarshan Kriya by the experimental group resulted in a statistically significant increase in all categories of Electronic Performance Monitoring, except for Unavailable Time for which a decrease is predicted .For the same time period, the control group showed no statistically significant difference in all the categories for Electronic Performance Monitoring.

For the experimental group, a statistically significant increase in all categories for Electronic Performance Monitoring, except for Unavailable Time for which a decrease is predicted, would reflect the intervention was successful in producing a change in Electronic Performance Monitoring.

For the control group statistically significant differences in Electronic Performance Monitoring may possibly be attributed to the Hawthorne Effect.

The null hypotheses for Electronic Performance Monitoring are

6.a) the experimental group showed no statistically significant increase in the Electronic Performance Monitoring category Contact Time between the pre-test and post-test scores;

6.b) the experimental group showed no statistically significant decrease in the Electronic Performance Monitoring category Unavailable Time between the pre-test and post-test scores;

6.c) the experimental group showed no statistically significant increase in the Electronic Performance Monitoring category AWT% between the pre-test and post-test scores;

6.d) the experimental group showed no statistically significant increase in the Electronic Performance Monitoring category Compliance% between the pre-test and post-test scores.;

6.e) the control group showed a statistically significant difference in the Electronic Performance Monitoring category Contact Time between the pre-test and post-test scores;

6.f) the control group showed a statistically significant difference in the Electronic Performance Monitoring category Unavailable Time between the pre-test and post-test scores;

6.g) the control group showed a statistically significant difference in the Electronic Performance Monitoring category AWT% between the pre-test and post-test scores;

6.h) the control group showed a statistically significant difference in the Electronic Performance Monitoring category Compliance% between the pre-test and post-test scores.

CHAPTER FOUR

4 RESEARCH METHODOLOGY

4.1 Experimental Design

Lewis-Beck (1993) says that an experimental design used to conduct a study is considered to be more powerful than non-experimental designs in uncovering causal relationships amongst variables. Experimental studies that involve direct manipulation are more frequently conclusive because they involve principles of control, randomisation and comparison. In the perfect experimental design, independent variables are manipulated, subjects are randomly assigned and all other variables are held constant (Lewis-Beck, 1993).

McGuigan (1990) outlines the phases of experimental design as being:

- formulate a solvable problem, which can be addressed with available tools;
- develop a hypothesis as a tentative solution to the problem;
- test the hypothesis by collecting data, organising them with statistical methods and conclude whether the data supports or refutes the hypothesis;
- generalise the hypothesis if it has been confirmed;
- explain the findings by appropriately relating them to a more general hypothesis or theory;
- predict to a new situation on the basis of the generalised hypothesis.

In applying the experimental design, the following steps need to be conducted:

- select a sample of participants from the population of the study;
- randomly assign them to groups;
- randomly assign the groups to conditions
    1. the experimental group serves under the experimental condition
    2. the control group serves under a normal condition;

- define the independent variable – this would be an aspect of the environment that is systematically varied such that a normal condition is assigned to the control group and the experimental condition is assigned to the experimental group;
- define the dependent variable – as aspect of behaviour that is the criteria of whether the independent variable is effective;
- control relevant extraneous variables, which may operate freely to influence the dependent variable. If these are not controlled an accurate assessment of the effect of the independent variable cannot be carried out;
- conduct statistical tests to determine whether the two groups reliably differ on measures of the dependent variable in order to confirm or disconfirm the hypothesis;
- generate and explain the hypothesis, if confirmed;
- predict to new situations, perhaps through replication of the study (McGuigan, 1990).

The purpose of this pure experimental study was to assess the impact that the stress management course involving Sudarshan Kriya has on individuals working in a customer services call centre. The statistical tests will focus on the direction of change and the amount of this change after the introduction of the intervention, with regards to specific performance criteria, absenteeism in the work place, the reduction of burnout and rustout as well as improved physical well-being experienced by the participants in the study.

4.1.1. Variables in the study

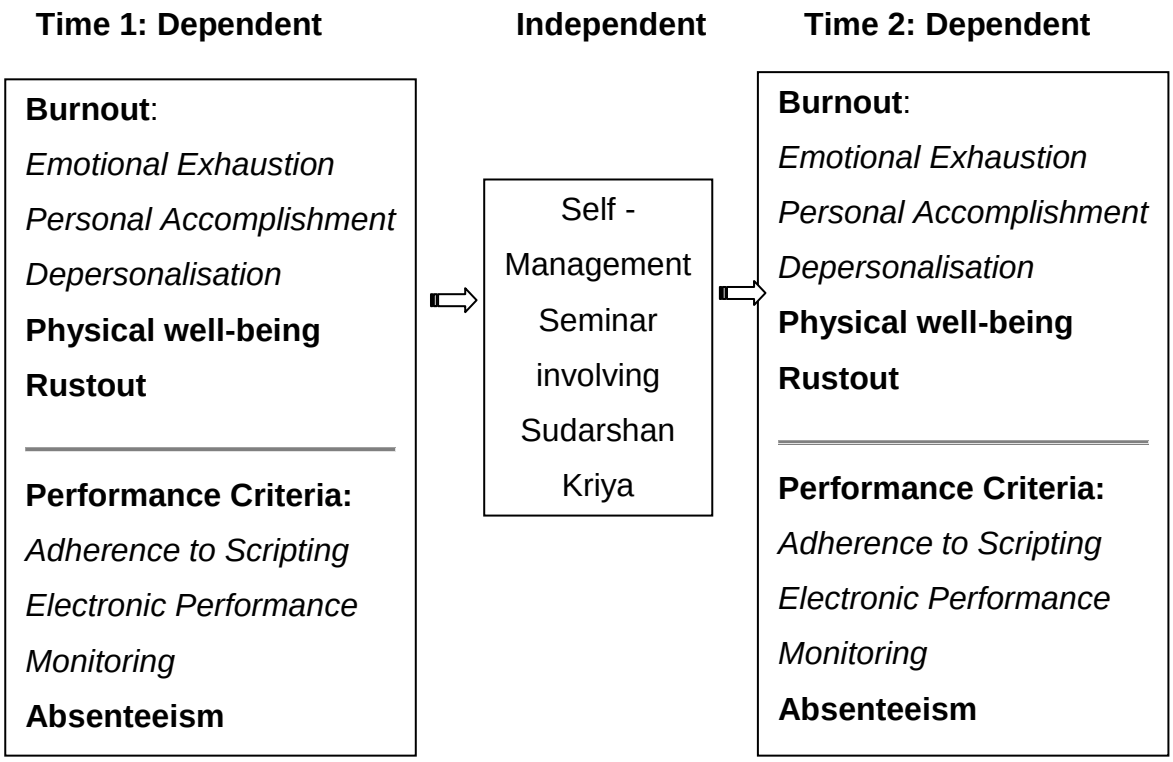
A set of variables are identified and decisions are made as to which ones to manipulate and which ones to hold constant. The effects of the independent variable on the dependent variables are determined (Lewis-Beck, 1993).

Dependent and Independent variables

In figure three, the design of the study is shown in terms of the dependent and independent variables identified for the study. The independent variable is defined as the intervention, the Self Management Seminar involving the

practice of Sudarshan Kriya, being used in the experiment to lead to a change in the dependent variables. Throughout this report the intervention is referred to as Sudarshan Kriya. The dependent variables are defined as those variables presumed to be influenced by the independent variable, namely elements of burnout, rustout, physical well-being, absenteeism, and the performance criteria of Adherence to Scripting and Electronic Performance Monitoring. The outcomes of the experiment are measured in terms of the direction of the observed change in the dependent variables.

Figure 3: Dependent and Independent Variables in the Study



The dependent variable of emotional exhaustion and other aspects of burnout such as depersonalisation and personal accomplishment were measured using the Maslach Burnout Inventory (Maslach & Jackson, 1981). The physical symptoms of stress were measured using Physical Symptoms Inventory developed by Spector & Jex (1998). Rustout was measured using an inventory developed by the researcher, referred to in the study as the Rustout Inventory. Organisational variables such as certain performance criteria and absenteeism were measured using records from the organisation.

Controlling Extraneous Variables

Inadequate control of intervening variables has been identified as a problem in previous research. Broome (1995) discusses the effects that are not specific to a particular intervention being tested. These have been identified as being:

- expectancy of benefit and credibility of the treatment. The researcher addressed this issue by not mentioning the benefits of Sudarshan Kriya to the participants when they were informed about the study;
- self-selection and motivation to obtain relief from stress. The participants on the study were assigned to the intervention randomly. Hence there is no element of self-selection in the decision to participate in the study;
- intention to relax;
- type of instructions;
- quality of relationships with the course facilitator.

The last three effects highlighted by Broome (1995) are unavoidable. It is only natural that participants become more relaxed during the intervention. The type of instructions and the manner in which it was communicated to the participants definitely contributed to the feeling of being relaxed, as participants would not want to learn stress management techniques from a course facilitator who is highly strung and anxious looking. A post-test was administered approximately one month after the intervention, diluting the above effects to an extent.

When extraneous variables that may influence the dependent variables are not controlled, the study may result in being confounded. Confounding occurs when the extraneous variables might differentially affect the dependent variables of the two groups in the study. Controlling can be achieved by means of elimination, constancy of conditions, randomisation, balancing in having a two-group design and counter balancing (McGuigan, 1990). The extraneous variables that may influence burnout, rustout, the physical symptoms of stress, absenteeism and performance are too many and unpredictable. A generic approach to control was adopted by way of building

into the design of the study randomisation and balancing by means of introducing a control group into the design.

4.1.2. Two randomised group design

Lewis-Beck (1993) explains that multiple-group experimental designs involve the comparison of two treatment groups that differ along a single independent variable. The independent variables may be two treatments or conditions created or observed by the researcher in a laboratory or field setting. An important and basic presupposition of any design is that the means or averages of the groups on the dependent variables do not differ reliably at the start of the experiment (McGuigan, 1990). Lewis-Beck (1993) further explains that the researcher then assigns participants to conditions as identified, ideally at random, and observes or measures levels of the dependent variables. When subjects are not randomly assigned, it is difficult to draw definitive conclusions from the study. This is overcome by checking for equivalence by means of doing pre-tests on the dependent variables. Another way this problem is overcome is by selecting matched cases from those available. When pre-test differences are found, conclusions must be made with extreme care (Lewis-Beck, 1993). McGuigan (1990) discusses other ways of ensuring equality in a randomised group design would be

- use a large number of participants, which would reduce the difference in the means of the two groups;
- use appropriate statistical techniques to determine the chance of such an event occurring less than five times out of a hundred;
- by comparing groups means to the actual scores of participants and analysing the differences to see by how much they do differ;
- use analysis of covariance to correct the differences in extraneous variables that affect the dependent variables;
- science is self-correcting, in that any incorrect conclusions made during a study, if important will be highlighted by later studies in the area of interest, with the result that the incorrect conclusion will be discarded (McGuigan, 1990).

This study was designed according to a two randomised group design. The participants in the experimental group and the control group were selected by random assignment. Twenty-four CCAs were to be part of the experimental group and another twenty-four were to form the control group. Figure four shows the time intervals at which the pre-test, the intervention and the post-test were conducted. Both groups were administered a pre-test followed by a post-test four weeks later. Sudarshan Kriya was varied between the two groups in that the experimental group was exposed to it while the control group was not exposed to it. The data collected from the control group and the experimental group was compared to each other using statistical methods. Matched groups were not pursued for the current study as the participants were randomly selected.

Figure 4: Design of the study

	time one (pre-test)	intervention	time two (post-test)
Experimental Group	O ---------->	X ---------->	O
Control Group	O ----------		---------- O

Where

‘X’ represents exposure of a group to an independent variable, the effects of which on the dependent variables are to be measured.

‘O’ represents an observation or measurement of the dependent variable.

According to Lewis-Beck (1993), non-random subject loss is another problem as it destroys the concept of randomness. Studies involving some treatments that are painful or unpleasant may result in systematic subject attrition. In the area of psychotherapy, some treatment groups consist of individuals who have completed the treatment compared with control subjects. There is obvious bias in the study since non-compliance with the treatment is not a random event (Lewis-Beck, 1993).

The advantage of a two-group study is that only levels of interest are compared. Independent variables are often complex situations that differ along many dimensions, which should be analysed thoroughly to assure that the treatment conditions created reflect the underlying theory or hypothesis (Lewis-Beck, 1993).

4.1.3. Pre-test / Post-test Design

Including pre-test observations on the dependent variables resulted in a Pre-test/ Post-test design, which allowed the researcher to demonstrate the level of the dependent variables before as well as after the treatment. This information was useful for establishing that groups were initially equivalent and for providing a baseline against which to compare treatment effects. This is especially popular to evaluate the efficacy of interventions for producing change in participants (Lewis-Beck, 1993).

Problems with Pre-test / Post-test Designs

The pre-test/post-test design creates the potential for instrument reactivity with treatments (Lewis-Beck, 1993). Subjects may be affected by pre-tests in such a manner as to influence their reactions to the treatment. The best control for this is the Solomon four-group design. Another problem that is experienced with this design is the interpretation and analysis of change data generated in the pre-test/post-test studies. One way of performing this analysis is to compare groups on average changes from pre- to post testing, subtracting post-test scores from pre-test scores. However, the problem with this is that it involves measurement error (Lewis-Beck, 1993).

A second problem lies in the statistical artefact, regression toward the mean (Lewis-Beck, 1993). This is an outcome of the measurement error that is associated with imperfectly reliable instruments. This is a result of scores in an instrument for subjects extreme in value relative to all people measured tend to become less extreme upon retesting. An unusually high individual score is usually associated with a large error component. Upon retesting it is unlikely that the individual score will be high again, thus becoming closer to the average score upon retesting (Lewis-Beck, 1993).

4.1.4. Reactivity

Reactivity is when the presence of a researcher results in the behaviour of the subjects being studied changing (Bailey, 1987). The study can affect the data collected as the subjects being observed act in one way in the presence of the researcher and differently when the researcher is not present. The reactivity problem is acute in social research as the subjects alter their behaviour once they are aware a social researcher is observing them. Often questions presented stimulate the subject to think about the topic that he or she has not previously considered. As a result an opinion is formed where one previously never existed (Bailey, 1987).

The reactive effect of research on the social phenomena being studying is known as the 'Hawthorne Effect' (Bailey, 1987). Individual behaviours may be altered because they know they are being studied was demonstrated in a research project (1927 - 1932) of the Hawthorne Plant of the Western Electric Company in Illinois (Frank & Kaul, 1978). The major finding of the study was that regardless of the experimental manipulation employed, the production of the workers seemed to improve. The workers were pleased to receive attention from the researchers who expressed an interest in them. Four general conclusions were drawn from the Hawthorne studies:

- the aptitudes of individuals are imperfect predictors of job performance. Although they give some indication of the physical and mental potential of the individual, the amount produced is strongly influenced by social factors;
- informal organisation affects productivity. The Hawthorne researchers discovered a group life among the workers. The relations that supervisors develop with workers tend to influence the manner in which the workers carry out directives;
- work-group norms affect productivity. Work groups tend to arrive at norms of what is 'a fair day's work';
- the work place is a social system made up of interdependent parts (Frank & Kaul, 1978).

According to Lewis-Beck (1993), the subjects may distort their responses for different reasons including a desire to look good or provide good data for the investigator. Some procedures are available to help identify certain biases such as faking and social desirability bias. Subjects found to exhibit bias might be eliminated from the sample, limiting generalisability only to subjects who do not distort results. The Hawthorne effect is particularly problematic when the subjects do not know about the study. Conditions then change from pre-test to post-test beyond the treatment of interest. This problem can be minimised by informing the subjects before the study, thus holding that knowledge constant (Lewis-Beck, 1993). The researcher addressed this issue by informing all participants about the study.

The control group was used to indicate that the absence of a stress management technique such as Sudarshan Kriya results in individuals being repeatedly exposed to stress with the result that their levels of mental, psychological and physical well-being are affected. This, in turn, is expected to affect organisational outcomes such as absenteeism and performance. There is the bias that such individuals may be deprived of the benefits of Sudarshan Kriya. Therefore the intervention has been offered to the control group at a cost to the company, which will be conducted at a later phase of the study.

4.2 The Research Population

The research population consisted of the CCAs in a call centre at the telecommunications company used in the study. The size of the population was 135 CCAs. A call centre was chosen as the context of the study as call centres have been shown to be intense and stressful work environments. The call centre is also one of the few areas in a company where performance reports are generated by an electronic performance monitoring system, simplifying the measurement of performance.

4.3 Sample Size and Selection

The call centre consisted of twelve teams. Four participants from each team were selected. Two participants were assigned to the experimental group and

the remaining two participants were assigned to the control group. The sample size for both the experimental group and the control group was twenty-two. The names of the CCAs from each team were written on separate pieces of paper and folded. These pieces of paper were then tossed in an envelope. The researcher randomly picked four pieces of paper out of the envelope for each team, assigning the two names to each group accordingly.

4.4 Data Collection

The data collection consisted of questionnaires administered to the participants to assess their levels of burnout, physical symptoms of stress and rustout. From an organisational objectives perspective, absenteeism records as well as performance records of the participants were used to measure changes in these variables. Since the design was a two group experimental design using pre/post tests, it was necessary to collect the questionnaire data, absenteeism and performance data before the intervention as well as after the intervention, for both groups.

4.4.1 Pre-test Data

All CCAs in the call centre were required to fill in an identical questionnaire for purposes of the pre-test. Absenteeism and performance records for three months before the intervention were used to calculate the CCAs pre-test data. The average of these three months made up the absenteeism and performance statistics.

4.4.2 Post-test Data

Only the participants in the experimental group and control group were asked to fill in the relevant questionnaires for the post-test. The post-test was administered to the participants four weeks after the intervention was conducted. The experimental group's questionnaire included an additional questionnaire evaluating the intervention and it's impact on the CCA. The actual absenteeism and performance data for the month following the intervention was used as a CCAs absenteeism and performance statistics for post-test purposes.

4.4.3 Questionnaires

The questionnaire (see Appendix 2) contained biographical questions, the Maslach Burnout Inventory, the Physical Symptoms Inventory as well as the Rustout Inventory. The dependent variables of the study of burnout and physical well-being were operationalised by using the Maslach Burnout Inventory and the Physical Symptoms Inventory to measure each variable. Rustout was operationalised using the Rustout Inventory. Included in the post-test questionnaire for the experimental group was an additional questionnaire asking participants how they had felt about various aspects of the course (see Appendix 3).

Biographic questionnaire

Various biographic questions were collected such as the person's age, gender, race group, position, number of years on the job, temporary or full time staff member and highest level of formal education (see Appendix 2).

Maslach Burnout Inventory

The Maslach Burnout Inventory (Maslach & Jackson, 1981) (MBI), shown in Appendix 2, was used as the instrument to measure elements of burnout, conceptualised as being emotional exhaustion, depersonalisation and personal accomplishment. The MBI was first developed to measure levels of burnout amongst human service professionals (Cooper *et al*, 2001). It is highly appropriate for the measurement of burnout amongst call centre employees as their work involves interacting with customers and servicing their needs over the phone.

Maslach & Jackson (1981) discuss the MBI as consisting of three subscales of Emotional Exhaustion, Depersonalisation and Personal Accomplishment. The Emotional Exhaustion subscale consists of 9 items, which describe feelings of being emotionally extended and exhausted by one's work. The Depersonalisation subscale consists of 5 items, which describe an unfeeling and impersonal response towards recipients of one's care or service. The Personal Accomplishment subscale consists of 8 items, which describe

feelings of competence and successful achievement in one's work with people. The Emotional Exhaustion and Depersonalisation subscales both correspond to higher degrees of experienced burnout. In contrast to these two subscales, lower means scores for Personal Accomplishment correspond to higher degrees of experienced burnout. The Personal Accomplishment subscale is independant of the other two (Maslach & Jackson, 1981). The mean scores for Personal Accomplishment do not negatively load onto Emotional Exhaustion and Depersonalisation and cannot be assumed to be the opposite of Emotional Exhaustion and Depersonalisation (Maslach & Jackson, 1981).

The MBI is the most widely used burnout scale used (Shinn, 1982 and Cooper *et al*, 2001), measuring emotional exhaustion (eg. "I feel emotionally drained from my work"), personal accomplishment (eg. "I deal very effectively with the problems of my clients") and depersonalisation (eg. "I have become harsher towards people since I have taken this job") (Shinn, 1982). Cooper *et al* (2001) observe that the most significant component of the MBI is emotional exhaustion.

The scoring of the MBI is done according to the frequency scale, ranging from a 0, which relates to 'NEVER' to 6, which relates to 'EVERY DAY', as indicated in table one. For each subscale the mean of the component items is computed (Maslach & Jackson, 1981).

Table 1: Scoring for the Maslach Burnout Inventory

Frequency of emotions or attitudes experienced	Never	Few times a year	Monthly	Few times a month	Every week	Few times a week	Every day
Scoring	0	1	2	3	4	5	6

There is second response dimension called 'intensity' which asks the participant to respond to each item on the scale ranging from 0 'NEVER' to a 7 'VERY STRONG'. Although there is evidence of a high correlation between

the two dimensions of frequency and intensity, Maslach & Jackson (1986) recommend that only frequency be used. The current study followed this recommendation.

Physical Symptoms Inventory

The Physical Symptoms Inventory (PSI) (Appendix 2), was developed by Spector and Jex to assess physical, somatic health symptoms thought by stress researchers to be associated with psychological distress. Each item is a condition or state about which a person would likely be aware, e.g., headache. The scale contains 18 items. Respondents are asked to indicate for each symptom if they didn't have it, had it, or saw a doctor for it in the past 30 days. Three scores are computed, the number of symptoms they had (have symptoms), the number for which they saw a doctor (doctor symptoms), and sum of both (total). Possible scores range from 0 to 18. This is a causal indicator scale, for which a coefficient alpha is irrelevant (Spector & Jex, 1998).

Rustout Inventory

The Rustout Inventory (RI) was developed by the researcher to measure the levels of rustout. The RI consists of 13 items of which 4 items relate to disengagement, 1 item relates to dis-identification, 1 item relates to disorientation, and 7 items relate to disenchantment. The items that specifically relate to each are shown in table two.

Table 2: Subscales for the Rustout Inventory

Item	Elements of Rustout
I see nothing but having to do the same tasks over and over again, over which I have no control.	Disenchantment, boredom
I feel stifled and trapped by my job.	Disenchantment, boredom
I feel the tasks I perform contribute to my growth and development.	Disenchantment, stimulating
I feel my abilities are used beyond their full potential.	Disenchantment, challenge
I feel my talents are not recognised.	Disenchantment
I am not valued for my true potential.	Disenchantment
I do not know how I fit into the organisation anymore.	Disorientation
My contribution used to be important but not anymore.	Dis-identification
I feel I am not able to achieve what I want for myself	Disenchantment, stimulating
My contribution at work is beyond that which is expected of me.	Disengaged
I come to work only to receive a salary at the end of the month.	Disengaged
I no longer make suggestions as I used to in the past.	Disengaged
I no longer volunteer myself when there are emergencies and extra duties to be performed.	Disengaged

The scale was developed using a five-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree), as shown in table three. The mean of each element is calculated by computing the means of each item within a subscale. Items 3, 4 and 10 are reverse scored since these are expressed in a positive language.

Table 3: Scoring for the Rustout Inventory

	Strongly Disagree	Disagree Somewhat	Neutral / Uncertain	Agree Somewhat	Strongly Agree
Scoring	1	2	3	4	5

Disengagement measures the degree to which an individual is disengaged from their job and the organisation. Dis-identification measures the degree to which an individual no longer identifies with the role they are currently in.

Disorientation measures the degree to which an individual has realigned themselves to the organisations pace. Disenchantment measures the degree to which an individual feels valued and recognised for his or her talents.

A factor analysis was done for the Rustout Inventory, the findings of which are presented in chapter five under the section called descriptive statistics.

4.4.4 Absenteeism Data

The absenteeism records from the HR department showed various reasons employees may be absent from work. For the purposes of the study only reasons seemingly related to stress were considered to determine a CCAs absenteeism statistics. The categories of leave used were:

- vacation leave (only where this was a day or two and not longer);
- sick leave;
- absent without leave

The frequency of one or two day absences is regarded as the most reliable measure of voluntary or discretionary absenteeism (Chadwick-Jones, Nicholson & Brown, 1982). Therefore, vacation leave having a duration of one or two days was considered as relevant for this study.

4.4.5 Performance Criteria Data

The CCAs performance is monitored using two methods of evaluation, namely, via an electronic performance monitoring system and by random quality checks performed by their team leaders. The quality checks by the team leaders are based on a CCAs adherence to certain predetermined scripted conversations. The quality checks are referred to in the study as Adherence to Scripting.

Electronic Performance Monitoring System

The electronic performance monitoring system monitors the agent's activity during scheduled work times. Table four provides an illustration of the time scheduled for an agent. An agent works a nine-hour day, with a total of one hour and forty-five minutes allowed for lunch, two breaks and a start up

meeting at the beginning of a shift. The remaining time is scheduled as available time for the agent to handle calls. Of this time an agent is allowed an 8% deviation from this time, which is taken as personal time. The company expects a 92% adherence to the scheduled time in a day.

Table 4: CCAs time scheduled for a shift.

Description	Minutes	Percentage
9 hour shift in minutes	540	N/A
Allowances for breaks, lunch & start up meeting	105	N/A
Available time for taking calls in a day	435	100%
Company Time	400	92%
Agent's Time	35	8%

Certain circumstances acceptable to management will result in the agent's scheduled time being reduced. Other circumstances not acceptable to management will result in the agent's scheduled time not being reduced. This is when an agent's compliance to scheduled times is affected.

The agent activity report shows information about inbound and outbound calls and additional information about talk-time, call work time and average handle time. The call centre used in the study mostly focused on inbound call contact. Outbound calls comprised approximately 2% of the monthly call work. The following data was used to measure the agents' productivity on calls handled:

*Contact Time: (*Talk Time plus Available time)
Refers to the time a CCA was busy taking calls plus the time a CCA is waiting for a call. This reflects the time a CCA was being productive.

Unavailable Time:
This is when a CCA deliberately removes himself / herself from the queuing system with the result that he or she will not be able to answer calls for reasons not authorised by management.

Average work time:

The norm is that a CCA works a nine-hour day with 435 minutes being scheduled as work time. The average work time calculates the percentage of time the CCA actually worked compared to the time that he or she was scheduled to work. Times allocated for meetings and training is included as scheduled work time, but the CCA is not available to take calls. The average work time is calculated as follows:

$$\left(^{(\text{Contact Time} + \text{Meeting Time} + \text{Training Time})} / _{\text{Attendance Time}}\right) * 100$$

Compliance % :

The agent scheduling system calculates according to historical call patterns the number of agents that are needed to be available to take calls as well as the best lunch and break times for each CCA. A CCA is allocated a schedule, which he / she is expected to comply with.

Adherence to Scripting

The team leader observes the CCA for five categories of scripting namely, fast, accurate, courteous, timely and selling. Each category has a predefined number of criteria, which the CCA either meets or does not meet or which is not applicable to the CCA. The CCA is evaluated accordingly and a percentage is calculated of the number of criteria the CCA meets against the total number of criteria in a category. An overall average of the different categories is also calculated. For purposes of the study, all categories as well as the overall average was used.

4.4.6 Reliability and Validity

Maslach & Jackson (1981) in their initial research have shown that various psychometric analyses illustrate that the MBI has both high reliability and validity. Cooper *et al* (2001) also discuss the validity and reliability of the MBI.

Cronbach's coefficient alpha was used to report internal reliability. Internal consistency was reported with a co-efficient alpha of 0.83 for the frequency response dimension. The subscales of Emotional Exhaustion,

Depersonalisation and Personal Accomplishment reported coefficient alphas of 0.89, 0.77 and 0.74 respectively (Maslach & Jackson, 1981).

According to Spector & Jex (1998) although the Physical Symptoms Inventory yields a total score, the individual items are not considered parallel forms of the same underlying construct. Instead this scale is viewed as a causal indicator scale consisting of items, which combined constitutes the construct, i.e., the items cause the construct. The items are not manifestations of the underlying construct. Thus coefficient alpha is not an appropriate index of reliability for such scales (Spector & Jex, 1998).

4.5 The intervention: Sudarshan Kriya

Sudarshan Kriya was taught to the participants in the experimental group within the context of a course that runs for a total of 18 hours. It consists of one 3-hour session (morning, afternoon or evening), two consecutive full days (9:30am to 4.00 pm) and an additional 3-hour session (morning, afternoon or evening). It is mandatory for all participants to attend all sessions of the course. The course introduces participants to the seven layers of an individual's existence, being the body, breath, mind, intellect, ego, memory and the self. Various processes aimed at these levels of existence create a greater awareness of how these levels of existence result in a build up of stress within. In a progressive build up, breathing techniques are introduced to the participants from the first day. The Sudarshan Kriya technique is taught during one session where the participants follow the technique as per instructions given by the facilitator. The technique is repeated every day once it is initially introduced in order to familiarise participants with the technique. This makes the independent practice of the technique by the participants much easier. The course is concluded with experience sharing by all participants. The participants are also taught a version of the technique that can be practiced at home. It is recommended that the technique be practiced daily, preferably in the morning. In addition, four follow-up sessions to be attended weekly were included as part of the course. At these sessions the participants practiced the technique as a group. This provided the participants with the opportunity to correct any steps that were practiced incorrectly.

4.6 Pilot Study

The pilot study was conducted to determine the logistics necessary for the main study. This included filling the pre-test instruments to ensure these would be easily understood by the CCAs. The issues highlighted by the pilot study with regards to the course as well as the pre-test instruments were taken into account by making the necessary adjustments for the main study. Eight team leaders were chosen to take part in the pilot study.

The pilot study was conducted at 7.30 am on 8th August 2003, at the call centre premises with the team leaders. The researcher introduced herself and explained the purpose of the pilot. Each questionnaire was explained carefully and the team leaders were asked to fill in the questionnaires with a view to assessing if these would be easily understood by the CCAs. The following issues were highlighted:

- in the Biographical Questionnaire the question 'Number of years as a Call Centre Agent' had to be changed to state 'Number of years in the Call Centre'. This question was changed as follows:

  Number of years of Call Centre experience ___

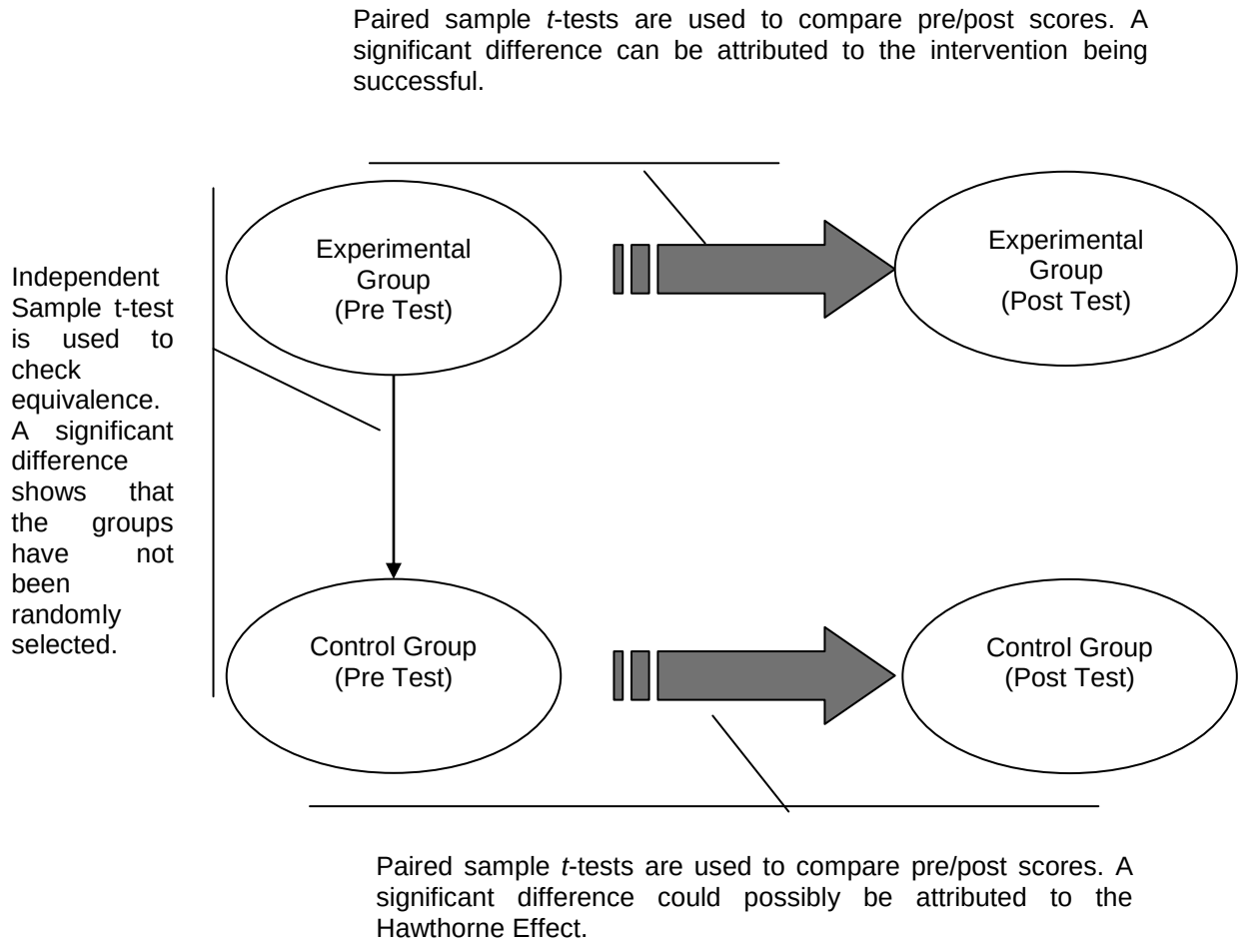
  Number of years in current position ____;
- the instruction 'Please mark the appropriate answer with an 'X'' was not on every questionnaire. Each questionnaire was changed to include appropriate instructions;
- in the Maslach Burnout Inventory, question 15 'I feel exhilarated after working closely with my clients' was confusing in that the meaning of the word 'exhilarated' was not easy to understand. This item had to be changed to expand on the meaning of exhilarated in brackets. The question then read 'I feel exhilarated (very happy and excited) after working closely with my clients';
- a review of the feedback from the pilot study with the research supervisor also resulted in a few suggested changes to the questionnaires, these were:
  - include a preamble that would guarantee confidentiality and nondisclosure of details per individual to the employer;

- include Name and Surname in the Biographical Questionnaire. This was necessary to trace absenteeism and performance records with the employer;
- change the 'Age' question to 'Age at your last birthday _____';
- include an item 'Home Language _____' with an option for this to be filled in;
- the option 'Std. 8' for the item 'Highest level of formal education completed' was to be changed to 'Less than Matric'.

4.7 Data Analysis

According to McGuigan (1990), the *t*-test is the most appropriate statistical method to be used in a two group design. A null hypothesis would possibly state that there is no difference between the population mean scores of the two groups. To test this null hypothesis the difference between the mean values of the two groups on the dependent variables will be computed. The *t*-test assesses the probability that the mean difference could have occurred by chance. The *t*-test is a ratio between the mean difference between the groups and the error variance in the study. The error variance is a direct function of the variability of the dependent variable scores (McGuigan, 1990). For the purposes of the current study, the researcher looked at using paired sample *t*-tests and independent sample *t*-tests to test the various hypotheses in the study, as depicted in figure five.

Figure 5: Statistical Analyses of Results of the Study.



The researcher approached the statistical analyses in the following manner:

- a comparison of pre-test scores between the experimental group and the control group was done to verify that the groups were initially equivalent. Independent Sample *t*-tests were used. A statistically significant difference in the results of the t-tests showed that the groups were not randomly selected (see figure 6);
- a comparison between the experimental group's scores for the pre-test and post-test was done using Paired Sample *t*-tests. A statistically significant difference in the results showed that the intervention was successful;

- a comparison between the control group's scores for the pre-test and post-test was done using Paired Sample t-tests. A statistically significant difference the possibility existed that either the Hawthorne Effect took place, or there was instrument reactivity or that statistical artefacts influenced the results.

Paired sample t-tests used to test the null hypotheses

Paired sample *t*-tests are used to evaluate differences between related samples. The mean of the distribution of differences of the two samples are calculated giving a *t*-value. When the *t*-value lies within the +/- range of the critical value for that population, this can be interpreted as the mean was zero, implying there was no significant difference between the two samples. When the *t*-value is less than the –ve critical value or greater than the +ve critical value, this can be interpreted as there was a statistically significant change between the two samples (Lind, Mason & Marchal, 2000). The direction of the change will also be interesting to note, as this could mean that there was an increase or decrease for that variable. The corresponding *p*-value for the calculated *t*-value is also analysed to determine the significance of the results produced. A *p*-value less than 0.05 is highly significant, implying the probability of errors causing this change was less than 5%.

Independent Sample t-tests used to test for initial equivalence

Independent sample *t*-tests are used to compare variables for two independent groups. The *p*-value returned will determine if the two groups' mean scores are identical. Using a level of significance of 0.05, when the *p*-value is less than 0.05 a significant difference in scores is noted. When the *p*-value is greater than 0.05 no significant difference in scores is noted. A positive significant difference implies that the intervention was successful in producing this difference.

Assumptions for the t-test have been identified by McGuigan (1990) as being

- the population distribution is normal;
- the variances of the groups are homogenous;
- the treatment effects and the error effects are additive;

- the dependent variable values are independent.

McGuigan (1990) emphasises the independence of the dependent variable values should not be violated at any cost, while the violation of the other three assumptions are accepted to an extent. Further, it is pointed out that data recording and analyses are even more critical.

4.8 Procedure followed

The researcher conducted the study in accordance with the design of the study. The activities for the study were broken down into five phases as shown in table five. The last phase involving the intervention to be conducted for the control group, has not yet been finalised with management. The procedures followed for each phase of the study is discussed in this section.

Table 5: Timelines for the Study

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
	Planning	Conduct the Pilot Study	Pre-test	Intervention and post-test	Statistical Analyses	Intervention for Control Group
Dates	June/July 2003	August 2003	August 2003	August 2003	September 2003	Not yet done

4.8.1 Phase One: Planning the activities for the study

- Obtained access to the company and their call centre agents.
- Finalised dates, the venue, timings as well as access to absenteeism and performance records with the HR Manager. Arrangements were also made to speak to a team leader to get a good understanding of the performance data required for the study.
- Arranged for a facilitator to conduct the intervention at the company.

4.8.2 Phase Two: Conduct the pilot study

A detailed account of the pilot study is provided under section 4.7 Pilot Study.

4.8.3 Phase Three: Administration of the pre-test

This phase of the study represented time one of the study when the pre-test was to be administered to the participants. Refer to figure four for a diagram on the design of the study. The researcher addressed the CCAs in two debriefing sessions held over two days on the premises. The questionnaire for the pre-test was administered to eleven of the twelve teams within the call centre. The twelfth team was unable to participate in the study as the team was smaller and they could not afford to have CCAs taken off their schedule. In the debriefing session the researcher

- announced that the research would conducted using the call centre. The purpose of the research was described as measuring the level of exhaustion in call centres and thereafter the effects of a particular intervention on CCAs once they have undergone the intervention;
- participants' co-operation were required in filling the questionnaires. The importance of the participants' honesty in answering the questionnaire was highlighted;
- the pre-test was administered with participants being given approximately half an hour to fill in the questionnaires;
- no details regarding the intervention were mentioned. What was mentioned was that participants would be selected randomly to be part of a second phase of the research;
- addressed questions that the participants may have had regarding the research;
- once the research was conducted and with the permission of the management, the intervention would be offered to the remaining CCAs at a later date;
- the first page contained demographic questions that may appear to be discriminatory. This information would be used for research purposes only in order to describe the participants in the study. If participants were not comfortable with providing these details they were free to omit them.

While the questionnaires were being filled out, the participants for the study were selected randomly from a list of names per team. The selected persons

names were announced in order to make sure that they were present and had filled in the questionnaires.

4.8.4 Phase Four: Conduct the stress management intervention

This phase of the study represented the intervention of the study, which was to be conducted between the time periods one and two. The intervention was conducted as per the agreed dates, timings and venue. The intervention took place from a Tuesday to a Friday, starting at 7.30 am. For the first two days the sessions were held until 11.00 am. On the third day the sessions were held until 4.00 pm. On the last day of the course the sessions were held until 9.00 am.

Follow-up sessions took place on a Wednesday morning for three of the four sessions, starting at 7.30am. The last follow-up session took place on a Monday morning, as the Wednesday for that week was a public holiday. On the day of the last follow-up session, the post-test was administered to both groups. The administration of the post-test represented time two in the design of the study. It took place approximately one month after the intervention was conducted.

All sessions for the course and the follow-up sessions took place at a conference room on the work premises.

Not all the participants selected originally for the study attended the course for various reasons. Instead replacement participants were selected to participate in the study. The researcher did not have the opportunity of randomly selecting these participants. The relevant team leader sent a candidate from their team, without informing the researcher. Due to time constraints these participants were included in the study. The study commenced with both the experimental group and the control group having 22 participants each.

During the concluding session of the course, participants were asked to share their experience of the course with the group. The researcher sat in on this

session as an observer and took notes for this session. The results of this session are shown in chapter five, table 32.

From speaking to the facilitator of the course, it was mentioned that the course took place under difficult circumstances compared to how it is normally conducted within a corporate environment.

Normally participants are taken away from the work environment and they are advised to adhere to a vegetarian diet, as the effects of the breathing techniques are enhanced when vegetarian foods are consumed. Further, participants are asked to abstain from alcohol, cigarettes and drugs. Participating on the course and practicing the breathing techniques for the first time can cause participants to detoxify to a large extent, so it is recommended that participants should be restful.

During the intervention, the dietary requirements as well as the abstinence from alcohol, cigarettes and drugs were mentioned to the participants, but they did not adhere to these requirements strictly. Instead they used the toilet breaks to have a cigarette. Since the intervention was taking place during working hours, participants had to go back into the stressful work environment with the result that the full effects of the breathing techniques were diluted. Finally, participants are expected to attend all sessions of the intervention, with no replacements taking place once the intervention has started. Since the intervention was being held on the work site, participants were being easily affected by the work load they had left behind at the office. Teams leaders were keen to replace certain participants with other staff members, while the intervention was in progress.

4.8.5 Phase Five: Perform the necessary statistical analyses

Statistical analyses to compare the results of the pre-test and post-test for the experimental group and the control group using tests of significance were conducted. See the section ‘Data Analysis’ as well as figure 6 for the statistical analyses performed for the study.

4.8.6 Phase Six: Conduct the intervention for the control group

Conduct the intervention for the control group. This is still to be finalised with the management of the call centre.

CHAPTER FIVE

5 PRESENTATION OF RESULTS

This chapter will present the findings of the research. The statistical analyses of the data collected from the study were done on a computer using Excel and NCSS. Both quantitative findings as well as qualitative findings from sessions in the study, questionnaires and other observations are discussed. The chapter will firstly describe the sample of the study, followed by descriptive statistics for each of the dependent variables. A brief overview of the underlying values used for the statistics presented later is also provided together with an analysis of the two groups' initial equivalence. Thereafter the hypotheses tests are shown. The results for each hypothesis presented, analyses the difference between the experimental group's pre-test scores and post-test scores as well as the difference between control group's pre-test and post-test scores. Finally, a section called 'Additional Analyses' looks at various qualitative data gathered. Here the attendance of the sessions, reasons for not attending sessions, comments from the sharing session and the questionnaire about the intervention are presented.

5.1 Description of the Sample

5.1.1 Sample for the experimental group

The experimental group consisted of 22 participants initially. Five participants dropped off the intervention for various reasons (see table 30 for the reasons participants did not attend the course and follow-up sessions). The experimental group therefore consisted of 17 participants of whom one participant did not fill in a pre-test questionnaire. The statistical analyses used 16 participants as the sample size for the experimental group.

The experimental group consisted of 16 participants between the ages 25 and 47. The mean age of the group was 31, with most participants falling in the age group 25 years to 28 years. 75% of the participants were female while 31% were predominantly English speaking, followed by 19% Afrikaans speaking participants. In terms of the racial component of the group, 50% of

the group consisted of Black participants, 25% Coloured while there were 12.5% each White and Indian participants. The level of education showed that 50% were matriculated and 37.5% had either a degree or a diploma. The group participants had a minimum of 1 year (18.75%) of call centre experience and a maximum of 6 years (12.5%) call centre experience. The mean number of years of call centre experience was 3.5 years. In terms of the number of years in the current position, the minimum was 1 year (31%) with the maximum being 6 years (6%). The mean number of years in the current position was 3 years. 50% of the group were temporary employees and the other 50% were permanent employees. See appendix 5 for more biographical data.

5.1.2 Sample for the control group

The control group consisted of 22 participants between the ages 20 and 45. The mean age was 30 years with most participants falling in the age group 29 years to 32 years. 68% of the group was female, while the most dominant home languages were Afrikaans and Zulu at 22% each. This was followed by 14% of the group speaking English at home. The control group had 64% Black participants, 18% White and 9% each of Coloured and Indian participants. The level of education was split between matriculated participants (73%) and participants with a degree or diploma (27%). The group had a minimum of 1 year (23%) call centre experience and a maximum of 7 years (4%) call centre experience. The mean was 3.33 years of call centre experience. In terms of the number of years in the current position, the group had a minimum of 6 months and a maximum of 7 years, with a mean of 3 years of being in the current position. 55% of the group were permanently employed while the remaining 45% were temporarily employed. See appendix 5 for more biographical data.

5.2 Descriptive Statistics

The descriptive statistics were calculated for the experimental group and the control group using their pre-test scores for each dependant variable. The Cronbach's alpha, where applicable, was calculated using the pre-test

responses for all CCAs who responded. A total of 107 CCAs responded to the pre-test questionnaires.

Hatcher (1994) says that the Cronbach's alpha is used to assess the reliability of items in an instrument used to measure the underlying variable being observed. It measures whether the instrument will always elicit a consistent and reliable response even if the questions were replaced with other similar questions. When a variable is generated from a set of questions that return a stable response, then that variable is said to be reliable (Hatcher, 1994). A reliability co-efficient 0.7 and greater has been indicated to be acceptable (Nunnaly, 1978).

5.2.1 Dependent variables related to individual well being

Burnout

In table 6 the descriptive statistics were calculated using the pre-test scores for the experimental group and the control group. Depersonalisation showed a Cronbach's alpha 0.693, which was slightly less than 0.7, which shows this subscale of the MBI to be not as reliable as Emotional Exhaustion and Personal Accomplishment. The Cronbach's alpha for all 22 items of the MBI showed a coefficient alpha of 0.80. This shows that the instrument as a whole is a reliable measure of the underlying construct burnout.

Table 6: Descriptive Statistics for elements of Burnout

Variables	Group	Minimum	Maximum	Mean	Cronbach's Alpha
Emotional Exhaustion	Experimental	1.11	5.44	3.03	0.90
	Control	0.55	5.77	3.38	
Personal Accomplishment	Experimental	2.63	5.75	4.44	0.79
	Control	2.25	5.88	4.38	
Depersonalisation	Experimental	0.80	5.60	2.16	0.69
	Control	0.20	5.00	2.36	

Physical Symptoms of Stress

The descriptive statistics for the physical symptoms of stress in table 7 shows that the means of the experimental group and the control group are the same for each variation of response for this inventory.

Table 7: Descriptive Statistics for the Physical Symptoms of Stress

Variables	Group	Minimum	Maximum	Mean
No experience of symptom	Experimental	6	17	10
	Control	1	17	10
Yes, but did not see doctor	Experimental	0	12	6
	Control	0	14	6
Yes, did see doctor	Experimental	0	9	2
	Control	0	12	2

Rustout

The descriptive statistics for Rustout for the experimental group and the control group are presented in table 8. The calculated Cronbach's alpha for the Rustout Inventory was 0.74, which implies that the items on the questionnaire are able to elicit consistent and reliable responses.

Table 8: Descriptive Statistics for Rustout

Variables	Group	Minimum	Maximum	Mean	Cronbach's Alpha
Rustout	Experimental	1.91	4.38	3.45	0.73
	Control	2.20	4.70	3.49	

The Rustout Inventory was developed *a priori* on four sub-scales of disengagement, disorientation, dis-identification and disenchantment. After doing a factor analysis on the data, it was found that a single factor instrument was most representative as a measurement of Rustout. A five-factor instrument was considered, however, the number of items per factor was too few to justify it being used for the current study. See Appendix 6 for the eigen values as well as factor loadings for each item in the Rustout Inventory.

5.2.2 Dependent variables related to organisational objectives

Absenteeism

The descriptive statistics for absenteeism are presented in table 9. The two groups have the identical mean values of 1.

Table 9: Descriptive Statistics for Absenteeism

Variables	Group	Minimum	Maximum	Mean
Absenteeism	Experimental	0	6	1
	Control	0	4	1

Adherence to Scripting

Table 10 shows the descriptive statistics for the experimental group and the control group for their pre-test scores. The data shows the two groups were different in their minimum and maximum scores for most categories. Similarly the mean scores were also different to each other, with the exception of Selling and Average.

Table 10: Descriptive Statistics for Adherence to Scripting

Variables	Group	Minimum	Maximum	Mean
Fast	Experimental	13.3%	100.0%	58.2%
	Control	00.0%	93.3%	44.3%
Accurate	Experimental	18.9%	92.2%	60.5%
	Control	42.2%	82.6%	64.6%
Courteous	Experimental	11.6%	95.0%	46.4%
	Control	11.6%	68.3%	40.5%
Timely	Experimental	00.0%	100.0%	66.8%
	Control	26.6%	100.0%	73.2%
Selling	Experimental	00.0%	80.0%	21.5%
	Control	00.0%	76.6%	20.2%
Average	Experimental	16.4%	87.1%	49.1%
	Control	23.5%	71.7%	48.9%

Electronic Performance Monitoring

Table 11 shows the descriptive statistics for Electronic Performance Monitoring. Contact Time is shown in hours and Unavailable Time is shown in minutes. The values for the two groups are similar to each other, with the differences between the two being narrow.

Table 11: Descriptive Statistics for Electronic Performance Monitoring

Variables	Group	Minimum	Maximum	Mean
Contact Time	Experimental	6	7	6
	Control	5	7	6
Unavailable Time	Experimental	1	9	4
	Control	2	11	4
AWT%	Experimental	73.8%	88.5%	82.6%
	Control	75.4%	88.0%	82.4%
Compliance%	Experimental	88.1%	97.1%	94.0%
	Control	84.3%	96.7%	93.3%

5.3 Analyses of data for both groups

5.3.1 Initial Equivalence between the two groups

A basic but important assumption in two-group design is that the groups being used are initially equivalent (McGuigan, 1990). This translates to meaning that the average of the two groups dependent variables do not differ reliably at the start of the experiment. In order to verify the equivalence, a comparison of the pre-test means for each dependent variable was done using independent sample *t*-tests. The *p*-value was compared to a significance level of 0.05. A *p*-value less than 0.05 implied a significant difference in their scores confirming the groups were not equivalent for that particular dependent variable. This also confirms that the groups were not randomly selected.

The results of the independent sample *t*-tests done between the experimental group and the control group are shown in table 12. All dependent variables in the study showed equivalence between the experimental group and the control group, confirming that the groups were randomly selected.

Table 12: Pre-test Equivalence for the Dependent Variables in the Study

	Dependent Variables	t-values	p-values
Burnout	Emotional Exhaustion	-0.88	0.38
	Personal Accomplishment	0.21	0.83
	Depersonalisation	-0.49	0.63
Physical Symptoms of Stress	No	0.08	0.94
	Yes	-0.08	0.94
	Rustout	-0.21	0.83
	Absenteeism	0.16	0.87
Adherence to Scripting	Fast	1.48	0.15
	Accurate	-1.54	0.13
	Courteous	1.05	0.30
	Timely	0.51	0.61
	Selling	-0.04	0.97
	Average	-0.62	0.54
Electronic Performance Monitoring	Contact Time	1.01	0.32
	Unavailable Time	0.00	1.00
	AWT%	0.18	0.86
	Compliance%	0.81	0.42

5.3.2 Differences in the Experimental Group's Pre/Post-test scores

Paired *t*-tests were used to analyse differences between the experimental group's pre-test and post-test scores. The values shown in table 13 were used to analyse the data. When a statistically significant increase in a dependent variable is predicted, the t-value is expected to be greater than the positive critical value of 2.13. Similarly when a statistically significant decrease in a dependent variable is predicted, the t-value is expected to be less than the negative critical value of –2.13. A statistically significant increase or decrease in scores, as is applicable for each dependent variable, can be attributed to the intervention being successful. When the *t*-values fall within the critical value range of –2.13 and 2.13, no statistically significant difference in the scores are implied.

In the actual presentation of the statistical data for each hypothesis, the t-value and the p-value are shown. The p-value supports the change in scores and a p-value less than 0.05 indicates a statistically significant increase or decrease or difference in scores. The p-values are presented within the context of the hypothesis being tested. For example, if an increase in a score

was predicted, the p-value for an increase only is shown. This p-value is different to the p-value for a significant difference or to the p-value for a significant decrease in the same variable. This also applies to the statistical analyses for the control group.

Table 13: Values used to analyse the results for the Experimental Group

	Values
N	16
Df	15
Level of Significance	0.05
Critical Value	2.13

5.3.3 Differences in the Control Group's Pre/Post-test scores

Paired sample *t*-tests were used to analyse differences between the control group's pre-test and post-test scores. The values shown in table 14 were used to analyse the data. The *t*-value for each dependent variable analysed must fall within the critical value range of –2.08 to 2.08, failing which the results prove that there was no statistically significant difference in the scores. The t-value falling outside the critical value range of –2.08 to 2.08 implies a statistically significant difference in scores from the pre-test to the post-test. This difference in scores can possibly be attributed to the Hawthorne Effect or other changes that may have taken place within that work environment.

Table 14: Values used to analyse the results for the Control Group

	Values
N	22
Df	21
Level of Significance	0.05
Critical Value	2.08

In the actual presentation of the statistical data for each hypothesis, the t-value and the p-value are shown.

5.4 Hypotheses Tests

The study has numerous dependent variables resulting in just as many hypotheses. In presenting the results of the study it was necessary to provide

a full description of each hypothesis, as outlined in Chapter three, in order to make the comprehension of the results easy.

5.4.1 Hypothesis One: Effects of the Intervention on Burnout

Hypothesis one tests whether the practice of Sudarshan Kriya resulted in a statistically significant difference in the levels of burnout in the experimental group while the control group showed no statistically significant difference in levels of burnout for the same time period.

For the experimental group, a statistically significant decrease in Emotional Exhaustion and Depersonalisation and a statistically significant increase in Personal Accomplishment would reflect that the intervention was successful in reducing the levels of burnout. For the control group statistically significant differences in the elements of burnout may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

Burnout consists of three elements of Emotional Exhaustion, Personal Accomplishment and Depersonalisation. Personal Accomplishment is independant of Emotional Exhaustion and Depersonalisation, as a low score contributes to higher levels of burnout.

Differences in the Experimental Group's pre/post-test scores

Both Emotional Exhaustion and Depersonalisation have *t*-values (see table 15) that are greater than the critical value of –2.13, implying there is a significant decrease in scores between the pre-test and the post-test. The *p*-values for both these variables are less than 0.05, showing a significant decrease in the scores has occurred.

The mean difference in scores for Personal Accomplishment shows a *t*-value that is less than 2.13, implying there was no significant increase in scores. The *p*-value is greater than 0.05, confirming there was no significant increase in scores.

Table 15: Experimental Group's results for Burnout

Dependent Variables	t-values	One tailed p-value	Hypotheses
Emotional Exhaustion	-4.23*	0.00	$\Delta EE < 0$
Personal Accomplishment	0.77	0.23	$\Delta PA > 0$
Depersonalisation	-2.32*	0.02	$\Delta D < 0$

* Variables with a significant decrease or increase in scores from the pre-test to post-test, using a significance level of 0.05 and 15 degrees of freedom

Therefore, the null hypotheses that

1.a) the experimental group showed no statistically significant decrease in Emotional Exhaustion between the pre-test and post-test scores is rejected;

1.b) the experimental group showed no statistically significant increase in Personal Accomplishment between the pre-test and post-test scores is accepted;

1.c) the experimental group showed no statistically significant decrease in Depersonalisation between the pre-test and post-test scores is rejected.

Therefore, evidence was found in support of the predicted outcome that the practice of Sudarshan Kriya resulted in a statistically significant decrease in Emotional Exhaustion and Depersonalisation. The predicted outcome that the experimental group would show a statistically significant increase in Personal Accomplishment for the experimental group was refuted.

Differences in the Control Group's pre/post-test scores

In table 16, the *t*-values for Emotional Exhaustion and Depersonalisation were within the critical value range of –2.08 and 2.08, implying no statistically significant difference in the mean of the differences between pre-test and post-test scores. Personal Accomplishment showed a *t*-value less than -2.08, which is also confirmed by a p-value less than a 0.05 level if significance. There was a statistically significant decrease in the Personal Accomplishment score.

Table 16: Control Group's results for the elements of Burnout

Dependent Variables	t-values	Two-tailed p-values	Hypotheses
Emotional Exhaustion	-1.47	0.16	$\Delta EE = 0$
Personal Accomplishment	-2.16*	0.04	$\Delta PA = 0$
Depersonalisation	0.64	0.53	$\Delta D = 0$

* Variables with a significant difference in scores from the pre-test to post-test, using a significance level of 0.05 and 21 degrees of freedom.

Therefore, the null hypothesis that :

1.d) the control group showed a statistically significant difference in Emotional Exhaustion between the pre-test and post-test scores is rejected;

1.e) the control group showed a statistically significant difference in Personal Accomplishment between the pre-test and post-test scores is accepted;

1.f) the control group showed a statistically significant difference in Depersonalisation between the pre-test and post-test scores is rejected.

Therefore, evidence was found in support of the predicted outcome that the control group showed no statistically significant difference in scores for Emotional Exhaustion and Depersonalisation. The predicted outcome that the control group showed no statistically significant difference in scores for Personal Accomplishment was refuted.

5.4.2 Hypothesis Two: Effects of the Intervention on Physical Symptoms of Stress

Hypothesis two tests whether the practice of Sudarshan Kriya resulted in a statistically significant difference in the levels of physical symptoms of stress in the experimental group while the control group showed no statistically significant difference in the levels of physical symptoms of stress for the same time period.

For the experimental group, a statistically significant increase in the number of 'No' responses and a statistically significant decrease in the number of 'Yes' responses would reflect that the intervention was successful in producing a change in the levels of the physical symptoms of stress. For the control group statistically significant differences in the levels of the physical symptoms of stress may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

The physical symptoms of stress were evaluated by asking the participants for one of three responses to a particular physical symptom. They could answer either 'No', or 'Yes, did not see a Doctor' or 'Yes, did see a Doctor'. The responses for the two variations of 'Yes' answers have been totalled to give one score for 'Yes'.

Differences in the Experimental Group's Pre/Post-test scores

Table 17 shows the 'No' response had a *t*-value greater than 2.13, while the 'yes' response showed a t-value less than –2.13. The mean difference in scores increased in the case of the 'No' response, while the 'Yes' response decreased. Both *t*-values had corresponding *p*-values of 0.00 implying that there was a statistically significant increase or decrease in the scores.

Table 17: Experimental Group's results for the Physical Symptoms of Stress

Dependent Variables	t-values	One-tailed p-value	Hypotheses
No	7.23*	0.00	ΔNo > 0
Yes	-6.83*	0.00	ΔYes < 0

* Variables with a significant increase or decrease in scores from the pre-test to post-test, using a significance level of 0.05 and 15 degrees of freedom.

Therefore, the null hypotheses that:

2.a) the experimental group showed no statistically significant increase in the number of 'No' responses to the physical symptoms of stress between the pre-test and post-test scores is rejected;

2.b) the experimental group showed no statistically significant decrease in the number of 'Yes' responses to the physical symptoms of stress between the pre-test and post-test scores is rejected.

Therefore, evidence was found in support of the predicted outcome that the practice of Sudarshan Kriya resulted in a statistically significant increase in the number of 'No' responses to the physical symptoms of stress as well as a statistically significant decrease in the number of 'Yes' responses to the physical symptoms of stress for the experimental group.

Differences in the Control Group's Pre/Post-test scores

Table 18 shows the 'No' response for the physical symptoms of stress has a *t*-value greater than -2.08 while the 'Yes' response showed a t-value less than 2.08. There was no significant difference in pre-test and post-test scores for the control group.

Table 18: Control Group's results for the Physical Symptoms of Stress

Dependent Variables	t-values	Two-tailed p-values	Hypotheses
No	-0.87	0.39	ΔNo = 0
Yes	0.87	0.39	ΔYes = 0

* Variables with a significant difference in scores from the pre-test to post-test, using a significance level of 0.05 and 21 degrees of freedom.

Therefore, the null hypothesis that

2.a) the control group showed a statistically significant difference in the number of 'No' responses to the physical symptoms of stress between the pre-test and post-test scores is rejected;

2.b) the control group showed a statistically significant difference in the number of 'Yes' responses to the physical symptoms of stress between the pre-test and post-test scores is rejected.

Therefore, evidence was found to support the predicted outcome that the control group showed no statistically significant difference in the number of

physical symptoms of stress between the pre-test and the post-test for the same time period.

5.4.3 Hypothesis Three: Effects of the Intervention on Rustout

The questionnaire on Rustout was not completed by one of the participants in the experimental group, with the result that the values used in the analyses of the data varied accordingly in the relevant sections to follow. In table 19 the values used to analyse the results of the t-tests .are shown with the critical value being 2.14.

Table 19: Values used to analyse the results for the Experimental Group

	Values
N	15
Df	14
Level of Significance	0.05
Critical Value	2.14

Hypothesis three tests whether the practice of Sudarshan Kriya resulted in a statistically significant decrease in the levels of rustout in the experimental group while the control group showed no statistically significant difference in the levels rustout for the same time period.

For the experimental group, a statistically significant decrease in the levels of rustout would reflect that the intervention was successful in producing a change in the levels of rustout. For the control group statistically significant differences in the levels of rustout may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

Differences in the Experimental Group's Pre/Post-test scores

The results in table 20 show that Rustout had a *t*-value less then –2.14, implying a significant decrease in the mean difference in scores. This is further confirmed by the p-value of 0.1, which is less than a significance level of 0.05.

Table 20: Experimental Group's results for Rustout

Dependent Variables	t-values	One-tailed p-values	Hypotheses
Rustout	-2.75*	0.01	∆Rustout < 0

* Variables with a significant decrease in scores from the pre-test to post-test, using a significance level of 0.05 and 14 degrees of freedom.

Therefore, the null hypotheses that

4.a) the experimental group showed no statistically significant decrease in the levels of Rustout between the pre-test and post-test scores is rejected.

Therefore, evidence has been found in support of the predicted outcome that the practice of Sudarshan Kriya results in a statistically significant decrease in the levels of Rustout in the experimental group.

Differences in the Control Group's Pre/Post-test scores

In table 21, the *t*-value for Rustout was within the critical values range of –2.08 and 2.08. No statistically significant difference in this variable was recorded.

Table 21: Control Group's results for Rustout

Dependent Variables	t-values	Two-tailed p-values	Hypotheses
Rustout	1.07	0.30	∆Rustout = 0

* Variables with a significant difference in scores from the pre-test to post-test, using a significance level of 0.05 and 21 degrees of freedom.

Therefore, the null hypothesis that

4.a) the control group showed a statistically significant difference in the levels of rustout between the pre-test and post-test scores is rejected.

Therefore, evidence has been found in support of the predicted outcome that the control group showed no statistically significant difference in the levels of rustout for the same time period.

5.4.4 Hypothesis Four: Effect of the Intervention on Absenteeism

Hypothesis four tests whether the practice of Sudarshan Kriya resulted in a statistically significant decrease in absenteeism in the experimental group while the control group showed no statistically significant difference in absenteeism for the same time period.

For the experimental group, a statistically significant decrease in absenteeism would reflect that the intervention was successful in producing a change in absenteeism. For the control group statistically significant differences in absenteeism may possibly be attributed to the Hawthorne Effect.

Differences in the Experimental Group's Pre/Post-test scores

The *t*-value for the experimental group was less than 2.13, implying no statistically significant difference in the mean difference for absenteeism as shown in see table 22.

Table 22: Experimental Group's results for Absenteeism

Dependent Variables	*t*-values	One-tailed *p*-values	Hypotheses
Absenteeism	0.07	0.53	ΔAbsenteeism< 0

* Variables with a significant decrease in scores from the pre-test to post-test, using a significance level of 0.05 and 15 degrees of freedom.

Therefore, the null hypothesis that

4.a) the experimental group showed no statistically significant decrease in absenteeism between the pre-test and post-test scores is accepted

Therefore, the predicted outcome that the practice of Sudarshan Kriya resulted in statistically significant decrease in absenteeism in the experimental group was refuted.

Differences in the Control Group's Pre/Post-test scores

As per table 23, the *t*-value for absenteeism for the control group was less than –2.08 implying no statistically significant difference for absenteeism.

Table 23: Control Group's results for Absenteeism

Dependent Variables	*t*-values	Two-tailed *p*-values	Hypotheses
Absenteeism	-1.76	0.09	∆Absenteeism=0

* Variables with a significant difference in scores from the pre-test to post-test, using a significance level of 0.05 and 21 degrees of freedom.

Therefore the null hypothesis that

4.b) the control group showed a statistically significant difference in absenteeism between the pre-test and post-test scores is rejected.

Therefore, evidence has been found in support of the predicted outcome that that the control group showed no statistically significant difference in absenteeism for the same time period.

5.4.5 Hypothesis Five: Effect of the Intervention on Adherence to Scripting

There were two participants from the experimental group that did not have scores for the performance criteria, as they were not on the queuing system for the call centre. Therefore comparisons made in this section will show the experimental group having 14 participants. Table 24 shows the values used in the study for evaluating the performance criteria for the experimental group.

Table 24: Values used to analyse the results for the Experimental Group

	Values
N	14
Df	13
Level of Significance	0.05
Critical Value	2.16

Hypothesis five tests whether the practice of Sudarshan Kriya resulted in a statistically significant increase in all the categories for Adherence to Scripting in the experimental group while the control group showed no statistically significant difference in all the categories for Adherence to Scripting for the same time period.

For the experimental group, a statistically significant increase in all the categories for Adherence to Scripting would reflect that the intervention was successful in producing a change in Adherence to Scripting.

For the control group statistically significant differences in all the categories for Adherence to Scripting may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

Differences in the Experimental Group's Pre/Post-test scores

Table 25 shows the categories of Courteous and Timely showed a statistically significant decrease in the pre-test and post-test scores, with their *t*-values being less than –2.16.

Table 25: Experimental Group's results for Adherence to Scripting

Dependent Variables	*t*-values	One-tailed *p*-values	Hypotheses
Fast	0.38	0.36	Δ Fast > 0
Accurate	-0.70	0.75	Δ Accurate > 0
Courteous	-2.29	0.98	Δ Courteous > 0
Timely	-2.67	0.99	Δ Timely > 0
Selling	1.56	0.07	Δ Selling > 0
Average	-0.50	0.69	Δ Average > 0

* Variables with a significant increase in scores from the pre-test to post-test, using a significance level of 0.05 and 13 degrees of freedom.

Therefore the null hypotheses that

5.a) the experimental group showed no statistically significant increase in the Adherence to Scripting category 'Fast' between the pre-test and post-test scores is accepted;

5.b) the experimental group showed no statistically significant increase in the Adherence to Scripting category 'Accurate' between the pre-test and post-test scores is accepted;

5.c) the experimental group showed no statistically significant increase in the Adherence to Scripting category 'Courteous' between the pre-test and post-test scores is accepted;

5.d) the experimental group showed no statistically significant increase in the Adherence to Scripting category 'Timely' between the pre-test and post-test scores is accepted;

5.e) the experimental group showed no statistically significant increase in the Adherence to Scripting category 'Selling' between the pre-test and post-test scores is accepted;

5.f) the experimental group showed no statistically significant increase in the Adherence to Scripting category 'Average' between the pre-test and post-test scores is accepted;

Therefore the predicted outcome that the practice of Sudarshan Kriya resulted in a statistically significant increase in all the categories for Adherence to Scripting in the experimental group was refuted.

Differences in the Control Group's Pre/Post-test scores

Table 26 shows the categories Accurate, Courteous, Timely and Average show a statistically significant difference in scores for the control group. The respective *t*-values are less than –2.08, implying a decrease in these categories. Fast and Selling showed no statistically significant difference in their scores as their *t*-values lie within the critical value range –2.08 and 2.08.

Table 26: Control Group's results for Adherence to Scripting

Dependent Variables	*t*-values	Two-tailed *p*-values	Hypotheses
Fast	0.25	0.81	Δ Fast = 0
Accurate	-10.25*	0.00	Δ Accurate = 0
Courteous	- 3.79*	0.00	Δ Courteous = 0
Timely	- 7.73*	0.00	Δ Timely = 0
Selling	-0.40	0.69	Δ Selling = 0
Average	- 7.02*	0.00	Δ Average = 0

* Variables with a significant difference in scores from the pre-test to post-test, using a significance level of 0.05 and 21 degrees of freedom.

Therefore the null hypotheses that

5.g) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Fast’ between the pre-test and post-test scores is rejected;

5.h) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Accurate’ between the pre-test and post-test scores is accepted;

5.i) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Courteous’ between the pre-test and post-test scores is accepted;

5.j) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Timely’ between the pre-test and post-test scores is accepted;

5.k) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Selling’ between the pre-test and post-test scores is rejected;

5.l) the control group showed a statistically significant difference in the Adherence to Scripting category ‘Average’ between the pre-test and post-test scores is accepted.

Therefore, evidence has been found in support of the predicted outcome that that the control group showed no statistically significant difference for the categories Fast and Selling. The predicted outcome that the categories Accurate, Courteous, Timely and Average showed no statistically significant difference for the control group was refuted.

5.4.6 Hypothesis Six: Effect of the Intervention on Electronic Performance Monitoring

There were two participants from the experimental group that did not have scores for the performance criteria, as they were not on the queuing system for the call centre. Therefore comparisons made in this section will show the experimental group having 14 participants. Table 27 shows the values used to analyse the results for Electronic Performance Monitoring.

Table 27: Values used to analyse the results for the Experimental Group

	Values
N	14
Df	13
Level of Significance	0.05
Critical Value	2.16

Hypothesis six tests whether the practice of Sudarshan Kriya resulted in a statistically significant increase or decrease in all the categories for Electronic Performance Monitoring in the experimental group while the control group showed no statistically significant difference in all the categories for Electronic Performance Monitoring for the same time period.

For the experimental group, a statistically significant increase in all categories for Electronic Performance Monitoring, except for Unavailable Time for which a decrease is expected, would reflect that the intervention was successful in producing a change in Electronic Performance Monitoring.

For the control group statistically significant differences in Electronic Performance Monitoring may possibly be attributed to the Hawthorne Effect, instrument reactivity or statistical artefacts.

Differences in the Experimental Group's Pre/Post-test scores

Table 28 shows that AWT% had a statistically significant increase in pre-test and post-test scores with the t-value being greater than 2.16. The p-value confirms this increase in scores. Compliance% for the experimental group showed a statistically significant decrease in scores with the *t*-values being less than –2.16.

Table 28: Experimental Group's results for Electronic Performance Monitoring

Dependent Variables	*t*-values	One-tailed *p*-values	Hypotheses	
Contact	-0.73	0.76	∆ Contact	> 0
Unavailable	-1.58	0.07	∆ Unavailable	< 0
AWT%	3.68*	0.00	∆ AWT%	> 0
Compliance %	-3.68	0.99	∆Compliance%	> 0

* Variables with a significant increase / decrease in scores from the pre-test to post-test, using a significance level of 0.05 and 13 degrees of freedom.

Therefore, the null hypotheses for Electronic Performance Monitoring that

6.a) the experimental group showed no statistically significant increase in the Electronic Performance Monitoring category Contact Time between the pre-test and post-test scores is accepted.

6.b) the experimental group showed no statistically significant decrease in the Electronic Performance Monitoring category Unavailable Time between the pre-test and post-test scores is accepted.

6.c) the experimental group showed no statistically significant increase in the Electronic Performance Monitoring category AWT% between the pre-test and post-test scores is rejected.

6.d) the experimental group showed no statistically significant increase in the Electronic Performance Monitoring category Compliance% between the pre-test and post-test scores is accepted.

Therefore, evidence has been found in support of the predicted outcome that that the practice of Sudarshan Kriya results in a statistically significant increase in AWT% for the experimental group, while the predicted outcome of a statistically significant increase for Contact Time and Compliance% as well as a statistically significant decrease in Unavailable Time for the experimental group was refuted.

Differences in the Control Group's Pre/Post-test scores

Table 29 shows that Contact Time, AWT% and Compliance% had a statistically significant difference in scores with the *t*-values falling outside the

critical value range of –2.08 and 2.08. Contact time and AWT% showed a statistically significant increase while Compliance% showed a statistically significant decrease. Unavailable time showed no statistically significant difference in the scores.

Table 29: Control Group's results for Electronic Performance Monitoring

Dependent Variables	*t*-values	Two-tailed *p*-values	Hypotheses
Contact	2.09*	0.05	Δ Contact = 0
Unavailable	-1.00	0.33	Δ Unavailable = 0
AWT%	2.42*	0.02	Δ AWT% = 0
Compliance %	- 3.14*	0.01	ΔCompliance%= 0

* Variables with a significant difference in scores from the pre-test to post-test, using a significance level of 0.05 and 21 degrees of freedom.

Therefore, the null hypotheses for Electronic Performance Monitoring that

6.e) the control group showed a statistically significant difference in the Electronic Performance Monitoring category Contact Time between the pre-test and post-test scores is accepted;

6.f) the control group showed a statistically significant difference in the Electronic Performance Monitoring category Unavailable Time between the pre-test and post-test scores is rejected;

6.g) the control group showed a statistically significant difference in the Electronic Performance Monitoring category AWT% between the pre-test and post-test scores is accepted;

6.h) the control group showed a statistically significant difference in the Electronic Performance Monitoring category Compliance% between the pre-test and post-test scores is accepted.

Therefore, evidence has been found in support of the predicted outcome that that the control group showed no statistically significant difference for the category Unavailable Time for the same period. The predicted outcome that the control group showed no statistically significant difference for the

categories of Contact Time, AWT% and Compliance% for Electronic Performance Monitoring for the same time period was refuted.

5.5 Additional Analyses

5.5.1 Attendance of the course and follow-up sessions

Although it was compulsory for all participants to attend all sessions of the course and follow-up sessions, there were circumstances when the participants could attend the course or the follow-up sessions. Table 30 presents the attendance figures for the course and the follow-up sessions.

Table 30: Attendance of the Intervention

	Attended	Dropped Off / Absent	Total	Attendance %
Course	17	5	22	77%
Follow-up One	15	2	17	88%
Follow-up Two	12	5	17	71%
Follow-up Three	14	3	17	82%
Follow-up Four	9	8	17	53%

Reasons for dropping off from the course or not attending the sessions were also investigated by the researcher by means of interviewing the participants after the last follow-up session took place. In table 31 the nature of the reasons shown indicate some were personal, some were coincidental and others were trivial.

Table 31: Reasons for not attending the course and follow-up sessions.

Reasons	Course	Follow-up 1	Follow-up 2	Follow-up 3	Follow-up 4
Conflicted with religious beliefs	3				
Work was a higher priority	1				
Personal problems would become known to the other participants	1				
Sick leave			2		2
Compassionate Leave		1			
Acting as Team Leader			1		
Attended other training courses			2		
Annual Leave		1		2	1
Transferred to another Office					1
Did not attend previous two follow-up sessions.					1
Forgot about the session				1	
Misunderstood Dates					3
Total number of participants	5	2	5	3	8

5.5.2 Sharing session at the end of the course

The common themes that emerged from the sharing session at the end of the course were that the participants found they experienced physical, psychological, social improvements in themselves. Most participants gained personal insights. A detailed breakdown of the comments making up each theme is shown in table 32.

Table 32: Sharing Session at the end of the course

Themes	Comments	No.	%
Physical	I felt so energised after the breathing techniques	1	100%
	The breathing techniques have given me relief from headaches.	1	
	The effects of the breathing showed on my face. People at work told me I look much better.	1	
	When we went back into the call centre everybody noticed that we looked stress-free and fresh.	All	
Psychological	I feel much better than before the course	2	35%
	The breathing techniques made me feel more relaxed.	2	
	I am calmer, stable mind and more peace within myself. I am more aware of my emotions.	2	
Social	I learnt more about my colleagues.	1	29%
	I am now reacting to situations and people in a different way.	4	
Personal Insights	I have become more aware of the different situations that cause stress within myself.	3	88%
	Have a positive attitude	1	
	Give 100% in all you do.	2	
	To be natural as when I was a child and not to change for others.	1	
	Accept the past and live for the present moment.	4	
	I learnt how to deal with problems and stress.	3	
	I have become more aware of ego.	1	

5.5.3 Analyses of Questionnaire about the intervention

In addition to the questionnaires related to the dependant variables being observed, a questionnaire about the intervention itself was also administered to the participants. Appendix 3 shows the questionnaire administered. Only responses adding value to the research objectives were analysed in this section.

Question Two: What did you find about the course that benefited you most?

This question enquired from the participants about which aspects of the course they found to have benefited them most. Their responses where directed towards the breathing techniques or philosophy taught on the course. Table 33 shows their responses per dominant theme.

Table 33: Benefits participants derived from the course

What did you find about the course that benefited you most?			
Themes	Comments	No.	%
Breathing Techniques	Breathing techniques	2	47%
	Breathing techniques was the best, philosophy taught sounds very new age	1	
	I never realised the source of energy that you can get from breathing - it was great	1	
	Breathing is a primary and essential health tool followed by eating	1	
	Getting a lot of energy and the mind to relax	1	
	Breathing techniques helped lots with my child, when I am stressed at work and when I arrive at home - I no longer feel that stressed anymore.	1	
	There are things you do that you are not aware of. Breathing techniques eases your mind, your soul and your body.	1	
Both	I feel they work hand in hand	1	47%
	Both breathing techniques & philosophy taught	7	
Philosophy Taught	What you resist will persist & Accept things you cannot change.	1	6%

The most common themes that emerged from question two were breathing techniques, philosophy taught and both. Table 34 summarises these themes together with the percentage of participants that agreed on a particular theme.

Table 34: Common themes emerging from the benefits participants derived

Theme	%
Philosophy Taught	6%
Breathing Techniques	47%
Both	47%

Question Three: How did the course help you manage your personal life and/or your work life better?

This question enquired from the participants about which aspects of their lives they perceive to have improved as a result of attending the course. Again, their responses were directed towards assessing the impact on their personal life or work life. Table 35 shows their responses, which are clustered under dominant themes.

Table 35: Influence on participants' personal life or work life

How did the course help you manage your personal life and/or your work life better?			
Themes	Comments	No.	%
Greater Awareness of Stressors	Be more calm	2	100%
	Live in the present moment, do not regret the past or be anxious about the future	6	
	Realise it is easy to avoid stressful situations	1	
	Do not see intentions behind others mistakes	2	
	Able to assess problem then either react or let go of it	1	
	I have learned to recognise when I am stressed	1	
	What you resist will persist - deal with situation immediately instead of leaving it for another day	1	
	Accept situations and people as they are	4	
Self Improvement	See different things I never recognise in life	2	59%
	Demanding love or things will destroy love.	1	
	Be positive	1	
	Take responsibility for everything you do	2	
	Love everything and your surroundings	1	
	Become more giving	2	
	It made me more human	1	
Perform better at work	Helped me to perform on my work	1	29%
	Able to concentrate	1	
	Job is emotionally stressful, course showed me how to monitor it in a positive way	1	
	Don't take things personally at work	2	
Negative tendencies of the mind reduced	Personally – learnt to control emotions	1	12%
	To have more patience	1	
Self improvement/ Improved social interaction	Personally able to be introspective - put myself first with the result that my relationships with others have improved	2	12%

Common themes that emerged from the question related to the influence of the course on participants personal life or work life is shown in table 36.

Table 36: Common themes emerging from the influence on personal life or work life

Theme	%
Greater awareness of stressors	100%
Self improvement	59%
Perform better at work	29%
Negative tendencies of the mind reduced	12%
Self improvement / Improved social interaction	12%

Question Four: Would you recommend the course to your fellow colleagues?

This question asked participants if they would recommend the course to their colleagues. All participants responded that they would recommend the course to their colleagues, as shown in table 37.

Table 37: Recommend the course to fellow colleagues

Would you recommend the course to your fellow colleagues?		
Comments	No.	%
Yes	17	100%

5.6 Summary of the findings of the study

5.6.1 Quantitative Findings

The quantitative findings of the research were represented by the results of the statistical analyses done on the pre-test and post-test data collected. These analyses have been shown under the various hypotheses tests shown in this chapter. The findings of the research show that all variables did not respond to the intervention as were predicted in the hypotheses. Table 38 shows a summary of the hypotheses and the findings of the study. The table shows the null hypotheses tested as well as the results of the study for the experimental group and the control group. The experimental group's information is indicated by the abbreviation EG and the control group's information is indicated by the abbreviation CG. The results shown indicate

whether the scores are statistically significant in terms of an increase, a decrease or no difference was observed.

Table 38: Summary of the hypothesised findings of the study

	Dependent Variables	Hypothesised test	Finding
Burnout	Emotional Exhaustion	EG – no decrease	Decrease
		CG – difference	No difference
	Personal Accomplishment	EG – no increase	No difference
		CG – difference	Decrease
	Depersonalisation	EG – no decrease	Decrease
		CG – difference	No difference
Physical Symptoms of Stress	No	EG – no increase	Increase
		CG – difference	No difference
	Yes	EG – no decrease	Decrease
		CG – difference	No difference
	Rustout	EG – no decrease	Decrease
		CG – difference	No difference
	Absenteeism	EG – no decrease	No decrease
		CG – difference	No difference
Adherence to Scripting	Fast	EG – no increase	No difference
		CG – difference	No difference
	Accurate	EG – no increase	No difference
		CG – difference	Decrease
	Courteous	EG – no increase	Decrease
		CG - difference	Decrease
	Timely	EG –no increase	Decrease
		CG - difference	Decrease
	Selling	EG – no increase	No difference
		CG - difference	No difference
	Average	EG – no increase	No difference
		CG - difference	Decrease
Electronic Performance Monitoring	Contact Time	EG – no increase	No difference
		CG - difference	Increase
	Unavailable Time	EG – no decrease	No difference
		CG - difference	No difference
	AWT %	EG – no increase	Increase
		CG - difference	Increase
	Adherence %	EG – no increase	Decrease
		CG - difference	Decrease

5.6.2 Qualitative Findings

The qualitative aspects of the research prevailed in the form of observations made by the researcher, notes taken as an observer at permitted sessions on the course, interviews conducted with participants who and responses to qualitative questionnaires administered to participants.

Attendance and reasons for not attending

The course had a 77% attendance rate with the follow-up sessions being similar to this. However the last follow-up session had a poor attendance rate due to a misunderstanding with regards to the date of the follow-up session. The reasons for not attending both the course and the follow-up session varied from being personal, to coincidental reasons to trivial reasons.

Sharing session at the end of the course.

The common themes that emerged from this session was that participants found improvements in their lives physically, psychologically and socially. They had also gained personal insight into their lives, and were taught techniques on how to recognise stressors and strains.

Analyses of qualitative questionnaire

Only some of the questions were analysed for the study. Questions related to how the participants benefited from the course, the influence it had on their personal lives and would they recommend it to their colleagues were analysed.

CHAPTER SIX

6 INTERPRETATION OF RESULTS

6.1 Introduction

In this chapter an interpretation of the results presented in chapter five will be made. The discussion is presented in order of the hypotheses tests. The results for each hypothesis is summarised briefly so that the interpretation of the results are more meaningful. This is followed by a discussion of the additional analyses of qualitative data gathered. The experimental group and the control group showed initial equivalence for all dependent variables in the study. This confirms statistically that the two groups were randomly selected.

6.2 Hypotheses Tests

6.2.1 Hypothesis One: Effects of the Intervention on Burnout

The experimental group showed a significant decrease in levels of emotional exhaustion as well as depersonalisation as a result of being exposed to the independent variable Sudarshan Kriya. Reduced levels of emotional exhaustion as well as depersonalisation relates to lower levels of burnout (Maslach & Jackson, 1981). Personal Accomplishment is a subscale independant of Emotional Exhaustion and Depersonalisation with the result that a reduced score in Personal Accomplishment relates to higher levels of burnout (Maslach & Jackson, 1981). For the experimental group, there was no significant difference in the Personal Accomplishment scores. Therefore, this variable did not contribute to higher levels of burnout amongst the participants for the post-test scores. Therefore the evidence supports the predicted outcome that the practice of Sudarshan Kriya resulted in a decrease in levels of burnout for the experimental group.

Maslach and Jackson (1981) in describing personal accomplishment say that this aspect of burnout relates to the tendency to evaluate oneself negatively, especially with regards to one's work with clients. Workers feel unhappy about themselves and their accomplishments on the job (Maslach & Jackson, 1981).

Being a call centre environment, the proximity to the client is not as close as compared to, for example, social workers. Often the reason for a client phoning is related to problems that are outside the control of the CCA. Further, the nature of the work is such that the resolution of a client's problem is not as complex and as demanding as other human sciences occupations, which require intense emotional involvement with the client. Therefore, the sub-scale of Personal Accomplishment may not be highly significant to a call centre work environment. On the other hand, the stress management skills taught on the course has benefited the participants. In their responses, 53% felt they improved as individuals, 41% have a greater awareness of stressors and 41% reported that the negative tendencies of the mind have reduced.

Therefore, this leads the researcher to the conclusion that a greater awareness of aspects of the job that may significantly contribute to perceptions of lower levels of personal accomplishment amongst the participants has been neutralised by the stress management skills taught on the course.

The control group showed significantly lower levels of Personal Accomplishment, contributing to higher levels of burnout. The variables Emotional Exhaustion and Depersonalisation showed no significant difference in scores. The lower levels of Personal Accomplishment can be attributed to instrument reactivity on the part of the participants. This is when participants are affected by the questions asked in the pre-test with the result that the post-test responses are influenced (Bailey, 1987).

It is interesting to observe that the control group showed instrument reactivity towards the sub-scale of Personal Accomplishment while Emotional Exhaustion and Depersonalisation did not show similar reactivity. Higher levels of Emotional Exhaustion and Depersonalisation has been shown by Maslach & Jackson (1981) to be correlated to job characteristics of the job being emotionally draining, having high volumes of work and the lack of opportunities for personal growth and development. Specifically applicable to Depersonalisation were the job characteristics of the meaningfulness of work

and the knowledge of performance on the job. Maslach & Jackson (1981) say that these two aspects of burnout are somewhat related. On the other hand, Personal Accomplishment refers to the person's attitudes towards themselves regarding their accomplishments on the job. Job characteristics such as task significance, assessing the degree of substantial impact the job had on other peoples' lives, opportunities for personal growth and development, meaningfulness of work and knowledge of performance on the job also correlated to Personal Accomplishment (Maslach & Jackson, 1981).

Therefore, Personal Accomplishment relates to the individuals' perception of their accomplishment on the job while Emotional Exhaustion and Depersonalisation are as a result of job characteristics. By being exposed to the questionnaire in the pre-test, the CCAs have become more aware of certain characteristics of their job, which they may have not considered previously. This had the effect of showing altered results in the post-test scores. Post-test scores for Emotional Exhaustion and Depersonalisation did not change, as there were no changes in the characteristics of the job that could have influenced these variables.

6.2.2 Hypothesis Two: Effects of the Intervention on Physical Symptoms of Stress

The number of 'no' responses to the physical symptoms of stress for the experimental group showed a significant increase for the post-test results. The number of 'yes' responses to the physical symptoms of stress showed a significant decrease for the experimental group for the post-test results. This supports the predicted outcome that the practice of Sudarshan Kriya resulted in the experimental group experiencing a reduction in the number of physical symptoms of stress. This confirms the findings of the research done by Chopra (2002), where the participants, after the practice of Sudarshan Kriya, had experienced relief from pain related to somatic symptoms such as tiredness and lethargy. The control group showed no significant differences in any of the responses for the physical symptoms of stress.

In further support of the predicted outcomes related to the physical symptoms of stress, feedback from the sharing session and the questionnaire about the intervention revealed that participants had noticed physical differences in themselves. Participants noted that when they went back into the call centre after the first session of the breathing technique, everyone at work commented that they looked stress-free and fresh. Other comments related to physical effects on the participants were related to relief from headaches and feeling more energetic.

6.2.3 Hypothesis Three: Effects of the Intervention on Rustout

The experimental group showed a significant decrease in the levels of Rustout. Therefore evidence supports the predicted outcome that the practice of Sudarshan Kriya resulted in reduced levels of Rustout. The control group showed no significant difference in the levels of Rustout.

McGarvey (1997) says that one of the main causes for rustout is the inability to cope with the pace of change in technology and global competition in society. Some people find that they have fallen behind, resulting in a ‘why bother?’ attitude. This leaves people with a sense of loss and lack of understanding of how they fit into business anymore. As a result commitment and enthusiasm decreases (McGarvey, 1997).

Certain items on the Rustout Inventory points to aspects of the work environment the individuals are exposed to. The item related to Dis-identification asks the participant to rate the statement ‘My contribution used to be important but not anymore’. This may be a reflection of certain circumstances in the work environment that appears invoke a stronger negative response in the control group compared to the experimental group. Further, personal insights and other coping skills taught during the intervention may have been instrumental in invoking a positive response to this statement by the experimental group. This is supported by the comments on the questionnaire about the intervention where all participants felt that they now have a greater awareness of stressors.

Therefore quantitative evidence supports the predicted outcome that the experimental group had a decrease in rustout after practicing Sudarshan Kriya. Further, comments made by participants during the sharing sessions and on the questionnaire about the course show that participants have learnt skills and personal insights about themselves. Comments like 'Do not take things personally at work', 'Do not see intentions behind others mistakes' and 'Accept situations and people as they are' by the participants when asked how the intervention has helped them in their work or personal life, appear to have provided them with new insights on how to handle uncomfortable circumstances. These appear to have helped them cope better with feelings associated with disorientation, disenchantment, dis-identification and disengagement.

6.2.4 Hypothesis Four: Effects of the Intervention on Absenteeism

The hypothesis was to test whether there would be a decrease in absenteeism for the experimental group as a result of being exposed to Sudarshan Kriya. The experimental group did not show a significant decrease in the levels of absenteeism. This may be due to the timeframe of the study being too short. The control group also showed no significant difference in levels of absenteeism. Ideally, it would have been preferable for the timeframe of the study to extend over three months after the intervention was conducted. In this case the post-test scores would be calculated using the average of the three months after the intervention was conducted.

Deery *et al* (2002) conclude in their study of emotional exhaustion and employee withdrawal at telephone call centres that the speed and pace of work contributed significantly to the depletion of emotional resources. As a coping mechanism, employees adopt a strategy of withdrawal. Therefore, although Sudarshan Kriya has been successful in reducing the levels of emotional exhaustion as well as depersonalisation, other organisational factors, instrumental in causing employees to resort to withdrawal as a coping mechanism, may have influenced the absenteeism scores for the post-test. Deery *et al* (2002) say that both the context and content of the job were important sources of job stress.

Within the context of the organisation, for the month of September, management reported that 80% of the call centre staff were available to service customers. This was due to higher training and higher vacation leave due to the school holidays coinciding with this month. Further, 15 temporary employees were retrenched during the same month, which may have influenced employees' commitment to work. These circumstances further support the argument that the context of the job is a source of job stress.

Varca (1999) says that workers will serve customers better when their perception of the work environment is positive. In a similar tone, Hendrix *et al* (1995) say that a positive environment leads to more committed people and subsequently lower absenteeism levels. Comments by participants regarding the intervention 'I see things differently', 'To be positive', 'I am now able to handle stressful situations better', 'Do not see intentions behind others mistakes' and 'do not take things personally at work' show that their perspective on life have changed in a positive manner. However, it has to be seen whether there was an impact on customer service. There was no reflection of improved absenteeism. Causality needs to be shown between a positive work environment, improved commitment and lower levels of absenteeism. This shows that reduced levels of burnout alone do not result in lower absenteeism. There may be other organisational variables that may have influenced the levels of absenteeism. Also the timeframe of the study may have been too short to see the causality between a positive perspective, improved commitment and lower absenteeism.

Taylor & Bain (1999) conclude that where individual resistance is embedded in a work place culture and is supported and shared by other disaffected workers, the said group then collectively adopts the same attitude. This argument may be yet another reason for no significant decrease in the levels of absenteeism for the experimental group, as collectively the call centre culture may be such that it is acceptable to take a few days off work. This view is also supported by the findings of the Hawthorne study where it was found

that work-group norms affect productivity (Frank & Kaul, 1978). Workers arrive at a norm of what constitutes a 'fair days work'.

The argument for a collective attitude towards work may have also influenced individuals experiencing a positive outlook on life. A participant may now have a positive attitude towards work, but the collective attitude may be too overwhelming for that individual's attitude to make a difference to the general mood prevailing in a work environment. Therefore yet another argument can be presented in favour of the unchanged absenteeism scores. Individual positive attitudes are influenced by the collective group mood in the work environment, resulting in no significant decrease in absenteeism for the experimental group.

6.2.5 Hypothesis Five: Effects of the Intervention on Adherence to Scripting

The practice of Sudarshan Kriya by the experimental group has led to no significant increase in all categories of Adherence to Scripting. Courteous and Timely had each shown a significant decrease in the post-test scores. The remaining categories of Fast, Accurate, Selling and Average showed no significant difference in post-test scores. The control group showed a significant difference in Accurate, Courteous, Timely and Average. All of these variables showed a significant decrease in post-test scores. The remaining categories of Fast and Selling showed no significant difference in scores.

It can be observed that the experimental group compared to the control group, showed decreases in fewer categories of the Adherence to Scripting. When comparing each category for both groups against each other, it can be seen that the experimental group appeared to be performing better than the control group. The Average scores for the two groups show that the experimental group showed no significant difference in scores while the control group's average score had decreased significantly. Although the results do not support the hypothesis that the practice of Sudarshan Kriya resulted in an increase in scores for all categories of Adherence to Scripting for the

experiment group, it does show that the experimental group delivered a better quality of service to the customer than the control group.

Hendrix *et al* (1995) in their stress-related health model show that the organisational outcome of performance is enhanced by the high significance of a task, while emotional exhaustion reduced performance. Given that this is a call centre environment, the impact on other peoples' lives is not as substantial compared to human services occupations, hence the significance of the job is not as high. Therefore it can be concluded that although the CCAs experienced lower levels of emotional exhaustion, this change alone did not influence the performance of individuals. Task significance has seemingly had an impact on performance. The unchanged scores for Personal Accomplishment on the MBI support the argument that task significance may be an influencing factor for the performance of the experimental group. It was discussed earlier that task significance is highly correlated to Personal Accomplishment (Maslach & Jackson, 1981).

6.2.6 Hypothesis Six: Effects of the Intervention on Electronic Performance Monitoring

The experimental group showed a significant increase in scores for category AWT%. Contact Time and Unavailable Time showed no significant difference in their scores while Compliance% showed a significant decrease in scores. The control group showed significant differences for Contact Time, AWT% and Compliance%. Contact Time and AWT% showed significant increases, while Compliance% showed a significant decrease. Unavailable Time showed no significant difference in scores for the control group.

The experimental group showed no significant difference for contact time while the control group showed a significant increase in contact time. The experimental group showed a more significant increase in AWT% than the control group. Similarly, there was a more significant decrease in the Compliance% for the experimental group compared to the control group. 7 out of 16 participants (44%) in the experimental group were below the minimum target range of 92% for compliance for the call centre. 8 out of 22 participants

(36%) in the control group were below the minimum target range (92%) for compliance for the call centre.

Unavailable Time showed no significant difference in scores for both the experimental group and the control group. Maslach & Jackson (1981) say that people experiencing burnout would want to spend less time working with people, which shows in them taking more frequent breaks from work. Studies have shown that staff who take more frequent breaks scored higher on Emotional Exhaustion. Although the experimental group has shown that there was a significant decrease in levels of Emotional Exhaustion, this change has not translated into improved results for unavailable time in the experimental group. No change in unavailable time may be attributable to collective group behaviour of taking frequent smoke breaks. This behaviour was also observed during the intervention as participants used the toilet breaks allowed by the facilitator, to have their smoke breaks.

During the month of September 80% of the call centre staff were operational as there was increased training and more vacation leave due to the school holidays coinciding with this month. Further, there were 15 temporary staff members that were retrenched by management. On speaking to the manager of the call centre, she mentioned that management focuses more on the quality of calls taken as opposed to the quantity of calls by a CCA. These circumstances may have resulted in the workload of the CCAs being greater for the month being observed and may have contributed to the results seen for Electronic Performance Monitoring.

The researcher finds it difficult to conclude that the Hawthorne Effect would have been responsible for the differences in categories of electronic performance monitoring for both the experimental group and the control group. The participants were not aware of the different criteria that were used to measure their activity on the electronic performance monitoring system.

According to Franke & Kaul (1999) 7 to 8 hour shifts make it difficult to sustain high levels of commitment. Electronic Performance Monitoring does not

secure quality performance from CCAs. Neither does it deliver the motivation and commitment that management seeks from call centre employees. Franke & Kaul (1999) conclude that the quality / quantity dilemna is an issue that preoccupies management's mind. Too much focus on quality and not quantity is not good for the business objectives of the call centre while the opposite would result in employees motivation and commitment being adversely affected.

6.3 Additional Analyses

6.3.1 Attendance of the course and follow-up sessions

The course had 77% attendance with 5 participants withdrawing from the course. The reasons for withdrawing varied from conflicting with religious beliefs, work was a higher priority to privacy needed with regards to a personal problem. All participants attended the first day in full.

One participant left after the first day as she felt vulnerable with regards to a personal problem she was experiencing. She did not want her personal problems to become known to the rest of the group. Her privacy regarding this matter was important to her. This withdrawal can be attributed to systematic subject attrition as the intervention resulted in the subject feeling vulnerable.

Two participants left the course on the second day, after the breathing technique was introduced to them. The one did not comply with any of the instructions given by the facilitator. Her perception was that the technique was against her religion, which was against being in a state of a thought-free mind. She felt uncomfortable because she was causing stress to herself and the facilitator by not complying with the instructions. This non-compliance can be related to the control of extraneous variables and the effects the type of instructions had on the participant. There was nothing in the technique that points to religion, but it was against her religion to relax in this manner. She found the philosophy inspiring but the technique was conflicting. The second participant performed the technique but decided to leave after the session was over as she was uncomfortable with it. When asked if there was anything

mentioned by the facilitator that may have caused her to associate the breathing technique with a religious practice, she said there was nothing that the facilitator said that made her associate it with religion.

Two participants left after the second day was completed. One participant left due the technique conflicting with her religious beliefs. Although the technique was not anything like meditation, she felt it was against her religion. The other participant left due to her recently returning from maternity leave. She needed to focus on work, as she had to catch up on sales.

From speaking to the participants that had dropped off from the course, it appeared that the participant who had not complied with the instructions given by the facilitator may have had a strong influence on the other participants who had decided to withdraw from the course, especially those who had withdrawn for religious reasons.

The follow-up sessions were not attended in full complement. They took place at 7.30 in the morning, during the call centre's start-up meeting time. Participants had varying reasons like sick leave, attending other courses, misunderstanding dates and forgetting about the session to mention a few. The attendance of the follow-up sessions were perhaps not emphasised enough to the participants.

6.3.2 Sharing session at the end of the course

The sharing session at the end of the course showed that participants had benefited from the techniques taught as well as the philosophy taught. The responses from participants showed that they had benefited by attending the course physically, socially, psychologically and in terms of the personal insight gained.

In terms of physical differences noticed, participants noted that when they went back into the call centre after the first session of the breathing technique, everyone at work commented that they looked stress-free and fresh. Other

comments related to physical effects on the participants were related to relief from headaches and feeling more energised.

In terms of the social differences noticed by the participants, one participant mentioned that she learnt more about her colleagues after the session where participants share their life stories. Some participants had mentioned that they are now reacting to people and situations in a different way.

In terms of the psychological differences noticed by participants, comments like ‘feeling much better than before’, ‘feeling more relaxed’, ‘more calm, and at peace within’ and ‘aware of my emotions’ show that they benefited psychologically from the intervention.

Finally, some participants observed greater personal insight in terms of becoming more aware of stress inducing situations, having a positive attitude, giving one hundred percent in everything that they do, being more natural and accepting the past and living for the present moment.

The sharing at this session showed that participants benefited from the course as mentioned above. These comments further support the quantitative findings of the research.

6.3.3 Analyses of questionnaire on the course

Participants were asked to provide feedback in the form of a questionnaire on how the intervention had benefited them and the influence it has had on their personal and / or work life.

Question one ‘How did you benefit from the course?’, showed responses which fall into the following themes :

Participants’ responses permeate more than one theme, with the result that 53% felt they had improved as individuals, 41% now have a greater awareness of stressors and 41% showed that the negative tendencies of the mind have reduced. Participants showed that they feel stronger about

themselves, more positive and calmer. Others have noticed that their perception of situations and people were altered.

Question two ‘What did you find about the course that benefited you most?’ showed the following themes in responses:

Comments to the effect that ‘the philosophy and breathing techniques work hand-in-hand’ and ‘breathing techniques eases your mind, soul and body’, ‘breathing is a primary health tool, followed by the food you eat’, ‘realising the energy that can be gained by breathing’ showed that the benefits were experienced across varying dimensions.

Question three: ‘How did the course help you manage your personal life and/or your work life better?’ showed the responses that fall into themes that were similar to question one. One more theme appeared which was ‘Performed better at work’.

Participants have shown that they are better equipped to handle stressful situations. Comments like ‘do not take personally at work’, and ‘do not see intention behind others mistakes’ show that they were adopting a more compassionate approach. There appeared to be subtle changes in their outlook towards life.

All the participants responded that they would recommend the course to their colleagues, as it would benefit them in the following ways:

They also agreed that they would suggest to management that the course be offered to their fellow employees. All participants also responded that they would recommend the course to friends and family members.

When asked how the course could be improved, 65% felt that is was fine as it is. Others commented that ‘it could be made longer’, ‘providing booklets on aspects of the course and videos on elements of the course’ and ‘small

breaks for the body'. One participant commented that participants should be told upfront that the course is not pursuing any religious interests.

When asked how often participants practiced the breathing techniques at home, almost 60% said they practiced three times or more often in a week. Others ranged from practicing it four to five times a week to not often or only when stressed.

When asked if the participants found it easy to incorporate it into their daily lives, the responses varied as shown below:

Comments showed some participants had made the extra effort by getting up earlier. Others had found it difficult to practice as attention needed to be given to others at home. Another participant found that breaking the routine at home was difficult. Others commented that it was not easy but they are getting used to it.

In conclusion, it can be said that participants have learnt valuable skills on how to identify stressors and deal with them. Selye (1983) says that in dealing with stress, an individual must be able to remove unnecessary stressors, not allow neutral stressors to become stressors in life, develop the ability to deal with stress and seek relaxation or diversion from the demand. From looking at the responses to the questionnaires about the intervention, it can be observed that the practice of Sudarshan Kriya has managed to equip the individuals to deal with stress in more than one aspect outlined by Selye (1983). Participants are able to seek relaxation from the demand by practicing the stress management technique. Comments related to how they have benefited from the course, for example, 'I have now become aware of situations that cause stress within myself', 'Live in the present moment, do not regret the past or be anxious about the future' and 'Accept people and situations as they are' show that the participants have learnt skills that allow them to remove unnecessary stressors and not allow neutral stressors from affecting themselves. Hence their ability to deal with stress has improved.

CHAPTER SEVEN

7 CONCLUSIONS

7.1 Summary

Through the current study, the researcher aimed to show that the practice of Sudarshan Kriya resulted in a reduction in levels of burnout, the physical symptoms of stress and rustout. In addition, organisational objectives such as absenteeism and certain performance criteria were observed for changes in these variables.

The study showed that the intervention was successful in reducing certain elements of burnout, namely emotional exhaustion and depersonalisation; reducing levels of Rustout, as well as reducing the number of physical symptoms of stress. The intervention did not show significant differences in absenteeism and performance criteria. It has been shown that individual well-being improved while organisational objectives did not show significant results.

The researcher believes that confounding may have taken place for the organisational variables such as absenteeism and the various performance criteria. Confounding occurs when the extraneous variables differentially affect the dependant variables for the two groups in the study (McGuigan, 1990).

The intervention has shown to not only improve the individual well-being but it has also shown to equip them with valuable insights on how to manage stress in their lives. The individuals came away with a positive perspective on life.

According to Folkman (1992), management is faced with the complex situation of managing both burnout and rustout amongst employees, as the solution to one seems to be the very source of problems for the other. The practice of Sudarshan Kriya has been shown to reduce both burnout and rustout. These results also confirms the claim made that the technique is experiential and as a result is specific to an individual (www.artofliving.org).

Therefore a solution to the complex situation of solving both rustout and burnout within the workplace, appears to be presenting itself in the practice of Sudarshan Kriya. The individual is empowered to cope with circumstances he or she is presented with. In addition, management should also attend to the source of problems related to rustout and burnout.

Varca(1999) says that providing a good work environment is part of the social contract between employers and employees. Therefore, Sudarshan Kriya can be used as a stress management intervention to enhance the work environment in which employees operate. This intervention can be regarded as a partnership between employers and employees whereby both parties benefit from the outcomes of the intervention.

South Africa has gone through unprecedented change in the last ten years in it's move from apartheid to democracy (Denton & Vloeberghs, 2003). However, the wounds of the past have not been healed within individuals, a socially responsible employer may see the need to address these issues in a creative way. The benefits for the employer are promising as the prospect of having a calmer work force can be rewarding to both the employer and employee. Sudarshan Kriya has been shown by Sageman (2002) to enable participants to rebuild a sense of a caring, tolerant and interdependant community in which they are valued and accepted. Used as an intervention in the workplace, the practice of Sudarshan Kriya may contribute significantly towards improved employer–employee relationships.

Hendrix *et al,* (1999) say that a healthy organisation contains healthy employees. This can also be said to be true for individual well-being as heightened well-being amongst employees reflects on the well-being of an organisation. The resultant positive attitude towards life experienced by participants may reflect on the overall mood of the organisation. This positive attitude may also be infectious and serve to contribute to a positive work environment.

The intervention may be seen as an EAP to help employees to return to fully contributing to work and a fully functional personal life (Berridge & Cooper, 1994). However, it should not be restricted to individuals who appear to be highly stressed and in need of help. The intervention is equally appropriate for individuals who are performing optimally, as their well-being would be enhanced. The techniques taught can be used as preventative measures against the build up of stress within an individual.

Therefore the intervention can be viewed as a health and well-ness programme, which can be introduced as an intervention to impact certain targeted variables to directly enhance individual well-being and indirectly assist in improving organisational effectiveness. Often individuals experience disorientation and feel disengaged after change within an organisation (McGarvey, 1997), Sudarshan Kriya can be used to effectively address a drop in enthusiasm and commitment. However, the intervention alone cannot be instrumental in achieving organisational results. Attention should also be given to management development programmes together with organisational and job design efforts in order to achieve improved organisational effectiveness.

7.2 Limitations of the study

7.2.1 Design of the study

Timeframe of the study was too short to measure the organisational objectives of the study. The researcher was restricted to conducting the study over a four-month period due to time constraints. The pre-test scores were measured using an average of three months of data before the intervention was conducted. The post-test results used one month of data, after the intervention was conducted.

Design did not include a post post-test. This could have added more insights into the study, as ability of the participants to sustain reduced levels of stress through the practice of Sudarshan Kriya would have become known. This may have also revealed more reliable data for the organisational objectives such as absenteeism and performance.

7.2.2 Sample size

The sample size for the experimental group was small, as the call centre could not afford to allow more than two participants per team to be taken off the call centre queuing system. Ideally, a recommended sample size is between 30 and 35 participants (Lewis-Beck, 1993). As the number of participants in the study increase, the power of statistical tests increases (Christensen, 1985). The current study started with 22 participants for the experimental group. Five participants dropped off from the intervention, leaving 17 participants as the sample size. However, other procedural flaws resulted in the sample size differing per dependent variable. One of the participants who attended the intervention in it's totality did not fill in a pre-test questionnaire, as she was one of those who was sent as a replacement. This reduced the sample size to 16. The variables related to performance criteria had a sample size of 14, as two of the participants were not on the call centre queuing system. The rustout variable used a sample size of 15 as one of the participants did not fill in the Rustout Inventory in error.

7.2.3 Pilot Study

The pilot study did not include conducting the intervention for a smaller number of participants, as the call centre did not have the time or the resources to dedicate to such an activity. This would have highlighted procedural issues during the intervention that could have been avoided during the main study. This would have also served to give the management team a good idea of the commitment that was needed for the intervention to take place smoothly.

7.2.4 Measurement of Organisational Objectives

Organisational objectives such as absenteeism as well as performance were found to be unaffected by the study. There may have been extraneous variables that may have affected absenteeism and performance. A simple telephonic interview with the manager of the call centre did not reveal enough about what may have influenced these variables.

7.2.5 Procedures Followed

Addressing the participants

In attempting to address various known effects that could impact the study, such as the Hawthorne Effect and Controlling Extraneous Variables such as expectancy of benefit from the treatment, self-selection and motivation to obtain relief from stress, the researcher was careful about how much was revealed about the intervention to the participants. This strategy appeared to be a limitation in the study, in that maybe too little was said about the intervention.

During the course, participants used to smoke during the toilet breaks. This could be due to not enough emphasis being paid to the importance to adhere to the recommendation to abstain from intoxicating substances such as cigarettes. Also the reaction of certain individuals that the breathing technique was conflicting with their religious beliefs could also have been attributed to not enough being said about the intervention. This was also confirmed by the comment made by the one participant that ‘ the participants should be ensured that the course is not pursuing any religious interests.’

Description on biographic questionnaire altered

On many of the questionnaires returned for the item related to race group, many participants struck off the word ‘Black’ and penned in the word ‘African’ instead. A suggestion would be for researchers to investigate the terminology used in a workplace for such biographic questions and adjust the questionnaire accordingly. The pilot study did not reveal this issue.

Understanding the population that is being used

The researcher did not do enough investigations into the different teams that were in the call centre. It was found out much later, that all the teams were scheduled to start at different times. Also some teams dealt with accounts queries, while others handled different types of queries. Also included in the twelve teams was a Quality Assurance team, which was not linked to the call centre queuing system. Sometimes within a team it was found that not all

members would be linked to the call centre queuing system. Lack of this knowledge before selecting the sample resulted in some of these individuals being included in the study. This resulted in the sample size for the study being affected as these individuals were eliminated from certain variables in the study.

Commitment to the study

Management commitment as well as participants' commitment to the study was a bit fragmented. This is understandable as their work objectives are a higher priority.

7.3 Significance of the study

The results of the study has shown that the practice of a yogic stress management technique, Sudarshan Kriya, was successful in reducing burnout, physical symptoms of stress and rustout amongst call centre employees. Similar predicted outcomes for organisational objectives such as absenteeism and performance did not show any significant increase. Therefore it can be seen that managing the stress levels amongst employees only does not directly impact on organisational effectiveness. Management should take into account the context and content of the job, the power of a collective group decision regarding withdrawal and the prevailing mood in the work environment and the vulnerability of organisational commitment to management's actions may also be responsible in influencing organisational effectiveness.

Further, the study also contributed towards literature in the form of an instrument developed to measure Rustout amongst employees. This instrument has been shown to have acceptable reliability, however validity still needs to be shown in future research.

Although the study has shown that individual well-being has been enhanced and there was no significant changes in organisational objectives, this finding is highly revelant as not enough is being done by organisations to address stress in the workplace (Varca, 2003b).

7.4 Recommendations

Sudarshan Kriya appears to be useful as a stress-management intervention in addressing various issues management is faced with. It can be used as a self-development programme, empowering employees to identify stressors and providing them with personal insights into themselves. Sudarshan Kriya can also be used to address the complex situation of addressing burnout and rustout simultaneously amongst employees. It can also be used to provide a good work environment by enhancing the well-being of employees. It can also be used to address to an extent employer-employee relationships by addressing the issues of the past that may be limiting progress in the work context. Finally, Sudarshan Kriya can be used as an EAP for both distressed employees as well as optimal performers as their general well being is enhanced.

When management are looking to use the intervention as part of a larger programme of transformation within the organisation, the collective group influence on individual changes in attitudes should also be taken into account. Therefore it is recommended that a larger the group of people undergoing the intervention would result in a greater impact on the targeted organisational objectives.

Although the study has shown that there was an improvement in individual well-being, it can be said that the organisational and job design issues that could possibly contribute to high levels of burnout and rustout amongst employees still needs to be addressed by management. The context and content of the job are important sources of job stress and are appropriate areas for management to focus on future policy making decisions (Deery *et al*, 2002).

Therefore in approaching various issues prevalent in the work environment, management is presented with a creative way of addressing some awkward organisational outcomes by the suggested use of Sudarshan Kriya in the corporate environment

7.5 Suggestions for Further Research

7.5.1 The study

In the event that the current should be replicated the researcher found the following points may be helpful:

Design of the study

Future research should perhaps extend the length of the study to take place over six months. Pre-tests should include data for three months before the intervention is conducted and the post-tests should take place for three months, every month, after the intervention. The design should also include a post post-test, three months after the post-test.

In the pilot study also include the intervention to be conducted with a small number of participants under conditions as close as possible to the main study. This should include taking participants for the pilot from the same company, the venue being the same, timings for the sessions being the same as for the main study and so on.

Include in the design of the study a greater qualitative approach with regards to the organisational objectives being observed. There were extraneous variables that impacted the organisational variables for the current study. It would be important to get a clearer understanding of what may have influenced these variables. It was also found that a simple telephonic interview with one manager over the telephone was not enough. Maybe the researcher should find other ways of being able to observe the work environment.

Procedures followed

Orientation meeting with team leaders and participants
Once the groups have been selected for participating in the study, the experimental group together with the team leaders should be addressed about the intervention in more detail. This would ensure more commitment from both the team leaders as well as the participants.

This meeting should also highlight that although the techniques taught resemble certain eastern traditions, it is not a religious practice. It is a technique that is highly useful in addressing stresses within ourselves at many levels. Another point that needs to be highlight to them is that the intervention should not be interrupted once it has started as the processes lead on from one day to another. Therefore participants will not be allowed to drop off or come onto the intervention once it has been started.

The researcher should get consensus from the participants regarding their willingness to participate. Anyone objecting for religious or other reasons may be excused from the study and another replacement participant will have to be selected.

The researcher's orientation towards the organisation being used

It is suggested that the researcher take some time to become familiar with the organisation being used for the study. Factors that may affect result in the sample size being affected, such as participants not being on the queuing system, in the case of the current study, should be considered and investigated accordingly.

Further, good working relationship should be developed with the management team so that their commitment to the study is ensured. Although this is difficult to achieve since, their work priorities may not allow them to engage with the researcher.

A better understanding of the organisational norms in terms of the terminology used for items that may appear on the questionnaires used. This would contribute to more polished instruments being presented to the participants in the study.

7.5.2 Other areas of research

Development of the Rustout Inventory

The Rustout Inventory has shown to be a reliable and consistent instrument to measure rustout. The researcher initially developed the instrument based on

the four elements of rustout, namely, disengagement, disorientation, dis-identification and disenchantment. However, a factor analysis all items on the instrument had shown that a one-factor instrument was suitable. It is suggested that the Rustout Inventory be further developed to expand on the items currently included in the instrument. Validity will also need to be shown for the instrument.

Burnout versus Rustout

The current study looked at both burnout and rustout amongst the participants. These two aspects of stress is said to be at opposing ends of a continuum. Leider & Buchholz (2003) say that burnout is the opposite of rustout. It would be interesting to investigate whether these two aspects of stress can be experienced simultaneously by an individual or whether they are distinct forms of stress that do not overlap.

Absenteeism

The link between depersonalisation and absenteeism needs to be investigated further, as the current study did not reflect any difference in absenteeism even though depersonalisation had decreased. Studies have shown that there is a correlation between the element of Depersonalisation and absenteeism (Maslach & Jacksom, 1981), in that, high scores for Depersonalisation is related to high absenteeism. However, the current study has shown that the converse of this relationship, a reduction in depersonalisation has not resulted in lower levels of absenteeism. It would be interesting to investigate, once absenteeism is an acceptable behaviour in a work environment, what factors were likely to influence individuals to attend work more regularly.

Organisational Objectives

It would be interesting to investigate how the combination of management development programmes, organisational / job design efforts as well as health and well-ness programmes impact on organisational effectiveness. However this would require that an organisation invest all of these different interventions.

Another area of interest that appeared was related to Absenteeism and Performance. Given the nature of work for call centres, it would be valuable to establish acceptable norms for these variables in a South African context. This would provide local call centre management with a benchmark against which to evaluate these variables for their individual call centres. This study may be extended to include other organisational objectives that are if interest to management.

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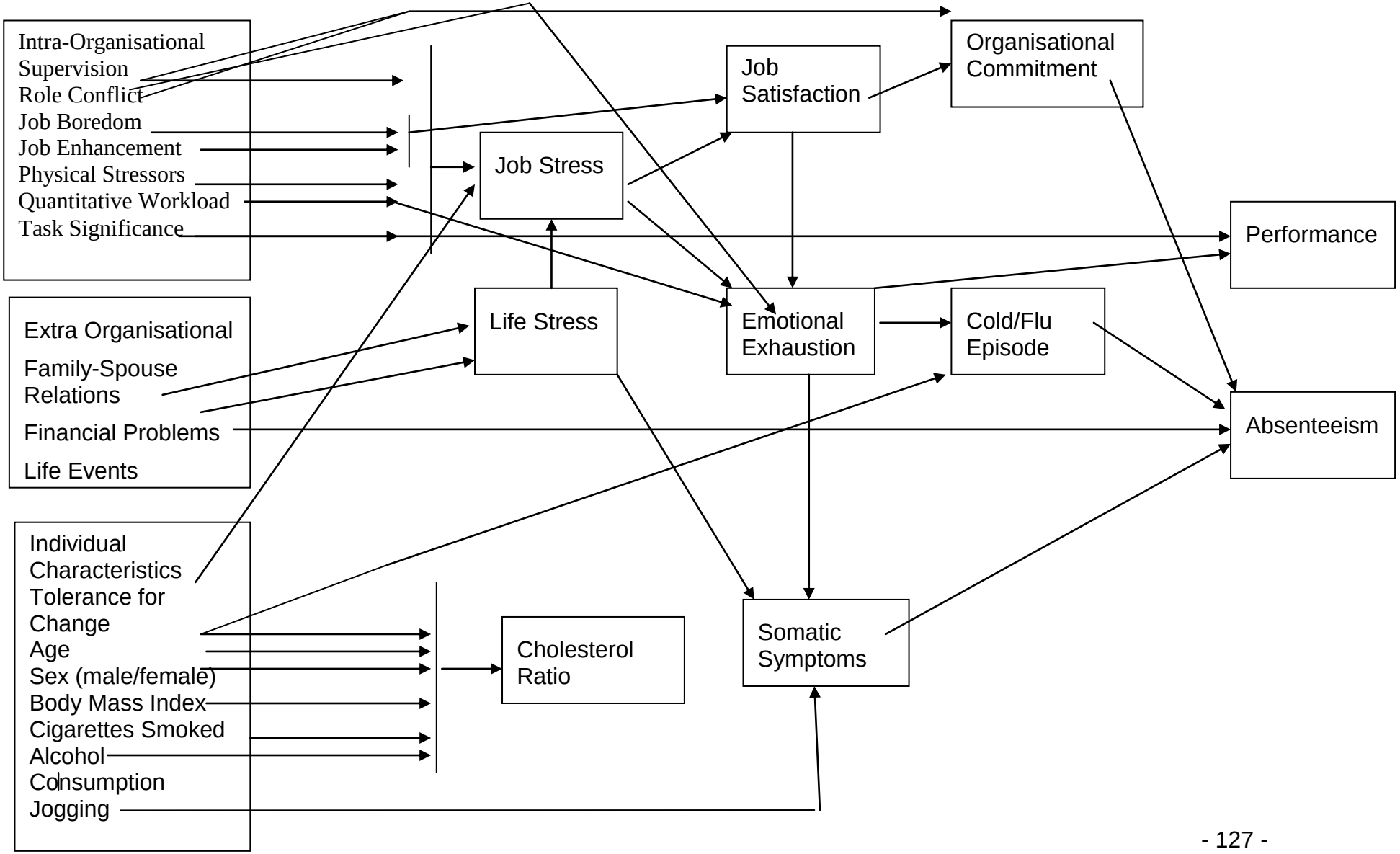
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APPENDICES

APPENDIX 1:Stress Related Health Model



APPENDIX 2: Questionnaires

Dear participant,

It would be greatly appreciated if you could fill out the questionnaires that follow. **Absolute confidentiality is guaranteed**. Your name is requested for research purposes only and **at no time will your employer have access to your particular data**. Remember that there are no right and wrong answers. Answer the questions as they apply to you only. Your integrity and honesty in answering the questionnaires is highly valued.

Thank you,

Shobha Maharaj

Questionnaire 1

To complete this section please mark the appropriate block with an 'X' or fill in the information requested.

Name: _____ Surname : _____

Age at your last birthday _____

Position Held

redaeL maeT ☐ tnegA ertneC llaC ☐

Gender

elaM ☐ elameF ☐

Home Language: _____

Race Group

kcalB ☐ ☐Coloured etihW ☐ naidnI ☐

Highest level of formal education completed

naht sseL ☐Matric cirtaM ☐ eergeD / amolpiD ☐

Number of years of Call Centre experience ___

Number of years in current position ____

Terms of employment

yraropmeT ☐ tnenamreP ☐

Questionnaire 2

The following items refer to feelings or attitudes. Please rate each item in terms of the **frequency (how often) you experience the feeling or attitude**. If the feeling or attitude is never experienced, simply place an 'X' in the column labeled 'Never'.

	Never	Few times a year	Monthly	Few times a month	Every week	Few times a week	Every day
1. I feel emotionally drained after my work.							
2. I feel used up at the end of the day.							
3. I feel tired when I get up in the morning & have to face another day on the job.							
4. Working with people all day is usually a strain for me.							
5. I feel burned out from my job.							
6. I feel frustrated by my job.							
7. I feel I am working too hard on my job.							
8. Working with people directly puts too much stress on me.							
9. I feel like I am at the end of my rope.							
10. I can easily understand how my clients feel.							
11. I deal effectively with the problems of my clients.							
12. I feel I am positively influencing other people's lives through my work.							
13. I feel very energetic.							
14. I can easily create a relaxed atmosphere with my clients.							
15. I feel exhilarated (very happy and excited) after working closely with my clients.							
16. I have accomplished many worthwhile things in my work.							
17. In my work I deal with emotional problems very calmly.							
18. I feel I treat some clients as if they were impersonal objects.							

	Never	Few times a year	Monthly	Few times a month	Every week	Few times a week	Every day
19. I've become harsher towards people since I took this job.							
20. I worry that this job is hardening me emotionally.							
21. I don't really care what happens to some clients.							
22. I feel clients blame me for some of their problems.							

Questionnaire 3

During the past **30 days** did you have any of the following symptoms? If you did have the symptom, did you see a doctor about it? Please mark the appropriate column with an 'X'. **During the past 30 days did you have**?

	No	Yes, but I didn't see doctor	Yes, and I saw doctor
1. An upset stomach or nausea			
2. A backache			
3. Trouble sleeping			
4. A skin rash			
5. Shortness of breath			
6. Chest pain			
7. Headache			
8. Fever			
9. Acid indigestion or heartburn			
10. Eye strain			
11. Diarrhoea			
12. Stomach cramps (Not menstrual)			
13. Constipation			
14. Heart pounding when not exercising			
15. An infection			
16. Loss of appetite			
17. Dizziness			
18. Tiredness or fatigue			

Questionnaire 4

The following items refer to feelings or attitudes. Please rate each item in terms of the **extent to which you agree or disagree with the feeling or attitude** as you experience them at work. If you strongly agree with the feeling or attitude experienced, simply place an 'X' in the column labeled 'Strongly Agree'.

	Strongly Disagree	Disagree Somewha	Uncertain / Neutral	Agree Somewha	Strongly Agree
1. All my job entails is doing the same tasks over and over again, over which I have no control.					
2. I feel stifled and trapped by my job.					
3. I feel the tasks I perform contribute to my growth and development.					
4. I feel my abilities are used to their full potential.					
5. I do not know how I fit into the organisation anymore.					
6. My contribution used to be important but not anymore.					
7. I feel my talents are not recognised.					
8. I feel I am not able to achieve what I want for myself.					
9. My contribution at work is beyond that which is expected of me.					
10. I come to work only to receive a salary at the end of the month.					
11. I am not valued for my true potential.					
12. I no longer make suggestions as I used to in the past.					
13. I no longer volunteer myself when there are emergencies and extra duties to be performed.					

APPENDIX 3 : Questionnaire about the intervention

1. How did you benefit from the Art of Living Course?

   _____

   _____

2. What did you find about the course that benefited you the most (breathing techniques or philosophy taught)?

   _____

   _____

3. How did the course help you manage your personal life and / or your work life better?

   _____

   _____

4. Would you recommend the course to your fellow colleagues?

   ☐ Yes ☐ No

5. In what way would your fellow colleagues benefit from the course?

   _____

   _____

6. Would you recommend the course to your friends and family members?

   ☐ Yes ☐ No

7. Would you suggest to management that the course be offered to your fellow employees as well?

   ☐ Yes ☐ No

8. How do you think the course can be improved?

   _____

   _____

9. How often do you practice the ‘take home’ breathing techniques?

   _____

   _____

10. Did you find it easy to incorporate the take home techniques into your daily life?

    _____

    _____

APPENDIX 4: Letter to the company requesting permission to conduct research

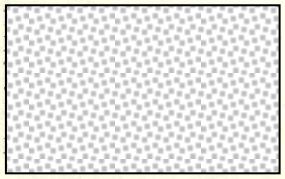
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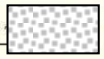




University of the Witwatersrand



29th May 2003

Permission to conduct research using a Stress Management Intervention at  Call Centres.

Dear Sir,

I am a full time MBA student who is currently embarking on a research report. The research topic is related to implementing a stress management intervention at a Call Centre in an organization. Part of the study would include measuring the impact such an intervention has on organizational objectives jointly identified and agreed by the researcher and the organization. The intervention involves teaching participants a breathing technique called 'Sudarshan Kriya' within the structures of a Self Management Seminar. It is a simple, practical and effective training program that empowers managers and employees to experience calm and focus in the midst of the any challenge or responsibility. The Self Management Seminar is based on innovative breathing techniques that permanently reduces stress and heightens one's mental clarity and awareness. These simple yet powerful techniques improve concentration, enhance creativity, increase efficiency and enable a greater sense of purpose and teamwork in the workplace. In this way the Self Management Seminar effectively unleashes the potential for superior performance.

Timescales

- Self Management Seminar is run over total time of 18 to 20 hours. It is mandatory for all participants to attend every session.
- Introductory talk about the research and the seminar to both the control group and experimental group. Pre-test questionnaire will be handed at this stage.

- Four 'Follow up' sessions consisting of two hours each to be held on a weekly basis will also be held. This will ensure that the participants are practicing the technique at least once a week.
- A post-test questionnaire to be handed to all participants at least 3 months after the intervention has been conducted.

I am keen to sign a non-disclosure statement in the event that there is any sensitivity around the results of the research. [redacted] has the reputation of being a leader in the telecommunications sector in Sou[redacted]. I am sure you and your management team would be keen to introduce such an intervention and be a leader yet again.

Regards,

Researcher
Shobha Maharaj (Miss)
083 655 4763

Supervisor
Dr. Karen Ortlepp
083 399 6777

APPENDIX 5: Biographical Questionnaire Analyses

Age

One participant in the experimental group did not disclose her age, so she was given the mean age of 31 years. Table 39 shows the age groups of the participants in the study.

Table 39: Age-groups of participants in the study

Range	20-24	25-28	29-32	33-36	37-40	41-44	44-47
Experimental Group	0%	56% (9)	19% (3)	6% (1)	6% (1)	0%	13% (2)
Control Group	18% (4)	22% (5)	36%(8)	9% (2)	5% (1)	5% (1)	5% (1)

From the descriptive statistics in table 40 it can be seen that, the experimental group had a mean of 31, with the median being 28. Most participants were in the age group 25 years to 28 years. The control group had a mean of 30, while the median was 31. Most participants in the control group were in the age group 29 years to 32 years.

Table 40: Descriptive statistics for Age in the study

	Mean	Minimum	Maximum	Median	Mode
Experimental Group	31	25	47	28	28
Control Group	30	20	45	31	31

Gender

As shown in table 41, the experimental group had 75% female participants while the control group had 68% female participants.

Table 41: Gender distribution of participants in the study

	Male	Female	Total
Experimental Group	25%(4)	75% (12)	100% (16)
Control Group	32% (7)	68% (15)	100% (22)

Home Language

The experimental group had predominantly English speaking participants (31%), followed by Afrikaans speaking participants being 19% of the group. The control group had a tie between Afrikaans speaking and Zulu speaking participants with English speaking participants being the next highest. Table 42 shows the distribution of participants according to their home language spoken.

Table 42: Home Language distribution of participants in the study

Home Language	Experimental Group	Control Group
English	31% (5)	14% (3)
Afrikaans	19% (3)	22% (5)
Zulu	13% (2)	22% (5)
Venda	13% (2)	5% (1)
N.Sotho	6% (1)	0% (0)
S.Sotho	0% (0)	9% (2)
Setswana	6% (1)	0% (0)
Tswana	6% (1)	9% (2)
Xhosa	6% (1)	9% (2)
Sotho	0% (0)	5% (1)
Tsonga	0% (0)	5% (1)
Total	100% (16)	100% (22)

Race Group

The experimental group consisted of 50% Black participants, followed by 25% Coloured and 12.5% of White and Indian participants. The control group consisted of 64% Black participants, followed by 18% White participants and

9% of Coloured and Indian participants. Table 43 shows the distribution of the participants in terms of race group.

Table 43: Distribution of Race Group for participants in the study

	Black	Coloured	White	Indian
Experimental Group	50% (8)	25% (4)	12.5% (2)	12.5% (2)
Control Group	64% (14)	9% (2)	18% (4)	9% (2)

Level of Education

The experimental group had 50% of the participants who were matriculated with 37.5% having a diploma or degree. 12.5 % did not have a Matric. The control group had 73% matriculated participants and 27% had either a diploma or degree. Table 44 shows the distribution of the participants for each level of education.

Table 44: Distribution of Level of Education for participants in the study

	Less than Matric	Matric	Diploma / Degree
Experimental Group	12.5% (2)	50% (8)	37.5% (6)
Control Group	0% (0)	73% (16)	27% (6)

Number of Years of Call Centre experience

The experimental group had 25% of participants with 5 years of call centre experience. The control group had 32% of the participants with 5 years experience. In table 45 the distribution of participants in years is shown.

Table 45: Distribution of Number of Years of Call Centre Experience for participants in the study

Number of Years	1	2	3	4	5	6	7
Experimental Group	18.75% (3)	12.5% (2)	18.75% (3)	12.5% (2)	25% (4)	12.5% (2)	0% (0)
Control Group	23% (5)	18% (4)	14% (3)	0% (0)	32% (7)	9% (2)	4% (1)

The experimental group showed the mean number of years experience was 3.5 years. The control group showed the mean number of years experience being 3.33 years. In table 46 the descriptive statistics for the number of years of call centre experience is shown. .

Table 46: Descriptive statistics for Number of Years of Call Centre Experience in the study

	Mean	Minimum	Maximum	Median	Mode
Experimental Group	3.5	1	6	3.5	5
Control Group	3.33	1	7	3	5

Number of Years in current position

The data related the number of years in the current position is shown in table 47. The experimental group had 31% of the participants being in the current position for 1 year. The mean number of years experience in the current position was 3 years. The control group had 3 years as the mean number of years experience in the current position. 32% of the participants had 5 years experience in the current position for the control group.

Table 47: Distribution of Number of Years in Current Position for participants in the study

Number of Years	1	2	3	4	5	6	7
Experimental Group	31% (5)	19% (3)	12.5% (2)	12.5% (2)	19% (3)	6% (1)	0% (0)
Control Group	22% (5)	18% (4)	14% (3)	0% (0)	32% (7)	9% (2)	5% (1)

Table 48 shows that descriptive statistics for the number of years in the current position. Both groups showed very similar statistics, with the largest difference being the maximum number of years in the current position.

Table 48: Descriptive statistics for Number of Years in Current Position in the study

	Mean	Minimum	Maximum	Median	Mode
Experimental Group	3	1	6	2.5	5
Control Group	3	0.5	7	3	5

Terms of Employment

In table 49 the terms of employment for the participants are shown. The experimental group had 50% temporary employees and 50% permanent employees. The control group had 45% temporary employees and 55% permanent employees.

Table 49: Distribution of Terms of Employment for participants in the study

	Temporary	Permanent
Experimental Group	50% (8)	50% (8)
Control Group	45% (10)	55% (12)

APPENDIX 6: Factor Analysis results for Rustout Inventory

Items	Eigen Values after Varimax Rotation		Factor loadings
	Eigen-values	Individual %	
1. All my job entails is doing the same tasks over and over again, over which I have no control.	4.83	97.96	-0.44
2. I feel stifled and trapped by my job.	0.62	12.46	-0.62
3. I feel the tasks I perform contribute to my growth and development.	0.36	7.35	0.49
4. I feel my abilities are used to their full potential.	0.30	6.14	0.46
5. I do not know how I fit into the organisation anymore.	0.26	5.18	-0.68
6. My contribution used to be important but not anymore.	0.07	1.31	-0.71
7. I feel my talents are not recognised.	0.00	0.03	-0.68
8. I feel I am not able to achieve what I want for myself.	-0.05	-0.96	-0.67
9. My contribution at work is beyond that which is expected of me.	-0.17	-3.39	-0.36
10. I come to work only to receive a salary at the end of the month.	-0.24	-4.84	-0.41
11. I am not valued for my true potential.	-0.29	-5.97	-0.66
12. I no longer make suggestions as I used to in the past.	-0.32	-6.46	-0.84
13. I no longer volunteer myself when there are emergencies and extra duties to be performed.	-0.43	-8.81	-0.70