The Development of A New Mindfulness Based Intervention for Stress and Burnout Prevention for Healthy Population
-
The Mindful Self-Development Coaching (MSDC) Intervention

Dissertation

der Mathematisch-Naturwissenschaftlichen Fakultät

der Eberhard Karls Universität Tübingen

zur Erlangung des Grades eines

Doktors der Naturwissenschaften

(Dr. rer. nat.)

vorgelegt von

Mrs. FangFei Hong

aus Dalian City, Liaoning Province, China

Tübingen

2016

Gedruckt mit Genehmigung der Mathematisch-Naturwissenschaftlichen Fakultät der Eberhard Karls Universität Tübingen.

Tag der mündlichen Qualifikation: 30.06.2016

Dekan:	Prof. Dr. Wolfgang Rosenstiel
1. Berichterstatter:	Prof. Dr. Martin Hautzinger
2. Berichterstatter:	Prof. Dr. Rene Ziegler

Acknowledgement

My deep appreciation to Prof. Dr. Martin Hautzinger, because of him this whole doctoral project is possible. I thank him dearly for his supervision and full support, especially his open mind and allowance for trying new ideas.

My very special thanks to Mr. Philipp Biswas for his great support on statistical analysis, assistance on training (5th and 6th round) and support on Assessment Centers as well as his warm companion during the difficult and stressful period of this doctoral research.

I also owe greatly to my team mates for their time and support on organizing and facilitating trainings and/or Assessment Centers, they are Ms. Nika Sologub, Ms. Elena Mishchenko, Ms. Lisa Riesner, Ms. Alexandra Halaskova, Ms. Nadine Berger, Ms. Monika Kesarwani, Ms. Mary Belay and Mr. Manfred Kooistra. Nika, Elena and Lisa also helped me greatly on data inputting, literature searching and assessors training workshop.

My special thanks to Prof. Dr. Rene Ziegler for his mentoring and helpful suggestions, especially even before he agreed to be my second supervisor. I am also grateful to my colleagues for their every little helps on logistic and technical matters, specially Mr. Dr. Marco Gulewitsch, Ms. Ariane Wruck, Mr. Andreas Schweizer and Mr. Dr. Michael Schönenberg. I cannot thank enough for Ms. Marjorie Kinney's mental support towards later stage of my PhD research.

Big thanks to Mr. Dr. Florian Soyka and Ms. Mary Donald for their constructive feedback on the early version of this thesis; also to Mr. Dr. Cyrus Shaoul for his expert knowledge on statistic analysis.

My wholehearted gratefulness to everyone who took part in the MSDC intervention and Assessment Centers Experience either as participants or assessors. Without their active participation and honest feedback, it is impossible to develop the intervention successfully.

Last and the most important acknowledgement, my deepest appreciation to my beloved family: my husband Johannes Hong, my daughters Sophia Yiming Hong and Laura Yishan Hong for their unconditional support, tolerance and love. Because of my family, this whole journey has a meaning and an end.

THANK YOU all from the deepest part of my heat.

Content

Acronyms List

ACT	Acceptance and Commitment Therapy
APA	American Psychological Association
ATP	According-To-Protocol
Bf-S	*Befindlichkeit-Skala* (Mood Questionnaire)
CAMS	Cognitive and Affective Mindfulness Scale
COR	Conservation of Resources
CPT	Continuous Performance Test
DBT	Dialectical Behavior Therapy
EABCT	European Association for Behavioral and Cognitive Therapies
FFMQ	Five Facet Mindfulness Questionnaire
FMI	Freiburg Mindfulness Inventory
INKA	Inventar Komplexer Aufmerksamkeit/Inventory for Complex Attention
ITT	Intention-To-Treat
KIMS	Kentucky Inventory of Mindfulness Skills
MAAS	Mindful Attention Awareness Scale
MBCT	Mindfulness-Based Cognitive Therapy
MBSR	Mindfulness-Based Stress Reduction
MSDC	Mindful Self-Development Coaching
PANAS	Positive Affect and Negative Affect Scale
P-E fit	Person-Environment Fit model
PSS	Perceived Stress Scale
SCS	Self-Compassion Scale
SWLS	Satisfaction With Life Scale

Table List

Figure List

Appendix List

* Obtainable from the author (hongff@gmail.com)

Abstract

Theory: stress and burnout are the two modern diseases with alarming damages not only psychologically, but also physically and economically. The new movement of mindfulness gives a fresh perspective to the cognitive behavior therapy. Recently developed mindfulness based interventions provide promising results on stress and anxiety reduction, depression relapse prevention, addictive behavior elimination, and many more. However, there is no specially designed intervention with focus on self-development and burnout prevention for the healthy population.

Method: the new intervention is named Mindful Self-Development Coaching (MSDC) program with an innovative structure - 5 biweekly full day sessions for a complete 8-weeks period. It has been tested and replicated 6 times with a total of 85 participants (age mean=30.04, SD=8.03, range=19-61, female 66%) at three time points (pre-, post and followup). Multidimensional measurement was used to test the effectiveness of the MSDC intervention: self-report questionnaires, cognitive tests and third person behavioral observation at Assessment Centers (ACs) as high-stake social evaluation.

Results: the MSDC intervention was well received (dropout rate 4.71%). Participants, in comparison with the control group after the intervention reported to be significantly more mindful and compassionate towards themselves, also perceived significantly less stress. At the same time, they were better able to concentrate, more successful in solving complex problems, they were also perceived by independent observers as more sympathetic, friendly and more aware of themselves from nonverbal cues than before the intervention. Those newly established changes were also consistent and sustainable at the three months followup check. Among the participants, those who invested more time in mindful practice at home were also perceived significantly less stressed than those who rarely did any homework.

Conclusion: the newly developed MSDC intervention was proven to be successful and could be an ideal prevention for burnout. The three innovative aspects, biweekly full day structure, combination of mindfulness and self-development plus use of ACs as measurement tool, have both advantages and disadvantages. However, due to limited time, resources and methodological imperfections of the current study, it needs to be further testified in real life with tailor-made measurements to burnout and the needs of the workplace.

Zusammenfassung

Theorie: Stress und Burnout sind die zwei neuartigen Krankheiten, die nicht nur zu alarmierenden psychischen sondern auch zu physischen und ökonomischen Beeinträchtigungen führen. Die Achtsamkeitsbewegung bringt eine neue Perspektive zur Kognitiv Behavioristischen Therapie hinzu. Jüngst entwickelte achtsamkeitsbasierte Interventionen liefern vielversprechende Ergebnisse bei Stress- und Angstreduktion, bei der Prävention von Depressionsrezidiven, der Überwindung von Suchtverhalten und vielem mehr. Jedoch gibt es bislang keine spezifisch auf gesunde Menschen ausgerichtete Intervention für Selbstentwicklung und Burnoutprävention.

Methode: Die neue Interventionsform heißt Mindful Self-Development Coaching (MSDC)-Intervention und hat eine innovative Struktur: fünf zweiwöchige Ganztagessitzungen innerhalb einer achtwöchigen Periode. Die Intervention wurde mit insgesamt 85 Teilnehmern (Altersdurchschnitt= 30.04, SD=8.03, Altersspektrum=19-61, weiblich 66%) sechs mal wiederholt und jedes Mal jeweils an drei Punkten des Prozesses (prä, post und followup) getestet. Für den Nachweis der Effektivität der MSDC-Intervention wurden mehr-dimensionale Messungen verwendet: Selbstbeurteilungsfragebögen, kognitive Tests und Verhaltensbeobachtung durch Dritte während eines stressreichen Assessment Centers.

Ergebnis: Die MSDC-Intervention wurde sehr gut angenommen (Dropout-Rate 4.71%). Die Teilnehmer, im Vergleich zur Kontrollgruppe, gaben nach der Intervention an signifikant mehr Achtsamkeit und Selbstachtung und ebenso signifikant weniger Stress zu empfinden. Gleichzeitig waren sie konzentrationsfähiger, erfolgreicher im Lösen komplexer Probleme und sie wurden bei der Untersuchung der nonverbalen Aufzeichnungen, von unabhängigen Beobachtern als wesentlich sympathischer, freundlicher und selbstbewusster als vor der Intervention wahrgenommen. Diese neu etablierten Veränderungen zeigten sich ebenso auch noch bei dem drei Monate späteren Followup-Check als konsistent und nachhaltig. Die Teilnehmer, die mehr Zeit in das Achtsamkeitstraining daheim investierten, wurden ebenso als signifikant weniger gestresst eingeschätzt, als diejenigen, die daheim selten Zeit dafür investierten.

Fazit: Die neu entwickelte MSDC -Intervention hat sich als erfolgreich erwiesen und könnte eine ideale Prävention gegen Burnout sein. Die drei innovativen Aspekte, zweiwöchige Ganztagesstruktur, die Kombination von Achtsamkeit und Selbstentwicklung und die Verwendung von Assessment Centern als Messmethode haben Vor- und Nachteile. Angesichts der Begrenzung von Zeit und Ressourcen und der methodologischen Unvollkommenheit bei der vorliegenden Untersuchung, ist es dennoch nötig die Intervention im realen Berufsalltag für die Bedürfnisse der konkreten Arbeitsplätze und des Burnouts maßgeschneiderten Maßeinheiten und Messmethoden zu untersuchen, um eine validere Aussage machen zu können.

Preface

This research paper will be organized as follows. Firstly, an overview on stress and burnout, the current and increasing modern diseases of our contemporary society, will be discussed. Next, the concept of self-development will be introduced as one of the human's basic needs, and it will be further explained in the scope of current research in two components: self-awareness and self-compassion. By explaining those two components, the concept of mindfulness will be naturally introduced and discussed. This leads to the theoretical rational of the current research, which is based on all those three elements, i) current tendency of being in stress and near burnout, ii) in searching for self-development, iii) rediscovering the ancient wisdom of mindfulness in modern society. Next, objectives of the current studies are defined and the innovative design of the newly created Mindful Self-Development Coaching (MSDC) intervention is explained. The first study is an uncontrolled pilot study, and the second one is a randomly controlled main study. In both studies the structure follows overview, design, hypotheses, methods and results, then followed by a discussion of findings, limitations and future implementation. At the end, a general discussion covers a global and critical view on the current study, direction for future research as well as practical commercial implications.

1. Introduction

1.1. Stress and Burnout - The Modern Dis-ease

Civilization produces many conveniences and positive outcomes to our modern living. For example, the widely spread Internet creates a whole new experience in the human world in terms of sharing, connecting and consuming. However, the development of modern technology comes also with a great cost and is followed by a number of modern diseases. Stress is one classical example. Nowadays, it is estimated that more than 60 percent of the visits to health care institutions is due to stress related disorders (Pelletier & Lutz, 1991; Kalia, 2002). Mental health is no longer a topic in theory, but indeed an integral part of health and well-being, and this importance has already been reflected in the definition of health in the constitution of the World Health Organization (WHO) : "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

Stress and Its Damages

In our busy modern world, arguably all illnesses are to a certain degree related to stress, as is commonly believed and also supported by many scientists (Davison & Neale, 1990; Monat & Lazarus, 1991). As a modern disease, stress is the most popular research topic in the field of psychology as claimed by Hobfoll, Schwarzer and Chon (1998). Stress has long been implicated as the major cause of development of mental disorders and decreased life satisfaction (Pelletier & Lutz, 1991). The top most harmful mental disorder is major depression. According to the recently published WHO Mental Health Atlas (2011), depression accounts for 4.3% of the global burden of disease and is among the largest single causes of disability worldwide, particularly for women. Further more, the odds for individuals who suffer from major depression and schizophrenia to die prematurely is 40% to 60% higher than for the normal healthy population. One of the two major causes of such premature death is suicide. What is even more alarming is that suicide is the second most common cause of death among the young generation worldwide to date and unipolar major

depression imposed the fourth greatest burden of ill health of all diseases worldwide (Murray & Lopez, 1998). The burden of stressed caused mental disorder is projected to increase dramatically, as a consequence, it is estimated by the year 2020 depression will impose the second greatest burden of ill health, very close behind the top cause, ischemic heart disease (Mental Health Action Plan 2013-2020, WHO, 2013).

Stress, depression and other mental disorders are not only harmful for individual health, they also have economic consequences. A recent report by the World Economic Forum (2011) estimated that the cumulative global impact of mental disorders results up to USD16.3 million million costs to industry between 2011 and 2030, owing to decreased productivity, absenteeism and disability. Even in Europe, the region with the best resource of mental support both for individuals and for business, an estimation made by the European Agency for Safety and Health at Work states that work-related stress disorders in Europe resulted in a yearly economic cost of approximately 20 billion Euros (about 25 billion US dollars) in lost production time and cost on health insurance bills, which is about 3-4% of the GNP for Europe (cf. Leka & Cox, 2008; Awa, Plaumann & Walter, 2010). Stress related causes of illness by workers is widely spread and affects more than 40 million individuals across the European Union (European Foundation, 2007). The impact is even more serious in the USA. The American Institute of Stress estimates that the US business loss is 300 billion US dollars per year due to stress and burnout related issues (Walter, 2012). Further more, a recent stress report "Stress in America, Paying With Our Health" (2015) done by the American Psychological Association (APA) states that perceived stress level is much higher than they thought it would be. On average, Americans rate their stress level as 4.9 on a 10-point scale (1 = "little or no stress"; 10 = "a great deal of stress") and it remains higher than what Americans believe to be healthy -- 3.7 on a 10-point scale. For those who are aware of the effects of being stressed and have the wish to change their life style, willpower is the most commonly cited barrier to making such changes. More than one third of Americans say that a lack of willpower prevented them from making a change, but 12% say that they are too stressed to make a desired change. Moreover, 20% of asked Americans say they never engage in an activity to help relieve or manage their stress. It is obvious, managing stress is a universal topic.

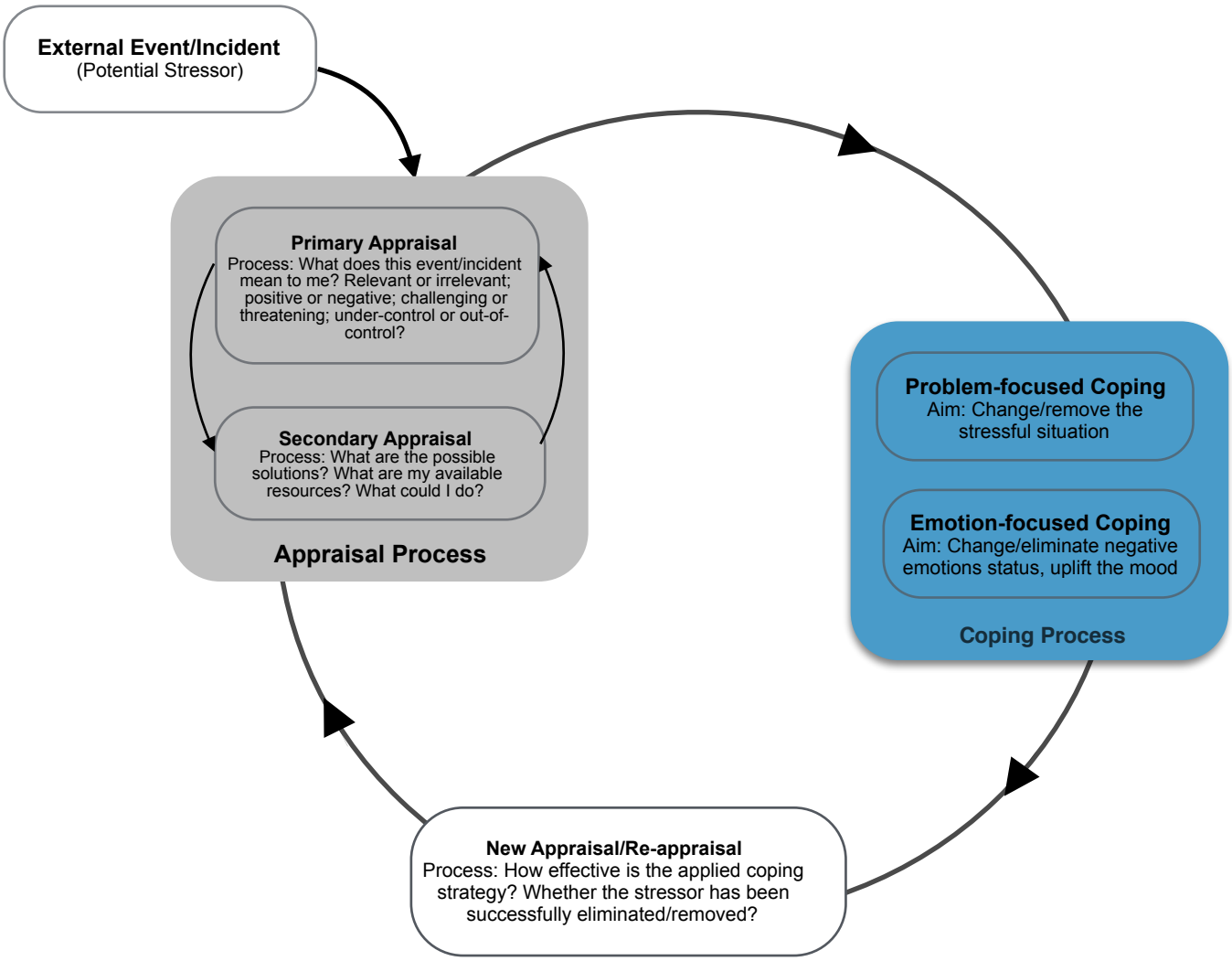


Figure 1: The Diagram of Transitional Stress-Coping Model (adapted from Lazarus & Folkman, 1984)

Stress Defined

Despite stress and its damaging effects having been studied extensively, the definition of stress, owing to its natural of complexity like many other concepts in psychology, is still undefined and under the debate (Mason, 1975a; Lazarus, 1966, Monat & Lazarus, 1991). One of the difficulties in defining the concept of stress is because it is not a simple and single dimensional variable, but that stress itself is a system of interdependent processes. The concept of stress is also subjective and highly related to both internal and external/ environmental factors. The same situational simulation can be perceived differently by individuals; one can feel stressed and the other one can be relatively less affected. The individual differences influence significantly the appraisal process, which leads to the difficulty of defining an universal definition of stress. Throughout their empirical research on

stress, a number of approaches made its historical imprints on defining the concept. One of the earliest and most fundamental perspectives on psychological stress was Lazarus's transactional model. In the model, Lazarus defines stress as a negative result of a system of interdependent processes when an individual is facing particular environmental demands. The process is a combination of appraisal, coping and reappraisal process. When the individual feels lack of necessary rescues to cope with the environment, a discrete emotion arises commonly labelled as "stress". In conclusion, based on the transactional model, stress is a product of the transaction between the individual and the environment (Holroyd & Lazarus, 1982). This transactional process directly mediates the frequency, intensity, duration, and selected psychological and somatic response (Delongis, Folkman & Lazarus, 1988). There are other popular theories of the stress process, such as the Conservation of Resources (COR) theory by Stevan Hobfoll (2001) and the Person-Environment Fit (P-E fit) principle rooted in the early work of Lewin (1935) and Murray (1938), later extended by Edwards (2000). However, those theories are primarily focused on the stress process rather than defining the concept of stress. A keynote made by Lazarus nearly half century ago is still valid and agreed on by many researches: " It seems wise to use 'stress' as a generic term for the whole area of problems that includes the stimuli producing stress reaction, the reactions themselves, and the various intervening processes. Thus, we can speak of the field of stress, and mean the physiological, sociological, and psychological phenomena and their respective concepts. It could then include research and theory on a group or individual disaster, physiological assault on tissues and the effects of this assault, disturbances or facilitation of adaptive functioning produced by conditions of deprivation, thwarting or the prospects of this, and the field of negatively toned emotions such as fear, anger, depression, despair, hopelessness, and guilt. Stress is not any one of these things; nor it is stills, response, or intervening variable, but rather a collective term for an area of study (Lazarus, 1966, p27).

Successful stress management can only be created and implemented with a good understanding on what stress is and how it causes damages. There are three basic types of stress which are commonly described: physiological (or systemic), psychological and social. Physiological stress is caused primarily by the disturbances of tissue systems (e.g., Cannon, 1953; Selye, 1976), psychological stress is more related to cognitive factors leading to the

evaluation of threat (e.g., Lazarus, 1966), and social stress is the disruption of a social unit or system (e.g., Smelser, 1963). Those three types of stress are commonly believed to be interconnected, however, in which way is still yet unclear.

Stress Coping Strategy

Although definition of stress is still under debate, more attention should be devoted to how humans could respond to stress positively and to cope with it successfully. Coping means an individual's efforts to master demands, such as threat or challenge, that are perceived as exceeding or challenging to one's safety and basic resources (Monat & Lazarus, 1991).

Coping strategies have been widely researched not only in psychology, but also in sociology and management. Despite different focuses on studying coping strategies, there are three basic features of coping as proposed by Folkman (1992):

“First, coping is a complex, multidimensional phenomenon that includes both problem-solving and emotion-regulating activity. Second, coping is variable because of variability in the context in which coping occurs. A given individual, for example, in the course of a week, may have to cope with transitory, resolvable situations as well as chronic, unremitting conditions. Third, coping is variable because of variability in personal characteristics, such as beliefs about the world, goals, coping resources, and skills.” (p.215).

Lazarus and Folkman (1984) proposed a transactional stress model and it is still being widely applied both in imperial and applied fields. The coping strategies in the transactional stress mode include two types: emotion-focused and problem-focused. Problem-focused coping is oriented on changing and solving the task or trouble on hand that causes the stress, and mostly on a personal level, such like stopping a certain undesired behavior or seeking outer resources for help and support, if it is necessary and available, may also involve directly confronting the person or persons who are seen as the source of the stress. On the other hand, the emotion-focused mode focuses more on how to relieve or soften the emotional impacts caused by the perceived stress. Denial is one of the commonly adopted emotion-focused stress coping modes.

Lazarus is particularly interested in the relationship between the inner appraisal process (evaluation of the stressor to be manageable or not) and stress reaction process (e.g. fight or flight). When an external event or incident occurs, the decision whether this would service as a potential stressor, will be made depending on an internal appraisal process on the triggers. The appraisal process, according to Folkman and Lazarus is on two inter-changeable levels: primary and secondary appraisal. The primary appraisal process is mainly to assess whether the event or incident is relevant or irrelevant, positive or negative, challenging or threatening, under-control or out-of-control. Based on the outcome(s) of the primary appraisal process, the secondary appraisal process would naturally follow. During this process, all possible and available coping strategies will be assessed and evaluated. Based on the outcome(s) of both appraisal processes, the person will then select either the problem-focused or the emotion-focused coping strategy, or sometimes a combination of both. The process does not end here, that's why we humans could be on the top of the evaluation process. After applying the selected coping strategy, a new appraisal process will then be carried out to evaluate the outcomes and effectiveness. Questions would be ask like how effective was the applied coping strategy? Whether the stressor has been successfully removed or eliminated? If not, then again the person will go through the whole appraisal and coping process until the stressor is removed or eliminated. This whole appraisal, coping and re-appraisal process is labelled as transitional stress coping by Lazarus and Folkman (1984), and illustrated in Figure 1. They studied many married couples' on their coping process when facing daily life stressors, rather than in a designed experimental way. Maybe because of that, their coping model sets a milestone in the empirical research in the field of stress and coping.

However, Lazarus' transactional model was criticized by Hobfoll for over-emphasizing the role of internal cognitive processes and lack of sufficient attention to the external environment, in other words Lazarus gives too much emphasis on personal appraisals but not enough consideration of why people appraise events in particular ways (Hobfoll, 2001). Subsequently, Hobfoll developed a Conservation of Resources (COR) theory. The COR theory examines the interaction of the person and the environment, as well as the degree of correspondence between demands in the environment and the individual's resources to deal with those demands. The fundamental feature of Conservation of Resources

theory is that “individuals strive to obtain, retain, protect and foster those things that they value” (Hobfoll, 2001, p.341) and what they value is a resource to the persons. Hobfoll indicates that 74 different types of resources exist and divided them into either “personal/ internal” or “environmental/external”. Personal resources include attributes such as personal values (e.g., the importance of achievement), personality traits (e.g., internal locus of control, dispositional optimism, generalized self-esteem) and other characteristics such as positive affect (Dewe, O’Driscoll & Cooper, 2012). Environmental resources are given considerable importance, and social support is one of the major sources, and it has been proven to be the mediator for reducing stress and burnout, and at the same time enhancing positive well-being (cf. Dewe, O’Driscoll & Cooper, 2012).

Similar to the Conservation of Resources theory to emphasize the importance of balance interaction of person and environment is the Person-Environment Fit model (P-E fit). Because it has major overlapping with the COR theory, and the single noticeable difference is that the P-E fit model focuses predominantly on people’s perception of fit, wheres COR theory incorporates more objective indicators of actual fit as outlined by Hobfoll (2001), thus there is no need to repeat the basic concepts of P-E fit model here. Instead, more attention should be drawn to the application of COR and P-E fit models, that is the human performance curve discovered by Cox and MacKay (1981). They found that the association between pressures and well being and functioning can be thought of as an inverted U, with well being and functioning being low when pressures are either high or very low. Based on the findings they developed a psychological model. According to this model, demands or external pressure placed on an individual result in an increase in performance or subjective well-being feeling. When the demand or pressure is too low or too little, the individual would suffer from boredom. While demands/pressure increases, the level of performance/subjective wellbeing feeling also rises to where optimal performance is reached. Then any further demands/pressure will trigger decreasing performance or declining level of subjective wellbeing. This relationship is sometimes illustrated by the human performance curve (see Figure 2). What is more interesting and also more relevant to the current research is that this model indicates, that the significant point is not so much about how much actual demands an individual receives, but how the individual perceives his or her ability to cope with the

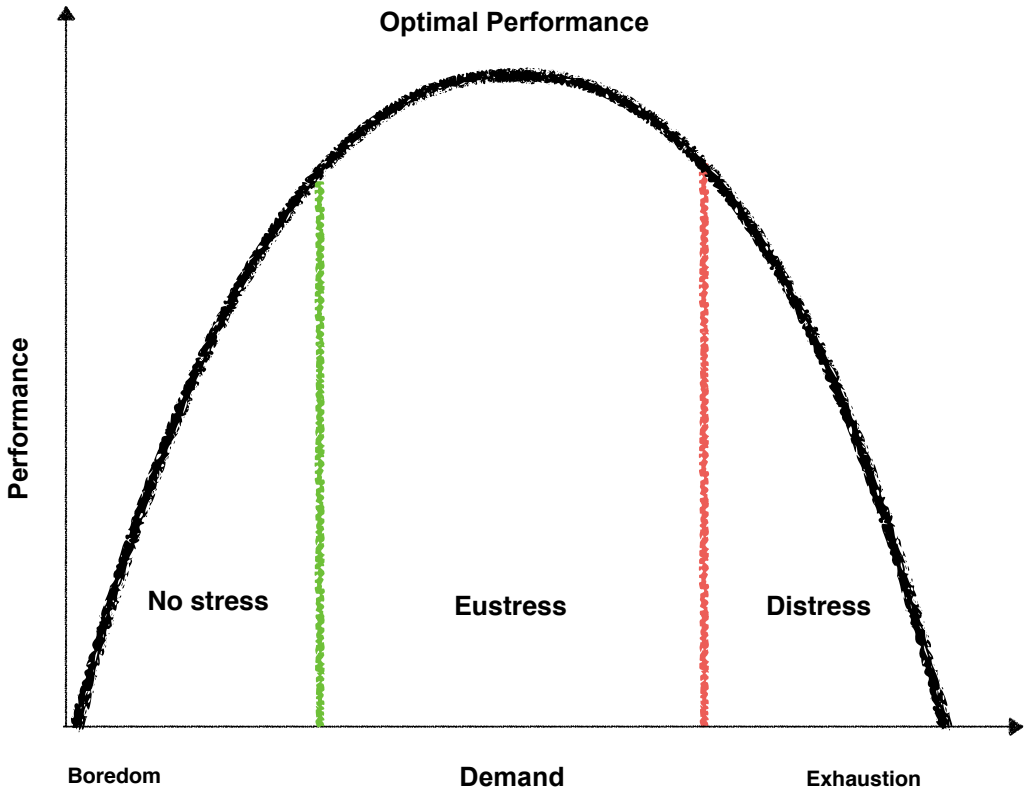


Figure 2: The Human Performance Curve (adapted from Cox & MacKay, 1981)

increasing demands or pressure. If the individual perceives his or her ability to cope as inferior to the level of pressures will experience stress and vice versa. As a conclusion, stress is an individual response to a given situation; in the same situation, one person could perceive it as stressful, hence resulting in experienced negative emotions, such as tension, frustration,anxiety, anger and depression. In the same situation, the other person may not perceive it as stressful, hence the above simulation would unlikely be triggered. Therefore, how an individual internally perceives their own level of stress is more relevant in the current research than the objective level of stress been classified by external sources.

Burnout and Its Damages

The majority of people in developed and developing countries now live in cities and are formally or informally involved in the workplace, where they spend most of their waking hours and productive lives (International Labour office, 2013). In the workplace, apart from stress, burnout is another closely following modern disease. As a relatively new concept in

comparison with stress, burnout was initially coined by Herbert Freudenberger in 1974. It is seen as a subjective (normally negative) response to chronic work-related stress and an ineffective coping strategy applied to protect oneself from it (Maslach, Schaufeli, & Leiter, 2001; Montero-Marın, Araya, Olivan-Blazquez, Skapinakis, Martinez-Vizcaino, et al., 2012). Burnout is an increasingly important topic not only for researchers but also for employers, because it is an indicator of poor employee well-being. Specifically, it is related to employee attitudes both towards the job and themselves, and also towards both physical and psychological health, emotions and behavior (Alarcon, Eschleman & Bowling, 2009; Cordes & Dougherty, 1993; Lee & Ashforth, 1996; Maslach, 2003; Maslach & Goldberg, 1998; Montero-Marın, Araya, Olivan-Blazquez, Skapinakis, Martinez-Vizcaino, et al., 2012).

Burnout is generally job-related and situation specific. What this means is that something is happening at work which is changing the way an individual thinks, feels and reacts within the work environment. Burnout may be observed as a progressively developed condition resulting from a decline in energy, motivation and commitment. It often occurs when an individual has high expectations for achievements, but does not receive the expected results regardless how much devotion and overcommitment is spent. As a result, the individual ends in an imbalanced life and suffers from stress and commonly also from depression (Roberts, 1997). This is particularly true when the individual receives both less-than-expected economic and social returns (Freudenberger 1974; Freudenberger & Richelson 1981, Montero-Marin, Prado-Abril, Demarzo, Gascon & Garcia-Campayo, 2014).

Overwork is another major source of causing burnout, and it is the most commonly known symptom. Maximizing profits as top economic value more frequently has being placed ahead of human capacities and values. The phenomenon is more likely when a mismatch is present between the nature of the job and the person doing the job. A common indication of this mismatch is work overload. It involves doing too much with too few resources. Stretching the limits is a way of further development, yet when the human limits are continuously overstretched, as discussed earlier in the human performance model (see Figure 2), then the balance of human mechanism will be disturbed, hence dysfunctions both in physical and mental level arise as diseases. Researchers have found a correlation between job stress and burnout (Maslach & Jackson, 1981). Today, it is the cause not only in the

sweats factories in the developing countries, but even in developed and wealthy countries, overwork is not uncommon and it has been found to contribute to serious illness, such like lower back problems and other musculoskeletal disorders in the upper body (Kalia, 2002); physical exhaustion, insomnia, increased use of alcohol and drugs, and marital and family problems (Maslach & Jackson, 1981). In extreme cases, overwork can cause death. In countries such as Japan and China, for example, death from overwork even has a name – *karoshi* in Japanese, *guo lao si* 过劳死 in Chinese. The major medical causes of *karoshi* deaths are heart attack and stroke, including subarachnoidal hemorrhage (18.4%), cerebral hemorrhage (17.2%), cerebral thrombosis or infarction (blocked blood vessel) (6.8%), myocardial infarction (9.8%), heart failure (18.7%), and other causes (29.1%, cited from Furuya, 2004). Since the 1980s, the number of Japanese recognized officially as having been victims of *karoshi*, and dying as a result of overwork, is 30,000 (Furuya, 2004; Pannozzo & Landon, 2005). However, experts estimate that approximately one million workers in Japan have a high risk of *karoshi* - putting their lives at risk from overwork - and almost 10,000 workers die of it per year (cited from Furuya, 2004). In China, as in many other countries, death caused by overwork has not yet been recognized officially. Not only overwork could cause physical death, it also results directly in serious depression and even suicide. In Japan, suicide from overwork is labelled as *karojisatsu,* and it has also become increasingly common in Japan. The country is one of the few which suffers the highest rate of suicide in the world, as a result approximately 31,000 die each year, however it is difficult to estimate how many of those suicide cases are due to work related stress and burnout.

Burnout is a worldwide and serious problem for all kinds of businesses, organizations and the economy as a whole. Over the years, more and more individual studies on burnout of various professional groups have also been conducted, especially in the professions in human services, such as physicians, nurses, teachers and social workers (e.g., Maslach, Schaufeli, & Leiter, 2001). The findings are alarming and should be taken seriously. For example, approximately one out of every five doctors in the US and Germany is burned out and more

Table 1: Burnout Dimensions, Subtypes, Coping and Preventing Strategy

Subtype	MBI-HSS/MBI-ES Dimensions	MBI-GS Dimensions	Symptoms	Coping Strategy	Preventing Strategy
Overload / Frenetic	Emotional Exhaustion	Exhaustion	Lack of energy, fatigue, impatience, forgetful, frequent long sighs, lost interest in activities used to enjoy, difficult to get the day started, often asking oneself: "what's wrong with me?"	Emotion-focused coping strategy Venting of emotions	Time management Boundary setting Mindfulness & Self-compassion based intervention
Neglect / Worn-out	De-personalization	Cynicism	Being cynical, passive, make cold and jokes, almost completely changed personality	Problem-focused coping strategy Behavioral disengagement	Behavior therapy Mindfulness & love-and-kindness based intervention
Lack of Development / Under-Challenged	Reduced Personal Accomplishment	Reduced Professional Efficacy	Professional inefficacy, make obvious mistakes, forgetful, harshly (sometime openly) self-critical, intolerant, internal dialog no stop	Emotion-focused coping strategy Cognitive avoidance	Cognitive therapy Mindfulness, Self-compassion, love-and-kindness based intervention

Note: MBI is Maslach Burnout Inventory; MBI-HSS is MBI-Human Services Survey; MBI-ES is MBI-Educators' Survey; MBI-GS is MBI-General Survey.

than one in four are burned out in Great Britain at any given time (Linzer, Visser, Oort, Smets, et al., 2001; Bergner, 2004). Furthermore, between 30 and 40 percent of teachers are burned out at any one time (Awa, Plaumann & Walter, 2010). It has been discovered that in the Netherlands at any given time, 10 percent of employees are burned out (Senior, 2006). With the seriousness of burnout having been recognized by many researchers and professional organizations in many countries, a clear definition is needed before further discussions.

Burnout Defined

The International Statistical Classification of Diseases and Related Health Problems (ICD-10) is the classification work used primarily in Europe and also in other parts of the world. The ICD-10, published by the World Health Organization, is a manual which provides classified diseases and other health-related problems that can legally appear on death certificates and in medical records. The term burnout has appeared in this manual since 1992.

It is classified under the heading "Problems related to life management difficulty" (Z73) and is defined as a "State of vital exhaustion" (ICD-10, World Health Organization, 1992).

Definition in empirical studies, however, is somehow different. Leading studies in the field define burnout as work related mental health impairment and dysfunction. Individuals who suffer burnout would experience more or less consistent causes and symptoms. Those symptoms include the dimensions of Emotional Exhaustion, Personal Accomplishment and Depersonalization as classified by the authors of the Maslach Burnout Inventory (MBI), the most widely used measure of occupational burnout in the empirical literature. An estimation has been made that nearly 90% of all published studies focused on occupational burnout have used the Maslach Burnout Inventory (Schaufeli & Enzman, 1998). **Emotional Exhaustion** is the state of being emotionally drained out and depleted, with the lack of further resources to regain healthy and balanced emotional level. **Depersonalization** refers to a negative, passive, cynical and detached approach to people around at the workplace, this includes colleagues and those under care, such as customers, patients, and clients. Last but not least, **Reduced Personal Accomplishment** refers to a sense of low self-efficacy and self-effectiveness, it also involves devalued self-view and negative feelings, sometimes even harsh feelings towards one's self (Maslach and Jackson, 1981; Maslach, Schaufeli, & Leiter, 2001; Awa, Plaumann & Walter, 2010). The original Maslach Burnout Inventory contains 22 items and was developed for use with human service professionals, and it is known as Maslach Burnout Inventory-Human Services Survey (MBI-HSS). Because as many as half of those studies were used to study teachers, therefore an Maslach Burnout Inventory-Educator's Survey (MBI-ES) was created and the only change was to replace the word *recipient* with *student* in the respective items (Maslach & Jackson, 1986; Worley, Vassar, Wheeler & Barnes, 2008). Because some of the researchers raised questions on the adequacy of the Maslach Burnout Inventory to measure burnout in occupations other than human service sectors, a general version of Maslach Burnout Inventory, namely Maslach Burnout Inventory-General Survey (MBI-GS), was developed in order to overcome this limitation (Schaufeli, Leiter, Maslach & Jackson, 1996). The three dimensions in the MBI-GS were labeled **Exhaustion** (same as previously explained); **Cynicism** (a distant attitude and detached behavior towards one's job); and **Reduced Professional Efficacy** (reduced level of performance). These dimensions are

explained as assessing the same dimensions as the organ measures: emotional exhaustion, depersonalization, and personal accomplishment, respectively (Maslach, Schaufeli, & Leiter, 2001). The Maslach Burnout Inventory-General Survey is claimed to have slightly broader terms by taking consideration of the job itself, rather than only focusing on the personal relationships connected with the job (Maslach, Schaufeli, & Leiter, 2001). A summary of different burnout dimensions used at different Maslach Burnout Inventory can be seen in Table 1.

Burnout Coping Strategy

Like the stress coping strategy, the choice of burnout coping strategy when facing challenges also directly results in positive or negative outcomes. The positive outcome can lead to further personal development and sense of achievement, and in contra the negative outcome can lead to physical uneasiness (e.g., more sick-day leaves) and psychological unbalance (e.g., depression). Coping strategies according to each subtype of burnout will be explained briefly in this research.

Coping strategy of "Overload" subtype of burnout

The overload subtype of burnout (or dimension "exhaustion" in the Maslach Burnout Inventory-General Survey) is the most commonly known type of burnout. It is mainly caused by overwhelming work load and emotional load, especially when the nature of the job requires long hours of working and continually handling emotions during human interactions. The common cause of emotional exhaustion is unfulfilled high ambition and less appreciated work by its receivers. This burnout type would need organizational support from the decision makers on restructure work load to best fit human needs and capability, in other words to maximize Eustress phrase based on the principle of the human performance curve (see Figure 2). At the same time, the employees need to learn how to improve emotional regulation and strengthen personal boundaries, in order to reduce psychopathological symptoms of burnout (Haberthür, Elkuch, Grosse Holtforth, Hochstrasser & Soyka, 2009). However, this coping strategy would only suffice when it were accompanied by increasing psychological flexibility and awareness of one's emotional limits (Lloyd, Bond & Flaxman, 2013).

Coping strategy of "Neglect" subtype of burnout

The neglect type of burnout is significantly explained by behavioral disengagement. It is similar to the problem-focused behavioral stress coping strategy as previously discussed. Studies found that when an individual disengaged oneself from his or her job as a coping strategy for job related stress, then it is likely he or she suffers from all classical burnout symptoms at the same time, and shows decreased self-efficacy and job satisfaction (Reissner, Baune, Kokkevi, Shifano, Room, et al., 2010). The other consequence of applying this strategy can drive one to low job performance, and in return it causes more difficulties and stress at work (Prati, Pietrantoni & Cicognani, 2009). This burnout type would need more than problem-focused stress coping strategy, deep understanding on the original of stressors as well as emotional support from supervisors and colleagues.

Coping strategy of "Lack of Development" subtype of burnout

This type of burnout is not as extreme as the other two and at the same time it shares characteristics with the other two profiles. The key unique point is applying cognitive avoidance as a coping strategy. It is similar to the emotional stress coping strategy as discussed earlier. In general, those individuals apply avoidance or denial as main coping strategy. Even if only used occasionally, this can easily lead to becoming more stressed and burned out (Gibbons, 2010). Results from applying this type of coping strategy would be increasing levels of boredom and detachment from the current role, also becoming more cynical, sometimes even aggressive, towards people at work, including colleagues and clients or customers (Montero-Marin, et al, 2012). This burnout type would need to search for the meaning of the work itself, for example the higher level of motivation according to Maslow's Hierarchy of Needs.

Regardless of which of the three types of burnout is considered, evidence from the recent development of cognitive behavioral therapy interventions, such as the Acceptance and Commitment Therapy (ACT), self-compassion/love-and-kindness as well as mindfulness based interventions, show that increasing awareness, and acceptance, at the same time creating meanings and values in life can be a satisfactory solution on burnout and stress

(Montero-Marin, et al, 2012). However, it is necessary first to provide a short overview on the science of prevention, in particular burnout prevention.

1.2. The Science of Prevention

In 1998, when Seligman started his presidency at the American Psychological Society (APA), he wrote in his president's column in the *APA Monitor* that psychology had become sidetracked by its exclusive focus on weakness and damage. Since World War II, psychology has been focused on the study of psychological disabilities and disorders, and "practicing psychologists found that they could make a living treating mental illness." But the side effects of such pathology oriented approach was to create a psychology that focused on the study of weakness and damage and "fixing what was broken." By spotlighting prevention, Seligman expressed his wish to turn psychology's attention towards the study of strength, resilience and health (Seligman, 1998).

How could prevention work? The goals of prevention, for example in public health, are to identify and reduce disease-causing agents in the environment and to immunize and strengthen individuals when facing the risks. Antismoking campaigns in youth might be focused on reducing or eliminating tobacco advertising, especially directed toward young people, age checking at the tobacco selling points, and what more is effective is that teaching them how to resist peer pressure to start to smoke.

Prevention in the field of psychology is very important and it is essential to know what environmental risk factors contribute to psychological diseases and what are the protective factors that strengthen and prevent individuals and decrease their risk vulnerability. There are three levels of prevention: primary, secondary and tertiary (Heller, Wyman & Allen, 2000). The goal of primary prevention is to reduce the incidence of dysfunction by decreasing the impact of environment risks or by increasing resistance resources (Antonovsky, 1979). It is more oriented toward groups who have high possibilities to be explored at risk factors for disability but have no symptoms. For instance, integrating burnout prevention training as a part of qualification training for high risk occupation groups, such as in healthcare and in primary eduction. Secondary prevention efforts are intended to identify

potential disorder at its infancy, so they can be treated at the earliest possible opportunity, and by doing that to decrease the severity and duration of dysfunction. It is focused on those already showing early stages of dysfunction, for example, where staffs have already shown signs of being stressed or with increasing number of sick leave days due to psychological distress. The last level of prevention is the tertiary, which focuses on reducing impairment levels in cases in which disorder has already occurred. It is generally seen to be similar to the goals of therapy and is rarely discussed in prevention literature. Current research will be focused on the first two levels of prevention.

Stress Prevention

Stress is like another other risk in life as well as in the workplace, it is important to treat it seriously including appropriate assessment to prevent it. The recent International Labour Organization (ILO, 2012) report "Stress Prevention at Work Checkpoints", states that "it is important that stress not be treated differently from other risks; the employer must undertake a risk assessment from which any changes must proceed"(Preface, p.v). Further on, it clearly pointed out that "Stress prevention should be part of the workplace occupational safety and health management systems. Planning and implementation of preventive measures should be based on the assessment of risks at work and the setting of priorities for practical improvements." (p.2).

Recent mindfulness based interventions provide encouraging empirical based evidence on the preventive effects of meditation and practice mindfulness on stress, negative mood and other psychological and psychosomatic disorders. Starting with the well-known Mindfulness Based Stress Reduction (MBSR) established by Dr. Jon Kabat-Zinn in the early 1980s, numerous researches, either MBSR or mindfulness based interventions, have replicated the significant positive effects on stress reduction (Holdevici & Craciun, 2015; Jain, Shapiro, Swanick, Roesch, Mills, Bell & Schwartz, 2007; Kabat-Zinn, 1982; Kabat-Zinn, Massion, Kristeller, Peterson, Fletcher, Pbert, Lenderking & Santorelli, 1992; Kaplan, Goldenberg & Galvin-Nadeau, 1993; Klatt, Buckworth, & Malarkey, 2009; Matousek, Dobkin & Pruessner, 2010; Miller, Fletcher & Kabat-Zinn, 1995; Rosenzweig, Reibel,

Greeson, Brainard & Hojat, 2003; Shapiro, Astin, Bishop & Cordova, 2005). Further detailed explanation on how meditation and practicing mindfulness could prevent stress will be explained in the section 1.4.

Burnout Prevention

Leiter and Maslach (2000) along with other authors note that self-awareness and self-monitoring are critical in preventing burnout, especially for “overload” and “lack of development” subtypes of burnout as previously discussed. Pines and Aronson (1988) note that in the case of the “overload” type of burnout, although organizations are largely to blame, employees themselves cannot be responsibility free. Employees need to learn how to switch off their minds when they are not at work, not checking emails, making business phone calls, mind planning, and so on. Without this ability to switch off one's mind and stay at the present moment, it is unlikely a person can separate oneself from working life and personal life. In such cases, even when organizations actively reduce demands, or offer flexible working hours, the individual is still likely to be burned out. Hence, improving self-awareness and being able to master one's own mind, knowing when and how to switch the mind between on and off duties, is not only important but also essential. As Pines and Aronson (1988) state:

“ . . . people must learn to make a clear discrimination between the concrete demands of the job and the demands they place on themselves that they sometimes erroneously attribute to their 'supervisor' or their 'organization'. Thus, some people regularly overwork, assuming that this is a demand placed on them by their organization. But if they examine the situation closely, they would realize that they were much harsher taskmasters than their employers. They would then realize that they did have more control than they realized -- and would have to deal with the issue of whether or not they wanted to exercise that control.” (pp. 30–31).

In other words, to be fully aware of one's border of working and personal life, when at work then to be fully at work, and when at home then be fully at home, is arguably the most effective prevention strategy for the “overload” type of burnout. Self-awareness ass also been

proven as an effective strategy for other two types of burnout. To be aware of any earlier signs of physical and emotional detachment from the current job role has been proven particularly effective in preventing burnout in human service jobs, such as clergy (Barnard & Curry, 2012), nurse (Edwards, Burnard, Coyle, Fothergill, & Hannigan, 2001), teachers (Farber, 2000; Griffith, Steptoe & Cropley, 1999) and social workers (McGarrigle & Walsh, 2011).

If awareness is so important, then how could it be developed and be used further for stress management and burnout prevention? The answer will be revealed in the coming section.

1.3. The Development of Awareness

Know thyself.

- Ancient Greek Apollo Temple

知人者智，自知者明。

Those who know and understand others are smart, but those who know and understand themselves are truly enlightened.

- Lao Zi (Lao Tzu)

Let a monk go forth mindfully to abandon view of self.

- The Buddha

Know Thyself

The Buddha pointed out that it is essential to work for the total removal of the false view of self, and it is the only way to liberation (Hart, 1987/2010). The Buddha is not the only ancient wise man who advocated the importance of viewing the true self. Lao Zi, the Chinese philosopher had expressed almost identical views around the same time in China (Laozi & Lao Tsu, 1989). The main philosophy from Lao Zi is to achieve high self-consciousness, the

real wisdom and he labelled it as “dao”. This was not only unique to the East. The ancient Greeks also admonished that we should know ourselves, as cultivated in the Apollo Temple, know thyself. Specifically, the ultimate aim of human development is to accurately perceive our own actions, motivation, and feelings. However, how can man know the self without awareness? The awareness of the self is the first step and continues improvement in self-awareness. In particular the need to have positive self-image, is the motor and drive of human development. This is not only applicable to ancient wise scholars, it also applies to contemporary ordinary laymen. It has been defined as a central feature of mental health (Jahoda, 1958) as well as a characteristic of self-actualization and self-transcendence (Maslow, 1954;1969), and subjective well-being (Ryff, 1989).

Being self-aware is not easy, it requires a host of personal qualities which normally are regarded as unpleasant and even painful, such as when people are judging themselves negatively or are confronted by negative life circumstances, So people do their best, either consciously or unconsciously, to avoid it by engaging in activities that allow them to focus on concrete aspects of their present environment or behavior (Heatherton and Baumeister, 1991; Gunaratana, 1993). When focusing on concrete thoughts, people can achieve a lower level of self–awareness that precludes meaningful self–thought and comparison to ideals, and as a result, creates a strategy of avoiding awareness of unpleasant reality (Leary, Adams, & Tate, 2006; Wegner & Vallacher, 1986). However, how important is to achieve high level of self-awareness then?

Maslow's Hierarchy of Motivation

The direction of how an individual seeks development can be demonstrated by Maslow's basic human need perimetric (Maslow, 1954, 1961, see Figure 3), however the most widespread version includes only five motivational levels, physiological needs, safety needs, belongings and love needs, esteem needs and self-actualization/self-realization. Self-actualization is the result of a long seeking process of personal potential and this process can be summarized in two steps: 1) what is a person’s full potential; 2) how to actualize and fulfill that potential. According to Maslow, before anyone can achieve top and final level of

Table 2: Maslow's Need Theory and Description of Achieved Person (adapted from Koltko-Rivera, 2006)

Motivational level	Description of Person and Typical Motto at the Level
Self-transcendence Driven	Feels to further a cause beyond the self and to experience a communion beyond the boundaries of the self through peak experience. Motto: I am here for a reason, how can I fulfill my life and how can I serve?
Self-actualization Driven	Seeks fulfillment of personal potential. Motto: What am I really good at? How can I bring my best out and share with others.
Self-Esteem Driven	Seeks esteem through recognition or achievement. Motto: I want to be successful. I want others to respect me, not look down on me.
Belongingness and Love Driven	Seeks affiliation with a group. Motto: I need love. Where is my love? I will be here waiting for love.
Safety Driven	Seeks security through order and law. Motto: Life is dangers, I need to be strong so that I can protect myself and those I love.
Physiological (Survival) Driven	Seeks to obtain the basic necessities of life. Motto: Life is hard. Life is all about survival.

the need perimetric, the person must not only achieve the previous needs, but also has the desire and drive to fully realize one's full potential. Maslow estimated that less than 5% of total population would actually achieve self-actualization.

However and interestingly, towards to his later years, Maslow explored a motivational step beyond self-actualization, and later he named it as self-transcendence (Maslow, 1969). He explained, the self only finds its actualization in seeking to further a cause beyond the self and to experience a communion beyond the boundaries of the self through peak experience, that is giving itself to some higher goal outside oneself, in altruism and spirituality (Koltko-Rivera, 2006). Maslow came into awareness that there is yet another level beyond his original finding by observing those people who according to him have already achieved self-actualization, and he noticed that they are not all the same. Some of those self-actualized people are more aware and have gone beyond self-actualization and operate with higher motivation to develop further. Importantly, most of them if not all have had some kind of peak/mystical/transcendent experiences so they have reached Being-cognition and become B-persons as Maslow labelled it. Not many records describe such peak experiences, and one reflection from Ralph Waldo Emerson which described his inner experience can give some vivid insight:

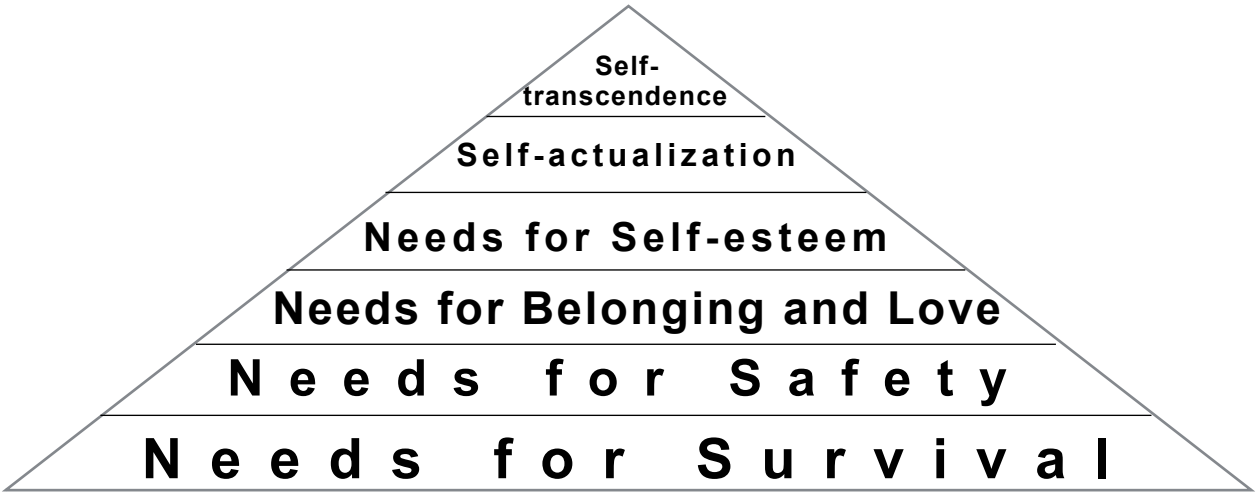


Figure 3: A rectified version of Maslow's Hierarchy of Needs (adapted from Koltko-Rivera, 2006)

" … my head bathed by the blithe air and uplifted into infinite space – all mean egotism vanishes. I become a transparent eyeball; I am nothing; I see all; the currents of the Universal being circulate through me." (Emerson, 1992, p.39).

After such peak experience, individuals arrive at the top of Maslow's new hierarchy of motivation, that is, with a strong motive through peak experience toward *self-transcendence*. Maslow explains further, those B-persons seek benefits beyond their personal needs, they seek communion with transcendent by their personal choice of transpersonal experiences. As a result, they often are engaged in service to others. Mother Teresa, Gandhi, Nelson Mandela are good examples of such B-persons. This rectified version of Maslow's Hierarchy of Needs can be seen in Figure 3 and the description of achieved person is summarized in Table 2. (adapted from Koltko-Rivera, 2006, p303).

Then naturally raises the question of how to be a B-person, how to evoke such a peak/ mystical/transcendent experience? Meditation can be one of many possible answers, and it is found to be more effective than yoga and contemplative prayer in terms of likelihood of achieving peak/mystical/transcendent experience (de Castro, 2015). Then what is mediation and what are the benefits of meditating will be the focus of the next section, but before that, a specific explanation on self-awareness in nonverbal communication should be addressed as it is relevant to the current research.

Self-Awareness in Nonverbal Communication

Self-awareness is also an important factor in the process of interpreting nonverbal cues during human interactions. Nonverbal communication is like their verbal relatives, they are meaningless unless someone is there to interpret them, or to decode them in scientific terms. On the other hand, presenting nonverbal behavior is called *encoding* and the process and attempt to interpret them is called *decoding*. The process of encoding and decoding nonverbal behaviors requires varying degrees of awareness and control (Lakin, 2006). For example, in a typical dating situation, a girl can say "no" to her date on behaving too intimately, yet her body language indicates the opposite. Without awareness of this conflict in her verbal and nonverbal encoding, she would be very surprised and even offended when her date continued to become progressively closer. Conversely, if a girl says "no" to her date and she really means that in both of her verbal and nonverbal level, but the date unfortunately lacks enough awareness to sense the real rejection, or he could be misled by common dating tips such as "women say no when they mean yes", or "girls like men to be tough and powerful", unfortunately such scenarios sometimes end up with date raping (Hendrick, 2004). Hence, being self-aware on both encoding and decoding at verbal as well as nonverbal levels is an essential part of self-development. Before going further into this topic, the concept of nonverbal communication deserves more explanation and also its importance in human interactions.

On average humans spend 80% of their waking hours in communication, which is generally defined as has having both a verbal and nonverbal component (Pease & Pease, 2004). During human interactions, 2/3 of all communications are nonverbal (Hogan & Stubbs, 2003). That might be the reason why nonverbal communication has received increasing attention from researchers and the general public. It is commonly believed that verbal communication often refers to the actual words we use in communication, and everything else other than actual words used in this process. However this perspective becomes less accurate when taking the complexity of human communication behavior into account (Knapp & Hall, 2002). For example, hand gestures are commonly considered as nonverbal behavior, that is "other than words", and they are used very frequently in human

interactions. However, the gestures that make up Sign Language (the language of the deaf) are clearly linguistic, that is to say for those who understand and communicate with the sign language, those hand gestures are no longer nonverbal but verbal communication. Conversely, not all spoken words have linguistic functions as commonly believed, for instance, onomatopoeic words such as "tattarrattat", a term coined by James Joyce in Ulysses (1922/2010) means an animation of someone knock on the door. Without knowing the background information, the term “tattarrattat” is meaningless.

In conclusion, high self-awareness in human communication, not only by actual spoken words we, but also and arguably even more important by consistent nonverbal behaviors, is a significant step of intentional self-development (Brandtstädter, 1999).

1.4. Meditation, Mindfulness and Compassion

As previously explained, stress and burnout are the two major diseases in modern contemplate society. Regardless which model of stress theories is applied, lack of awareness of existing resources both internally and externally is a fundamental cause of being stressed and burned out. The development of required awareness is a long process and needs to go through different motivational steps according to Maslow, and an increasing number of studies and empirical researches demonstrates that meditation can be an effective strategy to apply. Then what is meditation and what is the so-called mindfulness? Why do the mindfulness-based interventions become a phenomena in the field of psychotherapy, neuroscience, education and occupational health?

Meditation Defined

The origin of the English word “meditation” comes from Latin *meditatio,* the verb form is *meditari* and the direct translation means “to think, contemplate, devise, ponder” (An universal etymological English dictionary, 1773). However, in nowadays, the word *meditation* presents different meanings in different contexts. Firstly, there are many styles of meditation. Every major religious tradition has some sort of procedure which is called meditation, not only exclusively in Buddhism as may commonly be believed, but also in

other religious such as Taoism, Hinduism, Islam, Christianity and also the New Age and New Thought movements. Their followers also practice meditation in various settings, therefore the word *meditation* is often very loosely used (Gunaratana, 1993). In a general and broader context, meditation involves deep contemplation, and an internal effort to observe and regulate the mind in some way, it is often used in various religions as mind-training, such as in Buddhism and Taoism. However, as with many other fundamental and abstract concepts, it is difficult to define exactly what meditation is. In empirical research, one of the most cited definition of meditation in PsycINFO states: "[M]editation refers to a family of self-regulation practices that focus on training attention and awareness in order to bring mental processes under greater voluntary control and thereby foster general mental well-being and development and/or specific capacities such as calm, clarity, and concentration."(Walsh & Shapiro, 2006, p. 228-229).

Leaving the endless discussion on defining meditation, what is more interesting to ask is why bother to do meditation at all? The answer to this commonly asked question regarding meditation has already been answered, it is a promising approach which could lead to peak/ mystical/transcendent experience, and through such experience a person could develop into a Being-person by achieving a self-transcendence state, the highest aim of Maslow's Hierarchy of Needs (Maslow, 1969). However, as Maslow himself believed that humans first have to satisfy the lower needs before being able to achieve the next higher one, which means before a person reaches to self-transcendence, he or she must have achieved the needs of survival, safety, belongingness and love, esteem and self-actualization. This is not an easy journey and as Maslow himself predicted, only 5% of the human population could achieve the self-actualization level, and less than 1% could reach the ultimate end of self-transcendence (Koltko-Rivera, 2006). Then comes the next question, could mediation help to go up the human need hierarchy, if so how? To answer this question, further explanation on meditation practice in the East and West is required. By doing so, another key term "mindfulness" needs to be first introduced.

Mindfulness in Ancient Tradition in the East

The term "mindfulness" was firstly introduced in English as the translation of the *Pali* term *sati* (Sanskrit: *smrti*) in the 19th century. *Pali* was the language used and taught by the Buddha 2,500 years ago. *Pali* was mainly used in spoken language whiles Sanskrit is mainly used in written language, hence because of most of the translated Buddhism texts, for example, Sanskrit is more recognized and familiar in the English speaking countries. Before that translation, the term "mindfulness" is an unknown word in the English language.

In the widely acknowledged Pali-English dictionary by Rhys Davids (cf. Hart, 1987/2010), under the term *sati* ('*satima*' being the corresponding adjective) it states "memory, recognition, consciousness, intentness of mind, wakefulness of mind, mindfulness, alertness, lucidity of mind, self-possession, conscience, self-consciousness". A reader can be confused after checking out this term, then what exactly this term *sati* means?

This newly created translation has its advantage of minimizing association and unnecessary attachment of a reader from an existing English word. However, because this newly created word also follows linguistic forming rules, therefore it inevitably does bring a certain association to the word itself. Specifically, the root of the word, "Mind" and the adjective ending "-ful" plus the noun ending "-ness", can easily lead readers to interpret this new word as "mind-full". Whether this is an accurate guess on this newly invented word, a deep search into *Sutta*, the Discourse and teaching of the Buddha or one of his leading disciples is carried out. *Sati* was frequently used in *Sutta*, and the perceived meanings are also different according to the context. The origin of the term *sati* means memory or remembrance (Gunaratana, 1993). However, and particularly in the *Pali* scriptures, it has only occasionally retained that meaning of remembering past events. It mostly refers to the present, and as a general psychological term it carries the meaning of "attention" or "awareness". But still even more frequently, the term *sati* used in the *Pali* scriptures is restricted to referring to a kind of attentiveness, of which the meaning in the sense of the Buddhist doctrine, is good, skillful or right (*kusala*). '*Sati*' in the late use as a kind of good, skillful or right attentiveness is the seventh factor of the Noble Eightfold Path, under the name of *Samma-sati*, commonly

translated as Right Mindfulness, being expressly explained as the fourfold 'Foundations of Mindfulness' (*Satipatthana*) (cf. Ven. Nyanaponika Thera,1962, p.11).

Samma-sati is a valuable and meaningful term, which explains how to be mindful in three steps:

- to know the mind, that is so near to us, and yet is so unknown;
- to shape the mind, that is so unwieldy and obstinate, and yet may turn so pliant:
- to free the mind, that is in bondage all over, and yet may win freedom here and now.

(Ven. Nyanaponika Thera, 1962, P24)

In order to "know the mind", as instructed by the Buddha, a full and pure attention at the present moment is required and this can be done through meditation, specifically, through *Vipassana* (insight) meditation, the school of meditation developed by the Buddha which empowered him to full enlightenment, and it is the centre of his teaching. Following his instruction, one should start with *Anappana* (breathing) meditation, simply focusing on breathing, inhale and exhale. Once full and pure attention is stabilized then move to the *Vipassana* meditation. It requires directing full and pure attention inch by inch systematically through the whole body and observing any bodily sensations which may occur, again and again, being mindful and being determined. It is easier said then done. Because it is inevitable that the thoughts jump in and associate whatever has observed or experienced at the present moment with either the past (e.g., memories) or the future (e.g., planning). When thinking is associated with past and future events, certain thinking patterns both obtained or learnt based on past experience could be generated and generalized. As a result of generalization of experience, rational or abstract thinking are established and termed as perception, and such non stop associative thinking is called rumination, which has been identified as the major cause of a number of mental diseases such as depression (Williams, Teasdale, Segal & Kabat-Zinn, 2007). However, before the psychologists re-discovered this, the Buddha had already taught his students about 2,500 years ago, and he referred to it as the second step for the Right Mindfulness as explained above: "shape the mind".

If the mind is well trained that means being at the present moment, detached from past and future events, and liberated from current thinking pattern, as it was said before free from rumination, that leads to the third step which is "free the mind", in Buddhism terms

enlightened. In the opposite direction, once failed to shape the mind (or the mind is untrained), past and future events will take over the control of the mind, associative thinking is running non stop, becomes mind-full, in psychology term rumination, and it easily leads to depression, anxiety, stress and burnout.

As a conclusion, mindfulness as a direct and plain English term based on the original teaching of the Buddha means the process of training one's mind till free from attaching to it, or to be and to stay at the mind-free status at the present moment. Therefore, the translation of mindfulness, which can easily mislead to the association of being “mind-full”, is exactly opposite in meaning to the teaching of the Buddha, hence it is not accurate. Deep search into the original context of the term *sati* also gives better understanding in the modern use of mindfulness in psychology. As Ven. Nyanaponika Thera, one of the leading Buddhist scholars who introduced mindfulness from the east to the west, summarized:

"Mindfulness, though seemingly of a passive nature, is in fact an activating force. It makes the mind alert, and alertness is indispensable for all purposeful activity. In the present inquiry, however, we shall be mainly concerned with the restraining power of mindfulness. We shall examine how it makes for disentanglement and detachment, and how it positively helps in the development of the mental qualities required for the work of deliverance." (2001, P29).

Apart from the presentation and practice of Satipatthana in the school of Theravada, the Chinese chan “禅” and Japanese Zen are closest to the spirit of Satipatthana, also to the Mahayana schools of the Far East. However, further elaboration would be beyond the scope of the current study, what is more important and relevant is to further explain how mindfulness is understood and approached in the West in modern times.

Mindfulness in Modern Approach in the West

Mindfulness has been an increasingly discussed and researched topic since the 1970s. Since then, there have been significantly two different developments. The first one is theoretical, similar as many past scientific developments, either a new theory is grounded or an existing one into different perspective or level is broadened. In other words, the theoretical

development of the new concept of mindfulness is a natural result of accumulation of new findings that cannot be explained and/or satisfied by any established theory (Singh, Lancioni, Wahler, Winton & Singh, 2008). Examples of the leading figure in the first development of mindfulness are Langer (1989) and Brown & Ryan (2003). Langer's research in mindfulness started, as she claimed (1989) during her research on power. She realized by observing a designed gambling game how people attached to their given cards, and how they formed illusions on control. Langer illustrated the psychological theory of mindfulness and its application to human behavior, and she termed it “mindfulness”. The term used in Langer’s work is pure theoretical and it has little to do with the current research. The other theoretical development of the term mindfulness through the Acceptance and Commitment Therapy (ACT; see Hayes, Strosahl and Wilson, 1999) however, is very related with the current research. Arguably, the recently developed ACT can be considered as broadening an existing theory or theories, for example the relational frame theory in this case. It is classified in the theoretical development of the term mindfulness is because the participants of the Acceptance and Commitment Therapy are not required to meditate. Meditation is the most importance distinguishing criteria between the two developments.

The second development is more in a practical and clinical approach, or in a newly invented yet well-know term as mindfulness based interventions. The movement of mindfulness based intervention has evoked a new wave of development in traditional Cognitive Behavior Therapy (CBT). The mindfulness based CBT has abandoned the traditional approach on focusing on challenging an individual's irrational or harmful negative thinking (both the content itself and the thinking patterns), instead of transferring focus on detaching form such kind of thinking (especially the thinking patterns) and then observing the relationship between one’s thinking and feelings, without judgement or rationalization. That is, simply observing it mindfully from the third person's point of view. The benefit of doing so is more likelihood of deep understanding, total acceptance and eventually further necessary personal development (Singh, Lancioni, Wahler, Winton & Singh, 2008). This second practical development is mindful meditation based approach and a notable leading figure is Kabat-Zinn. His biggest contribution according to his introduction at the mindful class at the Google headcounter in 2007 is that he successfully applied the ancient Buddhism

concept of mindfulness into main stream medicine, particularly through his development of Mindfulness Based Stress Reduction (MBSR) intervention. The MBSR intervention is a classic example of this second development of Mindfulness in modern psychology, which has followed an inductive methodology, in other words, a theory is developed based on massive experiential data and with proven effectiveness.

As previously discussed, mindfulness is the core concept of the teaching of the Buddha, and it is a part of the Buddha's Four Noble Truths (suffering, the origin of suffering, the cessation of suffering, and the path to the cessation). It is a constituent of the Noble Eightfold Path leading to liberation from suffering (see Hart, 1987/2010). The Mindfulness Based Stress Reduction intervention is rooted from this understanding of human behaviors and is based on an experiential approach to personal transformation. The intervention was initially developed in the 1970's, and it was the last attempts to help patients with unknown pain chronically and could not benefit from traditional medical treatments. Dr. Jon Kabat-Zinn developed early version of Mindfulness Based Stress Reduction by applying mindfulness meditation both as formal class room practice and as informal daily at home practices. Kabat-Zinn as a long time meditator himself understands what Gunaratana claims that meditation is a living activity, an inherently experiential activity. It cannot be taught as a purely scholastic or theoretic subject in a typical classroom setting. The living heart of the process must come from the teacher's own personal experience (Gunaratana, 1993; Kabat-Zinn, 2003). Hence the Mindfulness Based Stress Reduction intervention, since its birth is only led by experienced meditation practitioners who not only understand the importance of practicing mindfulness but also let it guide their daily life and teaching. This could serve as one of the success factors of the Mindfulness Based Stress Reduction interventions. Ironically, this last attempt to cure chronic pain patients was not only successful, it has also resulted in a proliferation of research in a wide range of scientific fields ever since. Since then, profound increasing numbers of replicable clinical findings have been reported about various disorders, settings and disciplines. The Mindfulness Based Stress Reduction intervention approach is also the origin design of the current research.

Defining Mindfulness in Modern Psychology

Despite which development of mindfulness is used in modern empirical studies, the task of defining the term mindfulness, like many other psychological concepts, has not been a smooth ride. It has been continuously revised and clarified since the 1970's, and it has been defined very differently in social psychological research (e.g. Langer, 1989) in comparison to within the clinical and Buddhist literature (e.g. Bishop et al., 2004).

One of the most well-recognized Western definitions of mindfulness comes from Dr. Jon Kabat-Zinn, one of the central founders of the field as previously explained. According to him, mindfulness is, "paying attention in a particular way: on purpose, in the present moment, and nonjudgementalmentally" (Kabat-Zinn, 1990, 1994 & 2003). His version of the term mindfulness has become the landmark and most quoted definition. However, it is still worth it to further explore what other attempted conceptual definitions were and what the differences are. These definitions include:

- a state in which individuals continually make novel distinctions about objects of their attention (Langer, 1989; Langer & Moldoveanu, 2000);

- an open and receptive attention to and awareness of what is occurring at the present moment (Brown & Ryan, 2004);

- a two-component model with self-regulation of attention which is maintained on immediate experience and adopting a particular orientation toward one's experiences in the present moment (Bishop et al., 2004)

- an attention that is receptive to the whole field of awareness and remains in an open state so that it can be directed to currently experienced sensations, thoughts, emotions, and memories (Jha, Krompinger & Baime, 2007);

- waking up from a life lived on automatic pilot and based on habitual responding (Siegel, 2007); and

- an awareness that arises through intentionally attending in an open, accepting, and discerning way to whatever is arising at the present moment (Shapiro & Carlson, 2009)

The attempts of researchers to define the concept of mindfulness will foreseeably be continued. However there is a common theme shared among all these definitions, that is a

general willingness and full engagement with the present moment, in common language: a decision to be and to stay here and now. On the opposite side of mindfulness, is the experience of mindlessness. It would occur when attention and awareness capacities are disconnected due to preoccupation with either past memories or future plans and worries. As a result, one would have a limited awareness of and attention to experiences at the present moment (Black, 2011). Regardless of which definition, Singh and his colleagues (2008) have summarized nicely as below:

"We suspect that there will continue to be different definitions of mindfulness in psychological research, just as there continues to be different understanding of mindfulness within and between Buddhist and other wisdom traditions because mindfulness is not a unitary concept devoid of context. Even at the most global level, the definition of mindfulness will vary depending on whether one is interested in mindfulness from a social psychological, clinical, or spiritual context, or form the perspective of a research, clinician, or a practitioner, and their various combinations." (p. 661).

In the current research, the definition from Dr. Jon Kabat-Zinn, the found of the Mindfulness Based Stress Reduction intervention, is adopted and applied. Apart from mindfulness, the current study is also influenced by another related subject: self-compassion.

Self-Compassion

Self-compassion arises from many traditional philosophical thought in both the East and the West. The modern concept is coined by Neff (2003a, 2003b) from a combination view of social psychology and Buddhist tradition. Neff defines self-compassion with three main components: self-kindness, common humanity and mindfulness. *Self-Kindness* means being patient, kind and warm towards oneself, in particular when facing failure, disappointments and imperfection. It requires awareness in understanding on one's boundaries, and realizing the reality and difficulties one may have to face, instead of being harshly judgmental and self-critical but being tolerant and accepting. This is very much related to the previously discussed concept of subjective well-being and core of mental health. *Common humanity* again involves awareness. It is being aware that one is not alone, as many others are also undergoing similar

experiences and challenges, hence a sense of connection with sympathy rather than self-pity, shame and isolated loneliness. Last but not least, *mindfulness* involves mindful awareness and acceptance of painful thoughts and feelings. It means staying in contact with the present moment, the reality with deep realization on true authentic self rather than over-identifying with the false self, or the other name is the ego. In other words it is accepting the self as it is and even being able to confront one's shortcomings with nonjudgmentalness, rather than ignoring, ruminating nor rejecting.

When experiencing negative events, self–compassionate people tend to have less extreme reactions, ruminate less, and experience more positive emotions than those low in self–compassion. The concept of self–compassion is also related to self–esteem; people who react to negative events with self–kindness and equanimity also tend to feel good about themselves (Adams & Leary, 2007). What is worth note that self–compassion leads people to forgive themselves for their actions, especially if the actions are not allowed by their own principles, but does not necessarily lead them to give up responsibility for those actions. Leary et al. (2007) found that self–compassion has positive effects on reducing negative affect and increasing personal responsibility when it is confronted by an undesirable event. Thus, self-compassion tends to soften rather than reinforce a false self image and ego-protective boundaries between the self and others, in particular when a stressful event occurs (Gilbert & Irons, 2005; Gilbert & Procter, 2006)

Compassion has been described as a path leading to greater awareness. For example, Feldman (2005) wrote:

One is to see compassion as the outcome of a path that can be cultivated and developed. You do not in reality cultivate compassion, but you can cultivate, through investigation, the qualities that incline your heart toward compassion. You can learn to attend to the moments when you close and contract in the face of suffering, anger, fear, or alienation. In those moments you are asked to question what difference empathy, forgiveness, patience, and tolerance would make. You cultivate your commitment to turn toward your responses of aversion, anger, or intolerance. With mindfulness and investigation, you find in your heart the generosity and understanding that allow you to open rather than close. (pp. 141-142).

Benefits of Mindfulness and Self-Compassion

Practicing meditation and mindfulness has many benefits as proven by a recent mega-analysis includes 39 studies with a total of 1,140 participants completed mindfulness based interventions (Hoffman, Sawyer, Witt, & Oh, 2010). Samples are from a wide range of backgrounds and clinical conditions, including depression, cancer survivor, generalized anxiety disorder, and other psychiatric or medical conditions. They found evidence to support the efficacy of mindfulness-based therapy for reducing anxiety and depression symptoms. In this review, a large effect size was found among clinical participants and for the health population the effect size was moderate. Within the 39 examined studies, 19 of them also assessed depressive and anxiety symptoms in long-term follow-ups, again moderate effect sizes were found. These effect sizes were robust and uncorrelated with the number of treatment sessions or the publication year. This is strong evidence of sustainable effectiveness of mindfulness based interventions and suggests that mindfulness-based therapy is a promising intervention for treating anxiety and mood problems in clinical populations (Hoffman, Sawyer, Witt, & Oh, 2010). They also find rich evidence that mindfulness meditation leads to emotional regulation, in specific increased positive affect and decreased negative affect, this finding is in line with many other studies (cf. Davis & Hayes, 2011). Another two recent studies lead by Pace and colleagues examined whether a Tibetan program of compassion meditation moderates the effect of stress on immune and neuroendocrine responses (Pace et al., 2009; Pace et al., 2010). Results show that increased meditation practice is associated with decreased stress-induced interleukin-6 and subjective reports of distress in the meditation group. Furthermore, compassion meditation reduces stress-induced subjective distress and immune response (cf. Hofmann, Grossman & Hinton, 2012). In addition, another recent mega review examined 36 neuro-imaging studies from the period of 2001 to 2013, and the samples from those 39 studies are either experienced meditators or participants who newly completed mindfulness based interventions. Their findings indicate that practicing mindfulness can change brain function in areas including the medial cortex, default mode network, insula, amygdala, lateral frontal regions and basal ganglia (Marchand,

2014). Those changes lead to improvement on attention, automatic thoughts and self-referential thinking as well as emotional regulation.

Furthermore, numerous studies have found that practicing meditation and mindfulness can reduce perceived stress and chronic pain (Kabat-Zinn, 1982), prevent depression relapse (Williams, et al., 2007), lead to ethical decision making (Lang, 1989), improve working memory capacity (Jha, Krompinger & Baime, 2007), decrease mind wandering at the same time improving cognitive performance (Mrazek, Franklin, Phillips, Baird, et al., 2013), and improve self-efficacy (Greason & Cashwell, 2009) and self-insight (Dreifuss, 1990). It also increases patience, intentionality, gratitude and body awareness (Rothaupt / Morgan, 2007), just to name a few.

In terms of the benefits of self-compassion, more related studies have found that self-compassion is negatively associated with depression, self-criticism, rumination, thought suppression, anxiety, perfectionism, disordered eating attitudes and emotional exhaustion. At the same time it is positively associated with general well-being, life-satisfaction, wisdom, optimism, curiosity, learning goals, social connectedness, personal responsibility and emotional resilience (Adams & Leary, 2007; Barnard & Curry, 2012; Gilbert & Irons, 2005; Leary, Tate, Adams, Allen & Hancock, 2007; Neff, 2003b; Neff, Hseih & Dejitthirat, 2005; Neff, Kirkpatrick & Rude, 2007; Neff, Rude & Kirkpatrick, 2007).

However, a recent study found that the Mindfulness Based Stress Reduction did not improve sustained attention when compared to an active control group (MacCoon, MacLean, Davidson, Saron & Lutz, 2014). In addition, many published mindfulness based studies are either not controlled or with non active control group (e.g., compare to a well-known and valid similar intervention). The measurements on the effectiveness of the mindfulness based interventions are also been criticized, because many reported benefits are largely based on self-reported questionnaires. The benefits of self-compassion is mainly reported from the Self-Compassion Scale. Recent neuroscience evidences and other objective measurements are still under reported. Therefore from strict experimental design point of view, the largely reported benefits from mindfulness and Self-Compassion based interventions are questionable. At the same time, due to the natural the mindfulness and Self-Compassion based interventions, for example longer durations, high personal cost on proven qualified

trainer and less comparable interventions, it is a real challenge for researchers to design and conduct perfect active controlled and objectively measured experiment.

1.5. Aim of the MSDC Intervention

The initial goal of this doctoral research is to develop an easy to apply yet effective training and coaching intervention for stress management and burn out prevention. The targeted population is healthy professionals who work in a challenging and demanding environment. As this doctoral research was privately funded at the beginning, therefore, cost-and-time effectiveness analysis was carried out with priority.

Therefore, there were a number of top priorities for conducting this study:

1: the sustained final version of the intervention should be directly applied in real life commercial world as a further development training

2: the design of the training is simple and easy to analyze with minimized cost both in equipment, time and human resource

3: total number of participants required for scientifically significance can be reached within 3 years

Based on above priorities list the intervention has been developed gradually in two stages:

1st Stage: Pilot Study (One group: 05.2012 - 07.2012)

The first stage, the first round/group of the Mindful Self-Development Coaching intervention, is an experiment, which aims to testify how such a mindfulness based self development program can be received in the target population with English as teaching language. In addition, it is used to collect first hand experience on conducting and leading such interventions and to receive valuable feedback from participants and therefore to develop the intervention accordingly.

2nd Stage: Main Study (six groups: 10.2012 - 03.2015)

The next stage, from the second to the seventh round, is the new development of the Mindful Self-Development Coaching intervention. A new biweekly full day meeting structure is

designed and applied. Particularly, the key concept of the Mindful Self-Development Coaching intervention, personal development, has been further strengthened and well cultivated into a training master plan and standardized delivery. Furthermore, two new dimensional measurements, namely cognitive tests and nonverbal behavior observation are integrated in Mindful Development Assessment Centers as high stress social evaluation situations. The additional two dimensional measurements are aimed to further testify on sustainability of the training concept and quality as well as the effectiveness of the intervention.

The current research is a further development from the Mindfulness Based Stress Reduction invention, the innovative aspects of the current Mindful Self-Development Coaching intervention is not only the new biweekly full day format, but also the concept of personal development from a wide range of theories and practices as a remedy for stress management and burnout prevention. Last but not least, the application of Assessment Center to measure a mindfulness based intervention is also, to the best knowledge of the author, a first attempt in empirical study.

2. Pilot Study

2.1. Overview

The first round of the new intervention is an experiment to test how well this new concept of mindful self-development would be received in a healthy population in South Germany with English as teaching language. At the same time for the author to collect valuable feedback on what and how to improve the intervention further. In particular the feedback is collected for: the design and the structure of the program; the width and depth of teaching contents and the style of teaching and coaching sessions.

The initial concept of the new intervention is based on the author's long term personal mindfulness based practice and experience under the Buddhist teaching, in particular, chanting and chan meditation (irregularly since childhood, regularly since 1998) and hetha Yoga (since 2002). In addition, a rich amount of personal development techniques and personal sharing contributed to the initial design. The name of the new intervention discharged the negative concepts, e.g., stress or burnout, instead of a positive term “self-development”, which also indicates the core principle of the new intervention. Conclude all above factors, the new intervention is named as the Mindful Self-Development Coaching (MSDC) program. Here self-development means personal effectiveness and excellence as well as self-awareness.

The format of the new intervention was run as a typical Mindfulness Based Stress Reduction program, which was originally developed by Kabat-Zinn in 1978 (1983). In more details, the total length of the program is eight weeks long, it consists of eight weekly 2-hours meetings on weekday evenings, plus one full day silence retreat on the Sunday of the 6th week.

The basic principles of the Mindful Self-Development Coaching intervention were also emphasized in every meeting, which are honest, open and self-disciplined. The honesty and openness are the two most important factors in the eyes of the author for developing the self, they also give the humble and solid ground for group supports. Being self-disciplined emphasizes the work and practice has to be done by the participants themselves, with strong

determination and dedication continuously for the period of the 8-weeks' intervention. These three principles were served as a stable foundation for a gradually increasing load of homework and length of sitting meditation.

One last point, throughout the intervention, all participants are encouraged to sign up for at least one individual coaching session with the author, to get all the questions answered and receive personal advice on daily practice.

2.2. Hypothesis

Hypothesis 1: The level of mindfulness of participants will be raised and improved after the MSDC training, and the changes are sustainable.

Hypothesis 2: The level of perceived stress level will be reduced after the MSDC intervention, and the changes are sustainable.

Hypothesis 3: The mood of the participants will also be improved after every training session, and the overall mood at the end of the MSDC program will be better than before the training.

2.3. Method

Participants

Participants were recruited through various channels of announcement. One was the project webpage under the website of the Department of Clinical Psychology of the University of Tuebingen, which had been created three weeks before the first information evening. The majority of participants were recruited through single-color printed posters, which were placed around the main sites of the University of Tuebingen, such like main site students canteens and faculties' notice broads (where external posters are allowed, see Appendix 1). The rest were recruited through one single campus mail within the Max Plank Institutes of Tuebingen, which was distributed two weeks before the two open talk evenings. The requirements for the first round of Mindful Self-Development Coaching intervention participation were: fluent in English both in speaking and in writing, currently NOT suffering

from any mental illness or undergoing a major episode of depression; and willing to cooperate the pre- and post training evaluation questionnaires and interviews.

In total 24 people applied after two open talks. After a random selection, 14 were confirmed to be a part of the first round of the Mindful Self-Development Coaching intervention one week before the first meeting. The age range was from 20 to 55, median was 27.50 and mean was 28.93 (SD = 8.99). Three out of 14 participants were male (21.4%) and the remaining 11 were female (78.6%). The group was very international, the 14 participants came from 12 different countries, three were from Germany (21.43%) and one (14%) from each of the following countries: Brazil, China, Denmark, Netherland, Hungary, Italy, Jordan, Kyrgyzstan, Mexico, Slovakia and the USA. One of the participants was a full time employee (7.14%) and the rest were students and scholars. More detailed, five of them were undergraduates (35.71%), two were postgraduates (14.29%) and the remaining six were classified as scholars (PhDs or Post Docs, 42.86%). For those participants who were within the university system, five of them (35.71%) were at the Natural Science department, and three representatives from the faculty of Social Science and Humanities (21.43% for each). The last two participants (14.29%) were from the Medicine faculty. Regarding the past meditation experience, four of the participants (28,57%) had no meditation related experience, seven reported some irregular or single meditation experience. Three (21.43%) had regular meditation experience upon the time of application. See Table 3 for summary of the participants bio-background.

One participant (7.14%) dropped out after the first meeting due to personal reasons, all other participants had completed at least 80% (missing only one meeting) of the intervention, which made the completion rate of the first round of the Mindful Self-Development Coaching intervention 92.96%. The overview of the background of the participants can be seen at the Table 3.

Table 3: Bio-Background of Participants in the Pilot Study

Total No. (ITT)	Drop Out	Female	Age Range	Age Mean	Age SD
14	1 (7.14%)	11 (78.57%)	20-55	28,93	8,99
Career Background	**Academic**	**Undergraduate**	**Postgraduate**	**Scholar (PhD / Post Doc)**	
	13 (92.86%)	5 (35.71%)	2 (14.29%)	6 (42.86%)	
Previous Meditation Level	**None**	**Beginner**	**Experienced**		
	4 (28.57%)	7 (50.00%)	3 (21.43%)		
Country of Origin (Nationality)	**No. Different Nationality**	**Germany**	**Brazil, China, Denmark, Netherlands, Hungary, Italy, Jordan, Kyrgyzstan, Mexico, Slovakia, USA**		
	12	3 (21.43%)	1 (7.14%)		

Procedure and Design

Two open talks, free and open information meetings were offered, which provided essential information about the Mindful Self-Development Coaching intervention. In order to give a realistic expectation on the MSDC program, all the essential information was thoroughly explained, including the aim, the design, the requirements and the amount of commitment. A couple of mindful activities were demonstrated to give some tangible experience on what to expect, for example mindful eating, anchoring and five minutes *Ananpana* (breathing concentration) meditation.

At the end of the open talks, interested attendees applied and filled out the registration form (See Appendix 2). Then a short 15 minutes readiness interview was carried out by the author, mainly to check how ready the applicant was, and whether he or she would fit into the group setting. In the interview, a number of key questions were asked: any previous psychological disorders, readiness of commitment in the classroom and at home practice, and whether willing to cooperate research based pre- and post measurements plus submit 50€ refundable deposit. The deposit would only be returned upon full completion (at least 80% or 6 out of 8 meetings) of the Mindful Self-Development Coaching intervention and all the required scientific measurements.

As there were more applicants than the room capacity, therefore, a random selection was made by a lucky draw out of a box. Selected candidates were informed one week prior to the first meeting, and those who were not selected were also informed and offered to be put on the waiting list for the future interventions.

Before the start of the first meeting, participants gave 50€ in cash as refundable deposit, then filled up the pre- intervention questionnaires in pen and paper format. At the end of the last meeting, participants completed the same questionnaires in the same format before receiving their deposit in cash. In addition, at the beginning and at the end of each meeting, participants were also instructed to fill up a mood questionnaire as duration measurement.

The format of the Pilot Study followed typical mindfulness based intervention, the whole program contained eight weekly meetings and each lasted 2.5 hours (see Kabat-Zinn, 1982; Williams, Teasdale, Segal & Kabat-Zinn, 2007). Plus a full day silent retreat which took place on the Sunday of the 6th week from 10:00 till 18:00 O'Clock. The format of each individual meeting is described as following:

- 19:00 “warm up” session with combination of stretching, yoga and tai-chi movements
- 19:10 "check in” session, answer the question: how do I feel right here right now?
- 19:40 “sitting meditation”, the first four meetings were *Anapana* meditaiton, the rest meetings were *Vipasana* meditation, the length of meditation was gradually increasing, from 7 minutes to 45 minutes.
- c.a. 20:10 “self-development” session, various practices either individually or in a pair and all were oriented on the topic of stress management
- c.a. 20:40 “body scan” session for relaxation
- c.a. 20:50 "check out" session, again answer the question: how do I feel right here right now?

In principle, the training is divided into two parts; one is mindful meditation, and the other part is personal development based on a concept related with stress management and burnout prevention. The exercises include typical mindful exercises like sitting meditation (mainly *Ananpana* meditation or commonly known as concentration on breathing meditation, later *Vipassana* meditation, concentrating on bodily sensations through the whole body in a systematical manner); moving meditation (in walking or designed movements) and body scan (shorter and faster version of *Vipassana* meditation in a sitting or lying position), which were used in the Mindfulness Based Stress Reduction program initially and then widely adopted in other mindfulness based interventions. For the self-development part, a number of exercises

were designed and experimented within the first group of the Mindful Self-Development Coaching intervention.

The purpose pf the “check in” and “check out” sessions is to use this experience as a talking and listening meditation practice to allow the participants to four on expressing their inner experience and process at the moment, also at the same tim to listen and stay focused on other participants. Especially when a particular participant is struggling to find right words to express oneself or to speak in an easy to follow style, then the listeners need to practice a great deal on acting without judgements and maintaining attention with patience and mindfulness (see Chang, Palesh, Caldwell, Glasgow, Abramson, Luskin, Gill, Burke and Koopman, 2004).

After each meeting, all participants would receive an email from the trainer regarding recommended home practice, namely homework (see Appendix 4). The homework served as mindful reminder for regular home practices, also as a connection channel between the trainer and the participants. Participants could reply to the trainer directly to ask questions or to request a personal coaching session if needed.

Measurement

The Pilot Study was measured by self-reported questionnaires in three aspects: the level of mindfulness and the perceived stress at three time points, pre- (T0), post (T1) the intervention and after one year followup check point (T2). The last aspect is to monitor the movement of mood at each meeting. Hence a mood questionnaire was also used before each meeting started and immediately after the meeting was concluded. The examples of the questionnaires used at the Pilot Study can be seen at Appendix 3.

Pre-post Intervention Measurements

Most meditation and mindfulness based researches are mainly assessed by self-evaluation by self-report questionnaires. For this Pilot Study, the Kentucky Inventory of Mindfulness Skills (KIMS; R. A. Baer, Smith, & Allen, 2004) was used. KIMS contains 39-item and is divided

Table 4: Typical Items of the Kentucky Inventory of Mindfulness Skills

Subsection	No. of Items	Example
Observing	12	"I notice the smells and aromas of things."
Describing	8	"I am good at finding the words to describe my feelings."
Acting With Awareness	10	"When I'm working on something, part of my mind is occupied with other topics, such as what I'll be doing later, or things I'd rather be doing." (reversed)
Accepting Without Judegement	9	"I tell myself that I shouldn't be thinking the way I'm thinking." (reversed)

into four sub-categories which are designed to measure four elements of mindfulness: observing, describing, acting with awareness, and accepting without judgment. Items are rated on a 5-point Likert scale (*never or very rarely true* to *always or almost always true*), see Table 4 for some typical examples. The KIMS is based largely on the Dialectical Behavior Therapy (DBT) conceptualization of mindfulness skills. It measures a general tendency to be mindful in daily life and does not require previous meditation experience. The authors reported the range of internal consistencies range from .76 to .91 for the four sub-scales. The test-retest reliability was evaluated at .65 and .83 for the Observing and Nonjudging scales, respectively.

A well established and validated Perceived Stress Scale (PSS, Cohen, Kamarck & Mermelstein, 1983; Cohen & Williamson, 1988) was selected for this pilot study. The items are ranked using a five-point Likert scale from *never* to *very often*. The short version (10-item questionnaire) was used for this study that measures the degree to which situations in one's life over a defined period of time (e.g., last months or last 2 weeks) are appraised as unpredictable, uncontrollable and overwhelming. It posits that people appraise potentially threatening or challenging events in relation to their available coping resources. The PSS total score was computed by summing up the 10 items; four items that were phrased in a positive direction (e.g. 'felt confident about your ability to handle your personal problems') were reverse coded. A higher score indicates a greater degree of perceived stress. This measure displayed strong internal consistency in previous researches (Cohen et al., 1983; Koopman, Gore-Felton, Marouf, Butler, Field, Gill, Chen, Israelski, & Spiegel, 2000). A number of researches have proved that participation of mindful intervention, particularly the Mindfulness Based Stress Reduction program, has been associated with significant declines

in perceived stress scores (see Carmody, Crawford, & Churchill, 2006; Carmody & Baer, 2007; Chang, Palesh, Caldwell, Glasgow, Abramson, Luskin, Gill, Burke & Koopman, 2004).

Progressive Mood Measurement Over Time

Apart from examining the level of mindfulness and perceived stress at pre- and post measurement, the mood during the 8-week long MSDC Pilot study period was also monitored. A well tested and validate mood questionnaire (Bf-S, *Befindlichkeits-Skala*, von Zerssen & Koeller,1976; von Zerssen & Petermann, 2011) was used to track the movement of the mood of the participants. The Bf-S is a self-report checklist with 28 items for assessment of mood, in particular depressive symptoms. Two parallel forms are available (Bf-S, Bf-S′, see Appendix 3), one is used at the beginning of the meeting and the other one is used at the end of each meeting. Both forms are with a split-half reliability of 0.94 (von Zerssen & Petermann, 2011). The higher the scores indicates the lower of the moods. The norm for healthy population in Germany is 12.16 and was used to compare with current participants (Zerssen, Strian and Schwarz, 1974).

2.4. Results

The tests for the questionnaires have been done with Statistic program "R". The missing data is replaced by the mean. A normal distribution test (Shapiro-Wilk) is conducted at the beginning, and the results show that the mindfulness KIMS questionnaire including overall and all the four sub-scales (with the exception of the KIMS Observe sub-scale at Pre-) and perceived stress scores (PSS) are normally distributed, which permits parametric tests to be conducted in the current study. After confirmed homogeneity of variance in the sample for both KIMS and PSS via Bartlett's test, a one-sided paired *t*-Test can be generated to identify the differences between three different time points: pre- (T0) vs. post (T1); post (T1) vs. followup (T2); and pre- (T0) vs. followup (T2). The significant difference level is determined at the level of 0.05. The overall mindfulness (KIMS) scores, the four sub-scores, and the perceived stress scores (PSS) are computed and compared by the *t*-Test. In addition, in order to facilitate interpretation of any significance of the results, the power effect size (*d*) based on

J. Cohen (1988, 1992) is also calculated by the difference between means (m) which is then divided by the pooled standard deviation (s = sqrt(SD1^2+SD2^2)/2). The effect small, medium and large effect size have been set at .20, .50, and .80, respectively (Cohen, 1988; Cohen, 1992).

As there only one participant had dropped out, and as it is a pilot study, the data serves merely as guidance, therefore, the results were calculated first based on the According-To-Protocol (ATP) principle is also applied, specifically, all missing data are ignored.

Results of Level of Mindfulness

The summary of the mean and Standard Deviation (SD), and the p value plus the Effect Size (ES) are presented in Table 5. There was significant improvement on the level of mindfulness (KIMS), on overall scores as well as all four sub sections (Observing, Describing, Acting with Awareness, and Accepting Without Judgement) between two time points, before (T0) and after (T1) the MSDC intervention. The overall KIMS score was [t (12) = -7.40, $p \leq .001$, d = 2.50]. For the four sub-sections the same one-sided paired *t*-Test was carried out and results as follows: Observing [t(12) = -7.21, $p \leq .001$, d = 2.00]; Describing [t(12) = -3,38, $p \leq .01$, d = 0.94]; Acting With Awareness [t(12) = -3.81, $p \leq .01$, d = 1.06]; and Accepting Without Judgment [t(12) = -4,70, $p \leq .001$, d = 1.30]. As a conclusion, the improvement on the level of mindfulness after the intervention were significant at the overall level as well at each sub-scale level. The effect sizes for all levels were also very large.

The improvement on mindfulness achieved at the end of the Mindful Self-Development Coaching intervention has been maintained at the followup check point compares to the baseline (T0). This followup check took place at 12 months after the end of the Pilot Study. The mindfulness KIMS questionnaire was replaced by a later version of the Five Facets Mindfulness Questionnaire (FFMQ, see Section 2.5 Pilot Study - Discussion). Therefore, 24 items of KIMS, which are also included in the FFMQ, were used at the followup (T2) for further examination. The mean scores for the three time points were: T0 = 70.31, T1 = 86.24, T2 = 82.90. Significant differences were again found between pre- (T0) and followup (T2) [t(10) = 7.62, $p \leq .001$]. Though with weaker impact demonstrated by one-

Table 5: Descriptive Statistics of Mindfulness Scores in the Pilot Study

Qs: KIMS		Participants (No. = 13)		Treatment (T0 vs T1)		
		T0	T1	t (12)	p	d
Overall KIM	Mean	110,54	138,17	-7,40	< .001	-2,05
	SD	16,84	15,25			
Observing	Mean	39,15	49,40	-7,21	< .001	-2,00
	SD	6,93	5,66			
Describing	Mean	22,15	26,85	-3,38	< .01	-0,94
	SD	8,14	7,40			
Acting with Awareness	Mean	23,31	30,00	-3,81	< .01	-1,06
	SD	6,77	5,73			
Acting without Judgement	Mean	25,92	31,92	-4,70	< .001	-1,30
	SD	5,19	3,12			

KIMS is Kentucky Inventory of Mindfulness Skills, T0 is baseline; T1 is post intervention; SD is Standard Deviation; d is effect size calculated by Conhen's d

sided paired t-Test [$t(10) = 2.86$, $p \leq .05$]. This indicates that the effects of improved level of mindfulness have been reduced over the time.

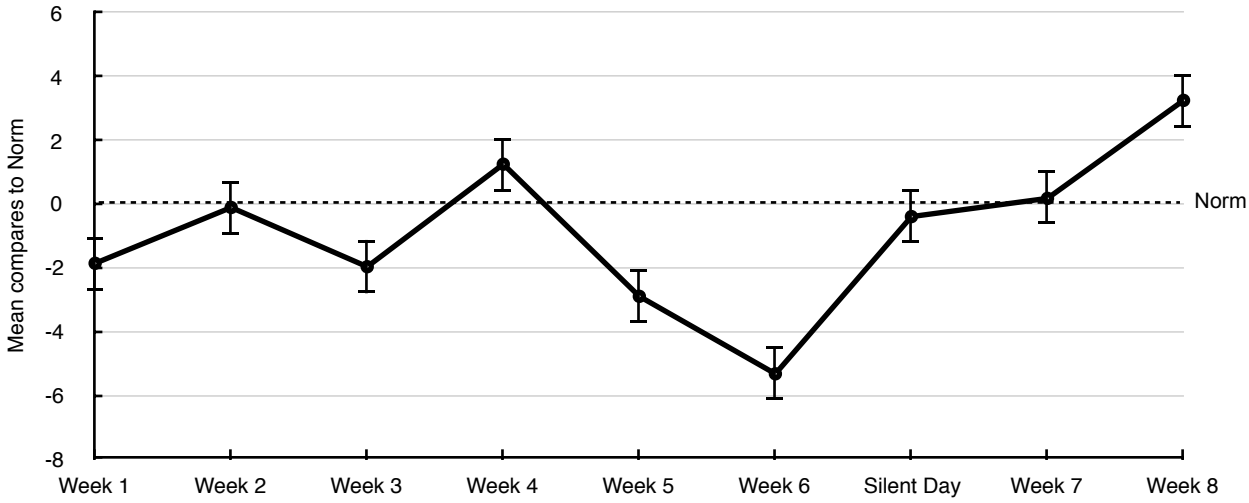
Results of Level of Perceived Stress

A one-sided paired *t*-Test was applied to examine whether there are any changes on the perceived stress level. The result shown there was a significant reduction on the level of perceived stress after the Mindful Self-Development Coaching intervention (T1) in comparison to the baseline (T0) [$t(12) = 2.92$, $p \leq .01$] with big effect size $d = 0.94$. The reduction on perceived stress level are sustainable at a followup check 12 months later. A one-sided paired *t*-Test was carried out and the result shown there was no significant difference between end the of intervention (T1) and at the followup check point (T2), [$t(13) = 0.92$, $p = .377$], this meant the reduced stress level was maintained after 12 months. As expected, there was a significant difference between baseline (T0) and at the followup (T2) point, [$t(10) = 2.31$, $p < .05$]. The results demonstrated that the participants perceived significant less stress after the Mindful Self-Development Coaching intervention than the baseline. The effect of reduced level of stress is sustainable even after 12 months upon the completion of the intervention.

Table 6: Changes of Mood in Comparison to the Norm

Week / Session	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Silent Day	Week 7	Week 8
No. Participants	14	13	13	12	12	12	13	12	12
Mean Score Pre- Meeting	19,07	14,43	18,21	14,43	17,79	22,07	16,07	16,77	10,92
Mean Score Post Meeting	9,00	10,14	10,07	7,43	12,36	12,93	9,07	9,08	8,31
Mean Score Overall	14,04	12,29	14,14	10,93	15,07	17,50	12,57	12,00	8,93
Difference to Norm 12.16	-1,88	-0,13	-1,98	1,23	-2,91	-5,34	-0,41	0,16	3,23

Figure 4: Changes of Mood in Comparison to the Norm



Results of Level of Mood Changes

The changes of mood before and after each meeting, also before and after the intervention were monitored and compared with healthy German populations (von Zerssen & Petermann, 2011). The mean score of each meeting (pre- and post) was collected and then the norm 12.16 was subtracted, the results were then drawn into a diagram as shown in Figure 4. The group started with a mean score of 14.04 points (N=14) for the mood, which was 1.88 points lower than the German norm. The mood of the participants raised 12.29 points in the second week and made the group mean 0.13 points below the norm. In the third week, the mood dropped 1.02 points below the norm, once again raises up 2.20 points above the norm at the fourth week. Then the mood of the group sank to 1.95 points below the norm in the fifth week, and it continued to sink further to 4.38 points in the sixth week, the lowest time point of the whole 8-week program. At the weekend of the sixth week which was the full day silent retreat, the mood of the group moved up sharply to 0.55 points above the norm, the rising was continued in the seventh week at 1.12 points above the norm, and even further improved

in the final eighth week, which reached the highest point of the whole program, at 4.20 points above the German norm.

2.5. Discussion

The t-Test results showed that at the end of the MSDC intervention (T1), the participants were significantly more mindful than at the baseline (T0). At the same time, the perceived stress level was significantly reduced as expected. Hence the hypothesizes of the current Pilot Study have been confirmed. The improvement remained 12 months later at a followup check (T2), although the improved level of mindfulness did diminish over time. In contrast, the reduction on perceived stress level remained low and was relatively little affected by time.

On the other hand, the mood of the participants of the Pilot Study started at a lower level compared to German healthy population at the first meeting, after two times ups and downs the mood level reached the lowest point at the 6th meeting. But since the full day silent retreat the mood of the participants had been raised and remained high till the end of the last meeting, which was higher than the norm of healthy German population.

All in all, the findings of the Pilot Study of the MSDC program are consistent with a great deal of the previous similar mindfulness intervention researches (Chang, et al, 2004; Katat-Zinn, 1982; Grossman, Niemann, Schmide & Walach, 2004) There are long lasting effects on stress reduction and mindfulness improvement after the MSDC intervention. Participants did feel significantly more positive at the end of the intervention.

What is worth mentioning is that the program ended at the mid of July, which happened to be the exam period at the university, 64% participants (the seven students and two of the PhDs out of 14) had to undergo at least one exam. It is commonly known that the time before and during the exam period is highly stressful and intensive. Hence presumably the total score of perceived stress level at T1 (fall into exam period) would be higher than baseline T0 (at mid of the semester). However, the results from the current Pilot Study indicate that the newly invented MSDC intervention has profound effects on stress reduction, or in other words, being mindful has helped the participants who need to undergo the exams

perceive pressure factors or hazards differently (see Stress Coping in the Introduction section).

Next important point is also obtained from the change of the mood of participants as illustrated at Figure 4. Possible explanation could be with the stress of completing the pen and paper questionnaires at the beginning of the first meeting in an unfamiliar environment and group, then finally comes to the mood test, as a consequence that the starting mood score of the Pilot Study group was lower than the norm of health German adults. At the second meeting, with the newly learned and tested power of mindfulness, the mood of the group had been lifted above the norm. When the program moved to the third week, the initial excitement of being on board of an uncommon intervention and at an unfamiliar environment gradually faded away, the required homework became clear obligation and self-discipline had been stressed at every meeting. Participants understood clearly that it was their own responsibility to do the homework on a regular basis in order to achieve any desired self-development. After overcoming the first obstacle of laziness and indolence, also some newly experienced benefits, together could encourage participants to continue regular practice, the mood of participants had been once again raised above the norm. Then from the mid point of the intervention, a decision needed to be made whether they would like to continue to develop further or should they simply accept that it is not the time for any change, or meditation is simply not the method for them. This process involves recognizing old patterns and realizing the necessary of changes, then a clear decision of development closely followed by description of current existing and familiar patterns. This process can directly provoke a sharp and deep drop of the mood from 4th week till 6th week. The turning point was the silent weekend retreat on the 6th week. The full day setting has proven to have remarkable effects on raising the mood of the whole group. The tendency of high spirit continued till the end of the intervention, and at the final and 8th meeting it reached the highest point, which was 4.20 scores above the norm. What is worth note is that during the same procedure as the pre-intervention questionnaires, the participants had to complete the mindfulness (KIMS) and perceived stress (PSS) questionnaires in pen and paper format first at the end of the last meeting, then at the very end came the last mood survey. Still, the high spirit had been maintained and retained. These changes of the mood of participants from this Pilot Study is

instructive. It provides guidance on a new design of the Mindful Self-Development Coaching intervention: that is for the first half of the 8-week long program, the participants would go through various emotional waves during the process of observing current existing behavioral, thinking and emotional patterns. Upon a clear decision, they may encounter a turning point and move up as desired or they may give in and withdraw. The new design of the MSDC prevention should recognize and reflect on this curvilinear change of the mood.

From the development of the mood of the Pilot Study group, it is also clear to the author that the length of the intervention needs to be 8-weeks at minimum for two reasons. The first one is that in the 6th week, the mood of the group presumedly due to the deconstruction of the old patterns would drop dramatically, and if the intervention is shortened, in other words in a low-dose version (e.g., Klatt, Buckworth & Malarkey, 2009), either the changes would not be impactful and sustainable if there are any changes, or the participants would end in even more miserable mood states than prior to the intervention. The second reason is that the normal biological cycle for adults is 28 days (e.g., female ovulate period is normally 28 days), and many studies have found that a human needs at least 21 days, commonly 28 days, to establish a new habit, and same amount of time, but commonly more than 28 days, to remove an old habit (see Duhigg, 2012). Therefore, altogether 8 weeks as a default length for a mindfulness intervention, as many previous researchers have already proven, is necessary and reasonable.

Another point worth noting is that the dropout rate (7.14%) of the current Pilot Study is significantly lower than other reported similar mindfulness intervention of 20% (e.g., Chang, et al., 2004), this could be owing to the incentive of 50€ of refundable deposit paid at the beginning of the intervention, or it could be an evidence of promising mindfulness intervention. This point needs to be tested further in the coming main study.

Limitations and Further Improvements

This Pilot Study's findings should be considered within the methodological restrictions of a preliminary intervention outcome study. Firstly, there was no control group, which makes it difficult to determine whether the findings of this study are due to the intervention or other

factors. In the coming main study, a plan of recruiting a control group should be taken into priority. Secondly, the generalization of these findings is limited owing to the small sample size, even the dropout rate (7.14%) of this Pilot Study is significantly lower than similar mindfulness based intervention (e.g., Chang, et al., 2004; Klatt, Buckworth & Malarkey, 2008). Baer (2003) suggested a minimum of 30 participants in order to generate meaningful study in the mindfulness based intervention. Hence, in the coming main study, a large sample size of 75 (twice the minimum of 30 plus default 20% attrition) is determined to be achieved. Thirdly, the participants are arguably classified as a self-selected sample due to recruitment methodology, who are interested in taking an intervention based on mindfulness meditation and self-development at a university. The efforts of appeal to a wider group of participants, especially outside of the university is required in the coming main study.

Certainly, there are also many valuable learning points which have been obtained, which should be improved in the following main study. First of all, the weekly two hours meeting in the evening, as originally proposed at the Mindfulness Based Stress Reduction and most other mindfulness based interventions, has its certain advantages, such as regular and frequent face to face group meetings as said to maximize group supports, also it has high conveniency for participants to balance between daily duties either at school/university or at work. However, the two hour frame is rather limited in terms of how deep each meeting could go. As the length of the sitting meditation grows gradually throughout the program, towards the end of the intervention the sitting meditation was 40 minutes, which means there was rather limited time left for group sharing, Q&A and let alone carrying self-development exercises in reasonable depth to make effective and long lasting impacts. One thing is worthy to be noted, the typical 8-week-long mindfulness based intervention is in fact only seven weeks for participation, and it is counted from the first meeting till the last one. Because the original design of the MSDC program is to search deep inside oneself in order to facilitate a fundamental and long lasting personal development, therefore, a new format with long meeting duration has become an essential task for main study. In addition, the feedback from participants at the "check out" session on the full day silent retreat is overwhelmingly positive, which serves as an incentive for the researcher to explore a new format with long duration.

Secondly, as previous meditation experience has no influence on the level of mindfulness tested on the KIMS, therefore the worry of including MAAS scores which were originally designed for experienced meditators is no longer valid. As a result, the Five Facets of Mindfulness Questionnaire (FFMQ), an update version of KIMS which includes MAAS items can be used in the main study.

Thirdly, participants feedback that some of the terms at the English version of Bf-S (*Befindlichkeit-Skala*) Mood questionnaire are uncommonly used especially for non English native speakers. For example, sluggish, rigid, and brooding. In order to make meaningful measurement, the researcher had to provide an English-English translation on all the adjectives used at the Bf-S mood questionnaire. It is surely not ideal to test participants' mood involves translation and reasoning. Moreover, the scoring principle of the Bf-S is that it calculates both the positive and negative affect as a whole and only the overall score is presentable. It would be useful to see how much mood would be affected both positively and negatively during the whole intervention. Hence, a new duration questionnaire computes both positive and negative affects separately and with simpler English terms and better user friendliness is required for the main study.

All in all, the significant results of this Pilot Study of the Mindful Self-Development Coaching intervention demonstrated that there is a wide interest in such mindfulness based self-development training program in healthy population. English as teaching language is also not a concern, instead for many international students and scholars in Tuebingen, a well known university town in south Germany, it is rather an advantage. The Mindful Self-Development Coaching intervention has been well received, however the success and effectiveness needs to be re-testified with a larger number of participants and also in a controlled environment.

3. Main Study

3.1. Overview

This chapter aims to give a comprehensive view of the Main Study, which is a collective work of five rounds/groups of 8-weeks-long MSDC interventions, and it lasted from the beginning of October 2012 till the end of December 2014. Firstly, the design of an innovative new structure of the MSDC intervention is explained in fine detail, and how it was implemented and received. Secondly, the reviewed hypothesis of the main study is proposed. Thirdly, the two additional dimensions of measurements, namely cognitive test and nonverbal behavior observation, is introduced and then is further explained in the method section. The method section is divided by the three dimensions accordingly. Fourthly, the result section follows the same order as in the method section, which means the results are displayed at dimensional level. Fifthly and lastly, findings from the result section are discussed as the conclusion of the main study in the discussion section.

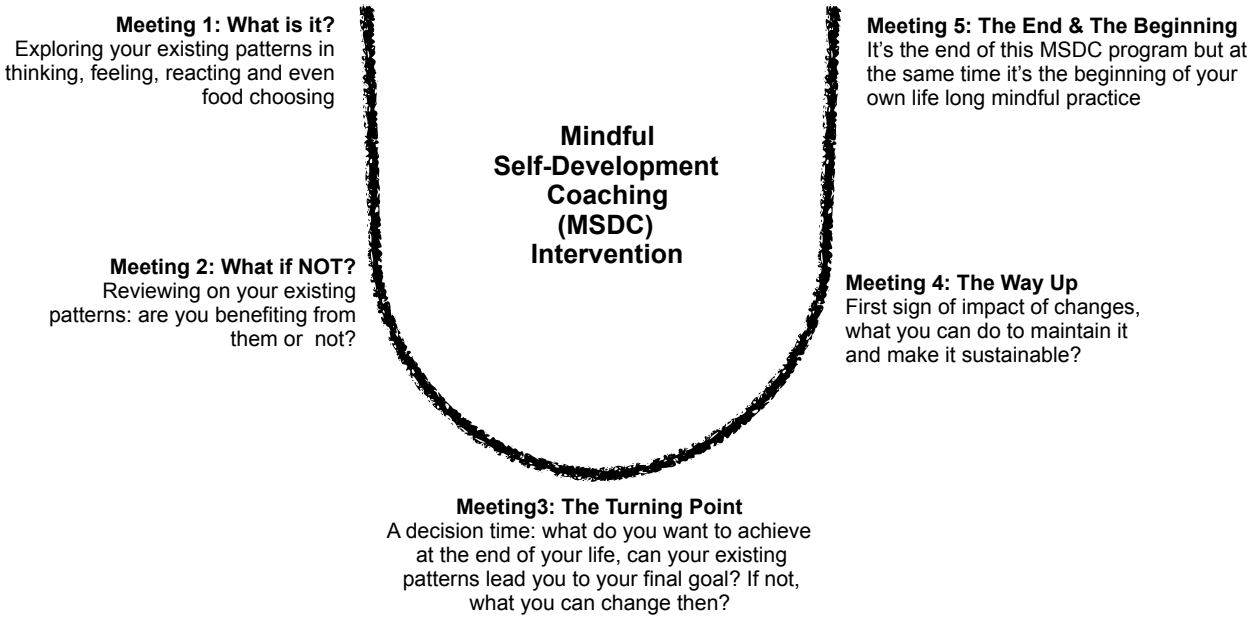
There are some highlights of the main study which will be presented below. First of all, the mentioned new structure is a 5 times biweekly full day meeting/session (from 10:30 till 17:30 O'clock) with a U shape design. Each session has a theme or an aim to achieve, and a number of practices and exercises either individually, in a pair or in group setting, are designed to achieve the theme. To the best knowledge of the author, this format of intensive structure is the first attempt in the mindfulness based interventions. Next highlight is low attrition rate. In total 85 participants took part at the intervention in five groups/rounds, and more than 95% (81 out of 85) completed at least 80% of the intervention (attended four out of five sessions), while similar mindfulness based interventions have around a 10-20% dropout rate. Next highlight is the multi-dimensional measurement. The first dimension is commonly used self-report questionnaires. In the Main Study, mindfulness, perceived stress, overall life satisfaction and self-compassion, in addition also the mood questionnaires (Positive and Negative Affects) were applied. The first four scales were tested at three time points, at the baseline (T0), one week after the intervention (T1) and at three month followup check point (T2). The mood (Positive and Negative Affects) questionnaire was used at the beginning of

each meeting to measure continuous mood changes throughout the 8-weeks' long intervention. The next two dimensions were measured at a designed high-stake social evaluation situation, namely mindful development assessment centers, a byproduct of the MSDC intervention. The second dimension is a combination of three cognitive tests, including two computer based tests testing simple and complex attentions, and one pen-and-paper test on nonverbal reasoning. The last and third dimension is a third person observation on nonverbal behavior and overall perception at two tasks which took place at the mindful development assessment centers: structured interview and free style self-introduction in a group. The combination of mindfulness based invention with assessment centers, to the best knowledge of the author, is the first attempt in accessible public literature. The last highlight is, findings at all three dimensions are encouraging. Significant improvements were have found in all dimensions and all single tests (expect the simple attention cognitive test) for the treatment group. Some of the significant results were also found in comparison to the control group.

3.2. New Design and Structure

The Pilot Study provides valuable and useful information for the development of a brand new structure. As previously discussed, the total length of the MSDC intervention is ideally to remain full 8-weeks long, and the curve of moods of the participants is expected to hit the bottom at the middle of the program, e.g., between 4th and 6th week, the new structure of the intervention needs to take this into account. Another key point is that the feedback from the full day silence retreat of the Pilot Study was surprisingly positive. This is also shown at the movement of the mood of the participants. It had raised sharply since the end of the full day silence and it had been retained till the end of the intervention. This indicates that a full day group in classroom setting is possible and may even be preferred for those who are willing to go further on the path of self-development, despite the fact that no published literature could support this attempt. The advantages of the full day settings are: i) possibility for longer sitting meditations, for instance up to one hour; ii) possibility for more in-depth mindful practices; and iii) more possibilities for group interactions hence receiving more group

Figure 5: The "U" Shaped Structure of the MSDC Intervention



supports, and much literature indicates that group support is a key success factor for such intervention (e.g., Kabat-Zinn, Lipworth & Burney, 1985). The disadvantages of the full day setting are: i) limited choice of meeting time. It is unrealistic to ask participants to take time off from a normal day job or study during the week days, therefore full day setting can only take place at weekends. Saturdays are normally the time for free time arrangements, hence Sundays are the only option for a full day setting intervention; ii). the frequency of meetings needs to be sacrificed in order to make the amount of commitment reasonable for full participation. Regular weekly group meetings are regarded as an important element in the success of the mindfulness based interventions (e.g., Praissman, 2008), particularly for the low dosed version (Klatt, Buckworth & Malarkey, 2009). It will be a challenge to test whether the intensity of a full day meeting can break even with the reduced frequency. A balance point has to be made on the impacts, social support, total time involved in the intervention plus the time being away from family and other social commitments. A biweekly full day meeting on Sundays could be ideal and doable. As a conclusion, a biweekly full day meeting for a total of 8 weeks long with a "U" shaped structure (Figure 5) is inspired and put into practice for the Main Study of the Mindful Self-Development Coaching intervention.

Typical Full Day Meeting

Each full day meeting in the Main Study is divided into two sections: mindfulness based and self-development based. The mindfulness based section includes formal and informal mindful practices, either in sitting or in moving, with or without interaction with other group members. In the self-development section, exercises involving thinking, reasoning, planning and executing are combined and delivered in either individual pen & paper exercises, or various interactions between a pair or in a group. All together, both mindfulness based and self-development based sections are carefully mixed and executed in order to achieve the main goal of the meeting.

Because each meeting has its unique theme, the setting of individual meetings changes accordingly. For an overview, the main structure of each Mindful Self-Development Coaching meeting is as follows:

- 10:30 Warm up (Hetha Yoga or stretching)
- 10:45 Check in (How do I feel right here and now, mindful speaking and listening)
- 11:15 Sitting meditation (the length gradually increases, between 20 - 60 minutes)
- c.a. 11:40 A couple of mindful exercises (depends on the theme of the meeting, e.g., observation, 3–3–3)
- 12:30 Lunch break (mindful eating)
- 13:30 Moving meditation individually
- 14:00 Moving meditation in pairs or in a group (e.g., mirroring, echoing, greeting, the ET game)
- 14:45 A couple of more mindful exercises (e.g., body scan, breathing breaks)
- 15:15 Self-development exercise (depends on the theme of the meeting)
- 16:30 Homework briefing and Q&A session
- 17:00 Check out (How do I feel right here and now, mindful speaking and listening)
- 17:30 The end

In short, the structure of the meeting provides a routine for the participants which may support them to settled in and feel comfortable to be in the group. At the same time,

various exercises challenge their normal way of thinking, listening, talking, and interacting with others.

Typical Exercises

Typical exercises used at the mindfulness based interventions are also applied at the Mindful Self-Development Coaching intervention. For instance, **setting meditation** (with or without auditory or visual elements), **body scan** (apply attention through the body), **group sharing** (through check in and check out sessions), **mindful calendar** (to recall an event with all five senses and thinking pattern in a designed format). In addition, a number of newly invented exercises were also introduced and practiced at the Mindul Self-Development Coaching intervention. For example, "**breathing breaks**" is one of the key mindful exercises in the intervention. It is a controlled breathing exercise with four steps: i). breathing in with counting (i.e. counting from one to five, seven or more, depending on the speed); ii). holding the breath on the same amount of counting; iii). breathing out with the same amount of counting; iv). holding the breath again for the same amount of counting. The aim of this exercises is to withdraw the mind from rumination and habitual thinking patterns by firstly counting (sheep counting effects), secondly without breathing (interruption of habitual pattern). It is natural that when people hold their breath, due to temporary lack of oxygen, most (if not all) cognitive activity will be suspended. This provides a rare space of emptiness, or mind-free status as previously explained. This short breathing exercise supports the participants in being detached from their habitual mind-body pattern and being more aware of the present moment.

Pair exercises served as an important tool to raise awareness of the self in an interactive way. A typical example is "**3–3–3**", a mindful communication exercise in pairs. The first "3" is three minutes mindful talking on a given topic, the second "3" is three minutes mindful listening but withholding any attempt to give feedback in both verbal and nonverbal cues, then the last "3" means three minutes in absolute silence, meaning no interaction on both verbal and nonverbal level, only looking at the partner's eyes. The aim of the first two "3" minutes exercises is to have the possibility to distinguish what is a real natural basic need (e.g., to express natural emotions, such as sympathy, joy, sadness, anger, etc.) and what is a

learned social need (e.g., to be agreeable or to appear to be polite and friendly), and the goal of the last “3” minutes is to improving competency of communication skills at a more direct and intensive channel - through eye gaze. For example, a recently developed test, namely the Reading the Mind in the Eyes Test (RME), is aimed to assess abilities to decode mental states from the eye region alone (Baron-Cohen, Wheelwright, Hill, Raste & Plumb, 2001; Baron-Cohen, Wheelwright, & Jolliffe, 1997). Those who score high in the RME test demonstrate high social competency and emotional intelligence, in particular accuracy on emotion recognition, deception, and trail reading (see Adams & Nelson, 2016).

Another specially designed pair exercise is called “**mirroring**”, it is a moving meditation in pairs. The pair stand face to face with each other at a comfortable distance. One of them leads the movement and the other one is required to mirror the movement as exactly as possible. The first round of mirroring does not require eye contact, and often the mirroring person focuses on the movements themselves, for instance the arms, or the legs. The second round, however, the mirroring person is required to lock his or her visual focus solely on the eyes of the leading person. Then, the role reverses. The aim of this pair exercise is to increase the sensitivity in recognizing the subtle movements around the eye region by receiving immediate feedback through movements. The detecting-mirroring-feedbacking-improving process loop is demonstrated to be effective in terms of social sensitivity and coordinating.

One last point on the special practice is the consistent implementation of the three principles of the Mindful Self-Development Coaching intervention, and they are defined as: a) be open to one's own and others opinions, views and shared experiences; b) be honest to oneself and to the rest of the group; and c) be self-disciplined. The concept of self-discipline from Dr. Scott Peck (1978/2003) is adopted in the Mindful Self-Development Coaching intervention, which states as "delaying of gratification, acceptance of responsibility, dedication to truth, and balancing." (2003, p18). The three principles are emphasized and anchored in each meeting, they serve as a strong foundation of an open and supportive group environment as well as a motivational tool to make some real difference.

Table 7: Overview of the Innovative Structure of the MSDC Intervention

Theme / Aims	Mindfulness Exercises	Self-Development Exercises	Homework
1st Meeting: **What is it?** Observing then being aware of current existing patterns in body, mind and emotions	**Sitting Meditation**: breathing AM: 20 minutes PM: 20 mintues **Body Scan** (long form) **Breathing breaks** **Observing:** feathers, bubbles, candle flame **Moving meditation:** warming up, mirror (with/without eye contact), echo	**Welcome, Check in & Check out** **3-3-3** (topic: why am I here in the MSDC intervention?) **Mindful goal setting:** i) in short term (in one year) ii) in middle term (in 3 years) iii) in long term (end of life) **Anchoring** - the top five life goals/elements	**Formal Practice:** one sitting meditation (20') One full body scan (10') Two scheduled breathing breaks (2x5') **Informal Practice:** start one mindful daily activity Mindful Pleasant Calendar
2nd Meeting: **What if NOT?** Challenging current existing patterns in body, mind and emotions, raising awareness on what if is NOT as you see/hear/ believe…	**Sitting Meditation**: breathing AM: 20-30 minutes; PM: 20 minutes **Body Scan** (long form) **Breathing breaks** **Moving meditation:** warming up, mirror (with eye contact), echo, Hello!, ET (short)	**Check in & Check out** **3-3-3** (topic: share one pleasant event) **Anchoring:** the most important present life goal **Letting go:** What is the most important element in your life? Letting go the top 5 life goals/ elements one by one, till the last and only one left on the paper	**Formal Practice:** two sitting meditations (2x 15') One full body Scan (10') Two scheduled breathing breaks (2x5') **Informal Practice:** start one new or continue the same mindful daily activity Mindful Awareness Calendar
3rd Meeting: **The Turning Point** Being aware of the need of changing, and make own commitment on what to do next in order to achieve desired self-development	**Sitting Meditation**: with sound/ mantra AM: 30-40 minutes PM: 20 minutes **Body Scan** (short) **Breathing breaks** **Moving meditation:** warming up, mirror (with eye contact), echo (with melody), ET (long)	**Check in & Check out** **3-3-3** (topic: share one unpleasant event) **Pair exercise:** 1). sense the boundary 2). activating language patterns **Tombstone:** What will be written on your tomb stone?	**Formal Practice:** two sitting meditation (min 20') As many breathing breaks as possible **Informal Practice:** Ask yourself: what is my relationship with the present moment? Mindful Learning & Development Calendar
4th Meeting: **The Way Up** Being aware of what has changed and what comes with the changes	**Sitting Meditation**: with sound/ mantra AM: 40-50 minutes PM: 20 minutes in pairs **Body Scan** (short) **Breathing breaks** **Moving meditation:** warming up, mirror, ET (long), Titanic **The kind and forgiving prayer**	**Check in & Check out** **3-3-3** (topic: share one significant development) **Giving and receiving:** appreciation message, group massage circle **The bucket list** - what would you do if only 12 months more to live?	**Formal Practice:** try and design your own mindful daily practice **Informal Practice:** Mindful Appreciation Calendar

Theme / Aims	Mindfulness Exercises	Self-Development Exercises	Homework
5th Meeting: **The End & The Beginning** Being thankful for what have achieved and being clear on what to continue and how to implement mindfulness into future daily life	**Sitting Meditation**: AM: 50-60 minutes with visual image, imagine go to a place called home PM: 20 minutes in pairs **Body Scan** (short) **Breathing breaks** **Moving meditation:** warming up, review all the moving mediation has done **The kind and forgiving prayer**	**Check in & Check out** with final words **3-3-3** (topic: what I have learned/ developed most in the last 8 weeks?) **Giving and receiving**: appreciation message, group massage circle **Team building**: 1). falling and catching 2). great human knot 3). team buffet lunch	**None** Some suggestions on daily mindful living

3.3. Hypothesis

Hypothesis 1: Participants will improve their level of mindfulness in comparison with the control group after the MSDC intervention.

Hypothesis 2: Participants will reduce their level of perceived stress in comparison with the control group after the MSDC intervention.

Hypothesis 3: Participants will enhance their level of overall life satisfaction in comparison with the control group after the MSDC intervention.

Hypothesis 4: Participants will refine their level of self-compassion during difficult life times in comparison with the control group after the MSDC intervention.

Hypothesis 5: The mood of participants will more positively be affected at the end of the intervention compared to the baseline.

Hypothesis 6: The nonverbal behaviors of participants will be perceived more positively after the intervention.

Hypothesis 7: The overall perception of participants will be perceived more positively.

Hypothesis 8: The expected changes of the Hypotheses 1-4 will be sustainable after a long period of time (minimum 3 months after the Mindful Self-Development Coaching intervention).

3.4. Method

Participants

Over 350 people showed interest in the Mindful Self-Development Coaching intervention either by writing mails or contacting the researcher in person during the three and half years of the research period. A total of 138 people registered with the program, in which 85 participants took part at the Main Study, and 47 people served as control group, but only 22 from the control group completed the second measurement. Participants were recruited through various channels. The majorities (55, 64.71%) were recruited through University of Tuebingen campus group mails, which were sent around two weeks before open talks in information evenings. Some of the participants also reported that they had noticed recruitment posters around on main campus sites, such as main student canteens and library (see Appendix 5). There are also 12 participants (14.12%) who contacted the trainer directly either by the project web page or the researcher's personal marketing through social events (see Appendix 6). After the Pilot Study, past participants recommended the Mindful Self-Development Coaching intervention to their friends and family members, and as a result 18 people (21.18%) became a part of the intervention.

The requirements for participants for the Main Study were as follows:

- to be able to communicate well in English (oral & written)
- currently NOT suffering from any mental illness or undergoing an episode of depression
- be able to commit to the whole 8-week long program
- agree to submit refundable 100€ deposit at the first meeting
- willing to cooperate in pre- and post program online questionnaires (ca. 20 minutes).

From the 5th round another requirement was added on:

- willing to cooperate in the pre- and post intervention mindful development assessment center (ca. 4.5 hours)

Participants of the Mindful Self-Development Coaching intervention have a relatively wide range of backgrounds. Compared to other mindfulness based interventions, the age

Table 8: Bio-Background of Participants in the Main Study

Total No. (ITT)	Female	Drop Out	Age Range	Age Mean	Age Median	Age SD
85	56 (65.88%)	4 (4.71%)	19-61	30,04	29,00	8,03
Career Background	**Academic**	**Non-Academic**	**Academic Level**	**Undergraduate**	**Postgraduate**	**PhD / Post Doc**
	71 (83.53%)	14(16,47%)		15 (17.65%)	21 (24.71%)	35 (41.18%)
Academic Faculty	**Theology**	**Law**	**Medicine**	**Humanities**	**Social Science**	**Natural Science**
	1 (1.14%)	3 (4.23%)	6 (8.45%)	19 (26.76%)	7 (9.86%)	35 (49.30%)
Previous Meditation Level	**None**	**Beginner**	**Experienced**			
	41 (48.24%)	38 (44.71%)	6 (7.06%)			
Country of Origin (Nationality)	**No. Different Nationality**	**No. Participants < 3**			**No. Participants 3 - 10**	**No.Participants > 10**
	19	Austria, Belgium, Canada, Czech, Egypt, Greece, Great Britain, Iran, Italy, Romania, Russia, South Korea, Taiwan, Ukraine, Venezuela			China Spain USA	Germany

range was widespread from 19 to 61 years, the mean and median was 30.04 and 29.00, respectively, the SD of age was 8.03. In line with other similar interventions, there were more female (56 in total, 65.88%) participants than males. As the program was mainly advertised in the university, so the majority of participants were associated with the university and divided into three groups. The biggest group is labelled as scholars (PhDs, Post Docs and other academic researchers) with total of 35 (41.18%) headcount; the second group is classified as postgraduates (Masters, German Diploma, and German State Exam) with total of 21 (24.71%); the third group with 15 (17.65%) participants is labelled as undergraduates (Bachelors). The remaining 14 (16.47%) participants were not related with the university, they were either in full time employment or were in search of jobs. For those whom were associated with university, their major faculty was also spread widely, the first tier group with 35 participants (41.18%) was the Department of Natural Science, the second tier group was the Department of Humanities with 19 headcount (22.35%). The third tier group was from the Department of Social Science with 7 participants (8.24%) closely followed by those who majored in Medicine with 6 participants (7.06%). The fourth and last tier group were the

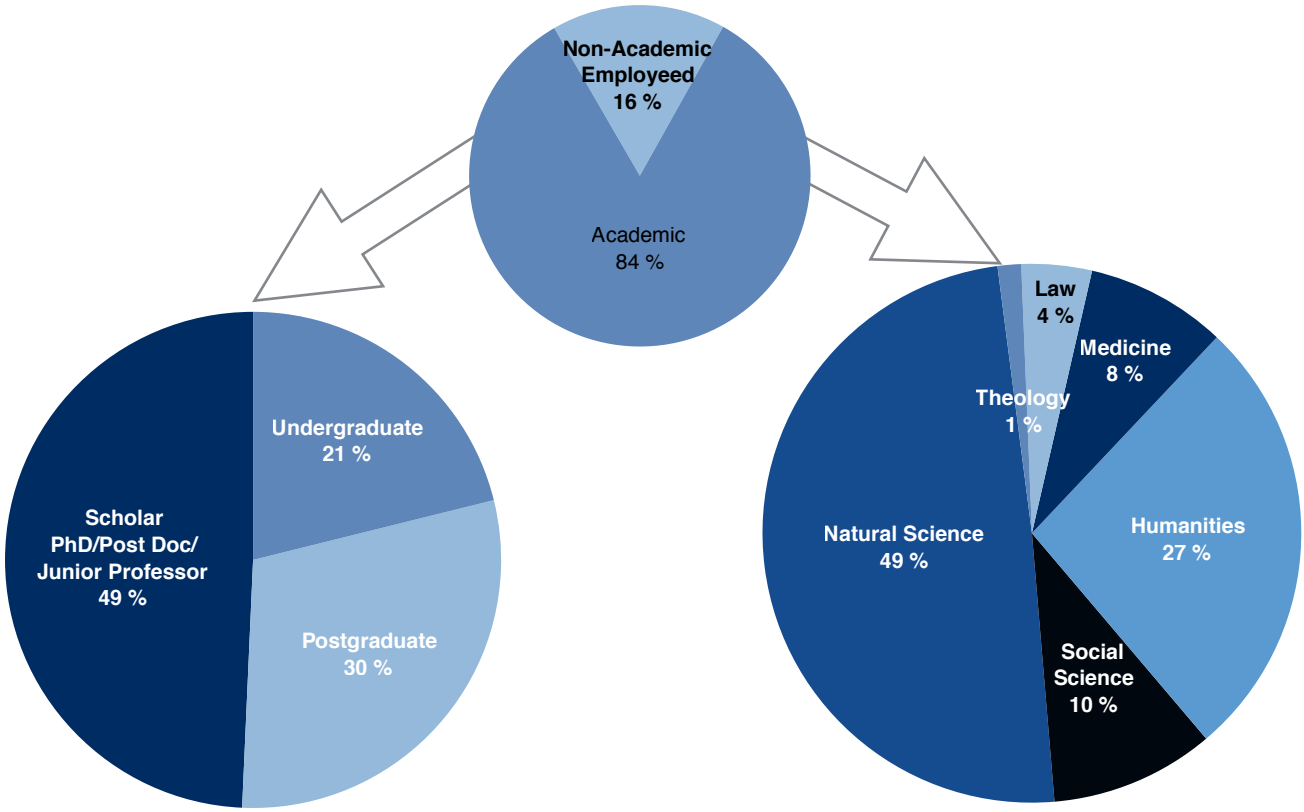


Figure 6: Distribution of Participants' Bio-Background in the Main Study

Department of Law and the Department of Theology with 3 (3.53%) and 1 (1.18%) participant(s), respectively (see Table 8 and Figure 6).

The 85 participants at the Main Study, like at the Pilot Study, are very international, with a total of 19 different nationalities which cover five continents. The high majority with a total of 56 (65.88%) are German as expected. Next tier of nationality group is China (4, 4.71%), Spain and the USA (3, 3.53%), then Canada, Romania, Russia, and Ukraine (2, 2.53%). Lastly, one participant (1.18% for each nationality) represents the following countries: Austria, Belgium, Britain, Czech, Egypt, Greece, Iran, Italy, South Korea, Taiwan, and Venezuela. In summary, 63 of the participants (74.12%) are from west Europe, eight of them (9.14%) are from central and eastern Europe, six of them (7,06%) are from Asia, five of them (5.88%) are from North America, and the last three participants (3,53%) are from other regions (see Figure 7).

Regarding previous meditation experience at the time of registration for the intervention, nearly half of them (41, 48.24%) were without any meditation related practices,

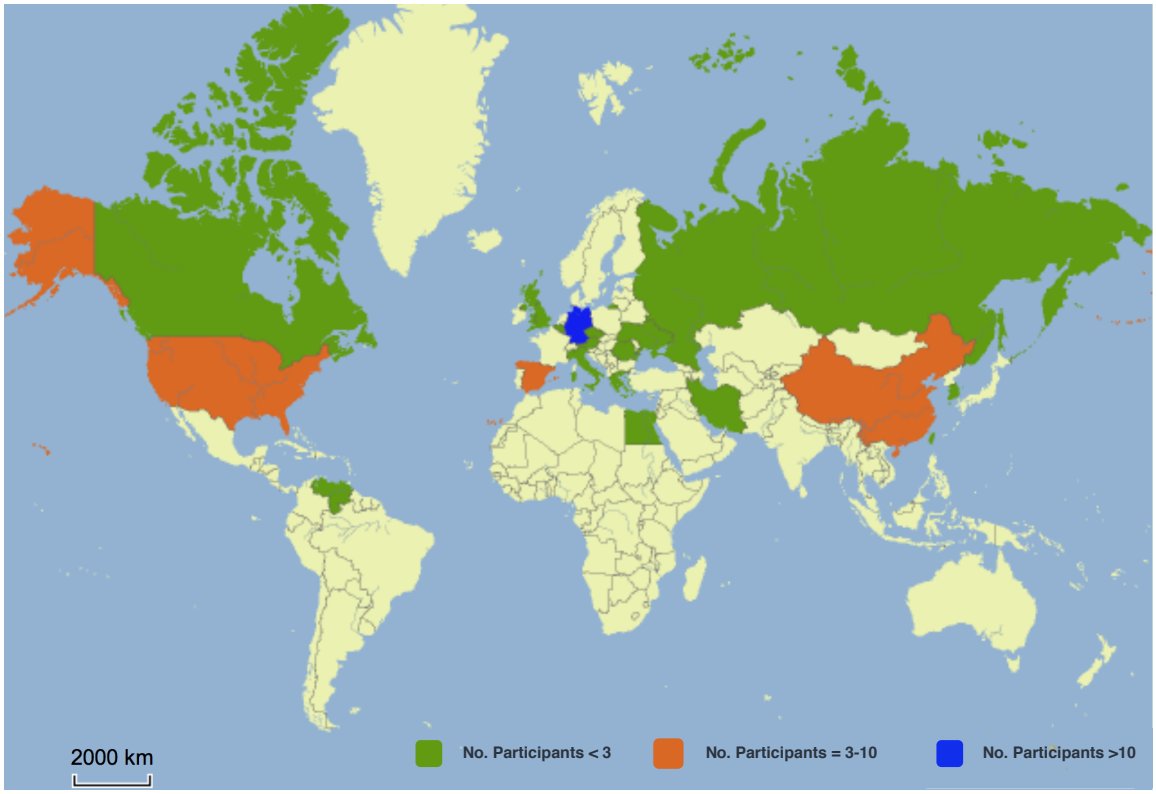


Figure 7: Distribution of Participants' Country of Origin on the World Map

38 of them (44.71%) were with limited and irregular meditation or yoga experience, the remaining six participants (7.06%) were with some either one single but intensive meditation experience (e.g., 10 days silent Vipassana meditation retreat) or regular meditation experience (e.g., weekly group meditation with/without instructions).

On last point worth noting about participants is that most of them have completed at least 80% of the training (e.g., only missing one training session), only 4 (4.71%) of them dropped out either after the first meeting or the second meeting due to various personal reasons. The dropout rate is significantly lower than reported c.a. 12-20% dropout rate at similar mindfulness interventions (e.g., Chang et al., 2004; Kerr, Jones, Wan, Pritchett, et al., 2011; Klatt, Buckworth & Malarkey, 2009).

Procedure

The plan of each round/group of Mindful Self-Development Coaching intervention started approximately 10 weeks before the first meeting, the initial training plan and objectives were

Table 9: Master Time Plan of the MSDC Intervention

Activities	At Week
Initial agreement with the supervisor	-10
Logistic planning (e.g., rooms booking, material preparation)	-10 till -6
Posters printing and distributing	-6 till -4
University on campus group mail distributing	-3
Open talks (free information talk at evenings)	-2
Pre- intervention online questionnaire	-1
Notification on random selection result (for the round of 2-4)	-1
Pre- intervention assessment center including random selection (for the round of 5-7)	-1
Mindful Self-Development Coaching Intervention	1 till +9
Post intervention online questionnaire	+9
Post intervention assessment center (the the round of 5 and 6)	+9
Individual feedback session	from +5
Follow up online questionnaire	from +21

confirmed by the supervisor of the author. Then logistic preparation followed around 6 weeks before the first meeting. The recruitment started with posters, then a campus mail was sent around three weeks in advance. All interested potential participants were invited to one of the offered free open talks, which normally took place two weeks before the start of the intervention. All necessary information about the Mindful Self-Development Coaching intervention was explained at the open talks, including: an overview on the design and structure; requirements for participation and amount of required commitment during the 8-weeks intervention. A couple of mindful activities were also demonstrated in order to give some tangible experiences about the intervention, typically, the mindful eating, five minutes breathing meditation, and the "3-3-3" mindful talking and listening exercises.

At the end of the open talks, interested applicants then were required to fill up the registration form (see Appendix 7). A short 20 minute long readiness interview was conducted by the researcher for the round of two to four. In the interview, previous psychological disorders, understanding the seriousness of undertaking the intervention, the amount of commitment for class room and home practice, as well as research based pre- and post measurements were the main points to be checked through. From the 5th till 7th round,

instead of the interview, participation on the mindful development assessment center was required. The overview of the Mindful Self-Development Coaching intervention time plan can be seen in Table 9. A random selection was carried out at the end of the selection interview or at the end of the assessment center. For these two important procedure steps, separate subsections with detailed explanation are offered at the end of the procedure section.

After the open talks, all applicants would receive a link to complete the online questionnaires (see Appendix 8), regardless whether they were on the participants or on the waiting group list. All participants were required to complete the online questionnaires before the starting of the first meeting.

The five biweekly full day training as previously described was then carried out and the total duration for the Mindful Self-Development Coaching intervention was 8-weeks long, counting from the first meeting till the last one. The refundable 100€ was collected at the beginning of the first meeting. At the beginning of each meeting, participants were required to fill up the mood questionnaire, plus to answer the following question: “whether there is any significant event since last meeting which could affect the score? If so, please specify. ” (See Appendix 13). If there was any major life event written down on the questionnaire, the trainer would contact the participant, and offer supports, including a private coaching session. During the 8-weeks’ long intervention, all participants were eligible to request one 90-minute long private coaching session, to address their specific personal questions or problems. The private coaching sessions were arranged directly between the trainer and the participants, and it was off the record for confidentiality reasons. Within one week after the last meeting, the post intervention on-line questionnaires were sent out for all groups, and for the fifth and sixth groups, a second assessment center was also conducted. Upon completion of the training or the post intervention measurements, the deposit was fully refunded in person. Three months after the intervention, a followup questionnaire was sent to the participants. It was voluntary to fill it out without any incentives.

The Process of Mindful Development Assessment Centers

The mindful development assessment centers were four and half hours long with a similar structure as in real-life organizational implementation. When participants arrived, the first thing was to fill up a registration form to collect biographical information (see Appendix 9). Then they were given a timetable of the assessment center and a number tag. They were informed that throughout the assessment center, they would be only identified either by their number (in group situation) or by their personal code (in cognitive tests and interview). Then the aim of the mindful development assessment center was explained to the participants. As the name has already suggested, the mindful development assessment centers are focused on development, in particular how much awareness the participants could demonstrate through their behavior in such designed stressful social evaluation simulations. Their behavior at both assessment centers would be closely observed and analyzed, therefore a video recording is essential for research purposes. Participants were ensured that all data collected would only be used for the current research and would be kept strictly confidential. At the same time, they were ensured of the right to stop the recording at any time for any reasons. Once the permission of recording was granted by all participants, the next step was to explain the schedule of the assessment centers and how to use the timetable to guide them through different tasks at different rooms (see Appendix 10 for a sample of master time plan).

The first task of the assessment centers was a 2-minute long free style group introduction. Each participant decided him/herself how much personal information to disclose in the given situation. Then for the next hour, the participants were divided into two groups, one group was assigned to computer based cognitive tests in a separate class room, there was a five minutes break in between two tests. The other group was then again divided into two pairs. Within one pair, one person was instructed to complete a pen-and-paper based nonverbal reasoning test in a small individual study room, the other person was led by an interviewer to a meeting room and to complete a 30 minutes long structured interview. After half an hour, the pair would switch the roles. Then the two groups switched takes. After every single participant had done one hour computer based cognitive tests, a half hour paper-and-pen based nonverbal reasoning test and a half hour structured interview, they were once again

reunited in the original big meeting room to complete the last part of the assessment center, which was group activities and it was led by a group administrator. The role of the administrator read out the script which was provided by the researcher to ensure all groups received the same instruction in the same manner (see Appendix 11). The first part of the group activity was leaderless group discussion, the administrator gave participants one of two statements given below and asked them to rank each given term in a priority order, the most important term should be ranked as the first one.

Statement 1: Capability, attitude and opportunity are three important factors to self-development.

Statement 2: Motivation, emotional intelligence, problem-solving ability, communication skills, and stress resistance are basic factors for self-development.

Participants were given two minutes to prepare their ranking and reasons behind it. At the end of the two minutes, the administrator asked participants to present their rankings and reasons to the group within two minutes. If a participant exceeded the time limit, the administrator would say: "time is up, thank you, next one." Once the whole group had done the individual presenting, the administrator instructed the group to start a 20-minute leaderless group discussion. The only rule was that voting was not permitted and at the end of the discussion, one of the group members should present their group ranking (if they had one) back to the administrator. Within the 20 minute group discussion, the administrator was not allowed to interfere, also was instructed not to answer any questions regarding the definition of the terms or time (e.g., when the discussion started or should end). At the end of the 20 minutes, regardless whether the group had achieved an agreement or not, the administrator then said: "time is up, thank you, please stop talking." After one of the group member s presented back their agreed or still under the process group ranking, the administrator then instructed the whole group to clear the table and to proceed further to the next task: leaderless group challenge. The administrator showed the group a basket which was prepared in advance with a number of daily ordinary stuffs, such as a bunch of paper tissues, 10 pieces of second-hand paper, a couple of rolls of sticky tape, a pair of scissor, some color cards in various shapes and size. The administrator then went on to explain the aim of the group challenge was to use and only use the materials provided to build a tower, and the tower

should be as high as possible but it had to be able to stand by itself (without being attached to anything else) for at least 15 seconds. Then the administrator announced: "your 20 minutes start now". The final 15 seconds countdown would only take place at the end of 20 minutes allowed time, if the group completed the task earlier, they had to wait till the end of the 20 minutes. After the 15 seconds countdown, if the object was still standing, the administrator would say: "Congratulations! Your task is successful. " If the object was no longer standing, then the comment would be: "I am sorry, your task has failed".

The next and the last part of the group activity was the group review. The administrator in this review session asked the participants to look back at the time and make an evaluation of their individual and group performances at three different tasks: firstly, the group challenge (tower building); secondly, the group discussion (priority ranking); and lastly the assessment center as a whole. For each review question, every participant had 2 minutes to talk. No discussion is permitted at the review session.

The Random Selection

Due to the limited total amount of applicants at each round of the Mindful Self-Development Coaching Intervention, it was not possible to do traditional and methodologically perfect random selection. For example, after each announcement of a new round of the intervention, around 50 people would show interests, and eventually around 20-25 would submit an application. The default number of participants was 16 because of the maximum capacity of the booked meeting room. Therefore, the number of control group in each round can only be the total number of applicants minus 16 the default number of participants.

At the very end of the readiness interview (2^{nd}-4^{th} round) or the mindful development assessment center (5^{th}-7^{th} round), participants then did random selection themselves by a lucky draw from a box. There were two possibilities, the first one was "in" meant to take part at the next coming intervention group, the other possibility was "waiting" meant to be put on hold on a waiting list for the next available intervention group. The number of "in" was the same for each round of 16, the number of "waiting", as previously explained, depended on the number of applicants at the time, the total number of applicants minus 16 would be the

number of the "waiting" group. Participants did the lucky draw themselves, hence no complaints on fairness were raised.

Measurements

There were three dimensions of measurement used in the Main Study. The first dimension was self-report online questionnaires, the second dimension was cognitive tests, and the third dimension was third person observation in a high-stake social evaluation situation. The second and the third dimensions were carried out at mindful development assessment centers as previously described. The measurements used at each dimension will be explained in following subsections independently.

Measurement of Dimension 1 - Self-Report Questionnaires

Pre- and Post Intervention

Based on the Pilot Study, the level of mindfulness and perceived stress are useful indicators of the success of the intervention, therefore they were carried further in the Main Study. The perceived stress scales remained unchanged; the mindfulness scale was changed to the Five Facets of Mindfulness Questionnaire (FFMQ), a new version of the previously used Kentucky Inventory of Mindfulness Skills (KIMS). The original developer of KIMS, Baer and her colleagues (Baer, Smith, Hopkins, Krietemeyer & Toney, 2006) combined all existing mindfulness questionnaires at the time, after initial reliability and validity tests then created a new version of mindfulness questionnaire and labelled as the FFMQ. After the Pilot Study, it was proved that the results had no correlation with previous meditation experiences, therefore the only concerns on the small number of MAAS items existing at the FFMQ, which was originally designed for experienced meditators, were no longer valid, therefore it would be safe to apply the Five Facets of Mindfulness Questionnaire at the Main Study. Examples of the online questionnaire used at the Main Study can be seen at Appendix 8.

Five Facets of Mindfulness Questionnaire (FFMQ)

As the name suggests, it contains five basic facets of mindfulness, and they are: *Nonreactivity* (e.g., usually when I have distressing thoughts or images, I "step back" and am aware of the

thought or image without getting taken over by it. 7 items in total); *Observing* (e.g., I pay attention to how my emotions affect my thoughts and behavior. 8 items in total); *Acting with awareness* (e.g., I find myself doing things without paying attention. 8 items in total); *Describing* (e.g., I have trouble thinking of the right words to express how I feel about things. 8 items in total); and *Nonjudging* (e.g., I make judgements about whether my thoughts are good or bad. 8 items in total). The author reported a fairly good internal consistence, from .75 to .91 of the five facets. The selected 39 items are reported on a 5-point Likert-type scale (1=never or very rarely true, 5=very often or always true). Because of the comprehensiveness and fair reliability of the FFMQ, it is widely used as a measurement of mindfulness.

In addition to the level of mindfulness and perceived stress, as previously explained the aim of the Mindful Self-Development Coaching intervention is to apply directly in the corporate world as a commercial training package. Therefore, it is necessary to correlate mindfulness with other well-known and easy to explain scales. Subjective wellbeing, commonly known as happiness, is one of the ideal indicators. Hence, the well tested and constructed Satisfaction With Life Scale (SWLS) was selected. Considering the Mindful Self-Development Coaching intervention is primarily aimed for stress management and burnout prevention, so it is also logical to exam the burnout level together with the perceived stress level. However, the most commonly used Maslach Burnout Inventory (MBI, Maslach & Jackson, 1981, 1986) is originally designed for measuring employees in human service professions in three subcategories: emotional exhaustion, depersonalization and personal accomplishment. A regular working surrounding, in particular with frequent contacts with other human beings is essential for applying this inventory. The current privately funded research had no additional resources to recruit enough ideal participants in the workplace, thus applying the MBI would not be suitable and realistic. Apart from burnout inventor, how well an individual treats the self during difficult times, in other words how compassionate one is towards the self, is another validated indicator on burnout risk (Barnard & Curry, 2012; Lloyd, Bond, & Flaxman, 2013). It is not necessary to be engaged in an employment to apply a self-compassion scale. As a conclusion, the newly developed Self-Compassion Scale (SCS) was selected and applied at the current research as an indicator for testing the tendency of burnout. The two new questionnaires are explained in separate subsections below.

Satisfaction With Life Scale (SWLS)

The Satisfaction With Life Scale (SWLS) is developed to measure levels of global life satisfaction (Diener, Emmons, Larsen & Griffin, 1985). The scale consists of five items and uses a 7-point Likert-type scale response range from 1=strongly disagree to 7=strong agree. Examples are like: "In most ways my life is close to my ideal" and "I am satisfied with my life". In terms of reliability the SWLS has been found to be internally consistent and temporally stable. Diener et al. (1985) reported a coefficient alpha of 0.87 and a rest-retest correlation coefficient of 0.82 with a two months interval. Similar findings were reported by Pavot and Diener (1993), Yardley and Rice (1991) and Shevlin, Brunsden and Miles (1998).

Self-Compassion Scale (SCS)

How participants treat themselves particularly their own imperfections and mistakes during a difficult life time was assessed by the Self Compassion Scale (SCS, Neff, 2003a). It measures the degree to which individuals display self-kindness against self-judgment, common humanity versus isolation, and mindfulness versus over-identification. This scale asks participants to rate 26 items on a 5-point Likert-scale ranging from 1=Almost never to 5=Almost always. The items are prefaced by the statement, "How I typically act towards myself in difficult times," and the instructions were, "Indicate how often you behave in the stated manner." Self-compassion was assessed by items such as "I'm disapproving and judgmental about my own flaws and inadequacies" and "When I fail at something important to me I try to keep things in perspective." Neff (2003a) found high inter-correlations between each of the six sub-scales, and a confirmatory factor analysis indicated that these were explained by the single higher-order factor of self-compassion. The SCS has good internal consistency reliability (.92) and good test-retest reliability (.93) (Neff, 2003a).

Process Measurement

Apart from the differences pre- and post the MSDC intervention, it was also interesting to see how the mood of the participants had been affected during the 8-weeks-long intervention. Watson's - The Positive and Negative Affect Schedule was selected for this purpose (PANAS;

Watson, Clark & Tellegen, 1988). PANAS is a widely used affect rating scale that includes 10 adjectives to assess Positive Affects (PA) and 10 adjectives to assess Negative Affects (NA). Each item was rated using a 5-point rating scale ranging from 1 (very slightly or not at all) to 5 (extremely). The descriptors of Positive Affects and Negative Affects were selected from a large list of emotion terms. Positive Affects reflects the extent to which one is experiencing a positive mood, with feelings such as joy, interest, enthusiasm, and alertness. In contrast, Negative Affects reflects the extent to which one is experiencing a negative mood, with feelings such as nervous, distressed, upset, and guilty. Cronbach's α are comparable for the English and German versions, varying for Positive Affects between .85 and .90 and for Negative Affects between .84 and .87 (Krohne, Egloff, Kohlmann, & Tausch, 1996; Watson et al., 1988). Factor analytic results support the statistical independence of the Positive Affects and Negative Affects (e.g., Schmukle, Egloff & Burns, 2002). In the MSDC intervention, participants were instructed to fill up the PANAS mood questionnaire at the beginning of each meeting. Internal consistency was .87 for Positive Affects and .84 for Negative Affects using the scores of the first day (cf. Meyer & Hoffman, 2005).

Measurement of Dimension 2 - Cognitive Tests

Cognitive tests were used at the Main Study to give objective view on the effectiveness of the Mindful Self-Development Coaching intervention. There were three different cognitive tests used at the second dimensional measurement at the Assessment Centers. An example of the tests can be seen at Appendix 12.

Conners' Continuous Performance Test-II (CPT-II; 25 minutes)

The CPT-II is a widely used and extensively studied measure of sustained attention. This task presented letters of the alphabet one at a time in the centre of a computer monitor. Participants were instructed to press the spacebar when the letter X appears immediately after the letter O, if the letter X appears alone participants should hold their response. The CPT-II contains six main blocks, each composed of three 20-trial sub-blocks (totaling 18 sub-blocks) that vary according to inter-stimulus intervals. Several measures of sustained attention were provided by the CPT-II; however, based on previous research using the CPT-II and

mindfulness measures, two indices of sustained attention were examined in the current study: omissions and reaction time.

Omissions were determined by the number of targets (i.e., letter O-X combination) to which the participant failed to respond. High omission error rates were indicative of sluggish response styles and difficulties orienting and responding to stimuli. The difference between reaction time at baseline and post intervention was measured and computed.

The procedure consisted of the administrator allowing the participants to read through the instructions on the computer screen, after which the administrator briefly reiterated the instructions and then gave the participants the standard practice trials to make sure the instructions were rightly understood.

Inventar Komplexer Aufmerksamkeit (INKA, 35 minutes)

The English translation of INKA is "Inventory for Complex Attention" (Heyde, 2000), a test of concentration and attention (i.e., the quality of information processing). It tests comprehension with mirroring effects. The participants were required to search and identify the reflected target letter in a line of random letters. The reflection was presented on the top of the screen, participants were not required to memorize them. Upon identification the following letter in the row should be typed in at the bottom. Two practice simulations with feedback were carried out before the formal test. Further explanations on instructions were offered to participants if required. There were a total of 16 problems, and the time limit was 20 minutes at the assessment center, but only the answers from the first 15 minutes were collected for data analysis, based on the suggestion of Heyde guide for healthy populations (2000). Reaction time, accuracy and number of attempts are collected for further analysis.

Nonverbal Reasoning Test (*Raven's Progressive Matrices, 30 minutes)*

Raven's Standard Progressive Matrices (Raven, 2000; Raven, Raven, & Court, 2004) were administered in pen-and-paper format. These tests are made up of a series of diagrams or designs with a part missing. Participants were expected to select the correct part to complete the designs from a number of options printed beneath. The Raven's Progressive Matrices tests have been proven, since the first publication in 1936, as highly reliable and valid general

intelligence tests for a wide population, regardless of age, gender, nationality, and so on (Raven, 2000). The Ravon's test was selected because it was easy to apply, the only requirement was the test itself, a pen and a separate room, which was ideal to be run parallel with the structured interview. At the same time, the nonverbal nature of the test is suited for the international background of the participants of the Mindful Self-Development Coaching intervention. The Accuracy and the number of attempts were collected for data analysis.

Measurement of Dimension 3 - Third Person Behavior Observation

The last and third dimension of measurement was exploratory and it aimed to investigate whether the 8-weeks-long MSDC intervention could lead to some observable behavioral and perceptional changes. To the best knowledge of the researcher, till date, there is no other published study which presents any correlation between the effectiveness of a mindfulness based intervention and behavioral changes.

In total, there were 22 mindful development assessment centers conducted, and each assessment center had more than 5280 minutes (88 hours) long video recordings. Those 88 hours video recordings provided a huge amount of information as well as workload. The traditional way of assessment center evaluating requires multi assessors to observe each task entirely before moving to do the classification based on the given criteria, then at the end to complete the evaluation (International Task Force on Assessment Center Guideline, 2000). The ratio between assessor and candidate is recommended to be 1:2 for ideal balance between quality observation and cost effective (Arthur & Day, 2011). It would be a too large cognitive task when an assessor has to observe more than two candidates simultaneously, while one assessor per candidate is too costly for both time and man power. However, in the current research after two pilot trials, it was certain that the traditional way of AC analysis was unrealistic due to time and human resource limitations. The major reason was that, the current research requires observing video clips rather than real assessment center interactions, and each task lasted at least 20 minutes, during the trial analysis, the feedback from observers was too much too long for a good level of cognitive concentration. Quality of observation is the foundation of any meaningful measurement, and the most important step of objective

evaluation according to the International Task Force on Assessment Center Guideline (2000). Therefore, an alternative and realistic method of analysis was determined.

After a number of attempts and long consideration, a final decision on evaluating short video clips no longer than 2 minutes and exclusively on nonverbal perspective was reached and approved. The two-minutes length was selected because it was long enough to give an impression of a person, at the same time it was short enough to avoid boredom. According to Burgoon & Baesler (1991) that, two minutes are also the on the border of macro and micro analysis for nonverbal measurement, which gives the benefits of the high reliability from micro analysis at the same time also the advantages of accurate general perception from macro analysis. The decision on analyzing exclusively on nonverbal perspective was due to two factors: the first reason was to keep the evaluator double blinded on group (treatment vs control) and time (pre- or post intervention) factors. This could only be done without any verbal clues from the video. Because without exceptions, all participants were willing to disclose their identity and express their opinions about the Mindful Self-Development Coaching intervention at post program assessment centers. The second reason was due to confidentiality. Though all evaluators agreed to sign the confidential agreement on strict non-disclosure of any personal information, and to report at once if they recognized the observees from any given video. However, the risk of leaking personal information was still rather high and could not be afforded. The best solution to keep confidentiality was to omit all verbal clues. Silent videos provided very limited information on personal identity and information, and even in the cases of acquaintance, little or no harm could be done to the participants.

The assessment center videos were cut and the audio channel was removed by the Shortcut video editor (version 14.08.01, see Appendix 17). Two tasks were selected for the analysis. One was the middle part of the structured interview, and the other one was the free style of self-introduction at the beginning of each assessment center. For the interview session, the middle part while the interviewee was speaking rather than listening (e.g., listening to the question and explanation form the interviewer) was selected. As previously explained, the interviews were highly structured, which means the beginning of the interview was the ice breaking stage, and the middle part of the interview was the most intensive and

confrontative to the interviewees, the end of the interview was to conclude in a positive manner in order to improve the mood of the interviewees and to end the interview with positive affects. Therefore, the middle part of the interview theoretically was the most stressful moment during the whole task, presumedly non verbal clues were easier to be observed and then evaluated in comparison to the beginning and the end parts.

For the group session, the first task of the assessment centers, 2 minutes free style of self-introduction was selected for analysis. The logic behind that was that the assessment center was used as a high-stake social evaluation, and the first task was the most stressful one owing to uncertainties and unfamiliarities. For example, the unknown setting and tasks (for the first assessment center), in an unfamiliar group (for both assessment centers), and feeling uncomfortable when cameras were switched on for the first time (though arguably someone could never feel comfortable under recording, but there could also be someone getting used to it as time passed by, like in later tasks). Because of the pressure, scarcely anyone at the self-introduction exceeded the two minutes allowance. In such cases, the scenes shortly before and immediately after the self-introduction are also included to make up the total two minutes video clip for each participant.

The evaluation criteria were originally set with 25 items, after four rounds of tests and re-tests, the final version of the nonverbal evaluation for both interview and self-introduction was limited to 12 items for nonverbal factors, and 5 items for overall perception (see Appendix 16). The face validity was at satisfactory level (see Appendix 16).

Two full days intensive training were provided, with the topics on the assessment center basic factors, extensive explanation on the current design of measurements, the rationals of selected dimensions and how to score them objectively and accurately. The nonverbal behavior check list was explained item by item first by real life demonstration, then by five test videos. Evaluators were instructed to score each video on one evaluation form, after the forms were collected and inputed by two research assistants. After the inputting, a 50% cross check (half of the scores from each evaluation form) was conducted to ensure the accuracy of inputting. Evaluators were double blinded for the factors of group (treatment vs. control) and time (pre- vs. post intervention).

3.5. Results

Results of Dimension 1- Self-Reported Questionnaires

Analysis preparation: Normality and homogeneity of variance

The analysis for online questionnaires had been carried out similarly to the Pilot Study with Statistic program "R" (Version R 0.98.1091). The missing data were replaced by the mean. A normal distribution test (Shapiro-Wilk) was conducted at the beginning, and the results showed that overall score of mindfulness (FFMQ), three sub-scores of FFMQ (Observing, Acting with awareness and Nonreactivity), Perceived Stress Scale (PSS) and Self-Compassion Score (SCS) were all normally distributed, which permitted parametric tests to be conducted in the current Main Study. One sub-score of Mindfulness (FFMQ-Describing) shows slide non-normal distribution at T2 (followup), and it can be ignored. However, the Satisfaction With Life Scale (SWLS) is significantly non normally distributed.

The homogeneity of variance in the sample for all scales was tested by the Bartlett's test, and the results shown that only one of sub-score of mindfulness (FFMQ-Nonreactivity) was not homogeneously distributed. As it is less significant so that it can be ignored. However the Satisfaction With Life Scale shown non-homogfneitic distributed, and in combination of non-normal distribution, means only non-parametric tests could be applied for further analysis. Same as in the Pilot Study, in order to facilitate interpretation of any significance of the results, the power effect size (*d*) based on J. Cohen (1988, 1992) was also calculated by the difference between means (m) which was then divided by the pooled standard deviation (*s* = sqrt(SD1^2+SD2^2)/2). The effect small, medium and large effect size have been set at .20, .50, and .80, respectively (Cohen, 1988; Cohen, 1992).

Data Analysis

Firstly, a 2x2 ANOVA test with the factor of time (T0=pre-, T1=post) and within-in subjects group (1=treatment, 0=control) shown significant improvement on overall level of mindfulness [$F(1, 105) = 18.79$, $p \leq .001$], and four of the sub-scores: Observing [$F(1,105) = 22.30$, $p \leq .001$]; Describing [$F(1,105) = 8.154$, $p \leq .001$]; Acting with Awareness [$F(1,105) = 7.104$, $p \leq .01$]; Nonjudging [$F(1,105) = 4.266$, $p \leq .05$]; and Nonreactivity [$F(1,105) =$

15.910, $p \leq .001$]. In contrast, the level of Perceived Stress Score (PSS) had decreased significantly [$F(1,105) = 6.153$, $p \leq .05$]. At the same time, the level of Self-Compassion Scores (SCS) had been significantly uplifted [$F(1,88) = 7.596$, $p \leq .01$]. However, no significant result was found for the Satisfaction With Life Scale (SWLS) [$F(1,88) = 7.596$, $p = .43$] in between groups, but there is difference for the treatment group at different time points [$F(1,105) = 28.240$, $p \leq .001$] (see Table 10 & 11).

Then a one-sided paired *t*-Test was generated to look into the differences in more detailed manner, especially at different time points: T0 vs. T1 (pre- vs. post); T1 vs. T2 (post vs. followup); and T0 vs. T2 (pre- vs. followup). The significant difference level was once again determined at .05. The Mindfulness scores (overall and five sub-scores), the Perceived Stress scores, and Self-Compassion scores, which were normal and homogeneously distributed can be computed and compared by the *t*-Test too. The results were calculated based on the Intention-To-Treat (ITT) principle. In the following sections, detailed results will be presented by surveys, under each survey the results then divided into within-group session at differences time points then followed by between group session at the same time points.

Results of Level of Mindfulness

The summary of the descriptive statistics are presented at the Table 10, and detailed results are presented as below.

Treatment Group: Pre- (T0) vs. Post (T1)

There was significant improvement on the level of mindfulness (FFMQ) at two time points for the participants group, before (T0, $M = 119.20$, $SD = 17.60$) and after (T1, $M = 140.58$, $SD = 17.05$) the Mindful Self-Development Coaching intervention [$t(84) = 10.99$, $p \leq .001$, $d = .238$] and tested by one-sided, paired independent-sample t-Test, however the improvement was with small effect size. Same rest was used for the examinations for the sub scales too and similar improvement was also found to all five sub sections, and four out of five sub-scales were with big effect sizes: Observing (T0, $M = 25.93$, $SD = 5.04$; T1, $M = 29.95$, $SD = 4.39$), [$t(84) = 9.789$, $p \leq .001$, $d = .808$], Describing (T0, $M = 27.28$, $SD =$

6.03; T1, M = 30.12, SD = 5.51), [t(84) = 6.748, p ≤ .001, d = .471], Acting with Awareness [T0, M = 22.39, SD = 5.15; T1, M = 26.89, SD = 4.65; t(84) = 8.505, p ≤ .001, d = .876], Nonjudging [T0, M = 25.26, SD = 7,53; T1, M = 30.76, SD = 6.67; t(84) = 7.881, p ≤ .001, d = .717] and Nonreactivity [T0, M = 18.59, SD = 4.40; T1, M = 22.85, SD = 3.52; t(84) = 8.098, p ≤ .001, d = .966]. The summary of results are listed in Table 11 and 12.

Treatment Group: Post (T1) vs. Followup (T2)

There was no significant difference on level of mindfulness at post (T1, M = 140.58 , SD = 17.06) and at three months followup (T2, M = 140.54, SD = 3.84) check points for participants of the MSDC intervention [t (84) = 0.033, p = .974], and the effect size was also extremely small (d = -.000), which indicated that the achieved improvement made from the MSDC intervention was sustainable. Similar results were also found at all five sub sections: Observing [t(84) = 0.488, p = .627, d = -.043], Describing [t(84) = 0.526, p = .600, d = .025], Acting with Awareness [t(84) = 0.125, p = .901, d = -.011], Nonjudging [t(84) = 0.459, p = . 648, d = .028] and Nonreactivity [t(84) = 0.479, p = .633, d = -.048].

Treatment Group: Pre- (T0) vs. Followup (T2)

In order to further test the sustainability of the effects of improved mindfulness, same t-test was carried out for T0 (M = 119.20 , SD = 17.60) and T2 (M = 140.54, SD = 3.84) two time points. Significant differences on level of mindfulness remained, this applied also to overall FFMQ scores [t (84) = 10.587, p ≤ .001, d = .237] as well as all five sub sections: Observing [t(84) = 8.998, p ≤ .001, d = .770], Describing [t(84) = 6.255, p ≤ .001, d = .494], Acting with Awareness [t(84) = 7.847, p ≤ .001, d = .866], Nonjudging [t(84) = 7.962, p ≤ .001, d = .742] and Nonreactivity [t(84) = 7.526, p ≤ .001, d = .927].

Treatment Group vs. Control Group at Pre- (T0)

At the baseline, there were no significant between the treatment group (M = 119.20, SD = 90.00) and the control group (M = 119.00, SD = 67.00) on overall level of mindfulness [t (105) = 0.247, p = .806], and the effect size was also very small (d = .048). Similar findings also found at the five sub sections: Observing [t(105) = 0.058, p= .954, d = .011], Describing [t(105) = 0.155, p = .878, d = .030], Acting with Awareness [t(105) = 0.777, p = .439, d = .

152], Nonjudging [t(105) = 1.512, p = .134, d = .295] and Nonreactivity [t(105) = 0.040, p = .969, d = .008]. This means both groups had similar level of mindfulness at the baseline.

Treatment Group vs. Control Group at Post (T1)

At the end of the MSDC intervention at time point T1, there was significant improvement for the participant group (M = 140.58, SD = 94.00) in comparison with the control group (M = 121.50, SD = 56.00) on overall level of mindfulness and with large effect size [t (105) = 4.827, $p \leq .001$, d = .942], simpler findings were also obtained at three of the five sub sections: Observing [t(105) = 4.144, $p \leq .001$, d = .809], Nonjudging [t(105) = 3.670, $p \leq .001$, d = .716] and Nonreactivity [t(105) = 3.645, $p \leq .001$, d = .711]. However, the significant differences did not apply to sub scale Describing [t(105) = 1.827, p = .070, d = .357] and Acting with Awareness [t(105) = 1.958, p =.053, d = .382], and the effect sizes were also small (see Table 11). This leads to the conclusion that the participants made significant improvement on the overall level of mindfulness, and three of the sub sections, but interestingly not for the sub sections of Describing and Acting with Awareness.

Control Group: Pre- (T0) vs. Post (T1)

The difference for the level of mindfulness for the control group at pre- (T0, M = 119.00, SD = 67.00) and at post (T1, M = 121.50, SD = 56.00) was also examined, so that it gave fair and objective comparison to the treatment group. As expected, there was no significant difference between the two time points and the effect size was also extremely small, this applied to overall FFMQ scores [t (21) = 1.118, p = .138, d = .037] as well as four of the five sub sections: Observing [t(21) = 0.332, p = .628, d = -.064], Describing [t(21) = 0.094, p = .463, d = .018], Acting with Awareness [t(21) = 1.294, p = .105, d = .322], and Nonreactivity [t(21) = 0.184, p = .040, d = -.025]. However, surprisingly for the sub section of Nonjudging, there was a significant improvement [t(21) = 2.152, $p < .05$, d = .387], but the effect size was small.

Table 10: Descriptive Statistics of Mindfulness Results

Qs: FFMQ		Treatment (No. = 85)			Control (No. = 22)	
		T0	T1	T2	T0	T1
Overall	Mean	119,20	140.58	140,54	119,00	121,50
	Median	17,60	17,05	18,30	16,25	13,57
	SD	90,00	94,00	95,00	67,00	56,00
Observing	Mean	25,93	30,00	29,81	26,00	25,73
	Median	26,00	30,00	30,00	26,50	26,00
	SD	5,04	4,39	4,44	4,21	3,72
Describing	Mean	27,28	30,12	30,26	27,50	27,59
	Median	28,00	30,00	30,00	26,50	27,50
	SD	6,03	5,51	5,60	5,09	6,75
Acting with Awareness	Mean	22,39	26,90	26,85	23,32	24,69
	Median	23,00	26,00	26,00	24,00	26,00
	SD	5,15	4,65	4,98	4,26	4,86
Nonjudging	Mean	25,36	30,76	30,95	22,73	25,11
	Median	25,00	31,00	32,00	23,50	24,00
	SD	7,53	6,67	6,54	6,15	5,38
Nonreactivitiy	Mean	18,60	22,85	22,68	18,64	18,50
	Median	19,00	23,00	23,00	19,50	19,00
	SD	4,40	3,52	3,84	5,63	5,31

FFMQ is Five Facets of Mindfulness Questionnaire, T0 is baseline; T1 is post intervention; T2 is 3 months followup; SD is Standard Deviation

Table 11: Summary of Mindfulness Results Between Groups

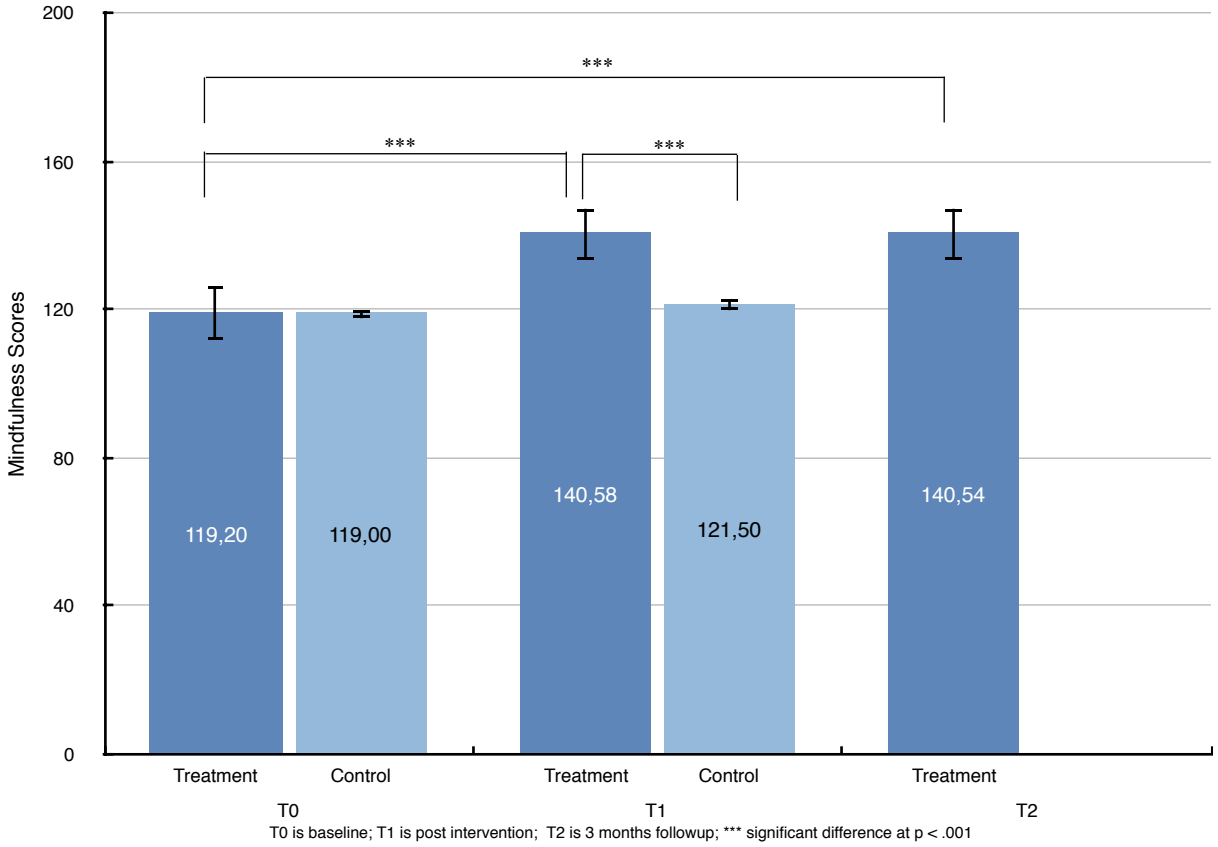
Independent t-test	T0 (pre- intervention)			T1 (post intervention)		
Treatment vs Control	t (105)	p	d	t (105)	p	d
Five Facets of Mindfulness Questionnaire	0,247	= .806	0,048	4,827	< .001	0,942
Observing	0,058	= .954	0,011	4,144	< .001	0,809
Describing	0,155	= .878	0,030	1,827	= .070	0,357
Acting with Awareness	0,777	= .439	0,152	1,958	= .053	0,382
Nonjudgung	1,512	= .134	0,295	3,670	< .001	0,716
Nonreactivity	0,040	= .969	0,008	3,645	< .001	0,711

Table 12: Summary of Mindfulness Results Within Groups

paired t-test	Treatment (T0 vs T1)			Treatment (T1 vs T2)			Treatment (T0 vs T2)			Control (T0 vs T1)		
	t (84)	p	d	t (84)	p	d	t (84)	p	d	t (21)	p	d
Overall FFMQ	10,990	< .001	0,238	0,033	= .974	-0,000	10,587	< .001	0,237	1,118	= .138	0,037
Observing	9,789	< .001	0,808	0,488	= .627	-0,043	8,998	< .001	0,770	0,332	= .628	0,064
Describing	6,748	< .001	0,471	0,526	= .600	0,025	6,255	< .001	0,494	0,094	= .463	0,018
Acting with	8,505	< .001	0,876	0,125	= .901	-0,011	7,847	< .001	0,866	1,294	= .105	0,322
Nonjudgung	7,881	< .001	0,717	0,459	= .648	0,028	7,962	< .001	0,742	2,152	< .05	0,387
Nonreactivity	8,098	< .001	0,966	0,479	= .633	-0,048	7,526	< .001	0,927	0,184	= .040	0,025

FFMQ is Five Facets of Mindfulness Questionnaire, T0 is baseline; T1 is post intervention; T2 is 3 months followup

Figure 8: Mindfulness Scores Compared with Factors of Time and Group



Results of Level of Perceived Stress

Descriptive statistics are listed at the Table 13, and detailed results follows.

Treatment Group compared at Pre- (T0) , Post (T1) and Followup (T2)

There was significant deduction on the level of perceived stress (PSS) at two time points, before (T0, M = 30.19, SD = 8.76) and after (T1, M = 22.08, SD = 7.77) the MSDC intervention [t (84) = 7.695, p ≤ .001] and with large effect size (d = -.926). The reduced stress level maintained at low level at three months followup check point (T2, M = 22.68, SD = 8.71) [t (84) = 0.968, p = .336], but the effect size is very small (d = .077). In order to further test the sustainability of the effects of reduced perceived stress, same t-test is carried out between baseline and followup these two time points. Results indicated that the perceived stress level at the three month follow up check point remained significant lower than at the baseline, and the effect size was also big [t (84) = 6.637, p ≤ .001, d = -.857].

Table 14: Summary of Perceived Stress Tests Results

	Treatment (T0 vs T1)			Treatment (T1 vs T2)			Treatment (T0 vs T2)			Control (T0 vs T1)		
	t (84)	p	d	t (84)	p	d	t (84)	p	d	t (21)	p	d
paired t-test	7,695	< .001	-0,926	0,968	= .336	0,077	6,637	< .001	-0,857	1,409	= .087	-0,390

	T0 (Treatment vs. Control)			T1 (Treatment vs. Control)		
	t (105)	p	d	t (105)	p	d
Independent t-test	0,254	= .800	0,050	2,794	< .001	0,545

T0 is baseline; T1 is post intervention; T2 is 3 months followup; d is effect size Cohen's d

Table 13: Descriptive Statistics of Perceived Stress Test Results

Qs: PSS	Treatment (No. = 85)			Control (No. = 22)	
Time	T0	T1	T2	T0	T1
Mean	30,19	22,08	22,68	29,68	27,18
Median	30,00	22,00	22,00	30,50	29,50
SD	8,76	7,77	8,71	6,41	7,08

PSS is Perceived Stress Scale, T0 is baseline; T1 is post intervention; T2 is 3 months followup; SD is Standard Deviation

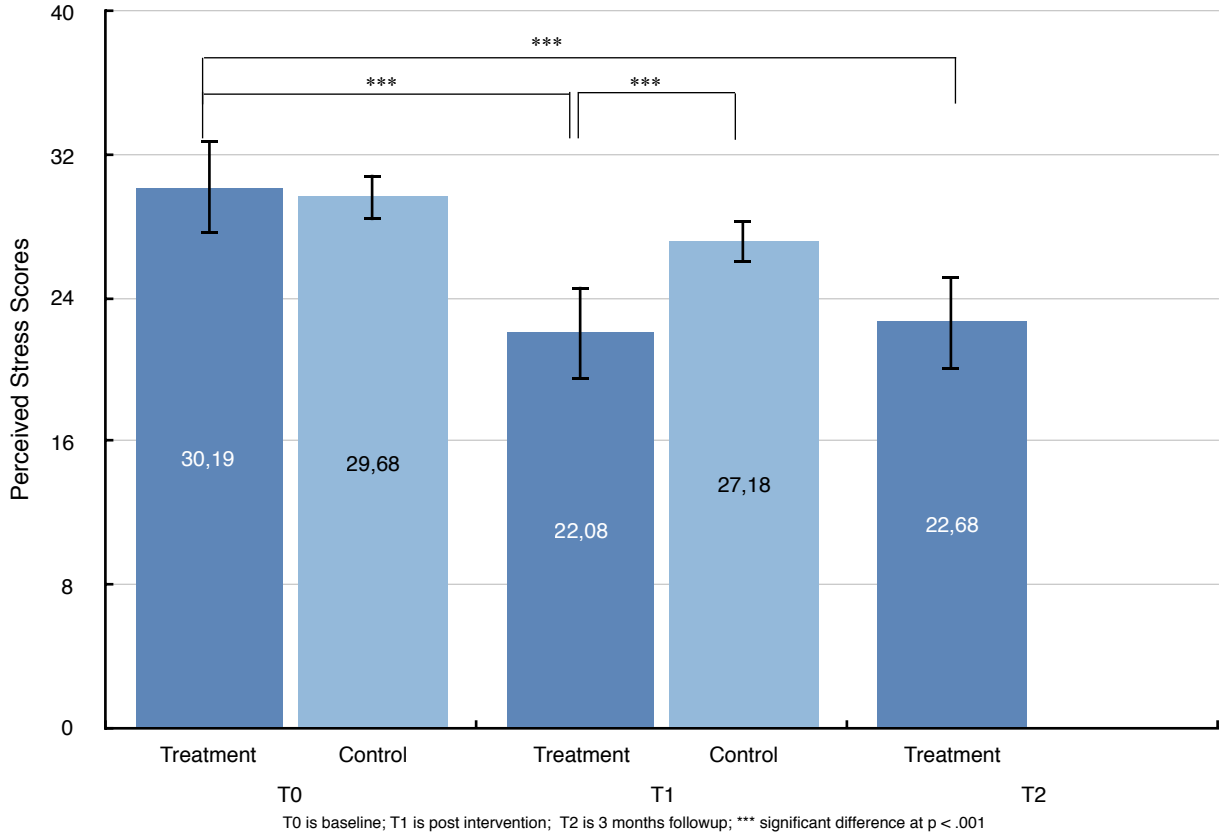
Treatment Group vs. Control Group: Pre- (T0) vs. Post (T1)

Before the MSDC intervention at baseline T0, the treatment group (M = 30.19, SD = 8.76) and the control group (M = 29.68, SD = 6.41) were at similar level of perceived stress [t (105) = 0.254, p = .800, d = .050], the effect size was also extremely small. At the end of the MSDC intervention at time point T1, between the treatment group (M = 22.08, SD = 7.77) and the control group (M = 27.18, SD = 7.08) was shown significant difference on the level of perceived stress [t(105) = 2.794, p ≤ .001], and with medium effect size (d = .545). This demonstrated that participants of the MSDC intervention perceived significant less stress than those who had not taken part in.

Control Group: Pre- (T0) vs. Post (T1)

The difference for the level of perceived stress for the control group at baseline and at post intervention was, as expected, not significant differences was found [t (21) = 1.409, p = .087], the effect size was also small (d = -.390).

Figure 9: Perceived Stress Results Compared with Factors of Time and Group



T0 is baseline; T1 is post intervention; T2 is 3 months followup; *** significant difference at p < .001

Length of Mindful Practice vs. Level of Perceived Stress

A 3x2 ANOVA with length of mindful practice at home, mainly calculated the frequency of mindful mediation (1 = less than once/week, 2 = between 2-4 times/week and 3 = more than 4 times per week) and time (T0 vs T1) as between-subjects factors revealed a main effect of length of mindful practice and perceived stress level [$F(1, 63) = 4.741$, $p \leq .05$]. This indicated that the longer the participants took time for practicing mindfulness, especially meditation, the less stress they had perceived. In other words, the time spent on meditation and away from daily duties did good on reducing the stress level.

Results of Level of Self-Compassion:

Descriptive statistics are presented at the Table 15 and details results as follows.

Treatment Group: Pre- (T0) vs. Post (T1) vs. Followup (T2)

For the treatment group, a significant improvement on the level of self-compassion (SCS) was found at pre- (T0, M = 73.82, SD = 16.76) and post (T1, M = 88.28, SD = 15.48) the MSDC intervention [$t (69) = 7.536$, $p \leq .001$] with large effect size ($d = .863$). The

Table 15: Descriptive Statistics of Self-Compassion Test Results

Qs: SCS	Treatment (No. = 70)			Control (No. = 20)	
Time	T0	T1	T2	T0	T1
Mean	73,82	88,28	88,25	74,00	77,21
Median	72,50	88,00	89,00	76,00	81,50
SD	16,76	15,48	15,54	16,30	14,75

SCS is Self-Compassion Scale, T0 is baseline; T1 is post intervention; T2 is 3 months followup; SD is Standard Deviation

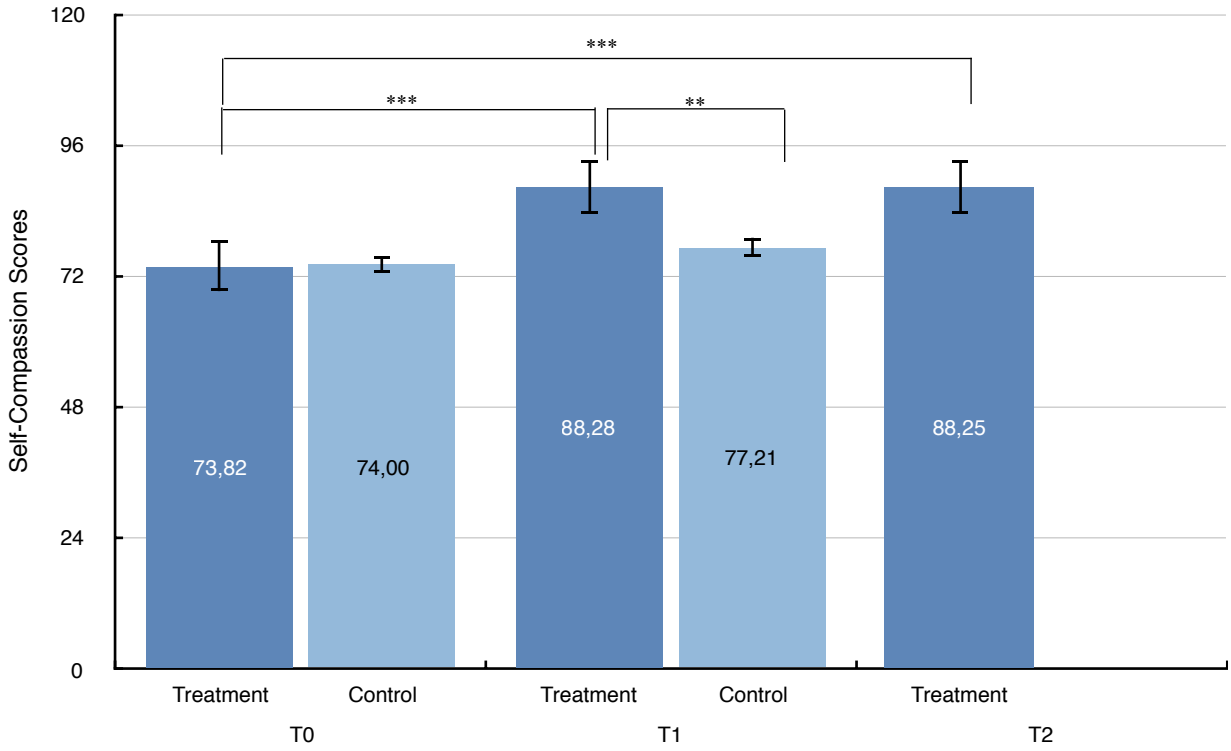
Table 16: Summary of Self-Compassion Test Results

	Treatment (T0 vs T1)			Treatment (T1 vs T2)			Treatment (T0 vs T2)			Control (T0 vs T1)		
paired t-test	**t (69)**	**p**	**d**	**t (69)**	**p**	**d**	**t (69)**	**p**	**d**	**t (19)**	**p**	**d**
	7,536	< .001	0,863	0,019	= .985	-0,002	7,268	< .001	0,866	0,880	= .195	0,197

	T0 (Treatment vs Control)			T1 (Treatment vs Control		
Independent t-test	**t (88)**	**p**	**d**	**t (88)**	**p**	**d**
	0,043	= .966	0,009	2,849	< .01	0,607

T0 is baseline; T1 is post intervention; T2 is 3 months followup; d is effect size Cohen's d

Figure 10: Self-Compassion Results Compared with Factors of Time and Group



T0 is baseline; T1 is post intervention; T2 is 3 months followup; *** significant difference at p < .001, ** Significant difference at p < .01

improvement remained at the three month followup check point, but the large effect size had disappeared (T2, M = 88.25, SD = 15.54), [t (69) = 0.019, p = .985, d = -.002]. At the same time as expected, the level of self-compassion between at baseline and post intervention two time points was also significantly different [t (69) = 7.268, p ≤ .001], and the effect size was also large (d = .866). This means that the obtained high level of self-compassion was sustainable after three months.

Treatment Group vs. Control Group: Pre- (T0) vs. Post (T1)

At the baseline, there was no significant difference between the treatment group (M = 73.82, SD = 16.76) and the control group (M = 74.00, SD = 16.30) on level of self-compassion [t (88) = 0.043, p = .966] and the effect size was also extremely small (d = .009) , this indicates that the randomly decided two groups were no difference on term of self-compassion. At the end of the MSDC intervention, the improvement made by the treatment group (M = 88.28, SD = 15.48) departed significantly from the control group (M = 77.21, SD = 14.75) on level of self-compassion [t(88) = 2.849, p ≤ .01], with medium effect size (d = .607).

Control Group: Pre- (T0) vs. Post (T1)

The control group shown no difference at the level of self-compassion at the baseline and at post the intervention [t (19) = 0.880, p = .195], the effect size was also small (d = .197).

Results of Level of Satisfaction With Life:

The perspective of general well-being was tested by the Satisfaction with Life Scale, as previously explained. The scores was not normally and homogeneously distributed, therefore non-parametric tests was used. Descriptive statistics are presented at the Table 17 and details results as follows.

Treatment Group : Pre- (T0) vs. Post (T1) vs. Followup (T2)

For the treatment group, a significant improvement on the level of general life satisfaction (SWLS) at baseline (T0, Mdn = 23.50) and after (T1, Mdn = 26.00) the Mindful Self-Development Coaching intervention was found by Wilcoxon Signed-ranks test [z = 203.5, p ≤ .001], but the effect size was small (d = .061). The improved level of life satisfaction

Table 17: Descriptive Statistics of Satisfaction With Life Test Results

Qs: SWLS	Treatment (No. = 70)			Control (No. = 20)	
Time	T0	T1	T2	T0	T1
Mean	22,39	25,53	25,61	21,50	23,60
Median	23,50	26,00	26,00	21,50	24,00
SD	6,16	4,92	5,51	6,35	4,31

SCWLS is Satisfaction With Life Scale, T0 is baseline; T1 is post intervention; T2 is 3 months followup; SD is Standard Deviation

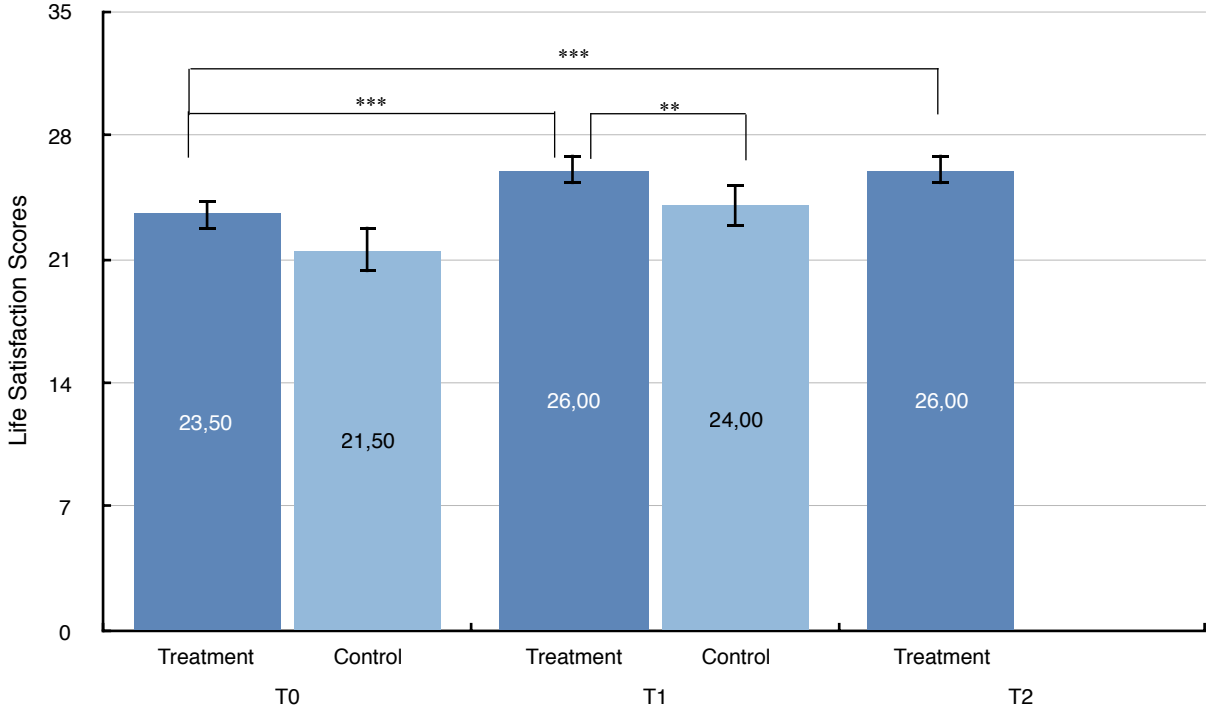
Table 18: Summary of Satisfaction With Life Test Results

	Treatment (T0 vs T1)			Treatment (T1 vs T2)			Treatment (T0 vs T2)			Control (T0 vs T1)		
Wilcoxon Signed-ranks Test	z	p	r	z	p	r	z	p	r	z	p	r
	203,5	< .001	0,061	361,0	= .689	0,002	291,5	< .001	0,062	98,0	= .160	0,074

	T0 (Treatment vs Control)		T1 (Treatment vs Control)	
Wilcoxon Sum-ranks Test	z	p	z	p
	638,5	= .553	2,849	< .01

T0 is baseline; T1 is post intervention; T2 is 3 months followup; r is effect size

Figure 11: Satisfaction With Life Results Compared with Factors of Time and Group



T0 is baseline; T1 is post intervention; T2 is 3 months followup; *** significant difference at p < .001, ** Significant difference at p < .01

remained no significant reduction at three months followup point (T2, Mdn = 26.00), [z = 361, p = .689]. This finding indicated that the achieved improvement made from the MSDC program was sustainable after three months. At the same time, as expected, the improvement was still significant compared to the baseline [z = 291.5, p ≤ .001], but the effect size was small (r = .062).

Treatment Group vs. Control Group: Pre- (T0) vs. Post (T1)

At the baseline, the randomly decided participants shown no significant difference between the treatment group (Mdn = 23.50) and the control group (Mdn = 21.50) on level of life satisfaction [z = 638.5, p = .553]. At the end of the MSDC intervention at time point T1, as expected, there was significant difference between the treatment group (Mdn = 26.00) and the control group (Mdn = 24.00) [z = 2,849, p ≤ .01].

Control Group: Pre- (T0) vs. Post (T1)

The control group shown no difference at the baseline (T0, Mdn = 21.50) and at post (T1, Mdn = 24.00) [z = 98, p = .160], as expected.

Results of Changing of Positive and Negative Affects (PANAS)

The mood of the participants was estimated to be lifted up after every training session, and the overall mood at the end of the MSDC intervention was expected to be improved compares to the baseline. The mood of participants was collected and separated in positive affects (PA) and negative affects (NA) separately and compared to the norm provided by the original developer of PANAS (Watson, Clark & Tellegen, 1988).

Firstly, a normality test (Shapiro Test) was done and found that both PA and NA were not normally distributed, therefore nonparametric tests were applied for further analysis. The descriptive statistics are presented at the Table 19.

Positive Affects (PA)

The positive mood of participants did significantly improved over the 8-weeks of the MSDC intervention, [$\chi^2(4) = 8.612$, p = .072]. From the start of the intervention (Session 1, Mdn = 31.50) to the end of it (Session 5, Mdn = 33.00), there was significant improvement [z = 753,

Table 19: Descriptive Statistics for Positive & Negative Affects Scores

Qs:PANAS	Session/Meeting	1	2	3	4	5
Positive Affects (PA)	Mean	31,84	32,41	31,77	31,21	32,63
	Median	31,50	33,00	32,00	32,00	33,00
	SD	5,76	6,27	7,68	7,45	7,07
Negative Affects (NA)	Mean	20,70	20,04	20,15	18,83	17,88
	Median	21,00	18,00	19,00	17,50	16,00
	SD	5,87	6,82	6,82	6,70	6,78

PANAS is Positive Affects & Negative Affects Scale, SD is Standard Deviation

Figure 12: Changes of Positive Affects in Comparison to the Norm

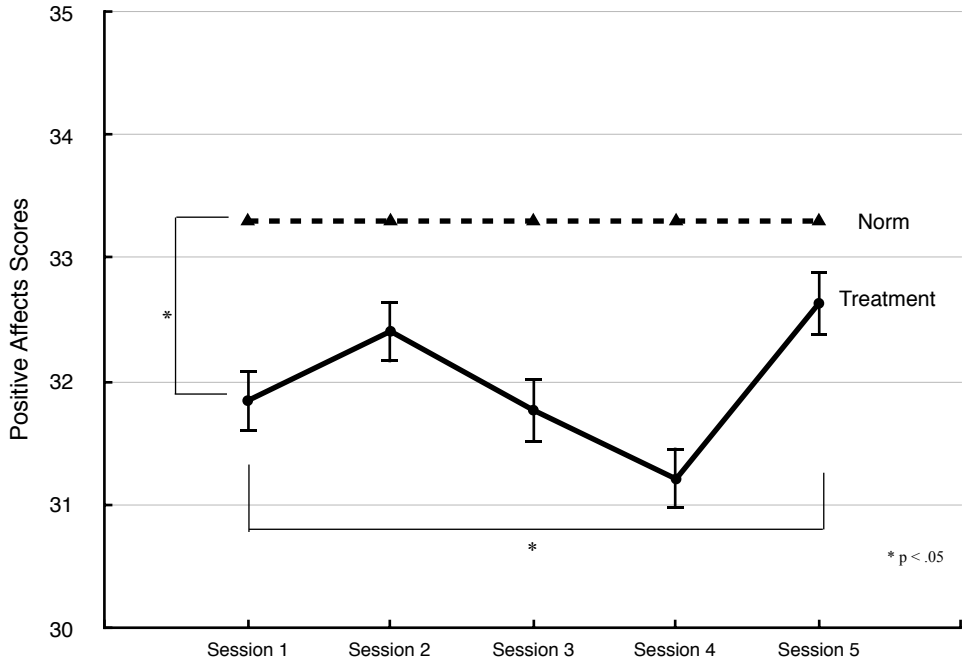
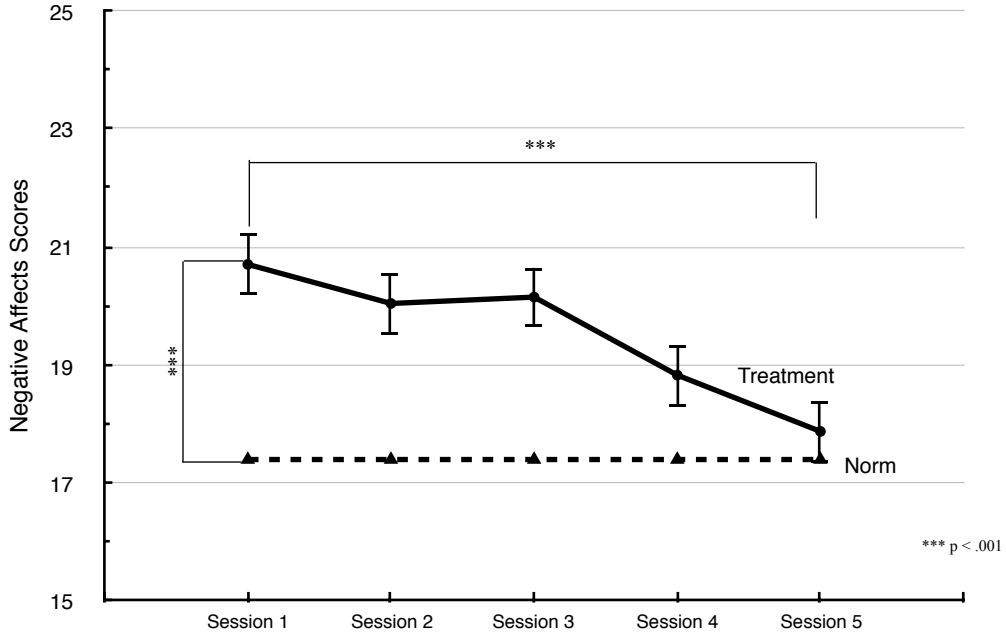


Figure 13: Changes of Negative Affects in Comparison to the Norm



$p < .05$], tested by Wilcoxon Signed-ranks Test. When compared to the norm (M = 33.3) from the original developer of the PANAS (Watson, Clark & Tellegen, 1988) under the term of "past few days", the total PA scores (M = 31.84) of MSDC participants at the baseline was significant lower [z = 849, $p < .05$]. However, at the end of the intervention, the difference is no longer significant [M = 32.63, z = 1,108, p = .693]. The changes of the PA scores is shown at Figure 12.

Negative Affects (NA)

The negative mood of participants improved more significantly over the 8-weeks of the MSDC intervention, [$\chi^2(4) = 20.529$, $p \leq .001$]. From the start of the intervention (Session 1, Mdn = 21.00) to the end of it [Session 5, Mdn = 16.00, z = 1,555.5, $p \leq .001$], also tested by Wilcoxon Signed-ranks Test. When compared to the norm (term "past few days", M = 17.4, Watson, Clark & Tellegen, 1988), the total NA scores (M = 20.70) of MSDC participants at the baseline was significant lower [z = 1,834, $p \leq .001$]. Similar improvement as the PA, the difference with the norm at the end of the intervention was no longer significant [M = 17.88, z = 1,110, p = .702]. The changes of the NA scores is shown at Figure 13.

Overall, the mood (both Positive Affects and Negative Affects) of the participants was significant lower than the norm at the baseline, but the differences lessened at the end of the intervention, in other words, the overall mood of the participants had been improved significantly after the intervention. In addition, the Mindful Self-Development Coaching intervention made more impacts on improving negative moods than the positive ones, as expected.

Results of Dimension 2 - Cognitive Tests

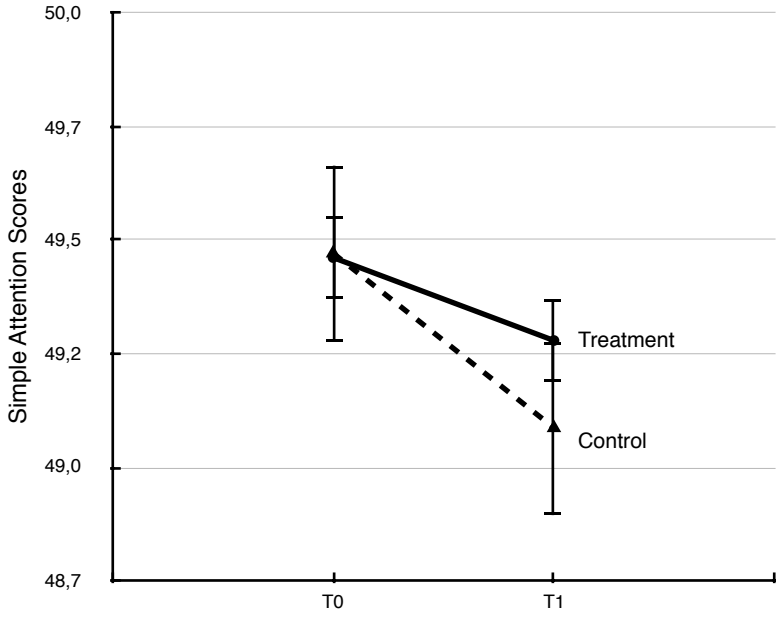
Second dimension of measurement includes three cognitive tests: Conners' Continuous Performance Test-II for simple attention (CPT-II), *Inventar Komplexer Aufmerksamkeit (*INKA, inventory for complex attention; Heyde, 2000) and nonverbal reasoning (Raven's Progressive Matrices Reasoning Test, Raven, 2000; Raven, Raven & Court, 2004). All descriptive statistics are presented at the Table 20, and the detailed results are presented as below:

Table 20: Descriptive Statistics of Cognitive Tests Results

Aim	Group Statistics	Treatment (No. = 35) T0	Treatment (No. = 35) T1	Control (No. = 22) T0	Control (No. = 22) T1
Simple Attention (CPT)	Mean	49,44	49,25	49,45	49,05
	Median	50,00	50,00	50,00	50,00
	SD	1,40	1,63	1,01	1,90
Complex Attention (INKA)	Mean	8,03	9,00	8,55	9,09
	Median	7,50	9,00	9,00	10,00
	SD	2,44	0,42	3,35	3,09
	Mean-att	11,86	12,69	11,68	13,05
	Median-att	12,00	13,00	12,00	12,00
	SD-att	3,17	3,08	2,87	2,28
	accuracy	67,71 %	70,92 %	73,20 %	69,66 %
Nonverbal Reasoning (Ravon's)	Mean	15,00	16,17	15,73	16,32
	Median	16,00	17,00	16,50	17,00
	SD	2,56	1,67	2,59	2,40

CPT is Continuous Performance Test, INKA is Inventory for Complex Attention, -att is number of attempt to solve the problem; SD is Standard Deviation, T0 is baseline or pre- intervention, T1 is post intervention

Figure 14: Changes of Simple Concentration Scores



Continuous Performance Test-II for Simple Attention (CPT-II)

Firstly, normality test (Shapiro Test) was conducted. The findings indicate that the omission and reaction time these two variables were not normally distributed. Hence Friedman's test was then carried to further test whether there could be any difference at two time points (T0 vs T1) on omission scores and reaction time.

Figure 15: Changes of Complex Attention Accuracy in Percentage

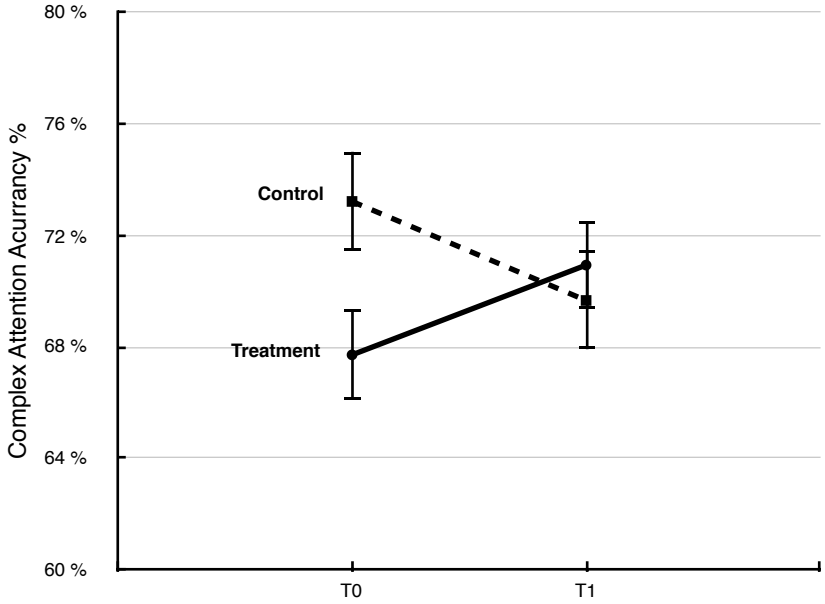
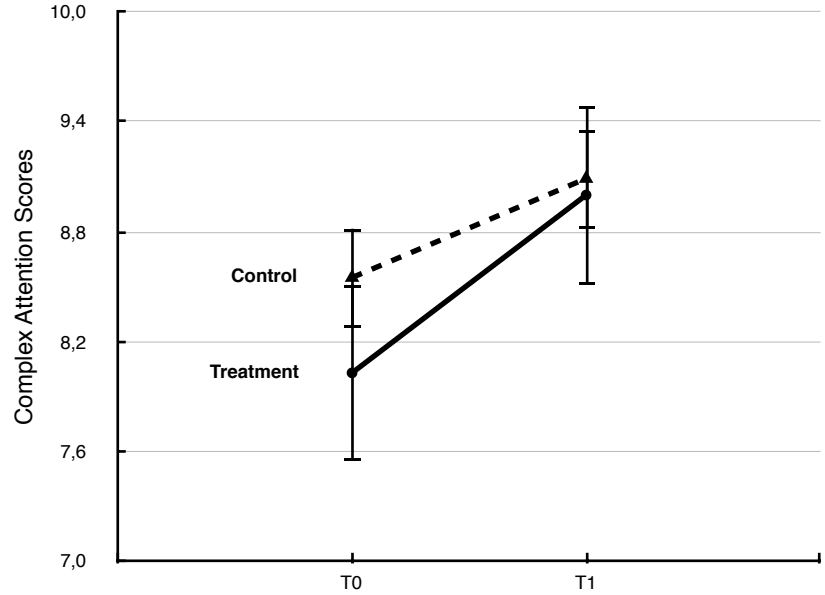


Figure 16: Changes of Complex Attention Scores



The omission scores of participants did not significantly change over the 8-weeks of the MSDC intervention, [$\chi^2(1) = 0.333$, p = .564]. For the control group there was also no differences, [$\chi^2(1) = 0.200$, p = .655]. There was also no differences on reaction time between T0 and T1 for both treatment group [$\chi^2(1) = 0.222$, p = .637], and control group [$\chi^2(1) = 0.533$, p = .465]. Overall, there was no significant differences either between groups nor at different time points.

In conclusion, as the CPT test was originally developed for patients with attention problems, so that for the health population in the current research, a ceiling effects was observed. In other words, both treatment group and control group had high scores at the baseline which prevent any significant changes at the end of the intervention.

Inventar Komplexer Aufmerksamkeit **(INKA, Inventory for Complex Attention)**

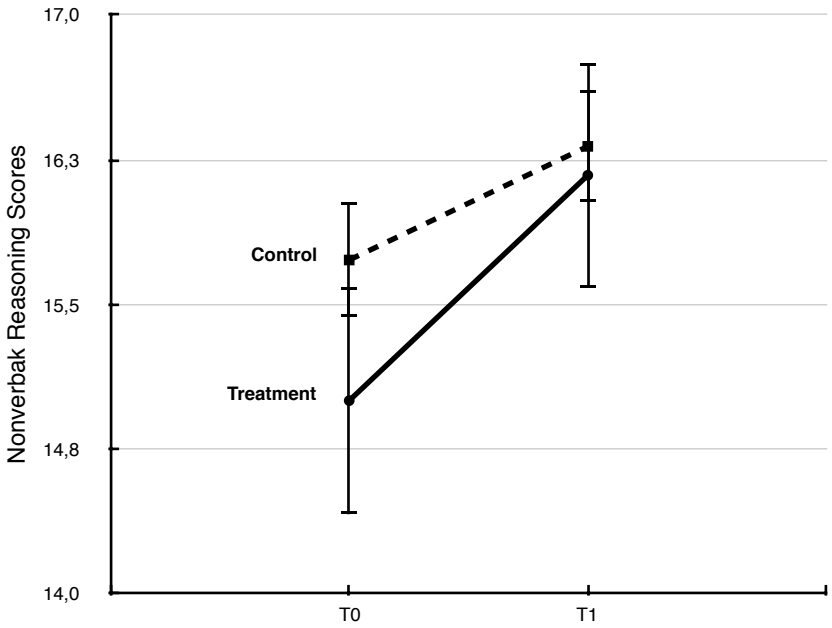
Firstly, the normality test was conducted by the Shapiro test and the result revealed that the INKA scores were normally distributed. Then, an 2x2 ANOVA test was applied with the factors of time (T0 vs. T1) and group (treatment vs control) and found significant effects on the factor of time on the scores [$F(1, 1) = 17.553$, $p \leq .001$]. This means that level of complex attention of the participants (treatment group) was improved significantly after the intervention. However, there is no main effects between groups [$F(1, 56) = 0.902$, $p = .347$]. This indicates that despite the treatment group made significant improvement on the level of complex attention from the baseline to post intervention, the controlled group also made good improvement arguably due to learning effects. Consequently, there was no group differences. Post hoc analyses using Tukey's HSD indicated that no significant difference between groups and different time points.

However, it is interesting to see the tendency of movements between the two groups as illustrated at the Figure 15 and 16. It is easily seen that the treatment group started at a lower level than the control group on the level of complexed attention at the baseline, but after the intervention, the tendency of improvement for the participants was visibly faster than the control group. In particular, when transfer the scores into percentage of accuracy (Figure 15), the tendency of changes for the treatment group was moving up, but for the control group was moving down. This changes of tendency on accuracy presented in percentage demonstrated the Mindful Self-Development Coaching intervention could improve complexed attention even in as short as 8-weeks period.

Nonverbal Reasoning Test (Raven's Progressive Matrices)

Firstly, normality test was conducted via the Shapiro Test on two sets of scores of the nonverbal reasoning test, one set was the number of correct final scores, and the other set

Figure 17: Changes of Nonverbal Reasoning Scores



was the number of attempts to solve given total 18 problems. The findings indicated that both scores obtained at the Ravon's progressive matrices reasoning test were not normally distributed. Hence the Friedman's test was carried to further test whether there could be any difference of those two independent variables are different at the baseline (T0) and after the intervention (T1).

The total accurate scores of treatment group did significantly change over the 8-weeks of the MSDC intervention, [$\chi^2(1) = 7.539$, $p = .006$]. For the control group there was also no differences, [$\chi^2(1) = 1.923$, $p = .166$]. However, there was no differences on the number of attempts between T0 and T1 for both treatment group [$\chi^2(1) = 1.800$, $p = .180$], and control group [$\chi^2(1) = 2.000$, $p = .157$].

When compare the difference between the treatment and the control group, as expected that both groups started at the indifferent baseline tested by Wilcoxon single rank test [$z = 468.5$, $p = .241$]. However, there was also no significance difference on accuracy between the two groups at the post intervention [$z = 465$, $p = .256$]. Similar results were also found for the number of attempts between the two groups both at the baseline T1 [$z = 419$, $p = .524$] and at the post intervention T1 [$z = 407$, $p = .456$]. Even though, the tendency of improvement between the two groups can be easily seen at Figure 17, the treatment group had made faster improvement in comparison to the treatment group.

Results of Dimension 3 - Third Person Behavior Observation

As previously explained, the third dimensional measurement is explorative and had not yet been used for testing the effectiveness of any mindfulness based interventions till date. Therefore, there was extremely little published literature available to guide the current research. The preparation for data analysis started with testing inter-rater's agreement by Cohen's Kappa for two raters, followed by normality test by calculating skewness and kurtosis then converted to z-scores. Next, the homogeneity test was carried out by the Bartlett test. At the end was independence tests. For the main part of data analysis, firstly a two-way ANOVA test with dependent variables Group (treatment vs. control) and Time (pre- vs. post) was carried out to see whether there was any main effects among those variables. After that, paired t-Tests are used to compare the difference between pre- and post intervention for each group separately. Then, independent t-Tests were used to exam the difference between the two Groups (treatment vs. control) at the baseline and at the post intervention. The level of significance was set to be 0.05, and the effect size level, small, medium and large was determined based on Cohen (1998, 1992) as .10, .30 and .50, respectively. At the end, post hoc tests were conducted to wrap up the whole analysis session for the third dimensional measurement.

Inter-Rater Reliability Tests

Two evaluators did the dimension three measurements independently. Both evaluator are summer internship from Scotland, therefore, they do not know any of the people in the Assessment Center videos. They were double blinded on the given videos for evaluation, that means, they did not know which group the observed person belongs to (participants or control group) nor which time the video clip was taken (before or after the intervention). After two trainings, the agreement between the two raters was tested by Cohen's Kappa paired interrupter reliability test. A total of five random sets of ratings were selected and applied the Cohen's Kappa test on each set of the rating, the agreement between the two raters for the selected five video clips were 0.741; 0.682; 0.358; 0.725; and 0.659, respectively. Because of four out of five sets of the data indicated sufficient agreement between the two raters, therefore the inter-rater reliability was at an acceptable level.

Table 21: Descriptive Statistics of the Interview Task Result

Section	Group	Time	No.	Mean	SD	Median	Range	Skew	Kurtosis	SE
Nonverbal Behaviors	Treatment	T0	25	33,82	3,03	33,00	29.5-40	0,54	-0,82	0,61
		T1	25	35,74	4,67	36,00	29-45	0,46	-0,78	0,93
	Control	T0	17	34,21	4,17	34,50	26-41	-0,18	-1,00	1,01
		T1	17	34.62	3,23	35,50	27.5-40.5	-0,47	-0,21	0,78
Overall Perception	Treatment	T0	25	14,74	1,98	15,00	10.5-18	-0,23	-0,64	0,40
		T1	25	15,60	2,12	15,00	11.5-19.5	0,13	-0,84	0,42
	Control	T0	17	14,66	1,66	14,50	12-17	-0,06	-1,49	0,40
		T1	17	14,76	1,56	15,50	12-17.5	-0,21	-0,86	0,38

Note: SD is Standard Deviation, SE is Standard Error, T0 is baseline or before the intervention, T1 is after the intervention

Figure 18: Nonverbal Behavior Results of the Interview Task

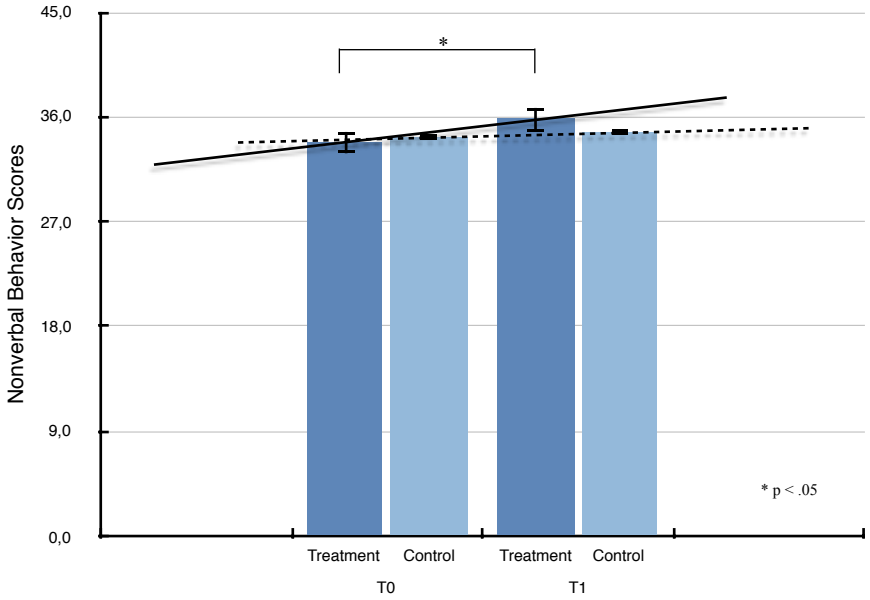
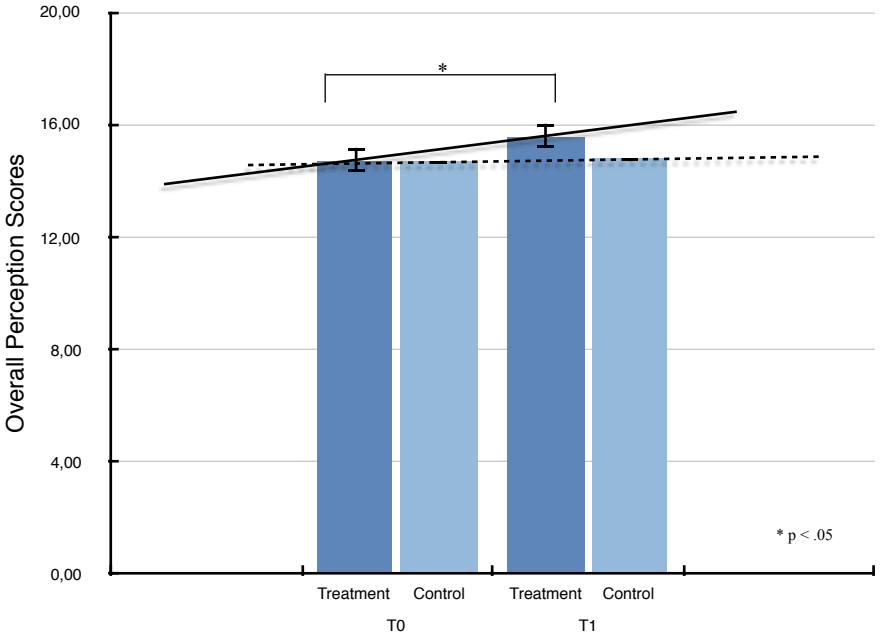


Figure 19: Overall Perception Results of the Interview Task



Results of Observation from the Interview Task

Both nonverbal scores and overall perception scores are proven to be normally distributed as can be seen from the skew and kurtosis values from the descriptive statistics, the distribution of both scores are also homogeneity as tested by the Bartlett test.

The overall nonverbal scores of the treatment group did significantly improved from baseline [T0, M = 33.82, SD = 3.03] compares to the end of the 8-weeks of the intervention [T1, M = 35.74, SD = 4.67] examined by the paired-samples t-Test, [t (24) = 1.994, $p \leq .05$]. For the control group there was no significant differences [T0, M = 34.21, SD = 4.17; T1, M = 34.62, SD = 3.23, t (16) = 0.649, p = .263] as expected. However, the difference between participants and the control group at the post intervention check point (T1) was not significant [t(40) = 0.921, p = .181]; the effect size was medium, Cohen's d = M/Sp = .34. The comparison of changes between the two groups are illustrated at the Figure 18.

The overall perception scores of the treatment group did significantly improved from baseline (M = 14.74, SD = 1.98) compared to the end of the MSDC intervention (M = 15.60, SD = 2.12) again it was examined by the paired-samples t-test,[t (24) = 1.882, $p \leq .05$]. For the control group there was no significant differences [T0, M = 14.66, SD = 1.66; T1, M = 14.76, SD = 1.56),t (16) = 0.361, p = .362] as expected. However, same as the Nonverbal section, the difference between participants and the control group at the post intervention check point (T1) was not significant tested by Welch t-Test: [t(40) = 0.921, p = .075] ; and the effect size was also small, d = .23. Again, the comparison of changes between the two groups are illustrated at the Figure 19.

Results of Observation from the Group Introduction Task

Similar procedure had been carried out for analyzing the group introduction task. Firstly, as it can be seen from the Figure 20, at the baseline (T0), the average score of participants on overall nonverbal factors was M = 40.43 (SD = 4,82). In comparison, the mean score for the control group was at the same comparable level M = 41.83 (SD =3,57) with the treatment group. After the invention, the mean score for participants was remained at the similar level M = 40.29 (SD = 4.81), but for the control group the mean scores was dropped to M = 38.94

Table 22: Descriptive Statistics of the Group Introduction Task Results

Section	Group	Time	No.	Mean	SD	Range	Skew	Kurtosis
Nonverbal Behaviors	Treatment	T0	35	40,43	4,82	30-50	0,10	-0,14
		T1	35	40,29	4,81	33-51	0,33	-0,38
	Control	T0	18	41,83	3,57	35-47	-0,62	-0,20
		T1	18	38,94	2,71	33-43	-0,41	-0,76
Overall Perception	Treatment	T0	35	19,03	3,35	14-10	-0,68	0,35
		T1	35	18,71	0,73	5-25	-0,98	1,69
	Control	T0	18	20,17	3,26	12-25	-0,94	1,77
		T1	18	19,00	3,27	9-23	-1,76	4,34

Note: SD is Standard Deviation, T0 is baseline or before the intervention, T1 is after the intervention

Figure 20a: Nonverbal Behavior Results of the Group Introduction Task

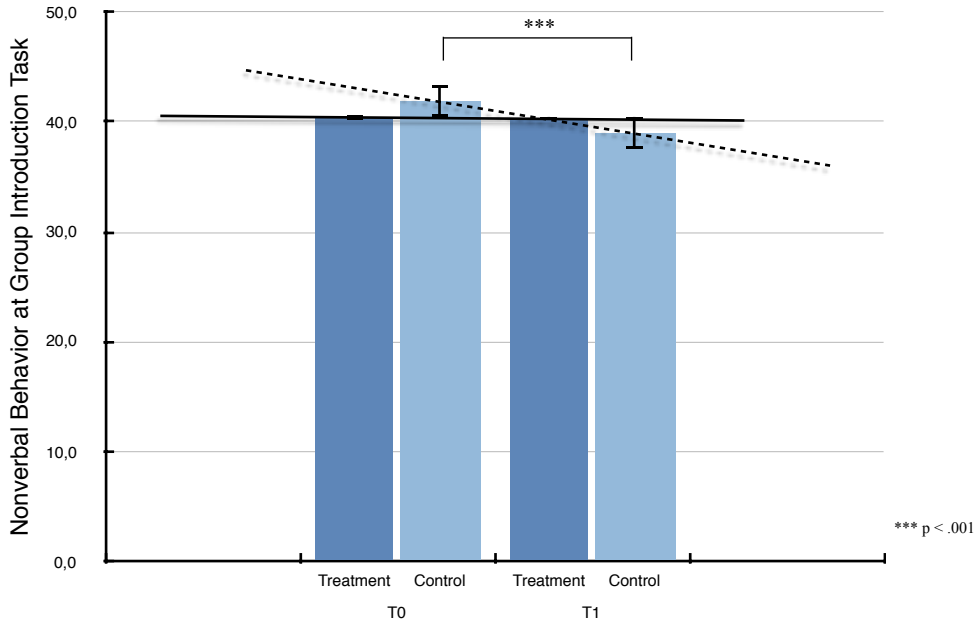


Figure 21a: Overall Perception Results of the Group Introduction Task

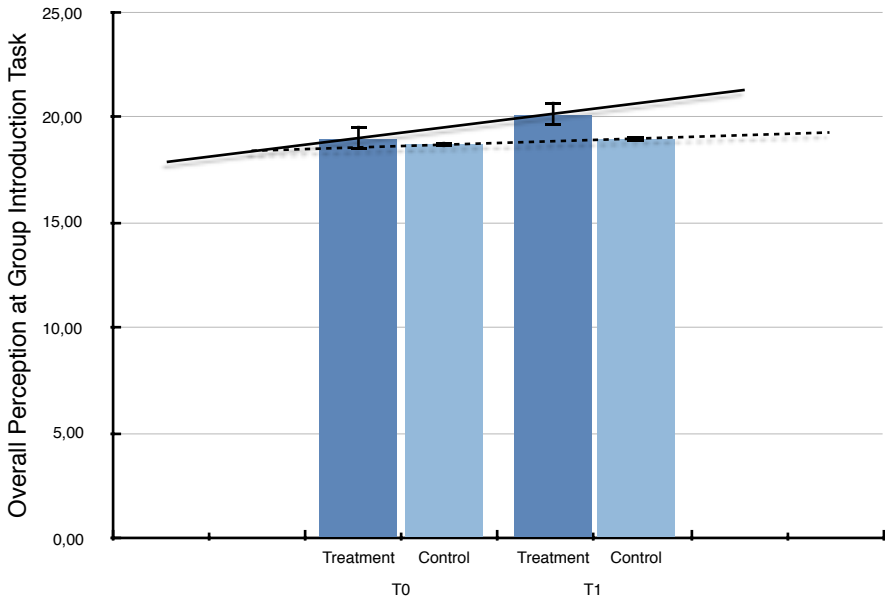


Figure 20b: Changes of Nonverbal Behavior Scores at the Group Introduction Task

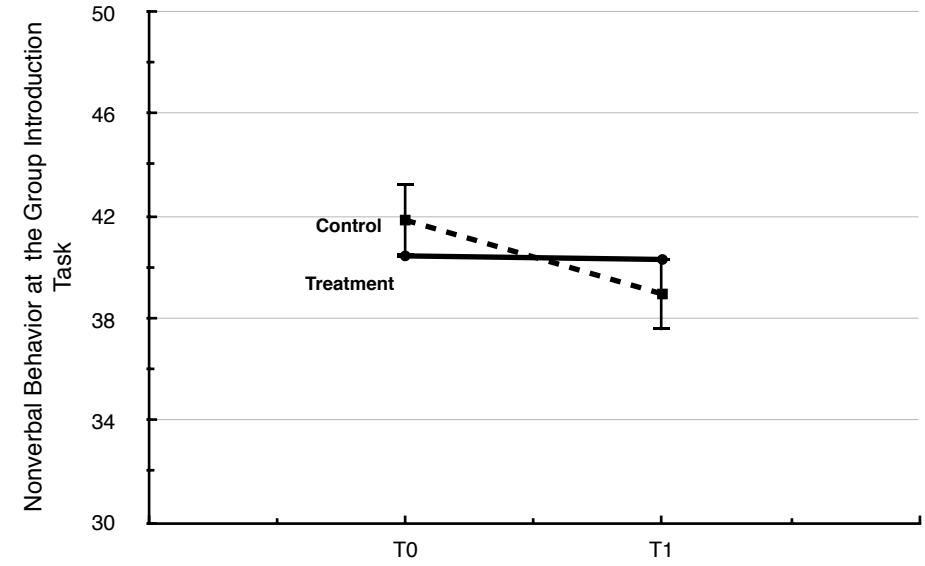
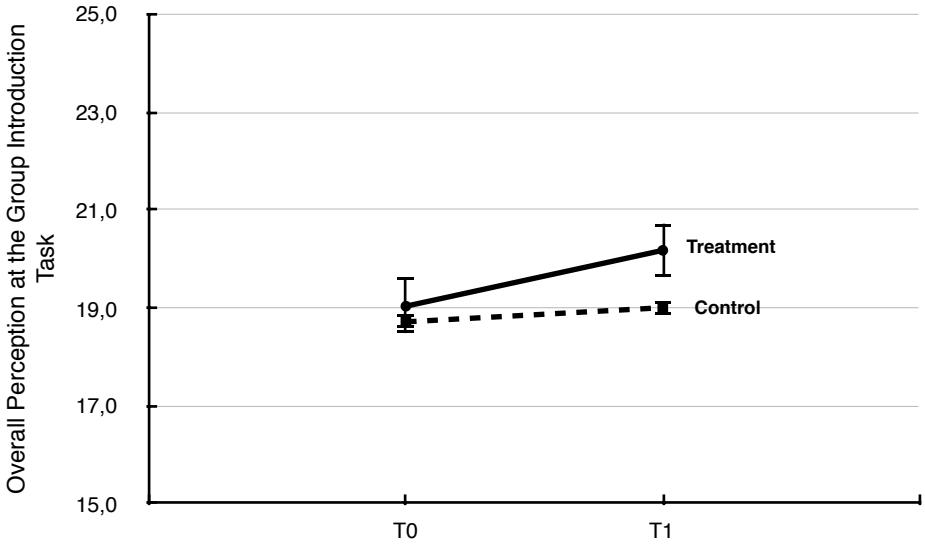


Figure 21b: Changes of Overall Perception Scores of the Group Introduction Task



(SD = 2.71). Similarly patterns were also found at the overall perception subsection for the group introduction task. At the baseline (T0), the average score of participants on overall perception was M = 19.03 (SD = 3.35), and the control group was slightly higher M = 20.17 (SD = 3.26). After the invention, the mean scores for participants was slightly decreased to M = 18.71 (SD = 0.73). Again, for the control group was further decreased to M = 19.00 (SD = 3.27). Two tailed paired t-Tests were carried out to test whether there was any difference on scores between pre- and post intervention for both groups, a significant deduction was found

on level of Nonverbal behavior for the control group:[t (17) = 2.969, $p \leq .001$] (see Figure 20a & Figure 20b). There was no other significant difference was found (see Figure 21a & Figure 21b).

As a conclusion, the results indicated the participants were same comfortable and aware of their nonverbal cues during the group introduction task at the pre- and the post intervention Assessment Centers. There was no visible differences at the two time points. While the control group despite better starting level at the baseline, eight weeks later they appeared to be significant less comfortable and aware of their nonverbal language cues. Therefore at the post intervention Assessment Center, the control group was viewed as less comfortable than the participants, the deduction was also significant. Similar findings from overall perception sub-section, participants had on average less good impression at the baseline compared to the control group, yet after the 8-weeks Mindful Self-Development Coaching intervention, they made some positive changes hence they were perceived as more friendly and sympathetic by the two observers, and also feel better about themselves.

3.6. Discussion

Discussion of Dimension 1 - Self-Report Questionnaires

The results of the first dimension of measurement were as hypothesized. Firstly, participants and the control group started at the baseline without any significant difference in terms of how mindful they were (FFMQ), how much stress they perceived in their daily life situations (PSS), how satisfied they were with their life in general (SWLS) and how well they treated themselves at difficult times (SCS). Then after 8-weeks Mindful Self-Development Coaching intervention, participants demonstrated significant and positive improvement on all four perspectives. In particular, when compared with the control group, participants of the MSDC intervention appeared to be more mindful in general, and also better in observing what is going on around them, acting with more awareness, being less judgmental and less automatic responding. They were also slightly better in describing their inner feelings, but this improvement was not significant when compared to the control group. The findings were

very similar to previous mindfulness based interventions (Baer, Smith, Lykins, Button, et al., 2008; Heidenreich, Ströhle, Michalak & Zarbock, 2011; de Bruin, Topper, Muskens, Bögels & Kamphuis, 2012).

At the same time, participants perceived significantly less stress in their daily life situations in comparison to the control group. However, this does not mean that they were facing fewer challenges and stressors in life. As a matter of fact, almost every Mindful Self-Development Coaching intervention group ended shortly before the exam period, and more than half of the participants were students and had to deal with prior exam anxiety and stress, at the same time they also had to take time off for the required daily mindful practice, which was about 45 minutes each day, six days per week. Interestingly, the results indicated that those participants who took more time to practice mindful mediation (e.g., more than 4 times per week), instead of feeling being more stressed due to the more additional time being away from their daily duties, they perceived significantly less stress than those who only practiced once per week. This finding indicates that mindful practices (in particular meditation) can be active stress reduction techniques, especially during high-stress periods like preparing exams. Similar stress reduction effects are also found in many similar mindfulness based interventions (Kabat-Zinn, 1982, 1990; Carlson, Ursuliak, Goodey, Angen & Speca, 2001; Chiesa & Serretti, 2009; Cohen-Katz, Wiley, Capuano, Baker, et al., 2005; Grossman, Niemann, Schmide & Walach, 2004).

In addition, after the MSDC intervention and in comparison to the control group, participants were significantly kinder and more compassionate towards themselves, especially when they made mistakes or happened to be at difficult life periods. Participants were reported to be less judgmental and critical towards themselves, they were able to detach from the situations and then observe them from a more objective manner. They also appeared to be less defensive and automatic reactive. This loving and accepting way of handling was not only applied to participants themselves, but also applied to those around them. This finding supports previous similar studies in mindfulness related self-compassion (Neff, 2003b; Neff, Hseih & Dejitthirat, 2005; Gilber & Procter, 2006). As previously explained, self-compassion skills is highly corrected to clear boundary setting, realistic career planning, and deep connection with one's own body. Hence, an individual who is more compassionate

of the self, the better chance he/her is saved from the risk of being burned out, regardless the natural of the job. The significant results achieved by participants at the self-compassion test, indicates that participants in comparison to the control group would be more resistance to the risk of being burned out.

Participants were also reported to be significantly happier with their lives in general after the Mindful Self-Development Coaching intervention than at the baseline. However, unexpectedly, this significance did not apply when compared with the control group. It seems that at the post invention point, the control group, without any intervention, was also reported to be happier than at the baseline. This is an interesting finding, it suggests that even though the participants become more mindful and self compassionate, at the same time they perceived significantly less stress after the invention compared to the control group, however for whatever reason, they did not automatically feel the same significant level of life satisfaction in general. This finding contradicts with previous mindfulness researches (Brown & Ryan, 2003; Brown & Kasser, 2005; Carmody & Baer, 2008; Kong, Wang & Zhao, 2014; Mackenzie, Poulin & Seidman-Carlson, 2005). The reason of unexpected improvement on the control group on the general level of life satisfaction is unknown and also difficult to interpret.

All the improvements discussed above were sustainable after three months upon the completion of the Mindful Self-Development Coaching intervention. The significance found at the end of the intervention lasted even after three months, without any exceptions. There was slide decline on the level of significance at the followup check point. This may be due to less regular mindful practice at home. In addition, this could also be due to the lack of regular group support.

Lastly, the results obtained from the first dimensional measurement are in line with other similar mindfulness interventions in the meta-analysis done by Grossman, Niemann, Schmidt & Walach (2004). They reported an average effect size of 0.05 for both controlled and uncontrolled studies.

All in all, the results from the first dimensional measurement suggested that the participants become more mindful, more satisfied with their life and also kinder towards themselves, at the same time they perceived also less stress after experiencing the 8-weeks

long Mindful Self-Development Coaching intervention, even during the stressful exam preparation period. In addition, the newly established positive changes were long lasting and sustainable after at least three months upon the completion of the intervention.

Discussion of Dimension 2 - Cognitive Tests

Results from the second dimensional measurement demonstrated some fixed findings. Firstly, both participants and the control group have achieved high scores on the simple concentrate test (CPT) both at baseline (T0) and at post intervention (T1), hence as a ceiling effect not much improvement can be made for both groups. The same CPT test has not been used in any other published mindfulness based interventions, hence no comparison could be made. However, one recent study demonstrated that CPT scores were found to be correlated with mindfulness as a trail character measured by the Philadelphia Mindfulness Scale (Ruocco & Direkolgu, 2013). The participants reported to be more mindful were also achieved higher CPT scores. However, in that experiment a specific score of CPT, Variability of Standard Error, was used. It measures consistency of response speed and requires a special equipment. Rocco and Direkolgu explained further, "it differs from the conventional method of calculating the standard error of reaction times to target stimuli because it is considered a within-respondent index of variability… Poorer scores on this variability of standard error indicates a diminished ability to sustain optimal performance level throughout the continuous performance task" (p.228). As a result, they found a specific correction between reaction time variability and the awareness sub-scale of the chosen mindfulness scale. However, when the current research was designed and conducted, such knowledge and equipment was not available to the author. Future implementation would be to exam the variability of the standard error of the CPT test, and its correlation with the treatment group and the control group in the future researchers.

Secondly, participants demonstrated significant improvement after the intervention in terms of complex concentrate ability tested by the INKA test and nonverbal reasoning skills tested by Ravon's progressive matrix. Even though the significance was no longer there when compared to the control group, the tendency of faster development from the treatment

group can be seen from the Figure 14 till Figure 17. To the best knowledge of the author, this is the first evidence of the effectives obtained from a mindfulness based intervention measured on the aspect of cognitive skills. As previously explained that the natural of mindfulness is being at the present moment and being aware of the self and the surroundings, therefore it has been long assumed that meditation would improve level of attention and awareness (Jha, Krompinger & Baime, 2007). However, the cognitive ability, such as intelligence, attention and nonverbal reasoning, could not easily been improved during adulthood (Willis, 1990, 2001). The 8-weeks intervention is definitely a rather short period of time to make significant improvement for the adults participants of the current research.

All in all, the second dimensional measurement on cognitive tests is aimed merely as an additional evidence on the effectiveness and benefits of practicing mindfulness. The found significant improvements for the treatment group on complexed attention and nonverbal reasoning tests are encouraging evidence on the benefits of practicing mindfulness and the effectiveness of the current Mindful Self-Development Coaching intervention.

Discussion of Dimension 3 - Third Person Behavior Observation

The third dimensional measurement as previously explained, was explorative and the first known attempt to measure the effectiveness of mindfulness based intervention. The raw data obtained from this third dimension was rich and massive. Within limited time and resources, analysis was solely focused on two selected tasks, the interview and the group introduction. The results were collected on two perspectives, nonverbal behavior and overall perception. The findings were not exactly as expected, however they provided valuable insight for further exploration. At the interview task, the nonverbal behavior presented from participants were viewed as significantly positive after the 8-weeks intervention, in particular, the uprightness, openness and stableness of the nonverbal presentation. In contrast, as expected, not much difference could be observed from the control group. However, the differences between participants and the control group was not as expected to be significant at the post intervention. The interesting point was that the tendency of development from participants was visibly faster than the control group, as illustrated in the Figure 18.

Similar results were also found from the overall perception aspect of the interview task. The participants appeared to be significantly more comfortable, sympathetic and friendly after the 8-weeks long intervention. On the other hand, the control group as expected remained at a similar level as the baseline. Though the difference between participants and the control group at the post intervention interview was not significant, but the sized effect was medium. The tendency of faster improvement on the overall impression of participants was also visible than the control group as demonstrated in the Figure 19.

In conclusion for the interview task, the participants demonstrated significant improvement both on nonverbal presentation and their overall impression. They appeared to be more aware of themselves, more upright and open, more friendly, and even more sympathetic. The control group did not make any significant changes. However, the improvement which the participants had made was not statistically significant when compared to the control group at the post intervention. The findings provides an interesting insight on positive correlation between mindfulness and nonverbal cues, as illustrated in the Figure 18 and 19. Future research could test more specific nonverbal behavior cues at a longer period (e.g., 3-6 months) after completion of a mindfulness based intervention.

At the group introduction task, participants in comparison to the control group at the baseline were seen in a less favorable position on both nonverbal presentation and overall perception. However, after 8-weeks of the Mindful Self-Development Coaching intervention, they appeared to be more aware of their nonverbal behaviors, such as their postures, gestures, and eye movement in comparison to the control group. On the sub section of overall perception, they were also perceived as more comfortable with themselves, more friendly and sympathetic by the two independent observers.

It was interesting that the control group slipped significantly backwards on the mean level of their nonverbal behavior at the post intervention Assessment Center, while the treatment group maintained their impression. It could be that through the Assessment Center at the second time made them less motivated and attentive, so that they appeared to be less impressive. Motivation is a key factor in the current study, and how much motivation has influenced nonverbal behavior presentation can be an potential and yet challenging future research topic. It also could be that the second Assessment Center took place in the same

room as the full day meeting room, naturally the treatment group had a great advantage in terms of familiarity of the surroundings. As many previous studies have found that environment has great effects on human's emotional and stress level (e.g., Cohen, Evans, Stokols & Krantz, 1986; Evans & Cohen, 1987; Knapp & Hall, 2002). In addition, due to the cost and resource limitations, it was not possible to allocate only one participant in each post intervention Assessment Center. In other words, the treatment group had also another advantage on meeting someone familiar at the second Assessment Center. All in all, the treatment group had a great degree of advantages in being familiar with the surroundings and the personnel at the post intervention Assessment Center. Thus, their stress level at the Assessment Center could be easily maintained.

In the conclusion of the group introduction task, the results from both nonverbal presentation and overall perception show that the participants retained their performance at a similar level at the pre- and post intervention Assessment Centers. However, the nonverbal presentation of the control group was significantly worse at the post intervention Assessment Center than at the baseline. The overall impression, however, remained at the same level. There are a number of external methodological factors which could alter the results, therefore, any interpretation needs to be carefully done. Further research is required on more detailed and focused measurement in order to draw a definite conclusion.

As previously discussed, the changes on behavioral level is strongly corrected from habits and 40% of the actions people perform each day are not actual decisions but habits (Duhigg, 2012), therefore any visible changes can only start with awareness and willingness for changes. Without this awareness nothing would happen at the initial place. Then it also requires a sustainable amount of time for the downloading process from the consciously level to the behavioral level (Ruedy & Schweitzer, 2010). The Mindful Self-Development Coaching intervention is designed for eight weeks. It could only serve as an initiator or a trigger for further development if desired and determined by the participants. The tendency of changes presented in the third dimensional measurement on both nonverbal languages and overall perception is encouraging for further improvement. For example, taking the change of habits into consideration, instead of running the second Assessment Center immediately after

the intervention, but a few weeks or even months later. The changes of nonverbal behaviors and general impressions could be more visible and easier to be measured.

4. General Discussion

Overall, evidences from the Pilot and the Main studies indicate that the participants have improved in various perspectives at multidimensional level after undergoing the whole 8-weeks Mindful Self-Development Coaching intervention. On the first dimension of self-reported questionnaires, they claimed themselves to be more mindful, satisfied with their lives and to be kinder and nicer towards themselves during the difficult times, at the same time they perceived less stress in their daily life situations. Those above noted improvements which were also sustainable and with long term effects after the intervention, observed at the three months' followup check point. On the second dimension of cognitive skills, participants demonstrated improved complex attention and nonverbal reasoning ability. In other words, they were more intelligent and capable of solving complex problems after completing the intervention. On the third dimension of observable behaviors, participants appeared to be more aware of their nonverbal presentations, which included their posture, gesture, movement, also facial expressions and eye movement. As a result, participants were viewed as more friendly, sympathetic and feeling good and comfortable about themselves than the control group by the two observers. At the same time, there are also a number of implementations and developments which are unique to the current research, and they are the full day meeting setting, applying Assessment Center as a multi-dimensional measurement tool and combination of mindfulness and self-development. The advantages and disadvantages of those innovative attempts will be critically discussed below.

4.1. Discussion of the Innovative Aspects of the MSDC Intervention

Biweekly Full Day Meeting Setting

In comparison to the traditional mindfulness based intervention with weekly two to three hours meeting setting, the advantage of full day meeting format is that provides opportunity for longer sitting meditation and intensive group interaction. These two factors could provide

better chances for potential changes and in-depth personal development. For each meeting of any mindfulness based intervention, regardless of the length, it requires a period of time at the beginning for participants to settle down both physically and emotionally, so that they can be relaxed and be at the present moment with the group. Likewise, it also requires a similar amount of time for participants to be ready to depart and rejoin the outside world, also to reconsolidate what has been learnt and experienced throughout the meeting. This process is important for participants to be willing to apply the newly learnt mindful techniques at home without group support and guidance. In the current Mindful Self-Development Coaching intervention, the settle down session is called "check in" and and wrap up session is called "check out". Both sessions serve as mindful talking and listening practice, at the same time they also have the function of enhancing group support and regulation, which is an important anchor on long lasting positive changes (Chang et al., 2004; Duhigg, 2012; Gilber & Procter, 2006). Typically, such "check in" and "check out" sessions require time. On average each participant has one to two minutes to check in, and again one to two minutes to check out. In the current study, group size is 16, which means each "check in" and "check out" session would be around half an hour without being rushed. The full day sitting format has the luxury of allowing each participant to feel free to express themselves during the "check in" and "check out" session, rather than being "reminded" to shorten their talking.

In addition, the length of sitting meditation increases gradually throughout the intervention. At the last meeting the length increases to one hour. Most participants had never achieved such length when they meditated alone at home. From the feedback obtained in all the seven groups in the Main Study, most participants reported that they felt content and even proud to be able to sit and meditate for one hour. This positive and rewarding feeling gives confidence and serves as an initiator for further mindful practice for the long term. Full day meeting setting gives the possibility to plan and implement long sitting meditation without shortening other exercises.

Furthermore, during the full day setting, participants have the choice to eat lunch as a group. In the current study, there is the facility to hold group lunch and it is strongly recommended. The group lunch provides an opportunity for social interaction with other group members for experience sharing and establishing contacts. This enhances the group

support in a less formal and more private manner. In addition, participants can also practice how to eat mindfully in a group, because many of them frequently have lunch with their colleagues or their mates. When eating in a group, it is rather difficult to remain mindful, but when the whole group is trying to be mindful while eating, then it is easier to each individual to achieve mindful eating in a social environment. After an amount of practice, participants could also transfer the learnt mindful eating in the Mindful Self-Development Coaching group to their daily life situation. In conclusion, the in-depth of practice and intensive group support are the two biggest advantages of the full day meeting setting.

However, on the other hand, there are also a number of disadvantages of the full day meeting setting. Firstly, the frequency of the meetings has been reduced from weekly to biweekly. The two weeks' gap between meetings can be an issue, especially at the beginning of the intervention if someone is very new to the concept of mindfulness and is unsure whether he or she has done the practice in the right way. Then the two weeks' gap could be too long and too challenging. Therefore, all participants are offered private coaching sessions and encouraged to book with the trainer directly when they feel the need of it. Even though, the option is still not the replacement for regular group meeting. The group support in such mindfulness based intervention is proven to be essential and important by a number of studies (e.g., Chang, et al., 2004; Gilbert & Procter, 2006; Klatt, Buckworth & Malarkey, 2009). The other issue is that if one participant misses one meeting for whatever reasons, then there will be a four weeks' gap period between the two attended meetings. This could easily lead to dropping out of the whole program. This was indeed the case for three out of the total five dropouts of the intervention.

The two weeks' longer gap between meetings also requires a lot of self motivation and self-discipline in order to carry daily mindful practices at home alone as recommended. In the case of lacking self-discipline, the participants can easily find excuses to miss out from daily meditation practice. Missing one or a few of the daily practice may not sound that serious, however the consequences are more than visible, one of the major consequences is the breaking of the cycle of creating a new habit. A new habit can only be established by continuous repeating of the same action for a minimum of 28 days (Duhigg, 2012). Once the cycle is broken, the whole process has to start from the beginning again. The facts observed

from the Main Study prove the case. At the beginning of the intervention, regardless of the previous meditation experiences, the whole group started at a similar level of enthusiasm and motivation. However, from the third meeting on the 5th week of the intervention, the group was naturally divided into two tiers. One tier was those participants who managed to do regular practice, they were more delighted to share their experiences, they also reported to be motivated to go further. At the same time they also enjoyed the benefits of practicing mindfulness from various channels. The other tier was those participants who could not manage to do regular practice for whatever reasons. Hence, at the meetings, they were either reluctant to share their experience or regretted not to be able to be self-disciplined, and naturally they also reported few benefits or changes. Therefore, the amount of commitment, on average 45 minutes per day during the intervention, was clearly communicated not only at the free open talks, but also throughout the whole 8-weeks' long Mindful Self-Development Coaching intervention. Moreover, the refundable 100 EURO deposit paid at the beginning with clear refunding policy serves as a strong motivator and incentive to complete the whole program. The refundable deposit is also in line with the design of the MSDC intervention, that is to challenge the "normal" way of thinking and doing. Participants will not pay for completing the training program, but they would be charged if they break their own commitment without convincing reason (e.g., medical reasons). The refundable deposit serves as one of the practices for being conscious on decision making and being aware of the consequences which come along with it.

Last but not least, full day meetings can only be carried out during weekends in order to make it easier and realistic for participants to commit. This restriction significantly limits those with family duties or those who wish to spend weekends on other activities. Consequently, only seven out of total the 111 participants are married with children, and within those only five are with children under the age of 10. This could only be amended if the intervention is classified as a part of the employees' further education scheme and the training day is calculated as a working day, or at schools as a part of soft skills training for which students can receive credits in return.

Applying Assessment Centers As A Measurement Tool

Applying the Assessment Centers, a designed high-stake social evaluation situation, as a measurement has certain advantages. The tool of Assessment Centers can be a strong predictor for selection and promotion readiness (Arthur & Day, 2011), in particular with the purpose of further training and coaching. Hence, 2/3 of Fortune Top 500 companies of the world are using Assessment Centers to a certain degree (Mayes, 1997). Therefore, the need of experiencing it and practicing it, especially in a university town, is overwhelmingly high. Hence, applying Assessment Centers as a measurement tool in the current research made participants recruitment was a much easier job. This was particularly true for the control group recruitment. Even only less than 30% of the control group has done the second Assessment Center experience, their participation served as mediator for the group effects. In other words, mixing the Assessment Center attendees with the intervention participants increased social pressure in a group phenomenon. At the same time, it reduced the advantages of the group familiarity of participants at the post intervention Assessment Centers. As a consequent, no more than three participants were placed at the same post intervention Assessment Centers.

Secondly, the length of each Assessment Center was four and half hours, which was significantly longer than typical reported designed stressful evaluation situations (e.g., Cuddy, Wilmuth & Carney, 2012). During the four and half hours, the participations were under exposure of stressful simulations in three different dimensions: individual (cognitive tests), interpersonal (interview) and social (group challenge). This provides rich information on how an individual copes with various situations. The longer duration itself already served as a stressor, in combination with the name “Assessment Center” and the presence of the video cameras in the room. Altogether the created stress was visible, specially at the beginning of the Assessment Center. This was also the reason why the task of self-introduction in the group was selected for the third dimension measurement.

However, there are also a number of disadvantages of applying Assessment Centers as a measurement tool. The biggest disadvantage was the high cost of running Assessment Centers in comparison to other measurement tools. The cost includes human resource,

equipments and facilities, and time spent on communication, pre-arrangement and training of the personnel. Therefore, Assessment Center is the most expensive Human Resources tool in the business, and the estimated cost for each candidate is $2,000 in the year 2000 (Arthur & Day, 2011). The cost of human resource, including the time of training qualified assessors and the time of those assessors spent at Assessment Centers, contributes the greatest proportion of the total cost. This case also applied to the current research. For each Assessment Center, four persons were required and each of them were needed to be trained at a different length according to their roles. It would not be manageable for the current privately funded research, if the author could not exchange the cost of human capital with private training, coaching and constructive feedback sessions.

The other disadvantage is that Assessment Centers are not an ideal repeated measurement for a short period of time. The overall validity and reliability of Assessment Centers are at a reasonable level, though it highly depends on the design, assessing criteria and delivery/execution (see Arthur, Day, McNelly & Edens 2003; Gaugler, et al., 1987). However, to the best knowledge of the author, till date none of published studies could prove that Assessment Centers have a good test and re-test validity within a one year time frame. One study suggested that the same Assessment Center can be used as a training tool for developing potential talents and can be applied repeatedly on annual bases (Rupp, et al., 2006). This can be due to the nature of the Assessment Centers. Participants can quickly accumulate learning effects after each experience, and those learning effects are rather complex to estimate or calculate by existing scientific methodology. In addition, in the current research, in order to make the pre- and post Assessment Center comparable, the same tasks were applied. In such case, learning effects can play an important role on the results obtained. At the same time, the degree of boredom increases during the second Assessment Center experience, and the effects of boredom on nonverbal behavior and general impression are also largely unknown, hence it is inevitable to alter the results obtained from the third dimension measurement.

Combination of Mindfulness and Self-Development

Till date, an increasing number of mindfulness based intervention combining the concept of mindfulness with various other needs, such as stress reduction (e.g., Mindfulness Based Stress Reduction); acceptance and self-compassion (e.g., Acceptance and Commitment Therapy), depression relapse (e.g., Mindfulness Based Cognitive Therapy), and so on. To the best knowledge of the author, the current study is the first attempt to combine the concept of mindfulness with self-development. As previously explained, the human natural is to develop the self and to know thyself. For instance, according to the rectified version of Maslow's Hierarchy of Needs, self-transcendence is on the top of the pyramid as the highest status of a human being (Maslow, 1969; Koltko-Rivera, 2006). The Buddha also made clear that the only way to enlightenment is to abandon the view of the self, and the method he recommended was *vipassana* meditation. It is commonly known as mindful meditation (Hart, 1987/2010). It seems the two concepts, mindfulness and self-development, naturally join each other. The current study focused on the combination of the two concepts and had benefited from a number of advantages.

Combining mindfulness with self-development made the fully day meeting more dynamic and interactive. Participants had more possibilities to experience mindfulness in various settings, such as mindful meditation in sitting, moving, eating, talking, listening and interacting. At the same time, the specially designed pen-and-paper self-development exercises built a bridge between abstract concept mindfulness and applied rational decision making. Feedback from the participants is said that they enjoyed the meetings, despite it was full day long and with a lot of challenges. At the end of each meeting, they were looking forward to the next one. This might be one of the reasons of the low dropout rate.

The other advantage is that the focus on self-development set strong anchor on "do it yourself" in order to "develop yourself". That is, do the first, second and every single step yourself in order to achieve any desired development. This was reflected by the basic principles of the Mindful Self-Development Coaching intervention (see Appendix 15). With "self-development" as the main principle of the intervention encouraged the participants to be self-disciplined and to do the recommended mindful practice (homework) on regular basis.

However, there is also disadvantage of this combination. For those who has not yet some clear ideas on what kind of self they wish to develop, the term “self-development” is too broad and less specific. For example, at the 4th meeting, the pen-and-pencils exercise was to write a bucket list, under the condition if there is only another 12 months to live. Some participants, who had not yet clear ideas on what was the real purposes of their own development, merely did a bucket list based on what they had heard or seen from the mess media, such as travel around the world or do extreme sports (e.g., skydiving). In such case, this exercise is not well received, as it is not about what to show or to present to others, instead of using the extreme condition to look deep inside of oneself and hopefully to be able to hear the real calling of one’s life. The goal of self-development could be seen as too far away from our daily life, and if an individual has not yet reached a clear vision on what kind of self to develop, hardly any changes could be provoked during the short 8-weeks intervention. Then the combination is not the ideal and certainly could not fulfill the expectations of those participants. The future studies could avoid this disadvantage by recruiting participants with similar needs on development, and specify the training concept on the need.

4.2. Limitations of the Current Research and Future Recommendations

The design of the current research has a number of methodological limitations, which should not be overlooked and will be critically discussed as below.

Non-Active Control Experimental Design

The design of the current study is not standard (active) controlled, rather a waiting-group inactive control. The waiting-group effects have been throughly discussed in many previous similar mindfulness based intervention studies (see a meta-analysis by Chiesa & Serretti, 2009). The phenomena of waiting and expecting add uncertainty into the control condition, in return it is a less scientifically controlled condition in comparison to the active control by another validated and proven similar treatment. However, at the same time, in one of the few

meta-analysis of mindfulness based intervention studies found that the effect size for both non-controlled and controlled studies are at comparable 0.05 level (see Grossman, Niemann, Schmidt & Walach, 2003). Current research due to limited resources was unable to allocate control group to other standard treatment parallel to the Mindful Self-Development Coaching intervention. However, any interpretation from the results obtained from the current study should be aware of this design limitation.

Third Person Observation As Third Dimensional Measurement

Third person behavioral observation measurement is restricted due to methodology limitations. Inter-rater's reliability was a big concern at the beginning and only solved after discharging the first round of the evaluation data by five evaluators and then recruiting two new evaluators from similar backgrounds. Consequently, an estimated three months of work had been wasted. In addition, the validity of the evaluation form could also be improved by being more quantitive, and tested more times before conducting evaluation. Furthermore, the validity and reliability of the method of third person observation requires a huge amount of time for testing, modifying and retesting. However, within the given time frame the author had to apply the simplest measurement criteria in exchange to a satisfactory level of inter-rater agreement.

International But Highly Educated Samples

Participants come from various background and different nations, however, all of them are with university level of education, and nearly half of them are at doctoral level and above. Therefore, data collected from the current research can only indicate the possible changes of a highly educated sample group. Arguably, the concept of mindful self-development had already been seeded through the long period of formal education. In particular, more then half of the participants were majored in natural science and medicine, they could be influenced prior attending the MSDC intervention on the effectiveness of mindfulness by increasing number of empirical studies. Such prior knowledge of mindfulness could alert the results found in the current study. For this reason, the effects found at the current study lack the

representation of the general population. Future research should consider more on how to approach other segments of the population, especially the less educated groups to further validate the effects of mindfulness.

Imbalanced Group Size for the Treatment and Control Group

Due to limited time and resources, the current study was not able to recruit same amount people at both treatment and control group. The ratio between the treatment group and the control group was about 2:1, it was highly unbalanced for an ideal scientific comparison. The random selection was also effected by this ratio. The chance of being self-selected at the treatment group is doubled in each round of the intervention. This limitation can cause serious methodical errors. Thus, any significance between group differences found at the current research could be a false positive founding (Type II error). The control group also heavily suffered from dropouts, less than 30% of the control group completed the second round of measurement. Future research should consider how to attract a large number of the control group and how to motivate them to complete the repeated measurements.

Multiple Roles of the Author

The author had multiple roles in the current study, the researcher with the responsibility of planning, conducting and analyzing the scientific experiment; the trainer with the responsibility of designing and leading the group meetings of the intervention; the assessor and the interviewer with the responsibility of directing all Assessment Centers and interviewing half of the candidates both from the treatment group and the control group. The multiple roles of the author in certain situations conflict with each other. For example, at the post intervention Assessment Centers, it was difficult for the author to maintain the same distance to the participants and the control group. Therefore, the author had to dress formally and deliberately to enlarge the distance of sitting positions when she interviewed participants. Moreover, because of the multiple role of the author, the current study cannot be classified as double blinded research but only a blind one, despite that only the personal codes were used at the data processing and analyzing. The ideal scientific experimental design is, of course,

separate to the role of the researcher, the trainer and the assessor, hence to maximize the objectiveness during the whole study.

Social Support vs Interventional Effects

The positive effects found from the current research can also be associated with the social support and environment for open and honest disclosure provided by the newly developed Mindful Self-Development Coaching intervention. Social support and open environment are the two variables which are found to be related to psychological well-being (Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Spiegel, Bloom & Yalom, 1981). In particular, throughout the intervention, a number of team building activities were integrated with self-development exercises, such as falling and catching, unlocking the human knot, also the giving and receiving of kind-and-loving messages. Participants were also actively seeking other group members' supports in the meetings (e.g., sharing ones personal experiences openly, or answering others question proactively). All those activities facilitated strong group bonding and activated the social supporting system. It is difficult to distinguish those positive effects from the effects of the Mindful Self-Development Coaching intervention itself.

Further research could examine whether the effects were influenced by social desirability. It is possible that participants would overrate the benefits of the intervention because they perceived reductions in stress and improvement in mindfulness to be desired by the author and themselves. To examine this, correlation analyses between the Marlowe-Crowne Social Desirability Scale and the change scores of selected questionnaires from baseline (T0) should be conducted. Very limited previous research has compared Marlowe-Crowne values with mindfulness scores, however those limited published and unpublished researches show that social desirability was not correlated with reductions in the psychological distress which were measured by intensive mindfulness retreat (Ostafin, Chawla, Bowen, Dillworth, Witkiewitz & Marlatt, 2006). In other words, mindfulness based interventions can be free from the influence of social desirability bias, however this needs to be further testified.

In conclusion, the newly developed Mindful Self-Development Coaching intervention demonstrated some interesting and promising effects on all three dimension measurements. Particularly, the participants are not only self-reported to be less stressed, feel more satisfied, comfortable and mindful, but also to be seen as such in comparison with the control group. The Mindful Self-Development Coaching intervention has two innovative aspects. The first is the biweekly full day meeting format. It is tested with large and mixed samples and it proven to be effective and applicable. However, the other innovative aspect, applying Assessment Centers as a multi-dimensional measurement, is shown with mixed advantages and disadvantages. It may have more advantages in the commercial setting than in the methodically restricted scientific setting. Despite the methodical limitations, the overall finding and effect sizes of the current research is inline with similar mindfulness based interventions presented in two meta-analysis studies (Chiesa & Serretti, 2009; Grossman, Niemann, Schmidt & Walach, 2004).

Last words; in our modern busy and consuming oriented world, we are easily getting lost in temptation and endless choices. We are so busy searching for and pursuing the best, the newest, the fastest and the coolest, but missing the quite and present moment to be with ourselves and enjoy what really matters to us. As a result, we become stressed, depressed and eventually burned out. The mindful way of living is not to eliminate fun, nor to remove pleasure, but to realize the real and long lasting fun and pleasure in life, the real happiness. That is what we have already and what we are as always. Being aware of who we truly are, then accept who we are as it is, love what we are as it is, and accept there are imperfections inside of us, so that we can always develop further. This is the real essence of self-development and the core principle of the Mindful Self-Development Coaching intervention. The development of the MSDC intervention is merely one of endless attempts to see, to feel and to reconnect the ultimate and true happiness lies deep inside of everyone of us.

5. Reference

Adams, C.E. & Leary, M.R. (2007). Promoting Self-Compassionare Attitudes toward Eating among Restrictive and Guilty Easters. *Journal of Social and Clinical Psychology, 26 (10)*, 1120-1144.

Adams, R.J., & Nelson, A.J. (2016). Eye behavior and gaze. In D. Matsumoto, H. C. Hwang, M. G. Frank, D. Matsumoto, H. C. Hwang, M. G. Frank (Eds.) , *APA handbook of nonverbal communication* (pp. 335-362). Washington, DC, US: American Psychological Association. doi:10.1037/14669-013.

Alarcon, G.; Eschleman, K. J. & Bowling, N. A. (2009). "Relationships between personality variables and burnout: A meta-analysis". *Work & Stress 23* (3): 244–263. doi: 10.1080/02678370903282600.

American Psychological Association. (2015). *Stress in America: Paying with our health.* Retrieved from https://www.apa.org/news/press/releases/stress/2014/stress-report.pdf

Antonovsky, A, (1979). *Health, Stress, and Coping.* San Francisco, CA: Jossey-Bass.

Arthur, W. J., & Day, E. A. (2011). Assessment centers. In S. Zedeck, S. Zedeck (Eds.) , *APA handbook of industrial and organizational psychology, Vol 2: Selecting and developing members for the organization* (pp. 205-235). Washington, DC, US: American Psychological Association. doi:10.1037/12170-007.

Arthur, W., Jr., Day, E. A., McNelly, T. L., & Edens, P. S. (2003). Meta-analysis of the criterion-related validity of assessment center dimensions. *Personnel Psychology*, 56, 125–154. doi:10.1111/j.1744-6570.2003.tb00146.x.

Awa, W. L., Plaumann, M. & Walter, U. (2010). Burnout prevention: A review of intervention programs. Patient Education and Counseling, 78, 184-190.

Barnard, L.K., & Curry, J.F. (2012). The Relationship of Clergy Burnout to Self-Compassion and Other Personality Dimensions. *Pastoral Psychol, 61,* 149-163. DOI 10.1007/ s11089-011-0377-0.

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice*, 10, 125-143.

Baer, R.A., Smith, G.T., Hopkins, J., Krietemeyer, J. & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment,* 13, 27-45.

Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S. & Walsh, E. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and nonmeditating samples. *Assessment*, 15, 329-342.

Baron-Cohen, S., Wheelwright, S., Hill, J., Raste, Y. & Plumb, I. (2001). The "Reading the Mind in the Eyes" Test Revised Version: A study with normal adults, and adults with Asperger syndrome or high- functioning autism. *Journal of Child Psychology and Psychiatry, 42,* 241–251. http://dx.doi.org/10.1111/ 1469-7610.00715.

Baron-Cohen, S., Wheelwright, S. & Jolliffe, T. (1997). Is there a "language of the eyes"? Evidence from normal adults, and adults with autism or Asperger syndrome. *Visual Cognition,* 4, 311–331. http:// dx.doi.org/10.1080/713756761.

Bergner T. (2004). Burn-out bei Ärzten: Lebensaufgabe statt Lebens-Aufgabe. *Deutsch Arztebl, 101*:2232–4.

Bishop, S.R., Lau, M., Shapiro, S., Carlson, L., Anderson, N.D., Carmody, J., Segal, Z.V., Abbey, S., Speca, M., Velting, D. & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230-241.

Black, D.S. (2011). A brief definition of mindfulness. *Mindfulness Research Guide*. Accessed from http://www.mindfulexperience.org

Brandtstädter, J. (1999). Cultural, Biosocial, and Ontogenetic Bases of Intentional Self-Development. In Brandtstädter, J. & Lerner, R.M. (Eds). (1999). *Action and Self-Development: Theory and Research Trhough the LifeSpan*. Sage Publications, Inc.: Thousand Oaks, London, New Delhi.

Brown, K. W., & Kasser, T. (2005). Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. *Social Indicators Research, 74*(2), 349–368. doi:10.1007/s11205-004-8207-8.

Brown, K. W. & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84,* 822-848.

Burgoon, K.J. & Baesler, E.J. (1991). Choosing between micro and macro nonverbal measurement: Application to selected vocalic and kinetic indices. *Journal of Nonverbal Behavior,* 15(1), 57-78.

Cannon, W.B. (1953). *Bodily Changes in Pain, Hunger, Fear, and Rage.* Boston: C. T. Branford.

Carlson, L. E., Ursuliak, Z., Goodey, E., Angen, M. & Speca, M. (2001). The effects of a mindfulness meditation-based stress reduction program on mood and symptoms of stress in cancer outpatients: 6-month follow-up. *Supportive Care in Cancer*, 9, 112- 123.

Carmody, J., Crawford, S. & Churchill, L. (2006). A pilot study of mindfulness-based stress reduction for hot flashes. *Menopause, 13*(5), 760-769.

Carmody, J. & Baer, R. A. (2008). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. *Journal of behavioral medicine, 31*(1), 23-33.

Chang, V.Y., Palesh, O., Caldwell, R., Glasgow, N., Abramson, M., Luskin, F., Gill, M., Burke, A. & Koopman, C. (2004). The effects of a mindfulness-based stress reduction program on stress, mindfulness self-efficacy, and positive states of mind. *Stress and Health*, 20:141-147.

Chiesa, A. & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: A review and meta-analysis. *The Journal of Alternative and Complementary Medicine*, 15, 593-600.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2. Ed.)*. Hillsdale: Lawrence Erlbaum.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159.

Cohen, S., Kamarck, T. & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.

Cohen, S., & Williamson, C. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan & S. Oskamp (Eds.), *The social psychology of health: Claremont Symposium on applied social psychology*. Newbury Park: Sage.

Cohen-Katz, J., Wiley, S. D., Capuano, T., Baker, D. M. & Shapiro, S. (2005). The effects

of mindfulness-based stress reduction on nurse stress and burnout, Part II: A quantitative and qualitative study. *Holistic Nursing Practice*, 19, 26-35.

Cordes, C. L., & Dougherty, T. W. (1993). A review and an integration of research on job burnout. *Academy of management review, 18*(4), 621-656.

Cox, T., & MacKay, C. (1981). A transactional approach to occupational stress. In N. J. Corlett & J. Richardson (Eds.), *Stress, work design, and productivity* (pp. 75–95). London, England: Wiley.

Cuddy, A. J. C., Wilmuth, C. A., and Carney, D. R. (2012). "The benefit of power posing before a high-stakes social evaluation," in *Harvard Business School Working Paper*, No. 13-027. Available online at: http://dash.harvard.edu/ bitstream/handle/ 1/9547823/13-027.pdf?sequence=1

Davis, D. M. & Hayes, J. A. (2011). What are the benefits of mindfulness? A practice review of psychotherapy-related research. *Psychotherapy*, 48, 198-208.

Davison, G.C., & Neale, J.M. (1990). *Abnormal Psychology.* 5th Ed. New York: Wiley.

de Bruin, E. I., Topper, M., Muskens, J. G. A. M., Bögels, S. M. & Kamphuis, J. H. (2012). Psychometric properties of the Five Facets Mindfulness Questionnaire (FFMQ) in a meditating and a non-meditating sample. *Assessment*, 19, 187-197.

de Castro, J. M. (2015). Meditation has stronger relationships with mindfulness, kundalini, and mystical experiences than yogy or prayer. *Consciousness and Cognition, 35*, 115-127. doi: 10.1016/j.concog.2015.04.022.

DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality And Social Psychology, 54*(3), 486-495. doi:10.1037/0022-3514.54.3.486

Dewe, P.J., O'Driscoll, M.P. & Cooper, C.L. (2012). Theories of Psychological Stress at Work. In R.J. Gatchel and I.Z. Schultz (eds.), *Handbook of Occupational Health and Wellness, 23 Handbooks in Health, Work, and Disability.* New York: Springer Science +Business Media. doi:10.1007/978-1-4614-4839-6_2.

Diener, E., Emmons, R.A., Larsen, R.J. & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49(1),* 71-75.

Duhigg, C. (2012). *The Power of Habit: Why We Do What We Do In Life and Business.* New York: Random House

Edwards, J. R. (2000). Cybernetic theory of stress, coping and well-being. In C. L. Cooper (Ed.), *Theories of stress* (pp. 122–152). Oxford: Oxford University Press.

Edwards, D., Burnard, P., Coyle, D., Fothergill, A., and Hannigan, B. (2001). A stepwise multivariate analysis of factors that contribute to stress for mental health nurses working in the community. *Journal of Advanced Nursing, 36*(6), 805–13.

Emerson, R. W. (1992). Nature 1836. In Ziff, L. (Eds). *Selected Essays.* New York: Penguin Books.

European Foundation. (2007). *Fourth European Working Conditions Survey.* Dublin: European Foundation for the Improvement of Living and Working Conditions.

Farber, B. A. (2000). Treatment strategies for different types of teacher burnout. *Psychother Prac,56*: 675–689.

Feldman, C. (2005). *Compassion*. Berkeley CA: Rodnell Press.

Freudenberger, H. (1974). Staff burnout. *Journal of Social Issues, 30,* 159–165. doi:10.1111/j. 1540- 4560.1974.tb00706.x.

Freudenberger, H., & Richelson, G. (1981). *Burn-out: The high cost of high achievement.* New York: Bantam Books.

Folkman, S. (1992). Commentary to part three: Improving coping assessment: Reply to Stone and Kennedy-Moore. In H. S. Friedman, H. S. Friedman (Eds.) , *Hostility, coping, & health* (pp. 215-223). Washington, DC, US: American Psychological Association. doi: 10.1037/10105-015.

Furuya, S. (2004). Karoshi and Karojisatsu in Japan. *Occupational Safety and Health, Asian Labour Update,* 52.

Gaugler, B.B., Rosenthal, D.B., Thornton, G.C., III & Bentson, B. (1987). Meta-analysis of assessment center validity. *Journal of Applied Psychology, 72*, 493–511. doi: 10.1037/0021-9010.72.3.493.

Gibbons, C.(2010) Stress, coping and burnout in nursing students. *International Journal of Nursing Studies, 47*(10): 1299–1309.

Gilbert, P., & Irons, C. (2005). Therapies for shame and self-attacking, using cognitive, behavioural, emotional imagery and compassionate mind training. In P. Gilbert (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy* (pp. 263–325). London: Routledge.

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology and Psychotherapy, 13,* 353–379.

Grossman, P., Niemann, L., Schmidt, S. & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research*, 57, 35-43.

Gunaratana, H. (1993). *Mindfulness in Plain English*. Boston: Wisdom Publications.

Haberthür, A.K., Elkuch, F.M., Grosse Holtforth, M., Hochstrasser B. & Soyka, M. (2009). Characterisation of patients discharged from inpatient treatment for burnout: use of psychological characteristics to identify aftercare needs. *Journal of Clinical Psychology, 65*: 1039–1055.

Hart, W. (1987/2010). *The Art of Living.* USA: Harper & Row Publications.

Hayes, S.C., Strosahl, K., & Wilson, K.G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change.* New York: Guilford Press.

Heatherton, T. F., & Baumeister, R. G. (1991). Binge eating as escape from self–awareness. *Psychological Bulletin, 110,* 86–108.

Heidenreich, T., Ströhle, G., Michalak, J. & Zarbock, G. (2011). The german version of the Five Facet Mindfulness Questionnaire (FFMQ): Psychometric properties and relationship with the schema mode inventor. Paper presented at the *41. Congress of the European Association for Behavioural and Cognitive Therapies* (EABCT), Reykjavik, Iceland.

Heller, K., Wyman, M.F., & Allen, S.M. (2000). Future Directions for Prevention Science: From Research to Adoption. In Snyder, C.R. & Ingram, R.E. (Eds.), *Handbook of Psychological Change, Psychotherapy Processes & Practices for the 21st Century.* New York, Chichester, Weinheim, Brisbane, Singapore, Toronto: John Wiley & Sons, Inc.

Hendrick, S. (2004). *Understanding Close Relationships*. Boston: Pearson Education, Inc.

Heyde, G. (2000). Inventar komplexer Aufmerksamkeit (INKA) [Inventory of complex attention]. Göttingen: Hogrefe.

Hobfoll, S. E., Schwarzer, R. & Chon, K. K. (1998). Disentangling the stress labyrinth: Interpreting the meaning of the term stress as it is studied in health context. *Anxiety, Stress & Coping*, 11, 181-212.

Hobfoll, S. E. (2001). The influence of culture, community and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review, 50*, 337–421.

Holroyd, K., & Lazarus, R. (1982). Stress, coping and somatic adaptation. In L. Goldberger & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (pp. 21–35). New York: Free Press.

Hogan, K., & Stubbs, R. (2003). *Can't get Through 8 Barriers to Communication*. Grenta, LA: Pelican Publishing Company.

Hoffman, S.G., Sawyer, A.T., Witt, A.A., Oh, D., 2010. The effect of mindfulness-based therapy on anxiety and depression: a meta-analytic review. *Journal of Consulting and Clinical Psychology,* 78 (2), 169–183.

Holdevici, I. & Craciun, B. (2015). Cognitive - behavioral therapy interventions and mindfulness in diminishing the stress level and cortisol blood level. *Procedia - Social and Behavioral Sciences, 187,* 379 – 383. doi:10.1016/j.sbspro.2015.03.071.

International Labour Office. (2013). *Global employment trends: recovering from a second jobs dip.* Geneva: ILO Publication.

International Labour Office. (2012). *Stress prevention at work checkpoints.* Geneva: ILO Publication.

International Task Force on Assessment Center Guidelines. (2000). *Guidelines and ethical considerations for assessment center operations*. Public Personnel Management, 29, 315-331.

Jahoda, M. (1958). Current concepts of positive mental health. *Joint commission on mental health and illness monograph series. Vol 1*. New York: Basic Books.

Jha, A.P., Krompinger, J. & Baime, M.J. (2007). Mindfulness training modifies subsystems of attention. *Cognitive Affect Behavioral Neuroscience*, 7(2), 109.

Jain, S., Shapiro, S. L., Swanick, S., Roesch, S. C., Mills, P. J., Bell, I. & Schwartz, G. E. R. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: Effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioral Medicine*, 33, 11-21.

Joyce, J. (1922/2010). *Ulysses*. Herts, UK: Wordsworth Editions Ltd.

Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, 4, 33-47.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your mind to face stress, pain and illness*. New York: Dell.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. New York: Hyperion Books.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10, 144-156.

Kabat-Zinn, J., Lipworth, L., Burney, R. & Sellers, W. (1986). Four-year follow-up of a meditation-based program for the self-regulation of chronic pain: Treatment outcomes and compliance. *The Clinical Journal of Pain*, 2, 159-173.

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L., Lenderking, W. R. & Santorelli, S. F. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry*, 149, 936-943.

Kalia, M. (2002) Assessing the economic impact of stress – the modern day hidden epidemic. *Metabolism, Clinical & Experimental, 51*(6) Supp.1, 49–53.

Kaplan, K. H., Goldenberg, D. L. & Galvin-Nadeau, M. (1993). The impact of a meditation-based stress reduction program on fibromyalgia. *General Hospital Psychiatry*, 15, 284-289.

Kerr, C.E., Jones, S.R., Wan, Q., Pritchett, D.L., et al. (2011). Effects of mindfulness meditation training on anticipatory alpha modulation in primary somatosensory cortex. *Brain Research Bulletin*. doi:10.1016/j.brainresbull.2011.03.026.

Klatt, M.D., Buckworth, J. & Malarkey, W.B. (2009). Effects of low-dose mindfulness-based stress reduction (MBSR-ld) on working adults. *Health Education & Behavior*, 36, 601-614.

Knapp, M. L., & Hall, J. A. (2002). *Nonverbal Communication in Human Interaction (3rd Edition)*. Crawfordsville, IN: Thomson Learning.

Koopman, C., Gore-Felton, C., Marouf, F., Butler, L.D., Field, N., Gill, M., Chen, X.H., Israelski, D., & Spiegel, D. (2000). Relationships between perceived stress and attachment, social support, and coping among HIV-positive persons. *AIDS Care, 12*(5), 663–672.

Koltko-Rivera, M.E. (2006). Rediscovering the Later Version of Maslow's Hierachy of Needs: Self-Transcendence and Opportunities for Theory, Research, and Unification. *Review of General Psychology, 10* (4), 302-317. doi:10.1037/1089-2680.10.4.302.

Kong, F., Wang, X. & Zhao, J.J. (2014). Dispositional mindfulness and life satisfaction: The role of core self-evaluations. *Personality and Individual Differences, 56*, 165-169. doi: 10.1016/j.paid.2013.09.002.

Krohne, H.W., Egloff, B., Kohlmann, C.W., & Tausch.A. (1996). Positive and Negative Affect Schedule - deutsche Fassung. *PSYNDEX: Literature and Audiovisual Media with PSYNDEX Tests*, Nr. PT9003475.

Lakin, J.L. (2006). Automatic cognitive processes and nonverbal communication. In V. Manusov & M.L. Patterson (Eds.). *The Sage handbook of nonverbal communication.* Thousand Oaks, CA: Sage.

Langer, E.J. (1989). *Mindfulness*. Reading, MA, US: Addison-Wesley/Addison Wesley Longman.

Langer, E. J., & Moldoveanu, M. (2000). The construct of mindfulness. *Journal of Social Issues*, 56, 1–9.

Laozi & Lao Tsu (1989). *Tao te ching*. Vintage Books. NY: Random House USA, Inc.

Lazarus, R. S. (1966). *Psychological stress and the coping process.* New York: McGraw-Hill.

Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Leary, M. R., Adams, C. E., & Tate, E. B. (2006). Hypo–egoic self–regulation: Exercising self–control by diminishing the influence of the self. *Journal of Personality, 74,* 1803–1831.

Leary, M.R., Tate, E.B., Adams, C.E., Allen, A.B. & Hancock, J. (2007). "Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly". *Journal of Personality and Social Psychology 92 (5):* 887–904. doi: 10.1037/0022- 3514.92.5.887. PMID 17484611.

Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of applied Psychology, 81*(2), 123.

Leiter, M.P. & Maslach, C. (2000). *Preventing burnout and building engagement: a complete program for organizational renewal*. San Francisco, CA: Jossey-Bass.

Leka, S., & Cox, T. (2008). *Best Practice in Work-related Stress Management Interventions: PRIMA-EF*. Nottingham: I-WHO Pbulications.

Lewin, K. (1935). *A dynamic theory of personality.* New York: McGraw-Hill Book Co., Inc.

Linzer, M., Visser, M. R., Oort, F.J., Smets, E. M. , McMurray, J. E. & De Haes, H. C. (2001). Predicting and preventing physician burnout: results from the United States and the Netherlands. *American Journal of Medicine, 111*:170–5.

Lloyd, J., Bond, F.W. & Flaxman, P.E. (2013) The value of psychological flexibility: examining psychological mechanisms underpinning a cognitive behavioural therapy intervention for burnout. *Work Stress, 27:* 181–199.

MacCoon, D.G., MacLean, K. A., Davidson, R. J., Saron, C. D. & Lutz, A. (2014). No Sustained Attention Difference in a Longitudinal Randomized Trial Comparing Mindfulness Based Stress Reduction versus Active Control. *PlosOne, Vol. 9*, Iss 6.

Mackenzie, C.S., Poulin, P.A. & Seidman-Carlson, R. (2006). A brief mindfulness-based stress reduction intervention for nurses and nurse aides. *Applied Nursing Research,* 19, 105-109.

Maslach, C. (2003) Job burnout: New directions in research and intervention. *Current Directions in Psychological Science, 12*(5), 189–92.

Maslach, C. & Goldberg, J. (1998). In Cooper, C.L. (Eds). A multidimensional theory of burnout. *In Theories of Organizational Stress*, pp 68-85. Oxford, UK: Oxford University Press.

Maslach, C., & Jackson, S.E. (1981). The measurement of experienced burnout. *Journal of Occupational Behaviour, 2,* 99-113.

Maslach, C., & Jackson, S.E. (1986). *Maslach Burnout Inventory manual* (2nd. ed.) Palo Alto, CA: consulting Psychologists Press.

Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001). Job Burnout. *Annual Review of Psychology 52*: 397–422. doi:10.1146/annurev.psych.52.1.397.

Maslow, A.H. (1954). *Motivation and personality.* New York, NY: Harper.

Maslow, A.H. (1961). Peak experiences as acute identity experiences. *The American Journal of Psychoanalysis, 21*(2): 254-262. doi: 10.1007/BF01873126.

Maslow, A.H. (1969). The farther reaches of human nature. *Journal of Transpersonal Psychology, 1*(1), 1–9.

Mason, J.W. (1975a). A historical view of the stress field. Part I. *Journal of Human Stress, 1*, 6-12.

Matousek, R. H., Dobkin, P. L. & Pruessner, J. (2010). Cortisol as a marker for improvement in mindfulness-based stress reduction. *Complementary Therapies in Clinical Practice*, 16, 13-19.

Mayes, B. T. (1997). Insights into the history and future of assessment centers: An interview with Dr. Douglas W. Bray and Dr. William Byham. *Journal of Social Behavior and Personality, 12*, 3–12.

McGarrigl, T. & Walsh, C. A. (2011). Mindfulness, Self- Care, and Wellness in Social Work: Effects of Contemplative Training. *Journal of Religion & Spirituality in Social Work: Social Thought, 30*:3, 212-233.

Meyer, T.D. & Hofmann, B.U. (2005). Assessing the dysregulation of the behavioral activation system: The Hypomanic Personality Scale and the BIS-BAS Scales. *Journal Of Personality Assessment*, 85(3), 318-324. doi:10.1207/s15327752jpa8503^DUL08.

Miller, J. J., Fletcher, K. & Kabat-Zinn, J. (1995). Three-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders. *General Hospital Psychiatry*, 17, 192-200.

Monat, A. & Lazarus, R.S. (1991). Introduction: stress and coping - some current issues and controversies. In Monat, A. & Lazarus, R.S. (Eds.) *Stress and coping: an anthology* (3rd Eds). New York: Columbia University Press.

Montero-Marin J, Araya R, Olivan-Blazquez B, Skapinakis P, Martinez- Vizcaino V, et al. (2012). Understanding burnout according to individual differences: ongoing explanatory power evaluation of two models for measuring burnout types. *BMC Public Health,*12: 922.

Montero-Marin, J., Prado-Abril, J., Piva Demarzo M.M., Gascon, S., & Garcia-Campayo, J. (2014). Coping with Stress and Types of Burnout: Explanatory Power of Different Coping Strategies. *PLoS ONE 9*(2): e89090. doi:10.1371/journal.pone.0089090.

Mrazek, M.D., Franklin, M.S., Phillips, D.T., Baird, B. & Schooler, J.W. (2013). Mindfulness Training Improves Working Memory Capacity and GRE Performance While Reducing Mind Wandering. *Psychological Science, 24*: 776-781

Murray, H.A. (1938). *Explorations in personality.* New York: Oxford University Press.

Murray, C. L., & Lopez, A. D. (1998). *The global burden of disease: A comprehensive assessment of mortality and disability from disease, injuries and risk factors in 1990 and projected to 2020*. Boston: Harvard University Press.

Neff, K. (2003a). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223–250. doi:10.1080/15298860309027.

Neff, K. (2003b). Self-compassion: an alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2,* 85–101. doi:10.1080/15298860309032.

Neff, K. D., Hseih, Y., & Dejitthirat, K. (2005). “Self- compassion, achievement goals, and coping with academic failure”. *Self and Identity 4 (3)*: 263–287. doi: 10.1080/13576500444000317.

Neff, K., Kirkpatrick, K., & Rude, S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality, 41,* 139–154. doi:10.1016/j.jrp. 2006.03.004.

Neff, K. D., Rude, S. S., & Kirkpatrick, K. (2007). “An examination of self-compassion in relation to pos- itive psychological functioning and personality traits”. *Journal of Research in Personality 41 (4)*: 908–916. doi:10.1016/j.jrp.2006.08.002.

Ostafin, B.D., Chawla, N., Bowen, S., Dillworth, T.M., Witkiewitz, K., & Marlatt, G.A. (2006). Intensive Mindfulness Training and the Reduction of Psychological Distress: A Preliminary Study. *Cognitive and Behavioral Practice*, 13:191-197.

Pace, T.W.W., Negi, L.T., Adame, D.D., Cole, S.P., Sivilli, T.I., Brown, T.D., Issa, M.J., & Raison, C.L. (2009). Effect of compassion meditation on neuroendocrine, innate immune and behavioral responses to psychosocial stress. *Psychoneuroendocrinology, 34,* 87–98.

Pace, T.W.W., Negi, L.T., Sivilli, T.I., Issa, M.J., Cole, S.P., Adame, D.D., & Raison, C.L. (2010). Innate immune, neuroendocrine and behavioral responses to psychosocial stress do not predict subsequent compassion meditation practice time. *Psychoneuroendocrinology, 35,*310–315.

Pannozzo, L., & Landon, L. (2005) Overwork and underwork take heavy toll on our economy. *CCPA Monitor, 11*(10), 24.

Pavot, W., & Diener, E. (1993). Review of the Satisfaction With Life Scale. *Psychological Assessment*, *5(2)*, 164-171.

Pease B. & Pease A. (2004). *The Definitive Book of Body Language*. New York, NY: Bantam Books.

Peck, M.S. (1978/2003). *The Road Less Travelled: A New Psychology of Love, Traditional Values*. New York: Simon and Schuster.

Pelletier, K.P. & Lutz, R. (1991). Healthy People - Healthy Business: A Critical Review of Stress Managmement Programs in the Workplace. In Monat, A. & Lazarus, R.S. (Eds.) *Stress and coping: an anthology* (3rd Eds). New York: Columbia University Press.

Pennebaker, J.W., Kiecolt-Glaser, J.K., & Glaser, R. (1988). Disclosure of traumas and immune function: health implications for psychotherapy. *Journal of Consulting and Clinical Psychology*, 56, 239–245.

Pines, A., & Aronson, E. (1988). *Career Burnout: Causes and Cures.* New York, New York: The Free Press.

Praissman, S. (2008). Mindfulness-based stress reduction: A literature review and clinician's guide. *Journal of the American Academy of Nurse Practitioners*, 20, 212-216.

Prati, G., Pietrantoni L & Cicognani, E. (2009). Self-efficacy moderates the relationship between stress appraisal and quality of life among rescue workers. *Anxiety Stress Coping, 23*: 1–8.

Raven, J., (2000). The Raven's Progressive Matrices: Change and Stability over Culture and Time. *Cognitive Psychology, Vol.41*(1), 1-48. doi:10.1006/cogp.1999.0735.

Raven, J.C., Raven, J. & Court, J.H. (2004). *Manual for Raven's progressive matrices.* San Antonio, USA: Harcourt Assessment B.V..

Reissner, V., Baune, B., Kokkevi, A., Shifano, F., Room, R., et al. (2010). Burnout, coping and job satisfaction in service staff treating opioid addicts-from Athens to Zurich. *Stress Health, 26:* 149–159.

Roberts, G.A. (1997). Prevention of burn-out. *Advances in Psychiatric Treatment*, 3, 282–289.

Rosenzweig, S., Reibel, D. K., Greeson, J. M., Brainard, G. C. & Hojat, M. (2003). Mindfulness-based stress reduction lowers psychological distress in medical students. Teaching and Learning in Medicine, 15, 88-92.

Ruedy, N.E. & Schweitzer, M.E. (2010). In the Moment: The Effect of Mindfulness on Ethical Decision Making. *Journal of Business Ethics, 95*: 73-87. doi:10.1007/s10551-011-0796-y.

Rupp, D.E., Gibbons, A.M., Baldwin, A.M., Snyder, L.A., Spain, S.M., Woo, S.E., et al. (2006). An initial validation of developmental assessment centers as accurate assessments and effective training interventions. *The Psychologist Manager Journal, 9*, 171–200. doi: 10.1207/s15503461tpmj0902_7.

Ryff, C.D. (1989). 'Happiness is everything, or is it?' Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology 57*(6), 1069–1081.

Schaufeli, W.B. & Enzmann, D. (1998). *The Burnout Companion to Study & Practice: A Critical Analysis.* Philadelphia: Taylor & Francis.

Schaufeli, W.B., Leiter, M.P., Maslach, C., & Jackson, S.E. (1996). Maslach Burnout Inventory – General Survey (MBI-GS). In C. Maslach, C., Jackson, S.E. & Leiter, M.P. *MBI Manual (3rd ed.)*. Palo Alto, CA: Consulting Psycho-logists Press.

Schmukle, S. C., Egloff, B., & Burns, L. R. (2002). The relationship between positive and negative affect in the Positive and Negative Affect Schedule. *Journal of Research in Personality, 36,* 463–475.

Seligman, M.E.P. (1998). President's column. *APA Monitor, 29*, 1, 2.

Senior, J. (26 November 2006) Can't get no satisfaction: In a culture where work can be a religion, burnout is its crisis of faith. Retrieved from http://nymag.com/news/features/24757/.

Selye, H. (1976). *The Stress of Life.* New York: McGraw-Hill.

Shapiro, S.L., Astin, J.A., Bishop, S.R. & Cordova, M. (2005). Mindfulness-based stress reduction for health care professionals: Results from a randomized trial. *International Journal of Stress Management,* 12, 164-176.

Shapiro, S.L., & Carlson, L.E. (2009). How is mindfulness helpful? Mechanisms of action. In, *The art and science of mindfulness: Integrating mindfulness into psychology and the helping professions* (pp. 93-104). Washington, DC, US: American Psychological Association. doi:10.1037/11885-007c.

Shevlin, M., Brunsden, V., & Miles, J.N.V. (1998). Satisfaction With Life Scale: analysis of factorial invariance, mean structures and reliability. *Personality and Individual Differences, 25,* 911-916.

Singh, N. N., Lancioni, G. E., Wahler, R. G., Winton, A. S. W. & Singh, J. (2008). Mindfulness approaches in cognitive behavior therapy. *Behavioral and Cognitive Psychotherapy, 36,* 659-666.

Siegel, D. J. (2007). Mindfulness training and neural integration: Differentiation of distinct streams of awareness and the cultivation of well-being. *SCAN, 2*(4), 259.

Smelser, N.J. (1963). *Theory of Collective Behavior.* New York: Free Press.

Spiegel, D., Bloom, J. R., & Yalom, I. (1981). Group support for patients with meta- static cancer: A randomized prospective outcome study. *Archives of General Psychiatry, 38*, 527–533.

Ven. Nyanaponika Thera. (1962). *The Heart of Buddhist Meditation - a Handbook of Mental Training Based on the Buddha's Way of Mindfulness.* London: Rider & Co.

Ven. Nyanaponika Thera, late. (2001). *The Power of Mindfulness.* Penang: The Wheel Publication, BPS.

von Zerssen, D. & Koeller, D.M. (1976). *Die Befindlichkeitsskala Bf-S Manual.* Weinheim, Germany: Beltz.

von Zerssen, D. & Petermann, F. (2011). *Befindlichkeits-Skala - Revidierte Fassung:* PSYNDEX: Literature and Audiovisual Media with PSYNDEX Tests. Web. 30 Mar. 2015

Walsh, R. & Shapiro, S. L. (2006). The meeting of meditative disciplines and western psychology: A mutually enriching dialogue. *American Psychologist, 61*, 227-239.

Walter, L. (2012) *The break-room: Stressing out.* Retrieved from http://ehstoday. com/health/ break-room-stressing-out-0302/.

Watson, D., Clark, L.A. & Tellegen, A. (1988). Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales. *Journal of Personality and Social Psychology, 54(*6), 1063-1070.

Willis, S. L. (1990). Contribution of cognitive training research to understanding late life potential. In M. Perlmutter (Ed.). *Late Life Potential* (pp. 25-42). Washington, DC: Gerontological Society of America.

Willis, S.L. (2001). Methodological issues in behavioral intervention research with the elderly. In J. E. Birren & K. W. Schaie (eds.) *Handbook of the psychological aging* (5th ed. pp. 78-108). San Diego, CA: Academic Press.

Williams, J. M. G., Teasdale, J. D., Segal, Z. V. & Kabat-Zinn, J. (2007). *The Mindful Way through Depression.* New York, London: The Guilford Press

World Health Organization. (2013). *Mental Health Action Plan 2013-2020*. Geneva, Switzerland: Author. Retrieved from http://www.who.int/mental_health/publications/ action_plan/en/

World Health Organization. (2011). *Mental Health Atlas.* Geneva, Switzerland: Author. Retrieved from http://www.who.int/mental_health/publications/mental_health_atlas_2011/ en/

World Health Organization (1992). *The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines*. Geneva, Switzerland: Author.

World Economic Forum. (2011). *The Global Economic Burden of Non-communicable Diseases.* The Harvard School of Public Health. Geneva, World Economic Forum.

Worley, J.A., Vassar, M., Wheeler, M.D. & Barnes, L.L.B. (2008). Factor Structure of Scores From the Maslach Burnout Inventory: A Review and Meta-Analysis of 45 Exploratory and Confirmatory Factor-Analytic Studies. *Educational and Psychological Measurement, 68*; 797-823. doi: 10.1177/0013164408315268.

Yardley, J.K., & Rice, R.W. (1991). The relationship between mood and subjective well-being. *Social Indicators Research, 24,* 101-111.

Zerssen, D. von, Strian, F. & Schwarz, D. (1974). Evaluation of Depressive States, Especially in Longitudinal Studies. In Pichot, P., Olivier-Martin, R. (Eds), Psychologica Measurements in Psychopharmacology. *Modern Problems of Pharmacopsychiatry, 7,* 189-202.

6. Appendix

Appendix 1: Recruitment Poster of the Pilot Study

Appendix 2: Registration Form of the Pilot Study

Appendix 3: Examples of Questionnaires Used at the Pilot Study

Appendix 4: Collection of Homework Emails Used at the Pilot Study

Appendix 5: Example of Posters Used at the Main Study

Appendix 6: Example of the MSDC Official Project Webpages

Appendix 7: Registration Form Used at the Main Study

Appendix 8: Example of Online Questionnaires Used at the Main Study

Appendix 9: Assessment Center Experience Registration Form

Appendix 10: Example of Master Timetable of Assessment Centers

Appendix 11: Example of Transcripts Used at Assessment Centers

Appendix 12: Example of Cognitive Tests Used at Assessment Centers

Appendix 13: Example of Mood Questionnaire Used at the Main Study

Appendix 14: Collection of Recommended Homework Used at the Main Study

Appendix 15: Collection of Supporting Literatures Used at the Main Study

Appendix 16: Example of Dimension 3 Nonverbal Measurement Forms

Appendix 17*: Example of Video Clips Used at the Current Study

* Obtainable from the author (hongff@gmail.com)

Appendix 1: Recruitment Poster of the Pilot Study

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Mindful Self-Development Coaching Program (MSDC) for International Students & Scholars for FREE!

Being Mindful is being in the **present** moment, it is paying attention, on purpose, non-judgmentally and non-auto-reactively. Practising **mindfulness** frees an unaware and untrained capacity of the mind. **Mindful Self-Development** is cultivated through training, meditation and everyday activities. **Mindful living** is the Art of Living.

Participants who complete the whole program are expected to be better able to:
- ✓ Direct and sustain attention and awareness internally and externally
- ✓ Listen with effectiveness and open heart to themselves and others
- ✓ Respond rather than react when facing challenges and difficulties
- ✓ Establish deep connections to themselves and everyone around them

When is the program?

The whole program is 8-week long, every week with 2 hours teaching and group practicing. The first set dates are on most Thursdays in June and July 2012 (in the case of public holidays an alternative date will be arranged), plus one full day silent retreat on Saturday 14th July 2012.

Open talk will be held from **19:00 to 21:00** on **Wednesday 23rd May** and **Thursday 24th May** at **Gartenstraße 29, Lecture Hall 1, 72074, Tübingen**.
Bus No.22 Stop: Jugendherberge or 7-8 minutes walk from Neckar Brücke

Who can take a part?

- ✓ **International students** (Bachelor & Master) and **International scholars** (PhD, Post-Doc fellows & visiting scholars) of the University of Tübingen
- ✓ who can communicate in **English**
- ✓ who are interested in self-development, stress reduction, awareness and concentration improvement;
- ✓ who currently are NOT suffering from any mental illness or undergoing a major episode of depression;
- ✓ who are willing to and able to commit to the 8-week-long program continuously in June and July 2012;
- ✓ who are willing to cooperate the pre- and post training evaluation questionnaires and interviews.

Anyone interested can obtain more detailed information about the **MSDC program** from the trainer Ms. Fei Hong or check out the official webpage at (http://www.uni-tuebingen.de/de/31628)

Ms. Fei Hong B.Sc., M.Sc. Psychology
PhD (Candidate) in Mindfulness Psychology
University of Tübingen, Psychology Institute
Schleichstr. 4, Level 4, Room 4.437, 72076 Tübingen
Email: fei.hong@uni-tuebingen.de

Appendix 2: Registration Form of the Pilot Study

Mindful Self-Development Coaching (MSDC) Program Registration Form

To apply for a place on the course please complete this form (using **Block Capitals** for your name and Email address), return it to the trainer and wait for notification. Please answer all questions fully. **All information submitted during the registration procedure will be treated strictly confidentially, all information will be used for this PhD research propose only.**

Section 1

First name		Surname	
Age	Date of birth DD MM YYYY	Gender	Occupation
Faculty/Institute			
Home tel	Mobile tel	E-mail address	
Nationality	Months lived in Germany if not German	German level when first arrive in Germany? None A1 A2 B1 B2 C1 C2 Native	

Section 2

Have you had any previous experience with meditation techniques, therapies or healing practices? If yes, please give details.	Yes No
Do you teach or practise on others? If yes, please give details.	Yes No
Where, or from whom, did you learn about MSDC?	

Section 3

Do you have any physical health problems or medical concerns? If yes, please give details.	Yes No If you are pregnant, please tick here

Do you have, or have you ever had, any mental health problems such as significant depression or anxiety, panic attacks, manic depression, schizophrenia, etc.? If yes, please give details (dates, symptoms, duration, hospitalisation, treatment, present condition). If necessary, continue on another sheet.	Yes No

Are you now taking, or have you taken within the past two years, any prescribed medication regularly? If yes, please give details (dates, types, dosage, present use).	Yes No

Section 4

For the research proposes, participants for this round will be picked up randomly, others will be put on waiting list for the next round of training in September and October 2012.

Will you be available on all the dates for this round of training in Jun/Jul this year?	Yes	No
Will you be available to take the next round training in Sept/Oct this year?	Yes	No
If so, do you want to be added on the waiting list if you are not picked for this round?	Yes	No

I agree to take full participation of the 8 week long MSDC program and willing to submit 50 EURO refundable deposit at the beginning of the course. I understand the deposit will only be returned upon the full completion of the MSDC course.

I realize that participation in a MSDC program is a serious undertaking and confirm that I am in a reasonably good state of mental and physical health.

To the best of my knowledge, I have given true and complete answers to all the questions.

Signature of applicant _____ **Date** _____

Please return this form to:

Fei Hong B.Sc., M.Sc.
PhD Candidate in Mindfulness Psychology
University of Tübingen
Psychology Institute
Schleichstr. 4, Level 4, Room 4.437
72076 Tübingen. Germany
Tel. 0049 (0) 7071 29 78 294
Email: fei.hong@uni-tuebingen.de

Appendix 3: Examples of Questionnaires Used at the Pilot Study

Mindful Self-Development Coaching (MSDC) Program Post Self Evaluation - First Round

Dear first round MSDC Program participants,

I thank you for being with me on this first 8-week long self-developmental program, I hope you decide to continue the mindful way of living from now on. Please help me to complete the post-program self evaluation questionnaire. If you want, I am more than happy to share with you on scientific level whether you have developed and how much you have done so. I can either send it to you via Email or we can talk it through in an additional one-to-one session. Please allows some time for me to process the data.

Same as at the beginning of the program, there are two more parts to complete:
Part 1 is to see how mindful you are at the moment
Part 2 is to assess what is your perceived stress level during the last month

In the case if you find difficulties with some of the questions, either because of language or definitions of certain terms, please do ask me. Thank you for answering all the questions honestly and openly. Yes, that means to go with your gut or your feelings, rather than thinking it too long or too much, it is self-evaluation not an exam or assessment, your honesty valued more in this case. Thank you for your kind co-operation as always.

Part 1: How mindful you are at the moment?

The questions in this scale ask you about your feelings, thoughts and behaviour in general circumstances. In each case, you will be asked to indicate ***how often*** the statement applies to you. The best approach is to answer each question fairly quickly and honestly. Your first instinct is the most accurate answer in this case. Please be open and honest to yourself, this is a very good and tangible feedback to your current mindfulness level at the beginning of this self-developmental journey.

For each question choose from the following alternatives:

Almost never	Very few times	Sometimes	Fairly often	Very often
1	2	3	4	5

Please select the one which describes you most in general circumstances.

01. I notice changes in my body, such as whether my breathing slows down or speeds up.	1	2	3	4	5
02. I'm good at finding the words to describe my feelings.	1	2	3	4	5
03. When I do things, my mind wanders off and I'm easily distracted.	1	2	3	4	5
04. I criticize myself for having irrational or inappropriate emotions.	1	2	3	4	5

Mindful Self-Development Coaching (MSDC) Program Self-Evaluation Questionnaire

05. I pay attention to whether my muscles are tense or relaxed.	1	2	3	4	5
06. I can easily put my beliefs, opinions, and expectations into words.	1	2	3	4	5
07. When I'm doing something, I'm only focused on what I'm doing, nothing else.	1	2	3	4	5
08. I tend to evaluate whether my perceptions are right or wrong.	1	2	3	4	5
09. When I'm walking, I deliberately notice the sensations of my body moving.	1	2	3	4	5
10. I'm good at thinking of words to express my perceptions, such as how things taste, smell, or sound.	1	2	3	4	5
11. I drive on "automatic pilot" without paying attention to what I'm doing.	1	2	3	4	5
12. I tell myself that I shouldn't be feeling the way I'm feeling.	1	2	3	4	5
13. When I take a shower or a bath, I stay alert to the sensations of water on my body.	1	2	3	4	5
14. It's hard for me to find the words to describe what I'm thinking.	1	2	3	4	5
15. When I'm reading, I focus all my attention on what I'm reading.	1	2	3	4	5
16. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	1	2	3	4	5
17. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	1	2	3	4	5
18. I have trouble thinking of the right words to express how I feel about things.	1	2	3	4	5
19. When I do things, I get totally wrapped up in them and don't think about anything else.	1	2	3	4	5
20. I make judgments about whether my thoughts are good or bad.	1	2	3	4	5
21. I pay attention to sensations, such as the wind in my hair or sun on my face	1	2	3	4	5
22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	1	2	3	4	5
23. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.	1	2	3	4	5
24. I tend to make judgments about how worthwhile or worthless my experiences are.	1	2	3	4	5
25. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	1	2	3	4	5

26. Even when I'm feeling terribly upset, I can find a way to put it into words.	1	2	3	4	5
27. When I'm doing chores, such as cleaning or laundry, I tend to daydream or think of other things	1	2	3	4	5
28. I tell myself that I shouldn't be thinking the way I'm thinking.	1	2	3	4	5
29. I notice the smells and aromas of things.	1	2	3	4	5
30. I intentionally stay aware of my feelings.	1	2	3	4	5
31. I tend to do several things at once rather than focusing on one thing at a time.	1	2	3	4	5
32. I think some of my emotions are bad or inappropriate and I shouldn't feel them.	1	2	3	4	5
33. I notice visual elements in art or nature, such as colours, shapes, textures, or patterns of light and shadow.	1	2	3	4	5
34. My natural tendency is to put my experiences into words.	1	2	3	4	5
35. When I'm working on something, part of my mind is occupied with other topics, such as what I'll be doing later, or things I'd rather be doing.	1	2	3	4	5
36. I disapprove of myself when I have irrational ideas.	1	2	3	4	5
37. I pay attention to how my emotions affect my thoughts and behaviour.	1	2	3	4	5
38. I get completely absorbed in what I'm doing, so that all my attention is focused on it.	1	2	3	4	5
39. I notice when my moods begin to change.	1	2	3	4	5

Part 2: What is your perceived stress level during the last month

Like the last part, below questions again ask you about your feelings and thoughts but **during the last month**. In each case, you will be asked to indicate ***how often*** you felt or thought a certain way. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate then alternative that seems like a reasonable estimate. There are only 14 questions in this part.

for each question choose from the following alternatives:

Almost never	Very few times	Sometimes	Fairly often	Very often
1	2	3	4	5

Please select the one which describes you most during **the last month.**

Mindful Self-Development Coaching (MSDC) Program Self-Evaluation Questionnaire

1. In the last month, how often have you been upset because of something that happened unexpectedly?	1	2	3	4	5
2. In the last month, how often have you felt that you were unable to control the important things in your life?	1	2	3	4	5
3. In the last month, how often have you felt nervous and “stressed”?	1	2	3	4	5
4. In the last month, how often have you dealt successfully with irritating life hassles?	1	2	3	4	5
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	1	2	3	4	5
6. In the last month, how often have you felt confident about your ability to handle your personal problems?	1	2	3	4	5
7. In the last month, how often have you felt that things were going your way?	1	2	3	4	5
8. In the last month, how often have you found that you could not cope with all the things that you have to do?	1	2	3	4	5
9. In the last month, how often have you been able to control irritations in your life?	1	2	3	4	5
10. In the last month, how often have you felt that you were on top of things (i.e. everything under your control)?	1	2	3	4	5
11. In the last month, how often have you been angered because of things that happened that were outside of your control?	1	2	3	4	5
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?	1	2	3	4	5
13. In the last month, how often have you been able to control the way you spend your time?	1	2	3	4	5
14. In the last month, how often have you felt difficulties were pilling up so high that you could not overcome them?	1	2	3	4	5

Thank you very much for your kind co-operation as always! I am very delighted to share this wonderful 8 weeks with you all. I wish a beautiful and mindful life ahead of you. Thank you, thank you, thank you!

How are you feeling right now?

Date _____ Name _____

You are all known by now, please decide quickly, yes, **without thinking too much,** which of the two corresponds most closely to your **present state** or the way you feel **now**. Put a cross next to the right word. Only if you are completely unable to make a decision should you mark the box in the column "neither-nor". Fill up all the lines! Thank you for your co-operation.

I am feeling now …

		more		more	neither-nor
1	outgoing		inhibited		
2	in a good mood		gloomy		
3	lacking in drive		motivated		
4	sickly		healthy		
5	determined		aimless		
6	serious		happy-go-lucky		
7	lacking in ideas		full of ideas		
8	sensitive		insensitive		
9	pessimistic		optimistic		
10	carefree		brooding		
11	worn out		fully of energy		
12	able to love		unable to love		
13	guilty		guiltless		
14	exhausted		refreshed		
15	fed-up with life		enjoying life		
16	good		bad		
17	merry		sad		
18	loved		unloved		
19	lazy		active		
20	reserved		responsive		
21	full of life		lifeless		
22	spirited		lacking in energy		
23	attentive		absent-minded		
24	desperate		hopeful		
25	contented		discontented		
26	timid		adventurous		
27	strong		weak		
28	well-balanced		unbalanced		

Thank you and enjoy the 8th, the last meeting of this wonderful 8-week long developmental journey!

How are you feeling right now?

Date _____ Name _____

Please decide quickly – **without thinking too much** – which of the two corresponds most closely to your **present state** or the way you feel **now**. Put a cross in the box to the right of this word. Only if you are completely unable to make a decision should you mark the box in the column “neither-nor”. Please fill up all the lines! Thank you for your co-operation.

I am feeling now …

		more		more	neither-nor
1	alert		listless		
2	indifferent towards others		interested in others		
3	cheerful		downcast and blue		
4	successful		unsuccessful		
5	irritable		calm		
6	indecisive		decisive		
7	joyful		tearful		
8	good-humoured		ill-humoured		
9	with a poor appetite		with a good appetite		
10	sociable		withdrawn		
11	worthless		of full value		
12	relaxed		tense		
13	happy		unhappy		
14	shy		bold		
15	sinful and wicked		pure		
16	secure		threatened		
17	abandoned		cared for		
18	even-tempered		short-tempered		
19	confident		insecure		
20	miserable		jolly		
21	flexible		rigid		
22	tired		rested		
23	hesitant		sure		
24	composed		restless		
25	without energy		energetic		
26	useless		useful		
27	sluggish		animated		
28	superior		inferior		

Thank you from my heart for being a part of this wonderful journey. There are 2 more Questionnaires to complete as an conclusion. Thank you so much for your kind co-operation!

Appendix 4: Collection of Homework Emails Used at the Pilot Study

MSDC1 Week1

1. Two times a day, sitting meditations for 5-7 minutes

Suggested time: as soon as you wake up and shortly before you go to bed; or at least half hour after your lunch if that is possible

Instructions: simply observing your breathing, in and out, make efforts to maintain your attention on every breath you make, in and out. Notice the tiny differences between each breath, and between inhale and exhale. If you find your mind is running away, simply bring it back to your breathing, smile and start again. If you continue experience difficulties, then do few slightly hard breathing, only few would do, then come back to normal breathing, and simply observe as it is. What important is that the effort of each time you bring your attention back on your breathing, and your perfect peace of mind after you did so, that is, without self-blaming or being irritated, just accept as it is and continue.

2. One time a day, one full body scan

Suggested time: before you do your evening sitting meditation. But, once you complete the body scan, open your eyes, take a short break, and then start with the sitting meditation.

Instructions: You can start either from the top of head to the bottom of your feet, or the other way around as we did in the first session, or what even better is to do both ways as a complete circle. To help your attention flowing at this beginning stage, I strongly recommend you to record your own instructions in the order you prefer, in the speed you feel comfortable. You may have to try few times to get the right tone, speed and feeling. This is a way to know better of your voice, your body and the relationship between these two. Love your own voice just like love every parts of your own body, you are as perfect as everyone else!

3. Mindful diary: note down every moment which you notice your own breathing

Suggested time: whenever you notice your own breathing, make a note, it can be a short note on your handy, or send yourself a text message, or simply wrote down on a note book in your pocket.

Instructions: in order to enhance the “being” at the moment experience, I suggest you also note down the 5 sensational details at the moment you feel or notice your breathing. For example, yesterday one of the moments I noticed my breathing: At the footpath tunnel, heard the beautiful echo of a violin piece, saw the appreciating smile of the street artist, smelt the damp of the tunnel, felt the chill air through my body and hot blood circulation caused by the wonderful melody, tasted like Vanilla ice cream (so I bought one at the end of the tunnel).

MSDC1 Week2

1. Two times a day, sitting meditations for 5 -10 minutes

Suggested time: as soon as you wake up and shortly before you go to bed; or at least half hour after your lunch if that suits you better

Instructions (the text is mainly from the Vipassana meditation course, as I said I did not invent this technique, it is the teaching from the Buddha, here I share it with you): simply observing your breathing and the sensations within the limited triangle area of the nostrils, from the top of your nose down to the upper lip. You may feel the temperature of the breath itself, as well as the many sensations which are not related to breath: heat, cold, itching, vibrating, pressure, tension, pain and others. As long as we are breathing, there is bound to be some kind of sensations. For this week, we are focusing on what happens only within the area of the nostrils.

Please do your best not to react to the sensation; just observe. You cannot choose what sensation to feel; it is beyond our conscious decisions------it is not the aim to attract unnatural sensations in this practice. Just remain aware of the sensation till it passes away, and then focus on whatever new sensation takes its place. Don't look for anything in particular, just accept and observe whatever occurs naturally. The name of the sensation is not important; what matters is to be aware of the reality of the sensation without reacting to it. If several sensations appear at one time, focus on the subtlest sensation. And if there is no sensation, continue observing your natural breathing.

You will notice sensations elsewhere in the body but for now you must learn how to ignore them, simply pay no attention. By continuing to focus on a small area, you make your mind sharper. This is how you practice the right awareness.

If you notice that your breathing become unnatural, then give yourself some time, letting go the tension inside of you, not wanting things to happen or not happen. Doing your best to bring all awareness on the limited area, at the same time to accept as it is, to be at the now. The effort on balancing is the right effort to work on.

2. One time a day, one full body scan, **either sitting or standing, or while moving**

Suggested time: anytime you feel like, it can be during a short tea or coffee break; waiting at the bus stop; riding bicycle; standing in the queue or walking back to home, and so on.

Instructions: same as last week, if your inner voice is strong and clear enough to direct, then do so. If not, then maybe it is better to record your voice. If you can find someone (maybe another member from the program) to lead you through the body scan, it is also a good idea. Do the way suits you most.

3. Anchor the every positive mindful moment!

Suggested time: whenever the moment you feel good!

Instructions: Noticing your breathing is merely a good indication what you are at this moment. The moment is neutral; it can be positive or negative feelings. For this exercise, we

only anchor those moments which **you feel really good and positive**, it can be a big accomplishment, it can also be a small detail like noticing the blooming roses on your way back home, or a friendly smile from a stranger you just encountered. In order to enhance these good feelings, please at the same time also **feel all your fingers and toes**. Because fingers and toes are the very end of our nervous system, feeling then gives you clear awareness of your own body. Again, it would be very beneficial if you can note those beautiful moments down in the 5 sensational details, or some of you may have even deeper experiences, then do your best to note them down in the way you can easily record them later. This would be the rich resource and support when you need it most.

Like Lao-Zi, the Chinese philosopher said:" (the Tao) is always present and always available.... If you are willing to be lived by it, you will see it everywhere, even in the most ordinary things."

MSDC1 Week3

1. Two times a day, sitting meditations for 7-12 minutes

Similar like last week, simply observing your breathing and the sensations within the more limited triangle area of the nostrils, from the bottom of your nose down to the upper lip. It is important to stress the point again, just observe, not expect or react. If there is no sensation, continue observing your natural breathing or repeat the prayer you prefer. If some particular sensations elsewhere in the body disturb you, you must learn how to ignore them, just observe without reaction or emotions (liking or disliking), if you could succeed doing so, then you have already disassociated from the position of actor or actress to the higher position of the director.

Every time you succeed to discipline yourself to sit and meditate, you have made the progress on confronting the dark shadow side of you. If you prefer, you can start with a prayer to help you to concentrate at the beginning of the meditation, once you are able to calm down inside, it is better stop repeating the prayer and start to observe your sensations only. This is to sharp our mind, increase concentration, and purify ourselves.

2. At least one mindful meal a day – eat with full attention and appreciation

Any meal you prefer through out the day.

Eat it with full awareness and appreciation, only eat, not talking, not reading or watching TV or computer screen. Take your time, first look and smell the food in front of you before dive into it, feel the sensations arise inside of you, in your mouth, your stomach, even in your fingers and toes. Make a small bite, taste it between your teeth and your tongue, slowly take it in and being fully aware of your whole body sensations.

Mindful eating can help with over eating and emotional eating; it is a great way to cultivate mindfulness into our daily life. Give a try and let me know how you get on with it!

3. Activating the moment of NOW, free from sense of time and space

Being moment is kind of feeling that free from sense of time and space, it is truly HERE and NOW. Some of you have already had some brief moments of this free from time and space true moment experiences in the last two weeks. So please continue to do what you are

doing on noticing and anchoring every beautiful and wonderful moment of your life. Those moments come by itself, however, if you are doing what you are really love to do, it is much easier to active them, and for this week, let's give a try!

Select one thing which you really love and enjoy doing it, maybe playing with a music instrument, singing, dancing, painting, writing, cycling, eating, cooking, hiking, walking, gardening, doing solo sports (team and competitive sports are not recommended for this practice). It is better without any electronic devices, especially computer, TV or MP3. It is also much better to do it alone, as social interactions distract us to go deep within. Remember, those moments come themselves, please put your whole attention into the thing you do, but take it easy on whatever outcomes you may have. If you are able to experience it only once in this week, that is a success; if you don't but you are able to maintain your inner balance while trying, it is another kind of success.

Accept what we cannot change, but do change whatever we can manage.

MSDC1 Week4

1. Vipassana meditation, at least a full round once a day

From this week on we are doing Vipassana meditation, it is a way to examine our body with our full attention, by doing so we purify our body as well as our mind. This is the biggest difference between body scan and Vipassana meditation. Body scan is aimed to increase bodily sensation and relaxation, but Vipassana meditation is an opportunity to take concrete steps toward liberation. It helps us to learn how to free the mind of the tensions and prejudices that disturb the flow of daily life. By doing so one begins to discover how to live each moment peacefully, productively, happily. At the same time one starts progressing toward the highest goal to which mankind can aspire: purity of mind, freedom from all suffering, full enlightenment or whatever language you may call it. However, one should not expect any result, as salvation cannot be done by oneself, it is beyond our control. Buddha himself said, if one aims to be enlightened, then he walks the exact opposite direction.

Like we have done in the meeting, start with focusing on the little triangle area of below the nostrils for few minutes, till your attention is stabilized and under the control, then move your full attention to the top of your head. Starting from this point, in the area you can maintain your full attention, once you feel any kind of sensation, then keep your attention move down to the next part of your body. Please work in an order, any order may be followed, but an order is necessary. Otherwise some parts of the body will be missed out, and those parts will remain blind, blank. Sensations exist throughout the body, and in this technique, it is very important to develop the ability to experience them everywhere. For this purpose moving in order is very helpful.

If in a part of the body there is no sensation, you may keep your attention there for few more seconds to a minute. In reality there is sensation there, as in every particle of the body, but it is of such a subtle nature that your mind is not aware of it consciously, and therefore this area seems blind, so-called blind spots. Stay for up to a minute, observing calmly, quietly, without expecting or judgments. Don't develop craving for a sensation, or aversion towards the blindness. If you do so, you have lost the balance of your mind, and an unbalanced mind is very dull; it certainly cannot help you to experience the more subtle sensations. But if the mind remains balanced, it becomes sharper and more sensitive, capable of detecting subtle sensations. If within a minute still no sensation appears, then smilingly move further. Next round, again stay for a minute; sooner or later you will begin to experience sensations there

and throughout the body. If you have stayed for a minute and still cannot feel a sensation, then try to feel the touch of your clothing if it is a covered area, or the touch of the atmosphere if it is uncovered. Begin with these superficial sensations, and gradually you will start to feel other ones as well.

If the attention is fixed in one part of the body and a sensation starts in another, in this case continue moving in order. Don't try to stop the sensations in other parts of the body--you cannot do so--but don't give them any importance. Observe each sensation only when you come to it, moving in order. Otherwise you will jump from one place to another, missing many parts of the body, observing only gross sensations. You have to train yourself to observe all the different sensations in every part of the body, gross or subtle, pleasant or unpleasant, distinct or feeble. Therefore never allow the attention to jump from, place to place. (Again, text is mainly from Vipassana meditation course)

If you have other individual questions, please feel free to ask me either in mail or in person. Doubts and confusions need to be cleared, so you practice in total understanding, which is very important.

2. At least one mindful meal a day – eat with full attention and appreciation

Continue to eat at least one meal a day with mindfulness.

Plus one more mindful daily activity of your choice

Start another daily activity with mindfulness, like brushing teeth, having showers, combing hairs, walking to office and back home, whatever you feel most appropriate. Remember, the biggest meditation is the life itself.

MSDC1 Week5

1. Two times a day, sitting meditations for 20 minutes

As I said in the meeting, you can decide which meditation you like to practice, either the Vipassana meditation or Anapana meditation (what we did for the first 3 weeks, focusing on breathing only), or any other meditations which you feel familiar and comfortable with. The aim is to ***develop the habit*** of sitting down quietly in the morning and afternoon to meditate and using this special time for yourself. However, one important point is that do NOT mix different techniques (between Vipassana and Anapana is OK), because the outcome can be very unpredictable, and I would not know how to support you if the “unpredictable” does happen.

If you want to train your self-discipline and improve your determination, then I strongly recommend you to sit through the whole meditation without change the position, keep your back erect, keep your hands, arms and legs still, keep your eyes closed; simply moving your attention in the order you choose, observing whatever bodily sensations you may experience during this period. When you are able to observe the good, bad and painful sensations with distance, and to maintain the balance of the mind, you are on the way to be the director of your own life.

If you have other individual questions, please feel free to ask me either in mail or in person. Doubts and confusions need to be cleared, so you practice in total understanding, which is very important.

2. At least one mindful meal a day, plus one more mindful daily activity of your choice

Continue to eat at least one meal a day with mindfulness, plus the daily activity you started since last week, how to live your life is the real meditation.

In order to live life fully, you need to be present for it. There is no time like the present, and the present is all we have. Hence, it is the only time to eat, drink, listen, see, hear, feel, do, learn and grow. Without awareness the moment, how can we see what is really going on, hear what is really around and inside of us, taste what is really in the food, feel and express emotions such as love and appreciation, and do what we need to do to take care of ourselves as well as our loved ones?

So why not live your life in a mindful, peaceful and meaningful way?!

3. Aware of unpleasant moments, then apply your anchor to bring back the balance

I sincerely hope you have developed a powerful anchor to support you to go through it. During the week, when you loose the balance of your mind, such like being irritated, angry, stressed, ashamed or any other negative emotions, be aware of it, ask yourself how did you notice it? Which kind of signals reach to your consciousness? Then acknowledge it, “all right, I know I am stressed/angry/annoyed…” The next step is to bring yourself back to balance by applying the anchor you have been practised in the last 4 weeks! Give yourself enough time, space, courage and patience to make this significant developmental step.

For those pleasant and beautiful moments, please do continue to enjoy and anchor them. Please remember, *you are not your thoughts or opinions, your like or dislikes, or your body*. They are more like weather patterns in your mind that you can be aware of, just like clouds moving across the sky, so you have the choice to be imprisoned by or to be freed from. Spending time and energy on the practices of how to live your life in this mindful way is the best investment you could make, and it is the adventure of a lifetime!

MSDC Week 6

The Sunday was full day silent retreat. From this week on, there is no more recommended homework, but find the best combination of different practices which fits perfectly into your daily schedule.

MSDC Week 7

Continue to try different combinations, make mindful way of living into every aspect of your life. I also share with you the poem "love after love" from Derek Walcott.

Love after Love

The time will come when, with elation,
You will greet yourself arriving,
at your own door, in your own mirror,
and each will smile at the other's welcome
and say, sit here. Eat.
You will love again the stranger who was your self.
Give wine. Give bread. Give back your heart
to itself, to the stranger who has loved you
All your life, whom you have ignored
For another, who knows you by heart.
Take down the love letters from the bookshelf,
the photographs, the desperate notes,
peel your own image from the mirror.
Sit. Feast on your life.
Derek Walcott

MSDC1 Week 8

The End of the program, no more homework are given, but your own decision on whether continue the mindful way of living and what kind of mindful practice you like to continue.

Appendix 5: Example of Posters Used at the Main Study

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

How to Develop the Self through Mindfulness to Enhance Job Satisfaction?



2nd Mindful Self-Development Coaching (MSDC) Program

Open Talk on Tuesday 2nd October from 19:00 to 21:00 at Psychology Institute, Room 4.328, Level 3, Schleichstr. 4, Tübingen

Mindful Self-Development Coaching (MSDC) Program is a doctoral research, a mindful meditation based intervention with focus on self-development. Results from 1st round shown:
• significant improvement on mindfulness level
• significant reduction on perceived stress level
The oral feedbacks from participants are also encouragingly positive (see project official website)

The **2nd MSDC program** is designed based on the learning from the first round, and with more focus on how to develop the self through mindfulness to enhance job satisfaction.

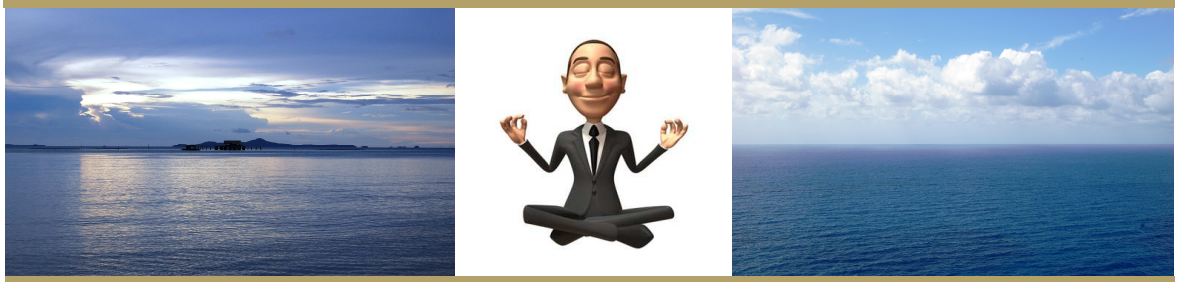
Who we are looking for?
•Scholars (PhD, Post-Doc fellows & visiting scholars) with employment contracts
•Students who are doing apprenticeship at any organisation during the whole program
•Good English level and strong commitment is also a must

When is the 2nd round MSDC?
8-weeks long with biweekly full day training and group practicing on Sundays (**14 and 28 Oct; 11 and 25 Nov, and 9 Dec**), plus two 90-minutes one-to-one individual coaching sessions

Fei Hong, PhD Candidate in Mindful Self-Development Coaching (MSDC) Program, fei.hong@uni-tuebingen.de
Psychology Institute, Schleichstraße 4, 72074, Tuebingen

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

2nd Mindful Self-Development Coaching (MSDC) Program



How to Develop the Self through Mindfulness to Enhance Job Satisfaction?

Open Talk on Tuesday 2nd October from 19:00 to 21:00 at Psychology Institute, Lecture Room 4.328, Level 3, Schleichstr. 4, Tübingen

Mindful Self-Development Coaching (MSDC) Program is a doctoral research, a mindful meditation based intervention with focus on self-development. Results from 1st round shown:
• significant improvement on mindfulness level
• significant reduction on perceived stress level
The oral feedbacks from participants are also encouragingly positive (see project official website)

The **2nd MSDC program** is designed based on the learning from the first round, and with more focus on how to develop the self through mindfulness to enhance job satisfaction.

Who we are looking for?
•Scholars (PhD, Post-Doc fellows & visiting scholars) with employment contracts
•Students who are doing apprenticeship at any organisation during the whole program
•Good English level and strong commitment is also a must

When is the 2nd round MSDC?
8-weeks long with biweekly full day training and group practicing on Sundays (**14 and 28 Oct; 11 and 25 Nov, and 9 Dec**), plus two 90-minutes one-to-one individual coaching sessions

Fei Hong, PhD Candidate in Mindful Self-Development Coaching (MSDC) Program, fei.hong@uni-tuebingen.de
Psychology Institute, Schleichstraße 4, 72074, Tuebingen

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Free Mock Assessment Center Experience

A doctoral research at the Psychology Institute of the University is now looking for participants for the mock Assessment Centre experience.

The Assessment Centre Experience includes:
- 20 minutes on-line self-evaluation questionnaire (off site)
- 60 minutes computer based Cognitive Test
- 30 minutes pen & pencil based Logical Test
- 30 minutes individual structured Interview
- 60 minutes video taped Group Challenge

Participation requirement:
- be able to communicate well in English (oral & written)
- be able to committe to two Assessment Centre experiences, one in October and one in December 2013
- NOT suffering from any mental illness or undergoing an episode of depression

Dates of October Assessment Centre:
Saturday, 26/10, 13:00-17:30hr
Saturday, 2/11, 13:00-17:30hr or Sunday, 3/11, 13:00-17:30hr

Your benefits:
- Experience the Assessment Centre as in real life situation for FREE
- Receive professional feedback from Human Resource (HR) point of view in January 2014
- For Psychology students, each Assessment Centre experience gives 5 “VPN-Stunden”

If you are interested, please register with Ms Fei Hong via Email fei.hong(a)uni-tuebingen.de With your name, study program, choice of AC and the reasons why you would like to take part.

Appendix 6: Example of the MSDC Official Project Webpages

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

MATHEMATISCH-
NATURWISSENSCHAFTLICHE FAKULTÄT
Klinische Psychologie und Psychotherapie

Google™ Benutzerdefinie →
A A A | Uni A-Z →
Anmelden →

ARBEITSBEREICH | FORSCHUNGSPROJEKTE | STUDIENTEILNEHMER GESUCHT | ABSCHLUSSARBEITEN | PSYCHOTHERAPEUTISCHE AMBULANZ

Home > ... > Arbeitsbereiche > Klinische Psychologie und Psychotherap... > Forschungsprojekte > Mindful Self-Development Coaching Prog...

KLINISCHE PSYCHOLOGIE UND PSYCHOTHERAPIE

- Evaluativer Stress und Körperbildwahrnehmung bei der Binge-Eating-Störung
- Körperbildstörung bei Frauen mit Binge-Eating-Störung
- Emotionsregulation bei Frauen mit Binge-Eating-Störung
- Mirror Exposure for the Treatment of Body Image Distortion in Anorexia Nervosa
- Aufmerksamkeitsbias für Essensreize bei der Binge-Eating-Störung
- Therapieevaluation bei Binge-Eating-Störung (BES)
- Dysfunktionale kognitive Verarbeitung bei psychischen Störungen
- Psychophysische Korrelate von Achtsamkeit
- **Mindful Self-Development Coaching Program (MSDC)**
  - Now looking for participants
- Behandlung von Schlafproblemen
- Prävention emotionaler Beeinträchtigungen bei Schülern

Klinische Psychologie und Psychotherapie

Welcome to the official page of the Mindful Self-Development Coaching (MSDC) Program

Prevention for Stress & Burn out

In co-operation with the Central Graduate Academy of the University of Tuebingen

What is the MSDC program?
Mindful Self-Development Coaching Program (MSDC) is designed for preventing stress and burn out. It is a mindful meditation based intervention with focus on **self-development**, in particular **self-awareness** (i.e. be aware of your strengths, weaknesses and potentials; be aware of your thinking and feeling patterns;know how to live your life mindfully and joyfully) and **self-compassion** (i.e. a balanced approach to your negative emotions so that feelings are neither suppressed nor exaggerated).

What you can develop by the end of the MSDC program?
If you complete the whole program, all 5 full day trainings and recommended daily homework, then you are expected to be better able to:

- → direct and sustain attention and concentration internally and externally
- → respond rather than react when facing challenges and difficulties
- → establish deep connections and listen with effectiveness & open heart to yourself and others
- → be aware of the personal borders of your own and others
- → gain more compassions to the self and others by feeling less blaming and guiltiness

What is the typical format of the MSDC full day meeting?
Every meeting has its unique focus; therefore the setting is different from meeting to meeting. However, there are some fixed points and a typical setting looks like this:

10:30 Welcome and checking in
- → Warming up (various exercises of stretching, body scan, or Yoga)
- → Main message of the meeting
- → Sitting meditation 1 (the length will increase throughout the journey)
- → A couple of mindful exercises (either in group, in pairs or individually)

12:30 Lunch break
13:30 Moving meditation
- → (various formats like walking, dancing, Yoga or Tai-Chi);
- → Sitting meditation 2
- → A couple of self-development exercises (depending on the focus of the meeting)
- → Recommended homework and explanation

16:30 Sharing and checking out

When is the next round of the MSDC program and how can I participate?
The 6th MSDC program will be from October till December 2014. For more details and how to apply, please check out the **announcement page**.

The MSDC program always starts with an **open talk**, which provides an opportunity to see and feel where the training takes place, to hear the reason and facts behind the design, to experience a couple of the exercises and to ask all the questions you may have.
Since the 5th round of the MSDC program includes the half day **Assessment Center Experience** to give additional behvaioural insights for the research project, at the same time you can obtain valuable and objective feedback at the end of training.

About the Trainers

Fei Hong
Mrs. Fei Hong originally comes from China, has studied and worked in Europe for more than 12 years. She is the initiator, developer and trainer for the Mindful Self-Development Coaching Program (MSDC). Apart from MSDC program, Mrs Hong is also offering Assessment Centre Workshop as well as Presentation & Public Speaking Workshop for students and PhDs

at the University of Tübingen. Prior to her doctoral research, Mrs Hong has worked at two of the Fortune Top 100 companies as Account Manager, Buying Manager and Commercial HR & Capability Manager for a total of 5 years. Mrs Hong has done her Master degree in Social Psychology at the London School of Economics and Political Science (LSE) and her Bachelor (Honour) degree in Psychology at the Middlesex University in London. Mrs Hong has been practising meditation for many years, she is also a Yoga practitioner, a public speaker, a NLP practitioner, a traveller, biker and hiker. Mrs Hong welcomes all questions and inquires about the MSDC program, please feel free to contact her as below.

Mrs. Fei Hong
PhD (Candidate) in Mindful Self-Development Coaching Program (MSDC)
University of Tübingen, Psychology Institute
Schleichstr. 4, Level 5, Room 4.516, 72076 Tübingen, Germany
Email: **fei.hong(a)uni-tuebingen.de**

Philipp Beuchel
Mr. Philipp Beuchel is co-conducting the courses. He has studied philosophy, education and french at the University of Tübingen and University of Pune, India. Currently Mr. Beuchel works as a research assistant for the MSDC program at the Psychology Institute, supporting it particularly with his knowledge in Indian philosophy and his experience in yoga and meditation. He practices both for more than ten years by now and teaches yoga for more than five years. Besides that he loves to be outside in nature and to travel.
Email: **philipp.beuchel(a)uni-tuebingen.de**

KLINISCHE PSYCHOLOGIE UND PSYCHOTHERAPIE

- Evaluativer Stress und Körperbildwahrnehmung bei der Binge-Eating-Störung
- Körperbildstörung bei Frauen mit Binge-Eating-Störung
- Emotionsregulation bei Frauen mit Binge-Eating-Störung
- Mirror Exposure for the Treatment of Body Image Distortion in Anorexia Nervosa
- Aufmerksamkeitsbias für Essensreize bei der Binge-Eating-Störung
- Therapieevaluation bei Binge-Eating-Störung (BES)
- Dysfunktionale kognitive Verarbeitung bei psychischen Störungen
- Psychophysische Korrelate von Achtsamkeit
- **Mindful Self-Development Coaching Program (MSDC)**
  - Now looking for participants
- Behandlung von Schlafproblemen
- Prävention emotionaler Beeinträchtigungen bei Schülern

6th Mindful Self-Development Coaching Program (MSDC)

Prevention for Stress and Burn out

In co-operation with the Central Graduate Academy of the University of Tuebingen

What is the MSDC program?
For detailed information please check the MSDC official website (**www.uni-tuebingen.de/de/31628**).

When is the 6th MSDC program?
The whole program is 8-weeks long with biweekly full day training and group practicing on Sundays, plus one 90-minutes one-to-one individual coaching session available upon request.

Full day group meeting (all five meetings are required)

- Meeting 1 – Sunday 12/10 2014, 10:30 - 17:00hr
- Meeting 2 – Sunday 26/10 2014, 10:30 - 17:00hr
- Meeting 3 – Sunday 09/11 2014, 10:30 - 17:00hr
- Meeting 4 – Sunday 23/11 2014, 10:30 - 17:00hr
- Meeting 5 – Sunday 07/12 2014, 10:30 - 17:00hr

Free information evening – open talks (only one open talk is required)

- Open Talk 1 – Tuesday 30/09, 19:00 - 21:00hr
- Open Talk 2 – Wednesday 01/10, 19:00 - 21:00hr

at **Psychology Institute, Lecture Room 4.332, Level 3, Schleichstraße 4, 72076, Tübingen**.
Please register with the trainer **Ms Fei Hong**.

Who can take a part?
Everyone is welcomed, who

- can communicate well in English;
- is interested in self-development, stress reduction and well-being improvement;
- currently is not suffering from any mental illness or undergoing a major episode of depression;
- is willing to and able to commit to the 8-week-long program continuously
- is willing to cooperate the pre- and post program evaluation (Assessment Centre Experience plus online questionnaire)

How much would it cost?
The similar programs in Europe normally cost between 250-400 Euro per person. During the doctoral research program, it is **free** for all participants who satisfy the above criteria. However, in order to encourage the commitment of full participation, a **refundable 100 Euro deposit** is required at the beginning of the program. The deposit will be returned upon completion of the full program (attend all five Sunday meetings plus pre- and post program Assessment Centre Experience & Online questionnaire)..

What is the Assessment Centre Experience?
Since the 5th MSDC program the Assessment Centre Experience has been introduced as behavioural observation measurement. The AC will run in the same format as the researcher has done in her former company as Human Resource (HR) manager, so it is the best practice you can get for preparing competitive job selections as well as a rare chance to observe yourself.

The AC includes:

- 20 minutes on-line self-evaluation questionnaire (before the AC day)
- 60 minutes computer based Cognitive Test
- 30 minutes pen & pencil based Logical Test
- 30 minutes individual structured Interview
- 60 minutes Group Challenge
- 20 minutes on-line self-evaluation questionnaire

Dates of pre- MSDC program Assessment Center Experience (only one is required):

- **Tuesday 07 October, 12:00-16:20hr or 14:15-18:30hr**
- **Wednesday 08 October, 12:00-16:20hr or 14:15-18:30hr**

→ **Thursday 09 October, 12:00-16:20hr or 14:15-18:30hr**

Dates of post MSDC program Assessment Center Experience (only one is required):

→ **Friday 12 December, 12:00-16:20hr or 14:15-18:30hr**
→ **Saturday 13 December, 12:00-16:20hr or 14:15-18:30hr**
→ **Sunday 14 December, 12:00-16:20hr or 14:15-18:30hr**

Any Questions?
If you have any questions regarding the training program, please feel free to get in contact with the trainer **Ms Fei Hong**.

Appendix 7: Registration Form Used at the Main Study

Mindful Self-Development Coaching (MSDC) Program
Registration Form/ Anmeldeformular

To apply for a place in the course please complete this form (using **Block Capitals** for your name and Email address) and return it to the manager. Please answer all questions fully. **All information submitted during the registration procedure will be treated strictly confidentially and will be used for this PhD research purpose only.**

Um sich für einen Platz im Programm zu bewerben, füllen Sie bitte dieses Formular aus (benutzen Sie **Druckbuchstaben** für Ihren Name und Ihre Emailadresse) und händigen Sie es der Projektmanagerin aus. Bitte beantworten Sie alle Fragen vollständig. **Alle angegebenen Informationen werden streng vertraulich behandelt und nur für die Zwecke des Promotionsprojektes verwendet.**

Section 1		
First name/ Vorname	**Surname/ Nachname**	
Date of birth/Geburtsdatum (DD.MM.YY-YY)	**Gender/ Geschlecht** Male/m ☐ Female/w ☐	**Nationality/ Nationalität**
Occupation/ Beruf	**Employed/ Angestellt** Yes/ Ja ☐ No/ Nein ☐	**Preferred Language/Bevorzugte Sprache** English ☐ Deutsch ☐
Marital Status/ Familienstand Single ☐ Married/ Verheiratet ☐ Divorced/ Geschieden ☐ Widowed/ Verwittwet ☐		
Phone/ Telefonnummer	**E-mail address/ E-Mail-Adresse**	

Section 2
Have you had any previous experience with meditation techniques, mindful therapies or healing practices? *If yes, please give details.* Haben Sie bereits Erfahrungen mit meditativen Techniken, achtsamen Therapien etc.? *Wenn ja, welche.* Yes/Ja ☐ No/Nein ☐
What do you do for relaxation or stress reduction (e.g. sports, arts etc.)? Welche Tätigkeiten üben Sie zur Entspannung oder Stressreduktion aus (Sport, Hobby etc.)?
Where or from whom did you learn about MSDC? Wie haben Sie über das MSDC erfahren?

Section 3

Do you have any physical health problems or medical concerns? Yes/Ja ☐ No/Nein ☐

If yes, please give details.

Bestehen bei Ihnen gesundheitliche Probleme oder Erkrankungen? *Wenn ja, welche*.

Are you pregnant? Sind Sie schwanger? Yes/Ja ☐ No/Nein ☐

Do you have, or have you ever had, any mental health problems such as significant depression or anxiety, panic attacks, bipolar depression, schizophrenia, etc.? Yes/Ja ☐ No/Nein ☐

If yes, please give details (dates, symptoms, duration, hospitalisation, treatment, present condition).
If necessary, continue on another sheet.

Leiden Sie momentan, oder haben Sie jemals an einer psychischen Störung, wie z.B. schwere Depression, Angststörung, Panikstörung, Bipolare Störung oder Schizophrenie gelitten?
Wenn ja, beschreiben Sie dies bitte etwas genauer (Datum, Symptome, Dauer, Klinikaufenthalt, Medikation, momentaner Zustand). Falls nötig, benutzen Sie bitte die Rückseite.

Are you now taking, or have you taken within the past two years, any prescribed medication regularly? Yes/Ja ☐ No/Nein ☐

If yes, please give details (dates, types, dosage, present use).

Nehmen Sie zur Zeit, oder nahmen Sie in den letzten zwei Jahren, regelmäßig verschreibungspflichtige Medikamente?
Wenn ja, beschreiben Sie dies bitte etwas genauer (Datum, Name, Dosierung, momentaner Gebrauch).

Are you now taking, or have you taken within the past two years, any illegal substances (such as heroin, cocaine, ecstasy, amphetamines, marijuana or other intoxicants)? Yes/Ja ☐ No/Nein ☐

If yes, please give details (dates, types, amounts, present use).

Konsumieren Sie momentan, oder konsumierten Sie während der letzten zwei Jahre illegale Substanzen (z.B. Heroin, Kokain, Ecstasy, Amphetamine, Marihuana oder andere Rauschmittel)?
Wenn ja, beschreiben Sie dies bitte etwas genauer (Datum, Art, Menge, momentaner Gebrauch).

Do you, or have you regularly consumed alcohol within the past two years? Yes/Ja ☐ No/Nein ☐

Konsumieren Sie momentan, oder konsumierten Sie während der letzten zwei Jahre regelmäßig Alkohol?

Section 4

In order to ensure the participant's anonymity throughout the whole program, please create your personal code as described below. This code will also be required in the online questionnaire and for the paper and pencil questionnaire in the meetings on Sundays.

To create your personal code, take the first two letters of your mother's first name, the first two letters of your father's first name and your birthday (example: mother's first name – Julia; father's first name – Paul; day of birth - 14th. The personal code: JUPA14)

Um die Anonymität der Teilnehmer während des gesamten Programms zu gewährleisten, erstellen Sie bitte einen persönlichen Code anhand der Beschreibung weiter unten. Dieser Code wird ebenfalls für den Online-Fragebogen und für den „Papier-und-Bleistift"-Fragebogen an den Trainings-Sonntagen benötigt.

Um Ihren persönlichen Code zu erstellen, nehmen Sie bitte die ersten zwei Buchstaben des Vornamens Ihrer Mutter, die ersten zwei Buchstaben des Vornamens Ihres Vaters und Ihren Geburtstag (Beispiel: Vorname der Mutter – Julia; Vorname des Vaters – Paul; Geburtstag – 14. Der persönliche Code lautet: JUPA14)

Your personal Code/ Ihr persönlicher Code: ____ ____ ____ ____ ____ ____

I agree to take full participation in the 8 week long MSDC program and am willing to submit 100 EURO refundable deposit at the beginning of the course. I understand that the deposit will only be returned upon the full completion of the MSDC course.
I realize that participation in a MSDC program is a serious undertaking and confirm that I am in a reasonably good state of mental and physical health.
To the best of my knowledge, I have given true and complete answers to all the above questions.

Ich willige ein, über die kompletten acht Wochen hinweg am MSDC Programm teilzunehmen und die Kaution von 100€ zu Beginn des Programms zu entrichten. Ich verstehe, dass die Kaution nur nach einer erfolgreichen Teilnahme am gesamten Programm zurückgezahlt werden kann.
Ich bin mir dessen bewusst, dass meine Teilnahme am MSDC Programm aus ernsthaftem Interesse erfolgt und versichere, dass ich mich in einer guten physischen und psychischen Verfassung befinde.
Ich habe die oben stehenden Fragen wahrheitsgemäß und nach bestem Wissen und Gewissen beantwortet.

Signature/Unterschrift_____ **Date/Datum**

Please return this form to/ Bitte zurück an:

Fei Hong B.Sc., M.Sc.
Alexandra Halaskova Dipl.-Psych.
PhD Candidates in Mindfulness Psychology
University of Tübingen
Psychology Institute
Schleichstr. 4, Level 5, Room 4.516
72076 Tübingen. Germany
Email: fei.hong@uni-tuebingen.de or alexandra.halaskova@psycho.uni-tuebingen.de

Appendix 8: Example of Online Questionnaires Used at the Main Study

Please select your preferred language. / Bitte wählen Sie Ihre bevorzugte Sprache aus.

- ○ English / Englisch
- ○ German / Deutsch

Weiter

Dear MSDC Program participant!

Welcome to this challenging 8-week long self-developmental journey. In order to measure the quality of this program and your personal development, please complete this self evaluation questionnaire. All information is strictly confidential, and it will be used for this PhD research project only.

There are four parts in this questionnaire:
Part 1: How mindful are you at the moment?
Part 2: What has been your perceived stress level during the last month?
Part 3: How satisfied are you with your life?
Part 4: How do you typically treat yourself in difficult times?

It is essential and important that you answer all the questions **honestly and openly**. The entire survey will take approximately 15-20 minutes to complete. Please ensure that you will not be disturbed during this time. It is important to finish the whole questionnaire at once. The return button on your web browser will not work. If you do cancel the questionnaire, you will have to start from the beginning.

Thank you for your co-operation!

Back Next

Please write your personal code.

Remember: to create your personal code, take the first two letters of your mother's first name, the first two letters of your father's first name and your birthday.
Example: mother's first name – Julia; father's first name – Paul; day of birth - 14th. The personal code: JUPA14

Back Next

Five Facets of Mindfulness Questionnaire (FFMQ)

Part 1: How mindful are you at the moment?

The questions in the following scale ask you about your feelings, thoughts, and behavior in general circumstances. In each case, you will be asked to indicate **how often** the statement applies to you. The best approach is to answer each question quickly and honestly. Your first instinct is the most accurate answer in this case. Please be open and honest with yourself, this is a good and tangible feedback to your current mindfulness level at the present moment.

Please select the one which describes you most in general circumstances.

	Almost never	Very few times	Sometimes	Fairly often	Very often
I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	O	O	O	O	O
In difficult situations, I can pause without immediately reacting.	O	O	O	O	O
When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	O	O	O	O	O
It seems I am "running on automatic" without much awareness of what I'm doing.	O	O	O	O	O
When I have distressing thoughts or images, I feel calm soon after.	O	O	O	O	O
I tell myself that I shouldn't be thinking the way I'm thinking.	O	O	O	O	O
I notice the smells and aromas of things.	O	O	O	O	O
Even when I'm feeling terribly upset, I can find a way to put it into words.	O	O	O	O	O
I rush through activities without being really attentive to them.	O	O	O	O	O
When I have distressing thoughts or images I am able just to notice them without reacting.	O	O	O	O	O
I think some of my emotions are bad or inappropriate and I shouldn't feel them.	O	O	O	O	O
I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	O	O	O	O	O
My natural tendency is to put my experiences into words	O	O	O	O	O
When I have distressing thoughts or images, I just notice them and let them go.	O	O	O	O	O
I do jobs or tasks automatically without being aware of what I'm doing.	O	O	O	O	O
When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.	O	O	O	O	O
I pay attention to how my emotions affect my thoughts and behavior.	O	O	O	O	O

	Almost never	Very few times	Sometimes	Fairly often	Very often
I can usually describe how I feel at the moment in considerable detail.	○	○	○	○	○
I find myself doing things without paying attention.	○	○	○	○	○
I disapprove of myself when I have irrational ideas.	○	○	○	○	○
When I'm walking, I deliberately notice the sensations of my body moving.	○	○	○	○	○
I'm good at finding words to describe my feelings.	○	○	○	○	○
I criticize myself for having irrational or inappropriate emotions.	○	○	○	○	○
I perceive my feelings and emotions without having to react to them.	○	○	○	○	○
When I do things, my mind wanders off and I'm easily distracted.	○	○	○	○	○
When I take a shower or bath, I stay alert to the sensations of water on my body.	○	○	○	○	○
I can easily put my beliefs, opinions, and expectations into words.	○	○	○	○	○
I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.	○	○	○	○	○
I watch my feelings without getting lost in them.	○	○	○	○	○
I tell myself I shouldn't be feeling the way I'm feeling.	○	○	○	○	○
I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	○	○	○	○	○
It is hard for me to find the words to describe what I'm thinking.	○	○	○	○	○
I am easily distracted.	○	○	○	○	○
I believe some of my thoughts are abnormal or bad and I shouldn’t think that way.	○	○	○	○	○
I pay attention to sensations, such as the wind in my hair or sun on my face.	○	○	○	○	○
I have trouble thinking of the right words to express how I feel about things.	○	○	○	○	○
I make judgments about whether my thoughts are good or bad.	○	○	○	○	○
I find it difficult to stay focused on what’s happening in the present.	○	○	○	○	○
When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.	○	○	○	○	○

Perceived Stress Scale (PSS)

Part 2: What has been your perceived stress level during the last month?
Below are questions, asking you about your feelings and thoughts during the last month (i.e. last 30 days). In each case, you will be asked to indicate **how often** you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.
Thank you for being open and honest with yourself, this is a very good and tangible feedback to your current stress level at this moment.

Please select the answer for each statement which describes you most during the last month.

	Almost never	Very few times	Sometimes	Fairly often	Very often
In the last month, how often have you been upset because of something that happened unexpectedly?	O	O	O	O	O
In the last month, how often have you felt that you were unable to control the important things in your life?	O	O	O	O	O
In the last month, how often have you felt nervous and "stressed"?	O	O	O	O	O
In the last month, how often have you dealt successfully with irritating life hassles?	O	O	O	O	O
In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	O	O	O	O	O
In the last month, how often have you felt confident about your ability to handle your personal problems?	O	O	O	O	O
In the last month, how often have you felt that things were going your way?	O	O	O	O	O
In the last month, how often have you found that you could not cope with all the things that you have to do?	O	O	O	O	O
In the last month, how often have you been able to control irritations in your life?	O	O	O	O	O
In the last month, how often have you been able to control irritations in your life?	O	O	O	O	O
In the last month, how often have you felt that you were on top of things (things are under my control)?	O	O	O	O	O
In the last month, how often have you been angered because of things that happened that were outside of your control?	O	O	O	O	O
In the last month, how often have you found yourself thinking about things that you have to accomplish?	O	O	O	O	O
In the last month, how often have you been able to control the way you spend your time?	O	O	O	O	O
In the last month, how often have you felt difficulties were pilling up so high that you could not overcome them?	O	O	O	O	O

Satisfaction With Life Scale (SWLS)

Part 3: How satisfied are you with your life?

This part contains questions about your general life satisfaction.
Please note, that there is no right or wrong answer, only your very own and individual feelings about your life.
Below are five statements with which you may agree or disagree.
Using the 1-7 scale below, indicate your agreement with each item.
Please be open and honest in your responding.

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
In most ways my life is close to my ideal.	O	O	O	O	O	O	O
The conditions of my life are excellent.	O	O	O	O	O	O	O
I am satisfied with my life.	O	O	O	O	O	O	O
So far I have gotten the important things I want in life.	O	O	O	O	O	O	O
If I could live my life over, I would change almost nothing.	O	O	O	O	O	O	O

Self-Compassion Scale (SCS)

Back Next

Part 4: How do you typically treat yourself in difficult times?

In this last part we would like to know more about how you typically act toward yourself in difficult times or situations of life. Once again, there is no right or wrong answer, only your very own and individual feeling of how you treat yourself. Thank you for being open and honest in your responding.
Please read each statement carefully before answering.

Using the 1-5 scale below, indicate **how often** you behave in the stated manner.

	Almost never	Occasionally	About half of the time	Fairly often	Almost always
I'm disapproving and judgmental about my own flaws and inadequacies.	O	O	O	O	O
When I'm feeling down I tend to obsess and fixate on everything that's wrong.	O	O	O	O	O
When things are going badly for me, I see the difficulties as part of life that everyone goes through.	O	O	O	O	O
When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.	O	O	O	O	O

	Almost never	Occasionally	About half of the time	Fairly often	Almost always
I try to be loving towards myself when I'm feeling emotional pain.	O	O	O	O	O
When I fail at something important to me I become consumed by feelings of inadequacy.	O	O	O	O	O
When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.	O	O	O	O	O
When times are really difficult, I tend to be tough on myself.	O	O	O	O	O
When something upsets me I try to keep my emotions in balance.	O	O	O	O	O
When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.	O	O	O	O	O
I'm intolerant and impatient towards those aspects of my personality I don't like.	O	O	O	O	O
When I'm going through a very hard time, I give myself the caring and tenderness I need.	O	O	O	O	O
When I'm feeling down, I tend to feel like most other people are probably happier than I am.	O	O	O	O	O
When something painful happens I try to take a balanced view of the situation.	O	O	O	O	O
I try to see my failings as part of the human condition.	O	O	O	O	O
When I see aspects of myself that I don't like, I get down on myself.	O	O	O	O	O
When I fail at something important to me I try to keep things in perspective.	O	O	O	O	O
When I'm really struggling, I tend to feel like other people must be having an easier time of it.	O	O	O	O	O
I'm kind to myself when I'm experiencing suffering.	O	O	O	O	O
When something upsets me I get carried away with my feelings.	O	O	O	O	O
I can be a bit cold-hearted towards myself when I'm experiencing suffering.	O	O	O	O	O
When I'm feeling down I try to approach my feelings with curiosity and openness.	O	O	O	O	O
I'm tolerant of my own flaws and inadequacies.	O	O	O	O	O

	Almost never	Occasionally	About half of the time	Fairly often	Almost always
When something painful happens I tend to blow the incident out of proportion.	O	O	O	O	O
When I fail at something that's important to me, I tend to feel alone in my failure.	O	O	O	O	O
I try to be understanding and patient towards those aspects of my personality I don't like.	O	O	O	O	O

Back Next

Now you are finished with the online questionnaire!

Thank you for your co-operation!

Appendix 9: Assessment Center Experience Registration Form

Assessment Center Experience
Registration Form/ Anmeldeformular

To register for the course please complete this form (using **Block Capitals** for your name and Email address) and return it to the manager. Please answer all questions fully. **All information submitted during the registration procedure will be treated strictly confidentially and will be used for this PhD research purpose only.**

Um sich anzumelden, füllen Sie bitte dieses Formular aus (benutzen Sie **Druckbuchstaben** für Ihren Name und Ihre Emailadresse) und händigen Sie es der Projektmanagerin aus. Bitte beantworten Sie alle Fragen vollständig. **Alle angegebenen Informationen werden streng vertraulich behandelt und nur für die Zwecke des Promotionsprojektes verwendet.**

<table>
<tr><th colspan="4">Section 1</th></tr>
<tr><td colspan="2">First name/ Vorname</td><td colspan="2">Surname/ Nachname</td></tr>
<tr><td>Date of birth/Geburtsdatum (DD.MM.YYYY)</td><td colspan="2">Gender/ Geschlecht
M/m ☐ F/w ☐ Other/anderes ☐</td><td>Nationality/ Nationalität</td></tr>
<tr><td>Program / angestrebter Abschluss
Bachelor ☐ Master ☐ PhD/PostDoc ☐
Staatsexamen/Magister/Diplom ☐
Other/Anderes (employed/angestellt, …) ☐
Please give details/ und zwar…
_____</td><td colspan="2">Faculty / Fakultät
Theology/Theologisch ☐ Law/Juristisch ☐
Medicine/Medizinisch ☐
Humanities/Philosophisch ☐
Economy & Social Science/Wirtschaft & Soz-wiss. ☐
Mathematics & Nat.Sci. /Mathemat.-Naturwiss. ☐</td><td>Subject/Fach</td></tr>
<tr><td colspan="2">Phone/ Telefonnummer</td><td colspan="2">E-mail address/ E-Mail-Adresse</td></tr>
</table>

<table>
<tr><th>Section 2</th></tr>
<tr><td>In order to ensure the participant's anonymity, please create your personal code as described below. This code is the same as in the online questionnaire.
To create your personal code, take the first two letters of your mother's first name, the first two letters of your father's first name and your birthday (example: mother's first name – Julia; father's first name – Paul; day of birth - 14th. The personal code: JUPA14)

Um die Anonymität der Teilnehmer gewährleisten, erstellen Sie bitte einen persönlichen Code anhand der Beschreibung weiter unten. Dieser Code ist der gleiche wie im Online-Fragebogen.
Um Ihren persönlichen Code zu erstellen, nehmen Sie bitte die ersten zwei Buchstaben des Vornamens Ihrer Mutter, die ersten zwei Buchstaben des Vornamens Ihres Vaters und Ihren Geburtstag (Beispiel: Vorname der Mutter – Julia; Vorname des Vaters – Paul; Geburtstag – 14. Der persönliche Code lautet: JUPA14)

Your personal Code/ Ihr persönlicher Code: ___ ___ ___ ___ ___ ___</td></tr>
</table>

Section 3

Do you have, or have you ever had, any mental health problems such as significant depression or anxiety, panic attacks, bipolar depression, schizophrenia, etc.? Yes/Ja ☐ No/Nein ☐
If yes, please give details (dates, symptoms, duration, hospitalisation, treatment, present condition).
If necessary, continue on another sheet.

Leiden Sie momentan, oder haben Sie jemals an einer psychischen Störung, wie z.B. schwere Depression, Angststörung, Panikstörung, Bipolare Störung oder Schizophrenie gelitten?
Wenn ja, beschreiben Sie dies bitte etwas genauer (Datum, Symptome, Dauer, Klinikaufenthalt, Medikation, momentaner Zustand). Falls nötig, benutzen Sie bitte ein extra Blatt.

Are you now taking, or have you taken within the past two years, any prescribed medication regularly? Yes/Ja ☐ No/Nein ☐
If yes, please give details (dates, types, dosage, present use).

Nehmen Sie zur Zeit, oder nahmen Sie in den letzten zwei Jahren, regelmäßig verschreibungspflichtige Medikamente?
Wenn ja, beschreiben Sie dies bitte etwas genauer (Datum, Name, Dosierung, momentaner Gebrauch).

Section 4

There is a possibility for a 60 min private feedback session, if you are willing to do a 2nd Assessment Center Experience. Yes/Ja ☐ No/Nein ☐
If yes, you will be contacted via email when the date is fixed.
Please contact the program manager to request the feedback session.

Sie können in einem 60 minütigen Gespräch ein persönliches Feedback erhalten, wenn Sie ein zweites Mal diese Assessment Center Erfahrung machen und üben möchten.
Falls ja, werden Sie per Email kontaktiert, sobald der Termin feststeht. Bitte kontaktieren Sie die Kursleiterin um einen Termin für das persönliche Gespräch zu vereinbaren.

To the best of my knowledge, I have given true and complete answers to all the above questions.

Ich habe die oben stehenden Fragen wahrheitsgemäß und nach bestem Wissen und Gewissen beantwortet.

Signature/Unterschrift_____ **Date/Datum** _____

Appendix 10: Example of Master Timetable of Assessment Centers

MSDC Assessment Centre Experience Master Timetable																
Date	**Friday 13 Dec 2013**															
Venue	**Psychology Institute, Schleichstr.4, Tuebingen**															
Group Green	**1**	Candidate1	**2**	Candidate2	**3**	Candidate3	**4**	Candidate4	**5**	Candidate5	**6**	Candidate6	**7**	Candidate7	**8**	Candidate8
Group Blue	**9**	Candidate9	**10**	Candidate10	**11**	Candidate11	**12**	Candidate12	**13**	Candidate13	**14**	Candidate14	**15**	Candidate15	**16**	Candidate16

Time/Room	Room A	Room B	Study Room 1	Room B	Study Room 1	Room D	
Activity	**Welcome, Group Challenge, Review**	**Interview**	**ReasoningTest**	**Interview**	**ReasoningTest**	**Cognitive Tests**	
1230	Group Green - Welcoming & Introduction (20')						
1250		Candidate1	Candidate2	Candidate4	Candidate3		Candidate5
							Candidate6
							Candidate7
1320		Candidate2	Candidate1	Candidate3	Candidate4		Candidate8
						C.P.T. Test (5' + 20')	
						INKA Test (10' + 20')	
1350	Group Green Break (15')						
1405		Candidate6	Candidate5	Candidate8	Candidate7		Candidate1
							Candidate2
							Candidate3
1435		Candidate5	Candidate6	Candidate7	Candidate8		Candidate4
1445	Group Blue - Welcoming & Introduction (20')					C.P.T. Test (5' + 20')	
						INKA Test (10' + 20')	
1505	Group Green Break (15')	Candidate10	Candidate9	Candidate12	Candidate11		Candidate13
							Candidate14
1520	Group Green Group Challenge						Candidate15
1530	Candidates 1-8	Canidate9	Candidate10	Canidate11	Candidate12		Candidate16
						C.P.T. Test (5' + 20')	
						INKA Test (10' + 20')	
1600		Team Blue Break (15')					
1615	Group Green Individual & Group Review (30')	Candidate14	Candidate13	Candidate16	Candidate15		Candidate9
							Candidate10
							Candidate11
1645		Candidate13	Candidate14	Candidate15	Candidate16		Candidate12
						C.P.T. Test (5' + 20')	
						INKA Test (10' + 20')	
1715	Group Blue Break (15')						
1730	Group Blue Group Challenge						
	Candidates 9-16						
1830	Group Blue Individual & Group Review (30')						
1900	Team pack up						

Appendix 11: Example of Transcripts Used at Assessment Centers

Interview Transcript

Interview – at the beginning

1. **Check whether the participate has been to the first AC. If not then check the registration form** quickly, whether there is any missing part, keep eyes on key questions on Section 2. If there is any answer in Section 3 is YES, then inform the candidate that the trainer will talk to him/her privately after the AC.
2. Open statement: purpose/context:

"**This interview is part of the Assessment Center experience. The AC is a measurement of a doctoral research program at the Psychology Institute of University of Tübingen**. "

3. End statement: "**Your answers given in this interview will have no effect on the other tasks of the seminar. There are no correct or wrong answers. Therefore please reply as honest and as open as possible to make your experience of this AC situation as authentic as possible. Again, all information given in this study is strictly confidential.**"

Part Three: Interview - main part

1. **"Can you tell me a bit more about your meditation experience/your hobby?**
    i. a). How long have you been doing it?
    ii. b). How often do you do it?
2. **"Can you give an example, where you solved a difficult problem successfully?"**
3. **"Please talk about a situation, where you could not make any progress anymore. What did you do then?"**
4. **"What do you want to develop in yourself at the moment?"**
5. **"What are your expectations on the MSDC program?"**

Interview – at the beginning

4. **Check whether the participate has been to the first AC. If yes, the proceed**
5. Open statement: purpose/context:

"**This interview is part of the Assessment Center experience. The AC is a measurement of a doctoral research program at the Psychology Institute of University of Tübingen**. "

6. End statement: "**Your answers given in this interview will have no effect on the other tasks of the seminar. There are no correct or wrong answers. Therefore please reply as honest and as open as possible to make your experience of this AC situation as authentic as possible. Again, all information given in this study is strictly confidential.**"

Part Three: Interview - main part

1. **"Can you tell me whether you have gained any new experiences in the last two months? In particular related with meditation?**
    a. if yes, please give details
    b. if not, then tell me what you have done in the last two months to relax or enjoy your free time?
2. **"Can you give an example, where you solved a difficult problem/challenge successfully?"**
3. **"Please talk about a situation, where you could not make any progress anymore. What did you do then?"**
4. **"What do you want to develop in yourself at the moment?"**
5. **"What are your expectations on the MSDC program now?"**

Acknowledgement:
“**OK, Thank you very much for your cooperation. I hope that you can benefit from this experience and I wish you best of luck for future interviews.”**

Group Administrator Instructions

Please read these instructions aloud, as they are written.

"**This exercise is a group challenge, it will last for 60 minutes and it divided into two parts.**

Part one is group discussion, and part two is group activity.

The group discussion will last 30 minutes, your task is to reach an agreement on the topic as a group. Voting is NOT allowed. Please discuss the topics freely and openly.

The first topic you are required to discuss is **"Capability, attitude and opportunity is three important factors to self-development. If you have to rank them in priority order, the most important is the first one, what would be your choice and why?"**

You will have 2 minutes to prepare for your answer. Then each person in turn will have maximum 2 minutes to present back to the group their individual choices and the reasons behind them.

Do you have any question before we start? You 2 minutes preparation time starts now.
after 2 minutes…

Time is up, now it is time to present your priority order and reasons behind it.

Who would like to start first?
Thank you. Who would like to be the next one? Etc Etc

As a group you now have 20 minutes to decide which is the most important and why. Once again rank these in priority order starting with the most important one. You all must agree with the final decision. Voting is not allowed.

At the end of the 20 minutes, as a group you will need to nominate a member to present your answers back.

Are their any questions before we start? Your 20 minutes time starts now.

After 20 minutes

Time is up, stop talking please. Thank you.

Can you please present the groups' response back?

Thank you. Now we move on to the second part.

Part two is a group activity. Your task is to build an object as high as possible. You can use any material available on this table, but only on this table. The object has to be able to stand free on itself for at least 15 seconds. You have 20 minutes to complete the task.

For the video recording reason, please do not use the side of the table near the window, thank you.

Are their any questions before we start?

Your 20 minutes time starts now.

After 20 minutes

Stop, time is up. Your testing 15 seconds starts now.
Count down from 15, 14, 13 … 1.
If the object is still standing, then say: **"Congratulations! Your task is successful. "**
If the object is no longer standing, then say**: "I am sorry, your task is failed"**

Thank you for your cooperation, I hope you have enjoyed the group challenge! Now we will move on to the last session, that is the review session. If anyone needs to have a natural break, please feel free to do so.

In this review session, I have three questions for you.

The first question is, if I may, bring you back in time, to the group activity you have just done, I would like to know, how do you feel about this group activity, as an individual, and as a group?

Who would like to start? Thank you. Who would like to the next one? Thank you….
When everyone has done.

The second question is, if I may, bring you back further in time, to the group discussion you have done not long ago. The task was to reach an agreement on ranking 5 factors as a group, I would like to know, how do you feel about this group discussion, as an individual, and as a group?

Who would like to start? Thank you. Who would like to the next one? Thank you….
When everyone has done.

The third and the last question in this review session is, if I may, once again, bring you back further in time, 4 and half hours ago, at the very beginning of this Assessment Centre experience, when you had 2 minutes to introduce yourself in this group. Think of what has happened in the last 4 and half hour, whether anything has changed, from individual point of view as well as from a group point of view, if so, what are the changes?

Who would like to start? Thank you. Who would like to the next one? Thank you.
When everyone has done.

Thank you very much, this is the end of the this Assessment Centre experience. I hope you have had fun and some benefits out of it. We can go off the recording now. (switch off the cameras).

Appendix 12: Example of Cognitive Tests Used at Assessment Centers

Nonverbal Reasoning Test for Assessment Centre of the MSDC Program

This is a nonverbal reasoning test with 18 problems.

During this AC you have 30 minutes to do as much as you can manage.

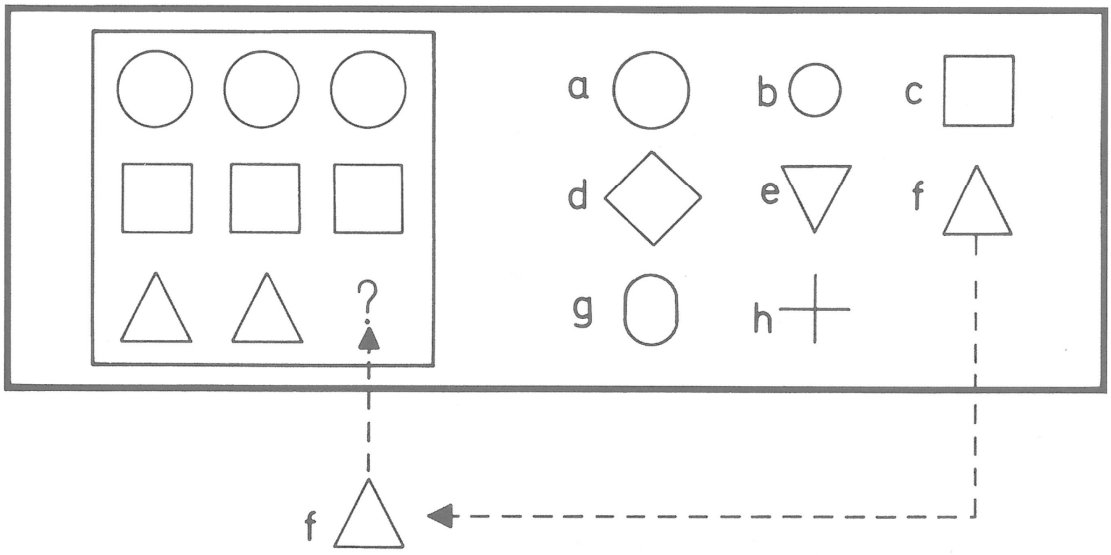
You are only measured on accuracy.

You will be given one example, and three practices for you to understand how to the test.

Please **do NOT** write anything on this master sheet, but on the answer sheet provided.

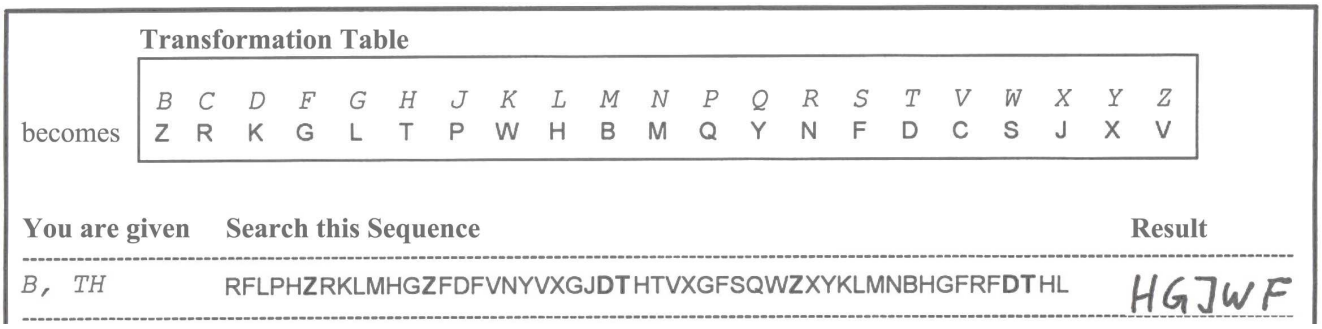
Here is your example.

Example:



Here is your first trail. The answer is on the next page.

Cognitive Test - Complexed Attention (INKA) Instructions



1) In the example (above) you see a transformation table and below that a sequence of letters.

2) Look at the letters you are given to the left of the sequence of letters. There is a single letter *(B)* and a pair of letters *(TH)*.

3) Transfrom all given letters in your mind with the helpf of the transformation table (B to Z TH to DT) and memorize these transformed letters.

4) Carefully scan the sequence of letters from left to right.

5) Whenever you encounter one of the transformed letters or letter pairs (Z or DT), type the letters to the left of this instance into the input field. Make sure you enter these letters in the order you find them. (The solution is: H G J W F.)

To CONTINUE press ENTER

Appendix 13: Example of Mood Questionnaire Used at the Main Study

Mindful Self-Development Coaching Program (MSDC)
Mood (or what so ever) give a name not just Questionnaire

Personal Code: __ __ __ __ __ __	**Date:**

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extend you have felt this way during the past week. Use the following scale to record your answers.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Enthusiastic	☐	☐	☐	☐	☐
Interested	☐	☐	☐	☐	☐
Determined	☐	☐	☐	☐	☐
Excited	☐	☐	☐	☐	☐
Inspired	☐	☐	☐	☐	☐
Alert	☐	☐	☐	☐	☐
Active	☐	☐	☐	☐	☐
Strong	☐	☐	☐	☐	☐
Proud	☐	☐	☐	☐	☐
Attentive	☐	☐	☐	☐	☐
Scared	☐	☐	☐	☐	☐
Afraid	☐	☐	☐	☐	☐
Upset	☐	☐	☐	☐	☐
Distressed	☐	☐	☐	☐	☐
Jittery	☐	☐	☐	☐	☐
Nervous	☐	☐	☐	☐	☐
Ashamed	☐	☐	☐	☐	☐
Guilty	☐	☐	☐	☐	☐
Irritable	☐	☐	☐	☐	☐
Hostile	☐	☐	☐	☐	☐

***

***

During the last 2 weeks, has any significant (positive/negative) event happened in your life? *If yes, please give details.*

Appendix 14: Collection of Recommended Homework Used at the Main Study

6th Mindful Self-Development Coaching Program (MSDC)

12th October 2014 1st meeting

Recommended daily mindful practice at home and at work

Formal practice

- ✓ **One sitting meditation (up to 20 minutes)**
  Simply focus on your breathing, in and out. At the same time learn to observe whatever rise up, the thoughts and/or emotions. Simply observe it like watch the clouds passing by in the sky. Constantly check whether your eyebrows are unlocked, shoulders are relaxed, and your back is absolutely straight!
- ✓ **One full body scan (5-10 minutes)**
  Move your attention systematically through your whole body. At this stage, you may keep the size of your attention same as the size of your hand. Ideally either just after you wake up in the morning or shortly before you fall asleep at the night
- ✓ **Two scheduled breathing breaks (2x3 minutes)**
  Breathe in for 7 counts, then hold your breath for 7 counts, then breathe out for another 7 counts, again hold your breath for 7 counts. Do this for at least 7 rounds. Decide in advance when is the most suitable time to take the breathing breaks. Set an alarm to remind yourself!

Informal practice

- ✓ **Starting one daily activity with full mindfulness**
  Select one daily activity, i.e. brushing teeth, combing hair, showering, walking, cycling, waiting for and taking the bus, eating alone… Do it very mindfully.
- ✓ **Keeping a mindful pleasant event dairy**
  Select ONE significant event of the day, the one event made you feel pleasant, happy and/or touched. Note down what was it, how your five senses triggered by it, and what thoughts and emotions associated with it. Only note down the key words. Start your recording of this 8-weeks long journey, it helps you to look in your life from different angle.

6th Mindful Self-Development Coaching Program (MSDC)

26.10.2014 2nd Meeting

Recommended daily mindful practice at home and at work

Formal practice

- ✓ **Two sitting meditations (minimum 20 minutes)**
  Start with one 7-round breathing break, then naturally get into meditation. Keep focus on breathing, be very alert on whatever thoughts, body sensations and emotions arise from within, only observe them come and go, without any judgments. Remind yourself, and this will soon pass away.

- ✓ **One full body scan (5-10 minutes)**
  Re-establish the connection with your body. Stay a bit longer at the areas where you normally or sometimes feel the pain or discomforts.

- ✓ **Two scheduled breathing breaks (2x3 minutes)**
  Pre-schedule the breathing breaks, you know when is the best time to give yourself this retreat for the well-being of yourself and the people around you. One of the 7-round deep breathing may give you two hours of full concentration!

Informal practice

- ✓ **Starting a new or continue the old mindful daily activity**
  If your time allows, then start one additional activity with mindfulness. If not, accept it without feeling negatively, and then continue to cultivate the selected mindful activity into your daily life. It is not the matter how many you can do, but how well you can do it.

- ✓ **Keeping an awareness calendar**
  Same as before, only this time select **one** significant event of the day, **one** that made you feel either pleasant or unpleasant. Note down as much key words as possible. Don't worry if you cannot recall all the sensations, what you can recall are the points that really matter.

6th Mindful Self-Development Coaching Program (MSDC)

09.11.2014 3rd Meeting

Recommended daily mindful practice at home and at work

"Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did do, so throw off the bowlines, sail away from safe harbor, catch the trade winds in your sails. Explore, Dream, Discover." Mark Twain

Formal practice

- ✓ **Two sitting meditations (ideally at least 20 minutes)**
  Same as previous weeks, simply keep the focus on breathing, be very alert on whatever thoughts, body sensations and emotions raised from within, observing how they come and go, also being alert any judgments you may have. Using this time as quiet quality time for yourself, when you are at peace, the world around you would be at peace too. You deserve the quality time for yourself, for the benefit of yourself as well as the benefits of everyone around you. Enjoy every beautiful and wonderful moment of your life!

- ✓ **As many breathing breaks as possible**
  Taking as many breathing breaks as possible. Before or during meetings; when having tea or coffee; during conversations; waiting in lines... At the same time, feel your fingers and toes, one by one. When you feel that, then you are at the present moment.

Informal practice

- ✓ **What is my relationship with this moment?**
  Ask yourself this key question as often as possible, it helps you aware the moment and how you are getting on with the present moment. You may naturally take a breathing break, or be alert on your body sensations, or whatever you may surprisingly discover. Simply remind yourself to ask this key question: what is my relationship with this moment?

- ✓ **Keeping a mindful calendar for purpose of learning & development**
  Same as before, only this time select **one** significant event of the day, the **one** you feel it worth recording. The Key point is: what do you want to learn and develop from the experience?

6th Mindful Self-Development Coaching Program (MSDC)

23.11.2013 4th Meeting

Recommended daily mindful practice at home and at work

"If your life goes along too easily, you become soft. Trying circumstances help you develop inner strength, and the courage to face difficulty without emotional breakdown." - Dalai Lama

From this week on, please feel free to try and design your own mindful daily practices, both formal and informal, at home and at work. You can try different combinations until you find the most suitable and workable one for you, yourself.

You can be mindful in every aspect of your life: eating, cooking, washing, talking, listening, working, doing sports, and simply being, being who you really and truly are!

You can do meditations in every format: sitting, walking, running, cycling, climbing stairs, and simply living. The biggest challenge of our life is to experience whatever happens in the outer world, the ups and downs even the losses and pains, with a kind of learning and developing attitude, trust the life only gives us the right and needed challenge at the right time. This attitude would help to maintain the balance of our inner world. Balance means peace, and peace comes from the most inner part of our heart! This is the art of living!

For the last two weeks of this program, your main focus is to find your personal mindful daily practice combination. Also it might be the right time to

- ✓ **Keep a mindful appreciation calendar**

At the end of the day, review it backwards, decide which moment or event makes you feel most appreciated or being thankful. Why do you pick up this event? Give as much details as possible. Especially which part of your body acted first? What's in your mind and what's the thinking pattern? Most of all, what it meant to you and how can you pass the appreciation on to the next day and the next person?

You could search the whole world over and never find anyone as deserving of your love as yourself.
- The Buddha

Last Meeting, 7.12.2014

Daily Mindful Practice at Home and at Work

Now it is the end of the 8-week-long MSDC program, it is also the beginning of your own life long practice. Mindful way of living means all aspects of your life. That is true, some aspects can be easily improved, but others especially with brainy tasks, which can be extremely difficult. So I here quote some useful guidelines for mindful living by Meditation teacher Larry Rosenberg:

1. When possible, do just one thing at a time.
2. Pay full attention to what you are doing.
3. When the mind wanders from what you are doing, bring it back.
4. Repeat step number three several billon times.
5. Investigate your distractions (thinking patterns).

Here are some tips which I find useful, give a try and see which fits you:

- ✓ When waking up, giving yourself a short while before standing up, you can take a few deep breathing or a quick body scan. Start your day with freshness and mindfulness.
- ✓ When stand up from the bed, be aware of the sensations the moment when your feet touch the ground, the first step you make of the day.
- ✓ Make every daily activity as your practice for mindful living, feeling the texture of the clothes when putting them on, sense drops of the shower flow down your body…
- ✓ When you open the door, feel the temperature difference, breathe in the fresh air, and smile for a wonderful day ahead of you.
- ✓ On your way to work or lessons, count how many interesting things you have noticed, like friendly greeting from a stranger, a hurried squirrel cross your way, a falling leave right in front of you…
- ✓ When you wait for buses or traffic lights, be aware of your bodily sensations and wondering mind pattern. Are you taking it as a chance to be mindful or start to plan the day already?
- ✓ Even you have to rush, be aware of the signs of tensions from your body, whether your eye brows are locked, teeth are biting each other, shoulders are frozen, or your heart is beating faster…
- ✓ Before enter a building, smile and take a deep breath before open the door, every door handle can be an anchor, as you never know which door leads to a beautiful view and a wonderful opportunity.

- ✓ Make the first 10 steps or stairs a little bit harder while count them, sense the connection between your feet, socks, shoes and the ground.
- ✓ Put mindful reminders (a picture, a postcard, a note) as anchors around your home, particularly on or near the computer screen.
- ✓ Switch off the monitor when talking to others or on the phone, give the person your full attention if you also want his or her full attention back.
- ✓ When you listening to others, can you be concentrated and mindful enough, being at the present, without judgments and eagerness to cut in, or wondering what should you say later…
- ✓ When you are talking to others, are you aware of those subtle movements of your listener, both facial and bodily movements, is he or she following you, whether your points really reach him or her?
- ✓ Adjust your monitor and chair to help you to sit upright and erect, that facilitates you make deep breathing, therefore more awareness in what you are doing.
- ✓ Set up alarms for breathing breaks or drink a lot of water so you have to go for natural breaks. One 7-round breathing break can easily give you a couple of hours' long concentration and productivity.
- ✓ On your way home, take a little bit longer way or get off few stops earlier, really feel every step you make, give yourself the time and space to switch from work-mode to home-mode.
- ✓ If you can, why not sometimes try a new way return home, a new path gives new view and new experience. Be curious and have the mind to try something new now and then.
- ✓ Before enter your home, feel the temperature difference between your hand and the key, the subtle sound when the lock opens, take a few deep breath before opening the door.
- ✓ Change your cloth as soon as you get in, feel the comfortableness and relaxation at home.
- ✓ Before got to bed or fall asleep, reflect your day backwards, thank for another day of development, do a 7-round breathing or a long body scan, that helps a good deep night sleep.

Remember, life itself is the best practice for mindful meditations. Thank you sincerely for being a part of this meaningful journey. I wish you a successful, beautiful and wonderful life!

Mindful Pleasant Event Calendar

The event	Sun 12.10	Mon 13.10	Tue 14.10	Wed 15.10	Thu 16.10	Fri 17.10	Sat 18.10
What was the event?							
What did you see and/or hear?							
Any smell and/or taste?							
How did your body react or feel?							
What's in your mind during the event?							
What's in your mind now when writing these down?							

6th Mindful Self-Development Coaching Program (MSDC)

Mindful Event Calendar – Pleasant and Unpleasant

The event	Sun 27.10	Mon 28.10	Tue 29.10	Wed 30.10	Thu 31.10	Fri 1.11	Sat 2.11
Pleasant/Unpleasant							
What was the event?							
What did you see and/or hear?							
Any smell and/or taste?							
How did your body react or feel?							
What's in your mind during the event?							
What's in your mind now when writing these down?							

5th Mindful Self-Development Coaching Program (MSDC)

Mindful Event Calendar – Leaning & Development

The event	Sun 10.11	Mon 11.11	Tue 12.11	Wed 13.11	Thu 14.11	Fri 15.11	Sat 16.11
Positive/Negative							
What was the event?							
What did you see?							
What did you hear?							
Any smell?							
Any taste?							
How did your body react or feel?							
What's in your mind during the event?							
What do I want to learn/develop from the experience?							

6th Mindful Self-Development Coaching Program (MSDC)

Mindful Event Calendar – Appreciation

The event	Sun 24.11	Mon 25.11	Tue 26.11	Wed 27.11	Thu 28.11	Fri 29.11	Sat 30.11
What is the significant event?							
What do I see?							
What do I hear?							
What do I smell or taste?							
How do I feel? How does my body react?							
What do I think during the event?							
Why am I thankful for this experience?							
Thank you, and how can I pass this to the next day and the next person?							

6th Mindful Self-Development Coaching Program (MSDC)

Appendix 15: Collection of Supporting Literatures Used at the Main Study

The two principles for the Mindful Self-Development Coaching Program (MSDC) are:

Being self-disciplined and

Being open and honest to yourself and other group members

The second principle is in fact the principle of love.

Here I quote the definition of discipline and love from one of my favorite author: Dr. Scott Peck:

"What I call discipline? There are four:

delaying of gratification,

acceptance of responsibility,

dedication to truth, and

balancing

(however) what lies in back of discipline - what provides the motive, the energy for discipline, this force is love...

I define love thus:

The will to extend one's self for the purpose of nurturing one's own (and) or another's spiritual growth.

Love is an act of will - namely, both an intention and an action. Will also implies choices. We do not have to love. We choose to love (in other words, love is a conscious decision)."

Dr. Scott Peck, Psychotherapist and author of 20 years best-selling book:

"The Road Less Travelled - A New Psychology of Love, Traditional Values and Spiritual Growth"

"I have a body, but I am not my body. I can see and feel my body, and what can be seen and felt is not the true Seer. My body may be tired or excited, sick or healthy, heavy or light, but that has nothing to do with my inward I. I have a body, but I am not my body."

"I have desires, but I am not my desires. I can know my desires, and what can be known is not the true Knower. Desires come and go, floating through my awareness, but they do not affect my inward I. I have desires, but I am not desires."

"I have emotions, but I am not my emotions. I can feel and sense my emotions, and what can be felt and sensed is not the true Feeler. Emotions pass through me, but they do not affect my inward I. I have emotions, but I am not emotions."

"I have thoughts, but I am not my thoughts. I can know and intuit my thoughts, and what can be known is not the true Knower. Thoughts come to me and thoughts leave me, but they do not affect my inward I. I have thoughts, but I am not my thoughts."

"I am what remains, a pure center of awareness, an unmoved witness of all these thoughts, emotions, feelings, and desires."

I am what I am.

By Ken Wilber

I am not I

I am not I

I am this one

Walking beside me whom I do not see,

Whom at times I manage to visit,

And whom at other times I forget;

The one who remains silent when I talk,

The one who forgives, sweet, when I hate,

The one who takes a walk where I am not,

The one who will remain standing when I die.

Juan Ramon Jimenez

in "The Winged Energy of Delight"

Lost

Stand still.
The trees ahead and bushes beside you
Are not lost.
Wherever you are is called
Here,
And you must treat it as a powerful stranger,
Must ask permission to know it and be known.

The forest breathes.
Listen. It answers,
I have made this place around you.
If you leave it, you may come back again, saying
Here.

No two trees are the same to Raven.
No two branches are the same to Wren.
If what a tree or a bush does is lost on you,
You are surely lost. Stand still.
The forest knows
Where you are.
You must let it find you.

– David Wagoner

Stillness Speaks

When you lose touch with your inner stillness, you lose touch with yourself. When you lose touch with yourself, you lose yourself in the world.

Your innermost sense of self, of who you are, is inseparable from stillness. This is the I Am that is deeper than name and form.

Stillness is your essential nature.
What is stillness?
The inner space or awareness in which the words on this page are being perceived and become thoughts.
Without that awareness, there would be no perception, no thoughts, no world.

You are that awareness,
disguised as a person.

- Eckhart Tolle

Love after Love

The time will come when, with elation,
You will greet yourself arriving,
at your own door, in your own mirror,
and each will smile at the other's welcome

and say, sit here. Eat.
You will love again the stranger who was your self.
Give wine. Give bread. Give back your heart
to itself, to the stranger who has loved you

All your life, whom you have ignored
For another, who knows you by heart.
Take down the love letters from the bookshelf,
the photographs, the desperate notes,
peel your own image from the mirror.
Sit. Feast on your life.

Derek Walcott

The blessing and forgiving prayer

May I be well, be happy and be healthy.
May I have enough courage, understanding, patience and determinations to meet and overcome the inevitable difficulties, problems and failures in life, and may I learn from and develop further by every tasks life gives to me.
May I be strong and open. May success and wealth serve me good.
May love, joy and peace be with me as always.

To my family, if you allow me to pray for you:
May you be well, be happy and be healthy.
May you have enough courage, understanding, patience and determinations to meet and overcome the inevitable difficulties, problems and failures in life, and may you learn from and develop further by every tasks life gives to you.
May you be strong and open. May success and wealth serve you good.
May love, joy and peace be with you as always.

To everyone I have met, known and encountered in this life so far, if you allow me to pray for you:
... (Repeat as previous)

To the strangers, and the family and friends yet to know, if you allow me to pray for you:
...

To those who hurt me in the past consciously and unconsciously, please forgive me for whatever inside of me triggered you to do so, and I forgive you for whatever you have done to me. Let's forgive each other, and we are all set free! If you allow me to pray for you:
...

To those whom I hurt in the past consciously and unconsciously, I humbly ask your forgiveness. I also forgive whatever inside of you triggered me to do so. Let's forgive each other, and we are all set free! If you allow me to pray for you:
...

To all the living beings in the universe, if you allow me to pray for you:
...

And it is done! I thank you all and I love you all.

Appendix 16: Example of Dimension 3 Nonverbal Measurement Forms

Mindful Development Assessment Center (MDAC)

Assessors Instructions for Instructed Interview

Assessor's Code _____ **Video Code** _____

#	Nonverbal Behavior Check List	Never	Seldom	Usually	Always
NV1	Upper body was absolutely straight or slightly lean forwards (i.e. back was not curved, shoulders are open)				
NV2	Head was well supported and straight (i.e. nodding appropriately)				
NV3	Both shoulders were relaxed, stable and balanced (i.e. no shrugs)				
NV4	Showed little nervous movements (i.e. not shaking or rocking)				
NV5	Both arms remained visible (i.e. not behind table or at the back)				
NV6	Both arms remained open (i.e. not closed or folded)				
NV7	Both legs remained open (i.e. naturally apart and flat, not crossed or twisted)				
NV8	Both feet remained apart and flat on the ground (i.e. not crossed or swing around)				
NV9	Both hands were visible, open and free (i.e.did not hold pen, or cover month or another hand)				
NV10	Used hand gestures expansively (i.e. big movements with upper arms)				
NV11	Used hand gestures supportively (i.e. pointing, demonstrating, and no self-touching)				
NV12	Facial expression was relaxed and joyful (i.e. with open facial lines, eye browns were open)				
	Total Nonverbal Behavior Scores	0			

#	Overall Perception Check List	Strong disagree	Disagree	Agree	Strong agree
OP1	Overall – this person appeared to be interested and engaged at the task				
OP2	Overall – this person felt comfortable in doing such task in front of the camera				
OP3	Overall – this person seems to feel good about him/herself				
OP4	Overall – this person appeared to be sympathetic				
OP5	Overall – this person appeared to be friendly				
	Total Overall Perception Scores	0			

Mindful Development Assessment Center (MDAC)
Assessors Instructions for Group Sessions

Assessor's Code _____ **Video Code** _____

#	Nonverbal Behavior Check List	Never	Seldom	Usually	Always
NV1	Upper body was straight or slightly lean forwards (i.e. back was not curved, shoulders are open)				
NV2	Head was well supported and straight (i.e. nodding appropriately)				
NV3	Both shoulders were relaxed, stable and balanced (i.e. no shrugs)				
NV4	Showed little nervous movements (i.e. not shaking or rocking)				
NV5	Both arms remained visible (i.e. not behind table or at the back)				
NV6	Both arms remained open (i.e. not closed or folded)				
NV7	Both hands were visible, open and free (i.e.did not hold pen, or cover month or another hand)				
NV8	When talking – maintained eye contacts with the whole group (i.e. looking around from person to person)				
NV9	When talking – used hand gestures expansively (i.e. with whole arms movements)				
NV10	When talking – used hand gestures supportively (i.e. pointing, demonstrating, and no self-touching)				
NV11	When talking – maintained upper body stability and balance (i.e. no nervous shaking or rocking)				
NV12	When listening – appeared to be attentive to the speaker at the time (i.e. looked at the speaker and/or nodding)				
	Total Nonverbal Behavior Scores	0			

#	Overall Perception Check List	Strong disagree	Disagree	Agree	Strong agree
OP1	Overall – this person appeared to be interested and engaged at the task				
OP2	Overall – this person felt comfortable in doing such task in front of the camera				
OP3	Overall – this person seems to feel good about him/herself				
OP4	Overall – this person appeared to be sympathetic				
OP5	Overall – this person appeared to be friendly				
	Total Overall Perception Scores	0			