



***EFFECTIVENESS OF STRESS MANAGEMENT TECHNIQUE IN LEARNING*
AN EXPERIMENTAL & SURVEY BASED RESEARCH**

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ABSTRACT

The aim of this study is to examine the “Effectiveness of Stress Management Technique in Learning”. Stress is a major element which affects one’s cognitive functions such as memory and attention span. Stress distinctly impairs memory retrieval and behavior, for instance the risk of underachieving in assessments. In having this thought, “Mindfulness” technique was used as the intervention or the stress management technique in this study. This is an experiment and survey based research which was conducted among 47 second and third year nursing students of International Medical College in Subang Jaya, Malaysia. Permission and consent were taken prior to the implementation of this research. This study includes total of 50 minutes of teaching of topic on Coaching and Mentoring which is segregated into Part A and B in order to measure the effectiveness of the Mindfulness on this study in a meritocratic manner. The effectiveness of “Mindfulness” was explored using three different instruments which are a) Multiple Choice Assessments, b) Self -Rating Stress Level Marker Scale and c) Mindfulness Stress Management Technique Satisfaction Survey. The researcher used quantitative research method to conduct this study. A pilot study was conducted before implementing the actual research. The study was analysed by using descriptive and inferential statistics which comprises of various frequency tables and charts. This study was carried out with the intention to give out a valuable method to the learners out there where they can reduce stress and also improve cognitive abilities which can result in optimum learning. The study is to benefit many educational stakeholders, policy makers in an educational setting, learners, educators as well as the general public.

Keywords: effectiveness, stress, teaching, coaching and mentoring, mindfulness, learners, cognitive abilities, learning, nursing students, descriptive and inferential statistics.

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TABLE OF CONTENT

CHAPTERS	Title	Pages
1	INTRODUCTION 1.1 Introduction 1.2 Background of the study 1.3 Problem statement 1.4 Research objectives 1.5 Research Questions 1.6 Significance of the research 1.6.1 Significance for Learners 1.7 Definition of terms 1.7.1 Learner 1.7.2 Stress 1.7.3 Stress Management Technique 1.7.4 Mindfulness 1.7.5 Satisfaction 1.7.6 Learning 1.7.7 Cognition 1.7.8 Attention 1.7.9 Working Memory 1.7.10 Recall 1.7.11 Understanding 1.8 Study Limitations	9-13 9 9 9 10 10 10 11 11 11 11 12 12 12 12 12 12 12 12 12 12 13 13
2	LITERATURE REVIEW 2.1 Introduction 2.2 Impact of Emotion on Learning 2.3 Effect of Stress in Learning 2.4 Stress Management Technique for Learning Effectiveness 2.5 Mindfulness 2.6 Conducting the literature search 2.7 Theoretical Rationale 2.8 Conclusion	14-21 14 14-16 16 17 18-19 19 20 21
3	METHODOLOGY 3.1 Introduction 3.2 Research method Figure 1: The Process of Study which took place in International Medical College, Subang Jaya Table 1: Mindfulness Stress Management Process and Procedure 3.3 Research setting 3.4 Population 3.4.1 Target population 3.5 Sampling 3.5.1 Sampling method and size 3.5.2 Sampling frame	22-31 22 22-23 24 25 25 25 26 26 26 26 26

CHAPTERS		
3	3.6 Time Frame	26
	3.7 Ethical consideration	27
	3.7.1 Institution	27
	3.7.2 Participants	27
	3.7.3 Scientific integrity of the researcher	27
	3.8 Pilot study	27-28
	3.9 Instrumentation	28-29
	3.10 Data collection procedure	29-30
	3.11 Data analysis	30
	3.12 Reliability and validity of research	30
	3.13 Conclusion	30
4	DATA ANALYSIS & FINDINGS	31-66
	4.1 Introduction	31
	4.2 Demographic Data Analysis	31
	4.2.1 Gender Analysis	32
	Table 2: Frequency and percentage distribution of respondents according to gender	32
	Chart 1: Frequency and percentage distribution of respondents according to gender	32
	4.2.2 Marital Status Analysis	32
	Table 3: Frequency and percentage distribution of respondents according to marital status	32
	4.2.3 Ethnicity Analysis	33
	Table 4: Frequency and percentage distribution of respondents according to ethnicity	33
	Chart 2: Frequency and percentage distribution of respondents according to ethnicity	33
	4.2.4 Academic Year Analysis	34
	Table 5: Frequency and percentage distribution of respondents according to academic year	34
	Chart 3: Frequency and percentage distribution of respondents according to academic year	34
	4.2.5 Age Group Analysis	35
	Table 6 :Frequency and percentage distribution of respondents according to age group	35
	Chart 4: Frequency and percentage distribution of respondents according to age group	35
	4.3 Multiple Choice Assessment Result Analysis	36
	Research Questions	36
	Table 7 : Frequency and percentage distribution of Part A (Pre-Test) Assessment Results	37
	Chart 5 : Frequency and percentage distribution of Part A (Pre-Test) Assessment Results	37
	Table 8 : Frequency and percentage distribution of Part B (Post-Test) Assessment Results	38
	Chart 6 : Frequency and percentage distribution of Part B	38

CHAPTERS	(Post-Test) Assessment Results	
4	Table 9 : Descriptive Comparison between Part A & Part B (Pre Test & Post Test) Assessment Results	39
	Chart 7 : Descriptive Comparison between Part A & Part B (Pre Test & Post Test) Assessment Results	39
	Table 10: Difference Comparison between Part A & Part B (Pre Test & Post Test) Assessment Results	40
	Chart 8 : Difference Comparison between Part A & Part B (Pre Test & Post Test) Assessment Results	41
	Table 11 :Paired Samples Correlations	41
	Table 12 :Paired Samples Test	42
	4.4 Stress Level Marker Scale Results Analysis	42
	Research Question	42
	Table 13 :Pre-Test Results for Stress Levels	43
	Chart 9 :Pre-Test Results for Stress Levels	43
	Table 14 :Post-Test Results for Stress Levels	44
	Chart 10:Post-Test Results for Stress Levels	45
	Table 15:Descriptive Comparison between Pre & Post Results	45
	Chart 11:Descriptive Comparison between Pre & Post Results	46
	Table 16: Paired Samples Correlations	47
	Table 17: Paired Samples Test	47
	Table 18: Difference of Stress Levels in Post-Test	47
	Chart 12: Difference of Stress Levels in Post-Test	48
	4.5 Mindfulness Stress Management Technique Satisfaction	48
	Survey Analysis	
	Research questions	49
	Table 19 :Mindfulness Stress Management Technique Satisfaction Survey Questionnaires	50
	Table 20: Frequency and percentage distribution for Question 1	51
	Chart 13: Frequency and percentage distribution for Question 1	51
	Table 21: Frequency and percentage distribution for Question 2	52
	Chart 14: Frequency and percentage distribution for Question 2	52
	Table 22: Frequency and percentage distribution for Question 3	53
	Chart 15: Frequency and percentage distribution for Question 3	53
	Table 23: Frequency and percentage distribution for Question 4	54
	Chart 16: Frequency and percentage distribution for Question 4	54

<p>CHAPTERS 4</p>	<p>Table 24: Frequency and percentage distribution for Question 5 Chart 17: Frequency and percentage distribution for Question 5 Table 25: Frequency and percentage distribution for Question 6 Chart 18: Frequency and percentage distribution for Question 6 Table 26: Frequency and percentage distribution for Question 7 Chart 19: Frequency and percentage distribution for Question 7 Table 27: Frequency and percentage distribution for Question 8 Chart 20: Frequency and percentage distribution for Question 8 Table 28: Frequency and percentage distribution for Question 9 Chart 21: Frequency and percentage distribution for Question 9 Table 29: Frequency and percentage distribution for Question 10 Chart 22: Frequency and percentage distribution for Question 10 Table 30: Descriptive Analysis of Mindfulness Stress Management Technique Satisfaction Survey Chart 23: Descriptive Analysis of Mindfulness Stress Management Technique Satisfaction Survey 4.6 Conclusion</p>	<p>55 55 56 57 58 58 59 59 60 60 61 62 63-64 65 66</p>
<p>5</p>	<p>SUMMARY OF FINDINGS, RECOMMENDATIONS & CONCLUSION 5.1 Introduction 5.2 Summary of Findings 5.3 Discussion 5.3.1 Multiple Choice Assessment Results 5.3.2 Stress Level Marker Scale Results 5.3.3 Mindfulness Technique Satisfaction Survey Results 5.3.4 Theoretical Rationale 5.4 Recommendation 5.4.1 Recommendation for Learners 5.4.2 Recommendation for Management of Education of Learning Institutions 5.4.3 Recommendation for Educators 5.4.4 Recommendation for General Public 5.4.5 Recommendation for Future Research</p>	<p>67-73 67 67-68 68 68-69 69-70 70 71 72 72 72 72 72 72 73</p>

CHAPTERS 5	Conclusion	73
	REFERENCES	74-77
	APPENDIX	78-101
	Appendix A: Presentation Slides Used in this Research	78-84
	Appendix B: Participants Demographic Details & Consent Form	85-86
	Appendix C: Assessment for Participants (Pre-Test & Post-Test)	87-92
	Appendix D: Stress Management Technique Satisfaction Survey	93-94
	Appendix E: Stress Level Marker Scale- Pre-Test & Post-Test	95-96
	Appendix F: Consent Letter from DEAN of Education & Cognitive Sciences, AEU to conduct the study	97
	Appendix G: Methodology Details for International Medical College	98-99
	Appendix H: Images Taken during Conduct of Research in International Medical College, Subang Jaya	100-101

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 Introduction

Stress has a major impact in Learning and Cognition. Examinations, tight deadlines and interpersonal conflicts are few examples of the many events that may result in high levels of stress in students (Susanne Vogel & Lars Schwabe, 2016). This statement clearly indicates that learners are constantly exposed to stress. The stress among learners affect their attention, memory and recall processes.

1.2 Background of study

From this perceptive, a decision was made to conduct a study on group of learners in a higher education institution using a “stress management technique”. The purpose of this study was to investigate the “Effectiveness of Stress Management Technique in Learning”.

1.3 Problem Statement

Research over the past two decades reveals that stress hormones (cortisol) and neurotransmitters are released during and after a stressful event as major modulators of human learning and memory processes, with critical implications for educational contexts. While stress around time of learning is thought to enhance memory formation, thus leading to robust memories, stress distinctly impairs memory retrieval, bearing, for instance the risk of underachieving in assessments. (Susanne Vogel & Lars Schwabe, 2016).Stressful events are very common in educational settings, both for learners as well as for teachers. A multitude assessments, evaluations and deadlines creates enormous pressure to perform. This stress, however, can have a critical impact on learning and memory processes, which are at the heart of our educational systems. (Susanne Vogel & Lars Schwabe, 2016).Today many learners’ learning process are being affected as they do not acquire methods to eradicate their stress effectively and the outcome could be clearly seen in their poor result in assessments. Living in a stressful environment continually impairs learning process among learners which obstructs them to be a successful learner or a person in future. Learners would be able to learn, understand and recall well if they practice stress management techniques to eliminate their daily stress.

1.4 Research objectives

The following research objectives have been identified:

- 1) To explore and examine the effectiveness of stress management technique in learning.
- 2) To explore in depth on the learners' satisfaction on effectiveness of stress management technique in learning.
- 3) To suggest the implemented stress management technique for learners if it is found to be effective in this study.

1.5 Research questions

The following question guided the research:

- 1) Does this stress management technique has positive effect on learning?
- 2) Does this stress management technique improves the concentration and attention of the learner?
- 3) Do the participants/learners are able to recall better upon practicing this stress management technique?
- 4) Does this stress management technique improves the level of understanding of the topic?
- 5) Does this stress management technique lowers the stress level in learners instantly upon practise?

1.6 Significance of the research

The objective of this study is to explore and discover the effectiveness of stress management technique in learning in learners as stress is one of the primary cause for effective learning not to take place. Many learners fail to pursue learning effectively due to the “stress” factor. As an educator, I would like to introduce and advocate this stress management technique to learners and educators in various platforms in internet as well as in person if this is technique is found to be an effective tool in eradicating stress as well as to enhance learning effectiveness. This study is to benefit learners to enhance their capacity on their cognitive functions such as working memory, attention and understanding, recall of a lesson if it is proven to be an effective method.

1.6.1 Significance for the learners

Learners will benefit in learning a new stress management technique through this study. Learners will express their satisfaction of the learnt technique in the survey which will be given at the end of the experiment. Learners will also go through pre and post assessments of multiple choice questions upon learning a topic together with the stress management technique as an intervention. Learners will also express the impact of the stress management technique by stating their stress level in the self-rating Stress Marker Scale during the study. If the stress management is found to be effective, respondents or learners will be notified through email to continue to use the technique for their learning effectiveness.

1.7 Definition of terms

The following terms are used in this study:

1.7.1 Learner

A person who is going through a learning process.

1.7.2 Stress

In psychology, stress is a feeling of strain and pressure. Small amounts of stress may be desired, beneficial, and even healthy. Positive stress helps improve athletic performance. It also plays a factor in motivation, adaptation, and reaction to the environment. Excessive amounts of stress, however, may lead to bodily harm. Stress can increase the risk of strokes, heart attacks, ulcers, dwarfism, learning difficulties, and mental illnesses such as depression (Sapolsky, Robert M, 2004).

1.7.3 Stress Management Technique

Stress management technique refers to the wide spectrum of methods or psychotherapies aimed at controlling a person's levels of stress, usually for the purpose of improving everyday functioning.

1.7.4 Mindfulness

Mindfulness is the psychological process of bringing one's attention to the internal and external experiences occurring in the present moment-which can be developed through the practice of meditation and other training, (Kabat-Zinn, 1994).

1.7.5 Satisfaction

Satisfaction is defined as a fulfilment response of doing or experiencing something, (Oliver, 2010).

1.7.6 Learning

Knowledge or skill acquired by instruction or study, (Merriam-Webster's, 2004).

1.7.7 Cognition

The mental action or process of acquiring knowledge and understanding through thought, experience, and the senses. "It encompasses processes such as knowledge, attention, memory and working memory, judgment and evaluation, reasoning and "computation", problem solving and decision making, comprehension and production of language, (Oxford Dictionary,2016).

1.7.8 Attention

Attention is the behavioral and cognitive process of selectively concentrating on a discrete aspect of information, whether deemed subjective or objective. This process requires the role of working memory, (Anderson, John R. (2004).

1.7.9 Working Memory

Working memory is a cognitive system with a limited capacity that is responsible for temporarily holding information available for processing (Miyake, A. & Shah, P. (Eds.) 1999).

1.7.10 Recall

Recall in memory refers to the mental process of retrieval of information from the past (Encyclopedia Britannica, 2010).

1.7.11 Understanding

Understanding is a psychological process related to an abstract or physical object, such as a person, situation, or message whereby one is able to think about it, give meaning and use concepts to deal adequately with that object (Bereiter, Carl . "Education and mind in the Knowledge Age, 2005).

1.8 Study Limitations

This study suffers from some limitations. To the best of the researcher's knowledge, this study only examined 47 learners in a group in one higher education institution and this number could be relatively small for higher validity of results. The learners also belong to one group of program and not a random sampling.

This study was carried out using quasi experiment and not controlled group experiment due to the scarcity in obtaining students for this experiment as many researchers who have done similar research used controlled group to obtain reliable data.

The stress management technique used here may have less impact on those learners who are involved in this study who are currently practising an effective or similar stress management technique on their daily life. The researcher did not have the luxury of time and resources to discover and eliminate those learners who are already practising a similar stress management technique.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Emotions drive the threesome of attention, meaning, and memory, (Jensen, 1988). Emotion plays a fundamental factor in learning and stress is a form of emotional response from a negative emotion. Stress hinders learners from learning effectively. It obstructs attention, memory and understanding a topic in total by overwhelming the brain with hormones and negative thought patterns. As an effect, learners fail to learn a subject or topic well and it is reflected in the assessment results. Poor results leads to poor opportunities in life. Although some may have taken necessary steps to eradicate stress but many are tangled in the circles of stressful lifestyle which sometimes even leads to depression or other mental health related problems. In this research, the researcher has looked into testing an emerging stress management method to eradicate stress in someone immediately which will result in learning a subject or topic effectively.

In this study, researcher will be using the Mindfulness as the method (stress management technique) in exploring the learning effectiveness. This literature review is divided into few sections. The first two parts of the literature review is related to the “Impact of Emotion” and the “Effect of Stress” on Learning. Followed by the next sections which relates to “Stress Management Technique for Learning Effectiveness” and “Mindfulness”.

2.2 Impact of Emotion on Learning

Emotion is relatively brief conscious experience characterized by intense mental activity and a high degree of pleasure or displeasure (Cabanac, Michel 2002). Emotion is often intertwined with mood, temperament, personality, disposition, and motivation. Emotions have two major functions. First, they give high priority warning signals that interrupt ongoing activities and inform us that we are facing a highly valuable or threatening situation. The second important function is to prepare us to react swiftly in response. The increased level of arousal coincides with a secretion of hormones into the bloodstream, producing physical changes and providing the psychological and motivational energy to allow us to take action.

We can observe in ourselves that many of these changes, such as the heart beating faster, breathing

becoming shallower or our hands feeling clammy (Frijda, 1986; OECD, 2010). Thus, emotions are a specific category of mental processes and states which are connected with instincts, needs, and motives which reflects itself in indirect form of experience (joy, fear, etc) for the implementation of an individual's life in significant events and situations.

Basic emotions have their own brain substrates which are closely linked with brain structures ensuring the work of memory and other cognitive processes (Druzhinina & Ushakov, 2002). Basic emotions are divided into two big groups: positive basic emotions and negative basic emotions. Positive emotions are a signal of welfare, but negative emotions are a signal of alarm and danger for the body (Ilyin, 2001). The physiological base of such positive basic emotions as joy, interest, surprise (Izard, 2000; Carlson, 1990; Kagan, Havermann, 1980) is mainly excitation process. Positive emotions tone up the body's activities and activate the person, generate strength and energy as well as enhance the person's capability of mental work and increases energy (Horns, 1999; Ilyin, 2001; Izard, 1980; Carlson, 1990).

However, negative basic emotions – anger, anxiety hatred, disgust, fear, shame, fault, sorrow (Izard, 2000; Carlson, 1990; Kagan, Havermann, 1980) are based on retention process. Negative emotions usually leads to stress and depression, even paralyzes a person as well as decrease a person's activity and also reduce energetic resources, (Horns, 1999; Banshchikov, 1975; Carlson, 1990; Vilyunas, 1976; Ilyin, 2001; Selighran, 1995).

Cronbach (1950) addressed the influence of emotions on learning and the need to well understand their interaction. Since then, studies of emotions demonstrated an association to memory and recall (Sylwester, 1994). In the 1960s, Liebert and Morris (1967) examined several aspects of anxiety, specifically its two component parts: worry and emotionality. They defined worry as a cognitive concern related to examination performance and emotionality as an autonomic response to uncertainty of the testing situation. They found that anxiety should be reconsidered because divergent levels of worry and emotionality may present in different situations (Eysenck & Calvo, 1992; Spiegler et al., 1968). Weiner (1985) further expanded upon what emotionality entailed. By introducing the notion of attribution to emotional responses, he removed the autonomic response initially associated with emotionality (Liebert & Morris, 1967). This concept of attribution clearly indicated the importance of cognitive influences associated with affective responses, both positive

and negative. Lazarus (1991) and Pekrun (1992) have further identified emotions specific to learning activities. Over the past 20 years, more work has been done to determine if what students feel affected with what they learned (Sansone & Thoman, 2005; Schutz & Pekrun, 2007).

2.3 Effect of Stress in Learning

Stress is triggered by emotion and stress is widely accepted to have two opposite effects on individuals - positive and negative. Stress is a survival program, but has some negative effects on learning. A specific part of the brain, the hippocampus, is very vulnerable to stress. Broadly, acceptable levels of stress help to improve the individual's performance whilst excessive amounts of stress can lead to a decreased performance. The perception of the individual determines whether or not the stressor has a detrimental effect; i.e. whether it causes physical or psychological symptoms of stress in the individual. (Statt 2004, p. 86) explained this as follows:

When we look at the psychological effects of stress we will find positive, negative and neutral aspects of the term used, illustrating once more that in psychology, so much depends on the context of the phenomenon in question and the nature of the individual's perception of it.

Higher stress levels increases the circulating level of glucocorticoids (stress hormone) are less effective or may even impair declarative memory performance, (Roosendal, 2002; Sauro, Jorgensen, & Pedlow, 2003). Michael Ronnlund, Anna Sundstorm & Daniel Eriksson Sorman (2013) found the longitudinal effects of perceived stress on measures of memory and two other cognitive functions (word fluency, visuospatial ability) in a middle-aged sample. With regard to memory, a dissociation between subjective and objective measures was observed. Specifically, participants in the high-stress group rated their memory as worse over time as compared with controls, and reported a higher frequency of occurrence of everyday memory failures, effects partly independent of depressive symptom.

The results of Wilson and Swanson's (2001) study provided evidence for working memory remaining relatively stable throughout the lifespan after adolescence. Individual factors in the community-college setting, however, such as second language learning, socioeconomic status, stress, and learning disabilities may influence accessibility to working memory.

2.4 Stress Management Technique for Learning Effectiveness

Coping skills in stressful or anxiety-producing situations impacted the results of test anxiety instruments. In a study of medical students, Bolger (1990) investigated if state anxiety inspired neuroticism leading up to an exam. Those with high anxiety showed that the anxiety had no influence on their exam results and that coping mechanisms were ineffective predictors of performance, which was further corroborated by Carver and Scheier (1994). However, (Himle, J. A., Himle, D. P., & Thyer, B. A. ,1989) demonstrated positive results from coping interventions, such as relaxation, cognitive restructuring, and systematic desensitization, which appeared to help after one year.

Study at the University of Miami (Beck, 2014,) showed that short interruptions (10–15 min) of lessons, filled with some physical exercises, led to better performances in mathematics and language courses.

For learning, it is important to exercise on attention in the classroom. The attention is higher, if the lessons are interrupted by breaks with exercise, but on the highest level, if teaching itself is done with moving elements (Dordel, Breithecker in Leitner, Kainberger, 2015, 22; Möller et al., 2016), the results must lead to a change of thinking about the traditional ‘frontal teaching’.

The Jacobson technique of progressive muscle relaxation is very easy and works well to come down from high-level stress. Focusing on good breathing also makes sense. ‘Attention to breath meditation’ has positive impacts on regulating aversive emotions, by down-regulating activation of amygdala (Doll et al., 2016). Mindfulness Meditation has also positive effects (Ricard et al., 2015), depending on the kind of mindfulness meditation. Concentration mindfulness activates frontal brain areas, carefulness meditation areas in the parietal and temporal lobes and empathy meditation has impacts on regions between parietal and temporal lobes, and medial prefrontal cortex and insula.

2.5 Mindfulness

Mindfulness has long been practiced in Eastern spiritual traditions for personal improvement, and educators, education psychologists and educational institutions have recently begun to explore its usefulness in learning. Mindfulness is a form of meditation incorporating breathing and concentration technique.

The Oxford dictionary (2014) defines mindfulness as “a mental state achieved by focusing one’s awareness on the present moment while calmly acknowledging and accepting one’s feelings, thoughts, and bodily sensations”. Mindfulness often refers to specific practices used to focus a person’s attention – meditation, yoga, breathing, single-pointed concentration on an object and is characterized by intentionality and nonjudgmental observation of experience (Broderick & Jennings, 2012).

During mindfulness meditation, ‘neuronal oscillations’ occur, which means, synchronous electrical impulses are generated. In particular, gamma-waves (frequency 40 Hz) are interesting, because they are related to higher cognitive functions and consciousness. A research on Tibetan monks, who meditated for a long time very intensively, revealed the most intensive gamma-waves, which were never observed with humans (Suzuki, Fitzpatrick, 2016,). Other studies (with fMRI) showed a surprising result (Suzuki, Fitzpatrick, 2016). During meditation, there is less activity in frontal areas. It is surprising but nevertheless logical because of a better control of attention and less work was necessary. It fits with the theory of transient hypofrontality (Arne Dietrich, 2003).

Another popular approach is transcendental mindfulness meditation, a technique that typically uses a standard seven-step protocol involving regular and frequent sessions, sitting comfortably with eyes closed, consultation with a meditation instructor, and repetition of an individual mantra. The goals of this technique are to achieve restful alertness (i.e., a state of increased awareness during deep relaxation), eliminate stress, increase creativity and intelligence, and promote happiness and fulfillment (Russell, 1976).

James Beauchemin, Tiffany L. Hutchins and Fiona Patterson (2007) conducted a study and used a pre–post no-control design to examine feasibility of, attitudes toward, and outcomes of a 5-week mindfulness meditation intervention administered to 34 adolescents diagnosed with LD (Learning

Disability). Post intervention survey responses overwhelmingly expressed positive attitudes towards the program. All outcome measures showed significant improvement, with participants who completed the program demonstrating decreased state of trait anxiety, enhanced social skills, and improved academic performance. Although not directly assessed, the outcomes are consistent with a cognitive-interference model of learning disability and suggests that mindfulness meditation decreases anxiety and detrimental self-focus of attention, which, in turn, promotes social skills and academic outcomes.

People who have undergone extensive mindfulness meditation training have shown improvements on cognitive performance (Cahn & Polich, 2006) and mood (Davindson et.al. 2003). Long term mindfulness meditation practice has been found to enhance attentional (Jha, Krompinger, & Baime 2007) and visuospatial process (Kozhevnikov, Louchakova, Josipovic & Motes, 2009).

In another study (Michael D. Mrazek, Michael S. Franklin, Dawa Tarchin Phillips, Benjamin Baird, and Jonathan W. Schooler Given, 2013) examined whether a 2-week mindfulness-training course would decrease mind wandering and improve cognitive performance. Mindfulness training improved both GRE reading-comprehension scores and working memory capacity while simultaneously reducing the occurrence of distracting thoughts during completion of the GRE and the measure of working memory. Improvements in performance following mindfulness training were mediated by reduced mind wandering among participants who were prone to distraction at pretesting. The results suggest that cultivating mindfulness is an effective and efficient technique for improving cognitive function, with wide reaching consequences.

2.6 Conducting the literature search

The researcher conducted literature search to guide the present study. The researcher used various Journals, Google Scholar, books and information from experienced personal in this field. It became clear for the researcher that many studies have been done on this topic earlier. That provides an insight and guideline to the researcher.

2.7 Theoretical Rationale

There are two theories that provide rationale to this study which are Cognitive Load Theory and Transient Hypofrontality Theory. "Cognitive Load Theory has been designed to provide guidelines intended to assist in the presentation of information in a manner that encourages learner activities that optimize intellectual performance", (Sweller, J.; Van Merriënboer, J. & Paas, F. 1988). This theory suggests that learning happens best under conditions that are aligned with human cognitive architecture. The structure of human cognitive architecture, while not known precisely, is discernible through the results of experimental research. Recognizing George Miller's information processing research showing that working memory is limited in the number of elements it can contain simultaneously, Sweller builds a theory that treats schemas, or combinations of elements, as the cognitive structures that make up an individual's knowledge base, (Sweller, 1988). According to Cognitive Load Theory, releasing stress-related extraneous elaborative thinking should lower the total cognitive load experienced, thus freeing up cognitive processing capacity.

From an instructional perspective, information contained in instructional material must first be processed by working memory. For schema acquisition to occur, instruction should be designed to reduce working memory load. Cognitive load theory is concerned with techniques for reducing working memory load in order to facilitate the changes in long term memory associated with schema acquisition.

Transient Hypofrontality Theory by Arne Dietrich (2003) concludes that the mental states commonly referred to as altered states of consciousness are principally due to transient prefrontal cortex deregulation. Supportive evidence from psychological and neuroscientific studies of dreaming, endurance running, meditation, daydreaming, hypnosis, and various drug induced states is presented and integrated. It is proposed that transient hypofrontality is the unifying feature of all altered states and that the phenomenological uniqueness of each state is the result of the differential viability of various frontal circuits. Using an evolutionary approach, consciousness is conceptualized as hierarchically ordered cognitive function.

2.8 Conclusion

The researcher has presented the flow of information on of how the literature search was done and the information source chosen. The needs for further studies were identified by the researcher through literature review. Therefore the researcher have chosen the topic of research to explore further. Upon reading various articles related to stress management technique, the researcher has decided to explore the Mindfulness as a Stress Management Technique in Learning. Based on the literature reviews, the researcher would like to conclude that Mindfulness Meditation does not only reduces stress but improves attention span, working memory, creativity, critical thinking, encoding process and memory recall in learning.

This study will stand unique and will be adding new knowledge of research in the area of Mindfulness as Stress Management specifically and Education and Cognitive Psychology in general. This is purely due to the “Methodological” aspect where none of the studies till to date to the knowledge of the researcher, have tested the “Effectiveness of Mindfulness” immediately upon the practice (intervention of mindfulness) by the respondents using satisfaction survey, self-rating stress marker scale and achievement results on the knowledge taught in the classroom.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter on methodology summaries the methods, design, instrument, data collection and data analysis used in order to complete this research. It also includes the pilot study, sampling, ethical consideration and the trustworthiness of the study. The objective of this study is to explore the effectiveness of stress management technique in learning on year two and year three student nurses. The students were taught on “Mentoring and Coaching” topic which was divided into two segments for pre-test and post-test in order to assess the effectiveness of the intervention on learning. Mindfulness was the stress management intervention used in this study. There were few measuring methods administered in this study which includes a) Multiple Choice Assessment on Learning Effectiveness which was carried out as pre-test and post-test upon the intervention b) 11-point (0-10) self-rating Stress Level Marker Scale to measure “Stress Level” before and after the mindfulness intervention, and c) Mindfulness Stress Management Effectiveness Satisfaction Survey to measure the effectiveness of the intervention in various areas of learning and cognition and stress reduction which used 5-point Likert Scale were administered to the year two and year three Diploma in nursing students. A quantitative method was used to collect the data.

3.2 Research method

According to Polit and Beck (2008), a research method is the systemic method used to structure, gather and analyze information in a study. The researcher used multiple quantitative and descriptive approaches in this study in order to obtain in-depth empirical data.

Quasi experiment was carried out in this study as no control group was involved. This study includes teaching of lesson on Mentoring and Coaching which is divided into two parts in order to create an avenue to conduct the learning assessment, measure stress levels and role out Mindfulness treatment. The study started with a) Welcoming and briefing the participants about the study and the entire research that they will be participating, b) Participants filled up the Participants details & consent form, c) Part A or the first part teaching of Mentoring and Coaching

session for participants, d) Multiple choice assessment for assessing the learning of Part A of Mentoring and Coaching for 25 minutes(pre-test), e) Participants filled the self-rating individual Stress Level Marker(pre-test), f) Participants participated in the Mindfulness Stress Management Technique for 25 minutes, g) Participants filled the self-rating individual Stress Level Marker Scale (post-test), h) Part B or the second part teaching of Mentoring and Coaching session for participants for 25 minutes, i) Multiple choice assessment for assessing the learning of the Part B of Mentoring and Coaching(post-test)for participants, j) Mindfulness Stress Management Technique Satisfaction Survey for participants.

Figure 1 below illustrates the process involved in carrying out the study in International Medical College.

Figure 1. The Process of Study which took place in International Medical College, Subang Jaya

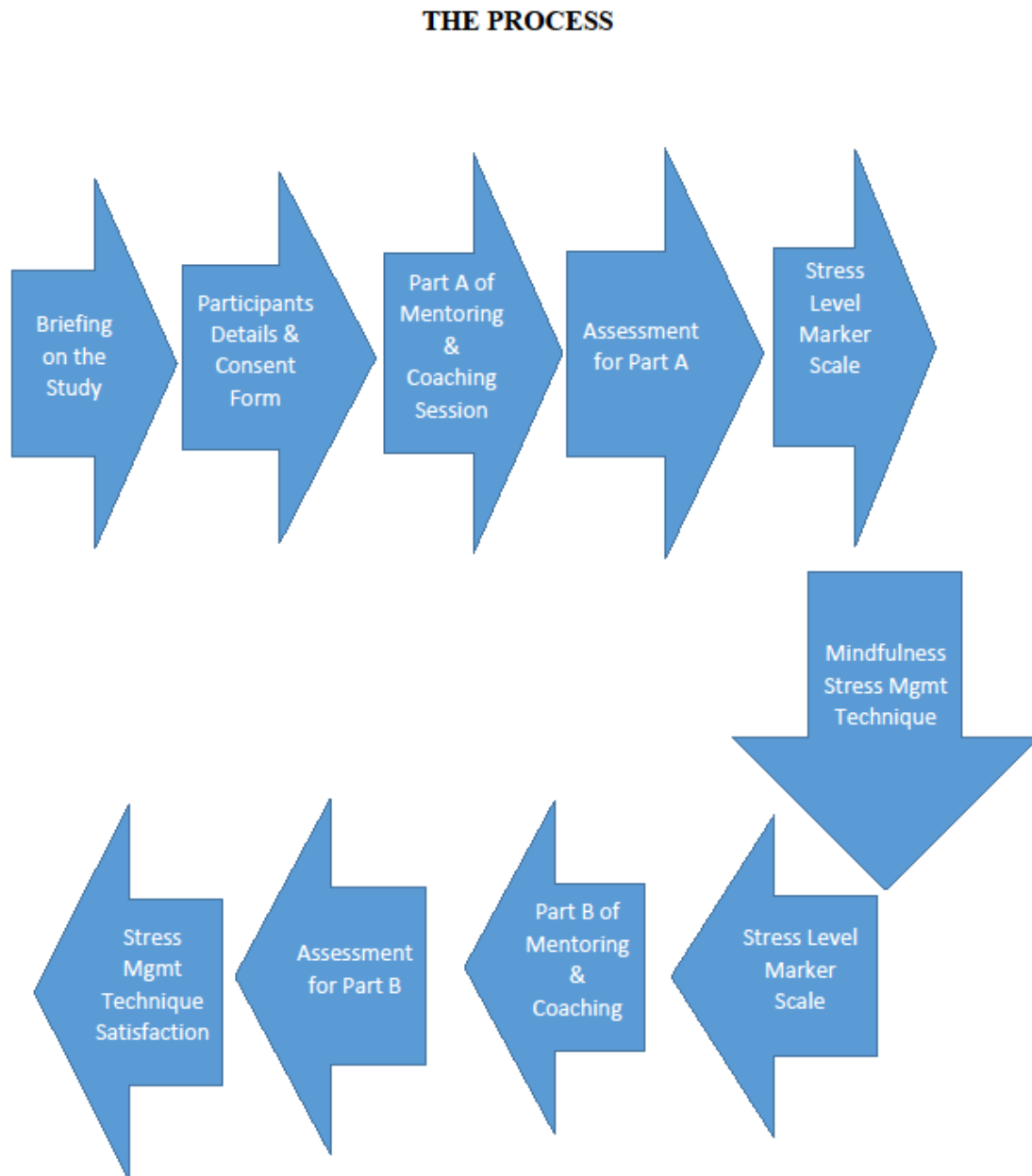


Table 1 below depicts the processes and procedures involved in carrying out the Mindfulness Stress Management Technique session.

Table 1. Mindfulness Stress Management Process and Procedure

Step	Task	Procedure/Method	Duration
1	Breathing Exercise	Inhale through either left/right nostril and hold breath for 8 seconds and exhale through the other nostril. Process will be repeated for 8 times in each nostril.	Approximately 10 minutes
2	Humming Exercise	Humming will be done for 8 times.	Approximately 5 minutes
3	Concentration Exercise	Concentration on nothingness by eyes closed	Approximately 10 minutes
4	End of Intervention		

3.3 Research Settings

This research was conducted in International Medical College in Subang Jaya, Selangor. The campus is located at the third floor in Summit Complex where the Diploma in nursing students are pursuing their studies. Other than that several post basic programs are also offered in this campus. The researcher was able to carry out the entire study in the classroom where he could use the teaching aids while administering the research. The environment where this study was carried out was extremely conducive.

3.4 Population

Population is defined by Brink (2009), as the group of people that are of interest of the researcher. According to Brink (2009), the people must also meet the criteria for participating in research. The researcher plays an important role in identifying the criteria of the population. According to Babbie and Mouton (2009), the sample will be selected from the population group of people.