

Exploring the effects of Metta meditation on emotional regulation: using semi structured interviews on adult novice meditators.

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Module Name: Research

Module Code: RESE8419

Qualification Details: Bachelor of Arts Honors in Psychology

Word count: 10745

Declaration

I hereby declare that the Research Report submitted for the Bachelor of Arts Honours Psychology degree to The Independent Institute of Education is my own work and has not previously been submitted to another University or Higher Education Institution for degree purposes

Acknowledgements

Thank you to everyone who supported me throughout this process. It could not have been done without any of you.

Abstract

The inability to effectively regulate one's emotions is linked to a variety of maladaptive behaviours and cognitive processes such as, psychotic symptoms, childhood trauma and negative affect (Bradley, DeFife, Fani, Guarnaccia, Phifer, Ressler & Westen, 2015). A global increase in anxiety and depression over the past several years (World Health Organization, 2017) calls for research into emotional stability and emotional regulation, and possible strategies to increase well-being. the study aimed to explore the effects of Metta mediation on emotional regulation, as well as other possible benefits of Metta mediation on emotions and well-being. The study was conducted on five novice Metta meditators that were recruited using purposive sampling. The study was qualitative. The data was collected using semi-structured interviews, as flexibility in the data collection process is important for an explorative qualitative study. The data was analyzed using thematic analysis. the study did not find a direct link between Metta mediation and emotional regulation. However, the participants reported experiencing increased compassion, benevolence, awareness, intent, and overall positive affect in relation to their Metta mediation practice. Further research needs to be conducted to determine whether Metta meditation is an effect strategy that can be used to increase individual's positive emotions and well-being.

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Introduction

Contextualisation

The inability to effectively regulate one's emotions is linked to a variety of maladaptive behaviours and cognitive processes, such as psychiatric symptoms, childhood trauma, and negative affect (Bradley, DeFife, Fani, Guarnaccia, Phifer, Ressler, & Westen, 2015). A global increase in depression and anxiety over the past several years (World Health Organisation, 2017) calls for an improvement and research into emotional stability and emotional regulation. Depression and anxiety cause a decrease in overall well-being, can affect individuals' productivity, behaviour, and feelings of fulfillment. Low emotional regulation has shown to have links to negative emotions and lower physical health (Alkozei, Killgore, Lane, Sanova & Smith, 2018).

Emotional regulation, on the other hand, is the ability to effectively manage our emotions, which in turn can have an impact on our well-being (Bosse, 2017). The use of emotional regulation as a cognitive skill to help treat psychopathology has increased over the past years (Deighton, Edbrooke-Childs, Moltrecht & Patalay, 2020). Metta meditation is a loving-kindness based practice which incorporates four components of loving-kindness that will be expanded on later. The effects of Metta meditation on emotional regulation will be explored using semi structured interviews on novice meditators.

The theoretical framework that will be used for the research consists of *neuroplasticity*. The review will be based on literature about: neuroplasticity and meditation; the different effects of meditation on different regions of the brain in connectivity, growth and activity; loving kindness and compassion practices and their effect on individuals' emotions and various aspects of well-being; the effects of emotional regulation on positive affect, altruistic behaviors and high levels of well-being. This will be done while relating the literature to the research problem and integrating it with emotional regulation and Metta mediation. This literature review will enable the researcher to gain a better understanding of Metta meditations effects on emotional regulation and the gaps thereof.

Rationale

The use of emotional regulation as a cognitive skill to help treat psychopathology has increased over the past years (Deighton, Edbrooke-Childs, Moltrecht & Patalay, 2020). However, this meta analytic study (Deighton, et al., 2020) has shown intervention strategies to improve emotional regulation to be effective in the youth that already show symptoms of psychopathology. Certain meditation practices have been shown to have multiple behavioural changes which benefit health and well-being (Fricchione, Luberto, Park, Philpotts, Shinday, Song & Yeh, 2017). Such as the effects of mindfulness meditation on positive affect, empathy, compassion and altruism. Another meta analytic review, on brain activity in mindfulness meditation (Falcone & Jerram, 2018), has shown that mindfulness and its' positive effects are skills that can be learned. This may suggest neuroplasticity to be a possible modulator in the effects of meditation on emotional regulation.

A study on Metta meditation (Chan, Hou, Lee, Lee, Leung, So, Tang, & Yin. 2012) has shown correlates to brain regions involved in emotions and cognition of emotions. Other kindness based mediation practices have found moderate decreases in self-reported states of depression, and increased reports of mindfulness, compassion and positive emotion (Frick, Stangier & thinnes, 2020). Loving-kindness meditation has been linked to activity in emotional processing regions of the brain (Chan, et al., 2012). This suggests that through neuroplasticity Loving-kindness meditation may activate emotional regulation processes aimed towards emotional states of loving-kindness.

Metta meditation could then be implemented into society as a skill to develop emotional regulation. This could be implemented into psychologists and counsellors' practices, into educational institutes such as schools and universities. This skill could be implemented into different organizations to help individuals improve their emotional regulation and overall well-being. The Metta meditation can also be implemented into smaller groups of people, who can gather to incorporate Metta meditation practice into their lives. Loving-kindness meditation has been linked to activity in emotional processing regions of the brain (Chan, et al., 2012). This suggests that through neuroplasticity Loving-kindness meditation may activate emotional regulation processes aimed towards emotional states of loving-kindness. The neuroplastic effects of Metta and other loving-kindness meditations also suggest the

practice can be implemented at the personal level where individuals incorporate Metta meditation into their daily or weekly routine, or into their mental health programs.

The studies mentioned however, have not directly addressed the effects of Metta meditation on emotional regulation specifically. More so, many of these studies involving kindness and compassion based practices are only addressing one component of loving-kindness. The literature tends to be: done on western dominant cultures (Chan, et al., 2012); focused on expert versus non-meditators (Chan An, Choi, Jang, Kang, Kim, & Yun, 2018); conducted on emotional regulation interventions on youth (Deighton, et al., 2020); or only focus on components of Metta meditation (Fricchione, et al., 2017). Therefore, more research on mediation needs to be conducted in a South African context. With a focus on adult, novice meditators, in Metta meditation specifically. In relation to the effects Metta may have on emotional regulation.

Problem Statement

There is currently limited scope on the effects of novice meditators practicing Metta on emotional regulation in South Africa (Chiu, et al., 2015). The root cause of a lack of emotional regulation is still unknown, and therefore strategies to improve the emotional regulation of individuals is yet to be developed. Low levels of emotional regulation have been linked to symptoms of psychopathology and negative affect (Bradley, DeFife, Fani, Guarnaccia, Phifer, Ressler, & Westen, 2015). Emotional regulation is important for well-being. However, the interventions to improve emotional regulation are limited and further research needs to be conducted on possible interventions and preventions, such as Metta meditation, on adult novice meditators in a South African context. As more and more individuals become affected by mental health issue and the inability to regulate their emotions (World Health Organisation, 2017) it becomes increasingly important to discover possible strategies, such as Metta meditation, which can possibly increase the emotional regulation of people.

Purpose statement

The purpose of this research is to explore: the effects of Metta meditation on emotional regulation; the possible prevention and intervention strategies that improve well-being;

whether or not mediation is an effective coping mechanism in novice meditators. In specific, on adult novice meditators in South Africa. The aim is to explore possible practices which can increase well-being and reduce suffering.

Research Question

What effect does Metta meditation have on emotional regulation in adult novice meditators in South Africa?

Sub Questions

What is the link between Metta meditation and emotional regulation?

How does an increase in Metta meditation increase or decrease emotional regulation?

How does Metta meditation effect emotional regulation?

Objectives

To explore the effects of Metta meditation on emotional regulation in novice meditators.

To explore whether Metta mediation has an increase, decrease, or no effect on emotional regulation in a South African context.

To explore possible benefits of Metta meditation on emotions and well-being of adults.

Literature Review

Theoretical Foundation

The theoretical foundation for the research will involve neuroplasticity. The theory suggests the emotional regulation in an individual can be changed by activating parts of the brain that are associated with emotional regulation (Falcone & Jerram, 2018). The individuals can activate different parts of their brain through the use of different practices, such as meditation, which will be explained later on.

Neuroplasticity is the brain's ability to remodel, change, grow and reorganize for the purpose of a better ability for a new situation (Sternberg & Sternberg, 2017). Meta-analytic studies on fMRI research (Falcone & Jerram, 2018; Cunningham, Kim & Kirby, 2019; Bode, Derntl, Heekeren & Morawetz, 2017) have shown that parts of the brain associated with compassion and emotional regulation are increased, in density and activation of neural pathways, in experienced meditators. While parts of the brain involved in negative emotion are decreased (Chan, et al., 2012). This may provide evidence for the practice of Metta meditation and its effect on the ability to regulate one's own emotions.

According to Cisneros-Franco, de Viller-Sandi, Thomas & Voss (2017) "plasticity regulators in the adult brain can be manipulated by acting on various neuromodulators and by precisely regulating sensory input". This may suggest that by regulating our sensory input we can manipulate the brain's plasticity. This is done through the cultivation of emotional regulation modules in the brain to develop and grow these areas of activation associated with emotional regulation. The means of cultivating the emotional regulation modules can involve the use of compassion and positive emotion based practices.

A review of studies on meditation on compassion, mindfulness and kindness, found these practices can reduce stress, and increase well-being and prosocial behaviours (Shaffer, 2016), the study showed these meditation practices to be associated with structural and functional changes in the brain. This suggests through neuroplasticity these patterns of activation can be changed and altered. By managing sensory input, such as meditation practices, with positive emotional states of mind and more effective emotional regulation strategies. Over time creating controlled emotional regulation strategies that are cultivated for well-being (Farsides & Stell, 2015).

The neuroplasticity model for developing emotional regulation suggests practices which activate the emotional regulation system in the brain will increase the activity in that area and the connection from that area to other parts of the brain (Farsides & Stell, 2015). Therefore, Metta meditation practices may have a neuroplastic effect on the brain's ability to regulate emotions.

Review of previous literature

Introduction

The review of previous literature involves research on meditation and its relation to neuroplasticity and how meditation can affect emotions and wellbeing (Gotnik, Hunink, Meijboom, smits & Vernooij, 2016). The literature on the effects of compassion and loving-kindness practices on positive emotions will also be reviewed in relation to how Metta meditation can affect emotional regulation. The literature on emotional regulation and its association to positive affect will be explored. The review will also include where the current literature is limited and the gaps in the literature.

Meditation and Neuroplasticity:

People who have difficulty managing their emotions tend to neglect their own health and regularly show a history of abusing substances, poor diet, disrupted sleep patterns, lack of exercise, noncompliance to medical treatment as well as self-injurious behaviors (Friesen, Messner & Schaffner, 2012). Meditation is associated with structural changes in the brain in regions involving cognitive or emotional processes which are active during meditation (Chan, et al., 2012). An analysis of several studies displayed meditation's influence on the increase of grey matter in multiple regions of the brain. The study also showed changes in white matter dependent of the type of meditation (Saleem & Samudrala, 2017), showing evidence for the plasticity of the brain in response to meditation practices.

Studies (Chan, et al., 2012; An, Choi, Jang, Kang, Kim & Yun, 2018) have found an increase in activity in regions of the brain involved in: identifying the emotional value of sensory

information; executive control; and emotional awareness, in expert meditators compared to non-meditators. Expert meditators are able to cultivate certain emotions more easily than amateur meditators (Chan, et al., 2012). This suggests certain regions of the brain can be activated through meditation, and the baseline activation levels of these regions can be increased with more meditation. An increase in activity in a region of the brain responsible for regulating emotional responses was also found in expert meditators compared to novice meditators (Falcone & Jerram, 2018; Chan, et al., 2012). This suggests that using meditation practices can increase activation in regions of the brain associated with the meditation practice, i.e. practicing Metta meditation may increase activation in regions of the brain associated with positive emotions and regulating emotions, therefore increasing emotional regulation through Metta mediation.

A possible link between meditation and depressive symptoms involving serotonin has been found. Meditation has shown to increase neuroplasticity capabilities, and neuroplasticity has been associated with serotonin, with increasing serotonin comes increasing neuroplasticity capabilities (Castren, Kasper, Kraus & Lanzenberger, 2017). This may partly account for the observed antidepressant effects of some types of meditation practices. Serotonin triggers the reactivation of early neuroplasticity mechanisms (Castren, et al., 2017). This suggests that Metta or compassion meditation may have a regulatory effect on serotonin levels. This aids in enhancing neuroplasticity, suggesting meditation practices to have a positive effect on emotional regulation. This increases the ability to manage stress and emotions, and improves emotional regulation strategies and coping mechanisms.

A study using MRI on loving-kindness meditators found more grey matter in regions of the brain responsible for affective regulation involving empathetic responses, anxiety and mood (Chan, et al., 2012). A recent study found practicing loving-kindness meditation increased activation strength in a region of the brain that controls the increase of positive emotions (Darcher, Mascaro, Negi & Raison, 2015). The loving-kindness meditators had an increase in activity in regions of the brain involved in emotional regulation, compared to nonmeditators, while viewing photos of others suffering (Darcher, et al., 2015). An eight-week practice of mindfulness based stress reduction has shown to have changes to the brain involved in emotions (Gotnik, et al. 2016). After the eightweek program the participants showed increased connections between regions of the brain responsible for emotions and the regulation of emotions. The participants also showed a quicker deactivation of a region of the brain responsible for the production of emotions, after exposure to an emotional

stimulus. This suggest that certain types of meditation practices can affect the regulation of emotions through the accumulative benefits of neuroplasticity.

Loving-kindness meditation is linked to activity in emotional processing regions of the brain (Chan, et al., 2012). Which suggests that through neuroplasticity this meditation may automatically activate emotional regulation processes directed towards emotional states of loving-kindness. However, the studies mentioned have been conducted mostly on first world societies that have homogenous cultures and socioeconomic backgrounds, or traditional expert meditators. It would be beneficial to explore the effects of Metta meditation on emotional regulation and emotions in a South African context. This would be done by using nontraditional meditators, and meditators from various socioeconomic backgrounds.

Compassion and Loving-Kindness Practices on Positive Emotions:

A recent study has shown various meditation practices to have an effect on people at multiple levels (Bankard, 2015). Such as improved physical health, increased altruistic behaviours, and restructuring of the regulation and development of emotions in the brain (Bankard, 2015). There is evidence supporting the increase in compassionate behaviors, increased pro-social behaviours, increased emotional awareness (which is an aspect of emotional regulation) and increased positive emotions in meditators (Bibeau, Dionne & Leblanc, 2015). However, these compassion based practices tend to only focus on one or two components of Loving-Kindness.

A meta analytic study of Metta meditation found a decrease in depression and an increase in interpersonal relationships and psychological well-being (Frick, Stangier & thinnes, 2020). Another meta analytic review on a kindness based meditation practice found an increase in well-being due to an increase in mindfulness, compassion and positive emotions (Bekkers, Galante, Galante & Gallacher, 2014). A meta analytic study on meditation found the practice to have an increase in self-reported positive emotions, and an increase in altruistic behavior, after eight to twelve weeks of practice (Fricchione, et al, 2017). However, these studies have mostly been conducted on American or western dominant societies. These studies demonstrate how meditation practice can have a positive effect on emotions, the cultivation of emotions, regulation of emotions and well-being.

A modified mediation program for treatment of negative affect found after the program the participants had decreased depressive symptoms. The participants also had a reported increase in their ability to tolerate negative emotions (Frick, Stangier & thinnes, 2020). However, the study also mentions that for most people there is difficulty integrating a lovingkindness meditation practice into a daily routine. Furthermore, none of the studies on Metta mediation mentioned have been conducted on a South African society. The limitations and gaps in the literature gives reason for further research to be conducted on Metta mediation and its' effect on positive emotions in a South African context.

A meta-analytic study on compassion based meditation practices found multiple patterns of positive emotion (Chiu, et al., 2015). The people who scored higher in self-compassion had: reported increase in ability to lessen their own suffering; acceptance of the process of healing with kindness; recognition of shared humanity; and more mindful awareness when processing negative aspects of oneself; less negative affect when encountering remembered or real events; an increase in acceptance of responsibility for negative events they are involved in; and decreased likelihood to ruminate on negative events (Chiu, et al., 2015). This demonstrates how different meditation practices can have positive effects on individual's emotional regulation through the cultivation of positive emotions, therefore increasing their well-being too.

Emotional Regulation and Positive Affect:

Higher levels of emotional awareness (which is a component of emotion regulation) have been associated with: higher levels of emotion recognition ability; impulse control; openness to experience; empathy and stability of well-being. While lower levels of emotional awareness were found to be associated with multiple mental disabilities and disorders (Alkozei, et al., 2018). Emotional awareness and an increase in cortical thickness in limbic networks have been linked with structural and functional imaging studies (Alkozei, et al., 2018). These are regions involved in processing and managing emotions. These linkages give insight into how emotional regulation and the brain interact. Such as, why certain individuals have positive behavioural and emotional responses. An increase in these brain regions gives individuals the ability to efficiently process and manage their emotions (Courtright, Fonseka, Jaworska, MacMaster & MacQueen, 2016). This demonstrates

through the use of neuroplasticity individuals can improve their emotional regulation and positive affect.

A study on cardiac disease (Aghaei, Alikhani, Bahremand, Janjani & Zakiei, 2016) found effective emotional regulation strategies to be linked to increased positive affect. While noneffective emotional regulation strategies put people at risk for developing a heart disease. Effective emotional regulation strategies have shown to have an increase in positive affect and a decrease in negative affect, in response to daily stressors (Ciuk, Saquib, Thal & Troy, 2019). These studies have a focus on western dominant societies or homogenous societies therefore these gaps in the study need to be researched.

The effects of emotional regulation in adolescents has been linked to aspects of well-being. Such as, positive affect, connection to people and the environment, and meaning in life (Chin, Morrish, Rickard & Vella-Brodrick, 2017). However, the study has a focus on adolescents and further research will need to be conducted on adults. More studies on nonwestern and heterogeneous societies, such as South Africa, need to be conducted to gain a better understanding of the effects of emotional regulation on positive affect.

Conceptualisation

Metta meditation is a Pali word translated to Loving-kindness, the meditation was first practiced by Buddhists. Meditation involves paying attention to a specific idea, or state of consciousness, with a clear focus and intent of keeping your attention on the meditation practice (Grossman, Hinton & Hofmann, 2011). The practice typically starts by cultivating loving-kindness by focusing on oneself or a symbol that brings them a feeling of lovingkindness. Then projecting that feeling onto oneself and gradually outward to family, friends, strangers, people we struggle with and finally to all sentient beings (Grossman, Hinton & Hofmann, 2011). Metta meditation and similar compassion based practices have been linked to positive emotions and to increased well-being (Galante, et al, 2014; Fricchione, et al, 2017). This meditation practice is one of the phenomena that will be explored during the research.

Loving-Kindness needs to be more accurately explained. Loving-Kindness is a mental state of unconditional love and kindness, which traditionally involves four aspects: loving-

kindness (described as unselfish friendliness), compassion (described as the willingness to cease the suffering of people in distress), appreciative joy (described as the feeling of happiness for other people's success and achievements), and equanimity (described as calm and content towards others and the circumstances of others based off of wisdom) (Chiu, et al., 2015). Similar compassion based practices have shown to reduce depressive states and increase emotional awareness. However, these compassion based practices tend to focus on parts of Metta meditation and are not fully inclusive of the above mentioned components (Bankard, 2015).

Emotional regulation is described as the ability to regulate one's emotions, it is a skill that largely influences how people function in social environments (Bosse, 2017). Our emotional state directly impacts our physical health and mental health (Alkozei, et al., 2018). The reduction of physiological and psychological arousal gives people the ability to gain insight and an understanding of their emotional processes and learn how to manage trigger signals and situations (Compare, Marconi, Shonin, Van Gordon & Zarbo, 2014). These trigger signals and situation, which cause the autonomic response, are non-adaptive affective states which can be altered to become adaptive affective states (Compare, et al. 2014). Metta meditation in itself is a relaxation exercise that aims to cultivate positive emotions, and in part, to cultivate positive emotions in response to negative situations or signals. Effective emotional regulation requires: an awareness of one's emotions; an understanding of one's emotions; and an acceptance of one's emotions, to manage impulses in order to achieve their goals (Jaque & thomson, 2017).

Conclusion

There is some evidence supporting the effects of Metta meditation and other meditation practices on emotional regulation as well as positive aspect and well-being. However, the research is limited to western dominant societies, with a focus on certain aspects of Metta meditation, or the study was conducted on children (Chin, Morrish, Rickard & Vella-Brodrick, 2017). Therefore, further research needs to be conducted on different cultures and societies, with a focus on Metta meditation and adults.

Research Paradigm and Methodology

Outline of paradigm

The chosen paradigm is *interpretivism* which is the view that reality is socially constructed and not an objective truth (Creswell, Ebersohn, Eloff, Ferreira, Ivanka, Jansen, Nieuwenhuis, Pietersen & Plano Clark, 2020).

Interpretivism is based on these premises:

It focuses on individuals' or groups' subjective experience, their interpretation of the experience, how they construct their reality and how they interact with other people. Interpretivism has believes that human life cannot be understood from the external view, only from the internal view. There is a greater understanding of the perceptions people have of their own behaviors when observed in a social context. With further exploring how phenomena and meanings are created, we can get a deeper understanding of the meanings attributed by people to certain phenomena and the social context (Nguyen & Tran, 2015). People's behaviour is influenced by their knowledge or understanding of the social world. The social knowledge people gain influence their understanding of social reality which helps researchers make decisions and gain a better understanding of the world (Creswell, et al., 2020). Social reality does not exist separately from human knowledge. The researchers understanding of phenomena influence their research methods and contents by the questions they ask, and the way they go about the research process. In short, the interpretivism paradigm views research as a way to gain an understanding of a situation from a certain perspective. Further understanding is gained by analyzing the ways certain people construct meaning and their understanding of situations (Singh, 2017).

This study aims to provide people with a better understanding of how they can improve their well-being and emotional states. The aim includes cultivating positive emotional states through mediation and emotional regulation strategies. Understanding what behaviours improve well-being and which do not, helps people make decisions that can move them towards improving. This is to determine which behaviours and thoughts should be valued in society, the effect they have on the well-being of individuals within societies must be understood (Singh, 2017). For example; compassionate thoughts towards others, beliefs in love and kindness and acts of friendliness are behaviours which can be observed and studied. The exploration of which societies or groups of people practice compassion based

practices and what are the typical behaviours of those people can also be studied. Another observation can be made by exploring groups that have high levels of overall well-being and their typical behaviours and practices, such as Metta meditators. By understanding and implementing practices and behaviours that produce positive outcomes for people, we can improve individual's overall well-being. (Algoe, Boulton, Brantley, Brantley, Firestone, Fredrickson, Kim, Salzberg, & Van Cappellen 2018).

Research Design

The research design will be *qualitative* which is typically used to explore a phenomenon. Qualitative studies also allow for a more flexible use of data collection and analysis, to explore the phenomenon and any emerging themes (Creswell, et al., 2020). This design works well for the study. The effects of Metta meditation on emotional regulation are going to be explored using the qualitative design. Allowing for the exploration of emerging themes and patterns which can give us a better understanding of the phenomenon.

The design will be *exploratory*, which aims to explore the phenomenon, and determine the nature of the problem or phenomenon. This also aids in the understanding of the problem and phenomenon (Dudovskiy, 2019). The design will be exploratory as the effects of Metta meditation on emotional regulation have not been fully defined and explained. There are gaps in the study which this design aims to explore and provide data for these gaps. Such as adult, novice mediators, in a South African context. The research will focus on the subjective Interpretations of the participants. Exploring their reports on what effects they have experienced from Metta meditation on their emotional regulation.

The research will be *inductive* which involves the identification of patterns by observing a phenomenon, and developing explanations for the emerging patterns (Dudovskiy, 2019). Inductive research aims to provide meaning from collected data, in order to identify themes and create explanations (Dudovskiy, 2019). It starts with intricate observations of a phenomenon. In this study it takes the reports of personal accounts and anecdotal evidence, and then extrapolates them into more abstract ideas and generalisations. The exploration of the effects of Metta meditation on emotional regulation, through the observations of the participants. Further exploration will be done using the interpretations of the participants as observations of the phenomenon, to gain a better understanding.

The study will be *phenomenological*, which focuses on the participants descriptions of their experiences, and finding themes within these descriptions (Du Plooy-Cilliers, 2014). The process of a phenomenological study involves identifying a certain phenomenon or phenomena to study, while excluding our experiences as a researcher. The researcher then begins collecting data from a few people who have experienced the phenomenon themselves. Then the researcher will analyze the data by identifying important statements, and combines those statements into separate themes (Creswell, et al., 2020). The researcher can then develop textural and structural descriptions of the participants' experiences. Which is then combined to create a more holistic view of the participants' experiences, and the phenomenon being studied.

The research will be *cross sectional*, which involves the study being conducted in one sitting, as opposed to multiple sittings over time (Creswell, et al., 2020). This study will be conducted over one sitting, and not over an extended span of time, and is therefore cross-sectional.

The ontological assumptions within an interpretivism approach are that reality is understood by various perspectives, as different people interpret circumstances differently, and have different perceptions of the circumstance (Creswell, et al., 2020). To understand what is reality, in an interpretivist approach, one aims at understanding the connected meaning between subjective experiences and interpretations. While demystifying any assumptions that do not hold true during the research. We can understand the effect of Metta meditation on emotional regulation through the meaning and interpretations people ascribe to it.

The epistemological view within an Interpretivism approach is concerned with how we can understand a phenomenon. It has its focus on the way in which we know information and phenomena, and how we learn about these phenomena and social reality (Creswell, et al., 2020). Epistemology states that the researcher cannot be completely objective. Therefore, one of the ways to interpret the findings of the research is to negotiate the gathered information and agree upon the findings between the researcher and the participants (Du Plooy-Cilliers, 2014). The focus is placed on the participants' frame of reference, as reality is understood from the experiences and interpretation of different people on a phenomenon.

Population

The unit of analysis for the study will be people, as the research is focused on the experiences and interpretations of Metta meditators on Metta and emotional regulation (Creswell, et al., 2020).

The target population chosen for the research is adult novice Metta meditators, living in Sandton. To gain a better understanding of the effects of novice Metta meditators on emotional regulation, in a South African context, in adult novice meditators.

The accessible population is the group from the target population that are actually able to be accessed and assessed (Creswell, Ebersohn, Eloff, Ferreira, Ivanka, Jansen, Nieuwenhuis, Pietersen & Plano Clark, 2020), these were people who have the time and resources for the interview, and who meet the characteristics of an adult novice meditator.

The accessible population were the people who have access to the internet and social media, as this is the way possible interviewees will be contacted and scouted. For example. Metta mediation organisations on Facebook, or individuals who have a history of Metta meditation on their social media. The accessible population was individuals that were reached out to and contacted (Creswell, et al., 2020).

The population parameters involves all the characteristics of the people being studied. For this study, the population parameters were novice Metta meditators, who are meditators that have been practicing Metta for more than a month but less than five years. This includes having an experience of Metta at least once a month. The mediators should also be adults over the age of twenty-four.

Sampling

The sample frame will be individuals who are contacted through social media to participant in the interview. While the sample will be those that agree to, and participate in the interview.

The sampling method used was non-probability sampling, as the selection of the population was not random (Creswell, et al., 2020). The sampling method used was snow ball sampling as the participants that were contacted through social media were then asked if they knew any other people that practice Metta meditation. This process continued until there were

five participants to interview (Creswell, et al., 2020). In this case the initial participants chosen represented adult, novice Metta meditators. Samples should provide important information on Metta meditation and emotional regulation. The samples should also increase the transferability of the results and create credible explanations of Metta mediation and its' effect on emotional regulation. The recruitment method used involved identifying, approaching and obtaining consent from possible participants on social media to partake in the interview.

The intended sample size is five people, as qualitative studies with in-depth interviews typically take a large amount of time and resources (Creswell et al., 2020). There are currently not enough resources to conduct the research on a larger sample size. A larger sample size would not be convenient for the current resources.

Data Collection Method

The data collection method used for the research was semi-structured interviews. A semi-structured interview involves formulating open questions which are then probed once answered to gain a better or clearer understanding of the participants experiences (Creswall, et al., 2020). The research collected data that is descriptive and explanative. Which aided in understanding the participants subjective interpretations of *Metta mediation* and *emotional regulation* (Creswell, et al., 2020). The interview consisted of open ended questions which could be clarified on or expanded on if certain patterns and ideas of interest emerged. The patterns and ideas of interest which emerged that also relate to Metta meditation and emotional regulation could then be explored further and probed by the researcher.

As a qualitative explorative study, there is importance in the flexibility of the data collection method, such as semi structured interviews (Docent, Johnson, Kallio, & Pietl , 2016). These interviews allow the researcher and participant to explore the participants subjective interpretations of their experiences on Metta meditation and emotional regulation.

During the interview probing strategies were used to gain as much important data as possible. This was done by clarifying the data, ensuring the data collected matches what

the participants had interpreted. The types of probing strategies used included detail oriented probing, which involves understanding the details of who, what and where of the participants answers (Creswell, et al., 2020). Elaboration probing which involves gaining a full understanding by asking participants further questions on certain ideas, or asking them to elaborate on a certain answer. Clarification probing which is used to clarify or verify if the understanding of an answer is accurate to what the participant said (Creswell, et al., 2020).

The conversations and information from the interview were recorded using audio recording. The permission for recording was ensured before the interviews are conducted. The questions that will be asked in the interview will be focused around two main concepts: *Metta mediation*, and *emotional regulation*.

The questions around Metta mediation involved: the participants personal experiences with Metta meditation, the participants experience of the effects of Metta meditation on emotional regulation and on emotions and well-being. With the use of probing to gain further information from the participants experiences and understanding of Metta meditation and emotional regulation (Creswell, et al., 2020).

The questions around emotional regulation involved factors of the cognitive emotional regulation questionnaire (Arteche, Filho, Kristensen, de Moura, Schäfer & Tavares, 2018). This involved questions on the participants interpretations of their emotional experiences, such as how they deal with negative situations, descriptions of situations where they regulated their emotions and situations where they did not regulate their emotions.

Application of Data Collection

The application of the data collection method started with identifying possible participants from social media. By searching on social media for individuals that show elements of Metta on their social media such as compassion, love, kindness etc. Once individuals were identified they were contacted and asked if they practiced Metta meditation and for how long. If they matched the necessary requirements of a novice meditator they were asked to participate in the interview,

Once the participants were identified, the interview and research was briefly explained and then the participants were asked if they were comfortable to participate in the research. Once the participants had agreed, a consent form for the interview and recording of the interview was sent out to them, and a schedule for each participant was established. The participants were willing to the interviews face to face with social distancing practices in place. On the day of the interview the participants returned their signed consent forms. When each participant arrives they are greeted and shown to their seat. Rapport started as soon as communication started between the interviewer and each participant, such as greeting, asking them how they feel, how their day is going etc. The interviewer ensured each participant was comfortable and ready to begin the interview before hand (Creswell, et al., 2020).

An introduction to the interview was then initiated, building further rapport with the participants and explaining the process that would be followed throughout the interview and an explanation of the purpose of the interview was also given (Creswell, et al., 2020). Once the process was explained the participants were asked if they understood the concepts of Metta meditation and emotional regulation, if they didn't understand the concepts it was explained to them until they understood. Participants were then given the opportunity to ask any questions or clarifications before the questions would begin.

Once the participants were comfortable with continuing with the questions the interview then transitioned into questions regarding the participants experiences with Metta meditation. The participants were asked about their personal experiences with Metta meditation and its effects on emotional regulation, and their personal experiences of Metta meditations effects of emotions and overall well-being. Some clarification of the questions were needed for some participants to gain an understanding of their experiences. Answers that required further understanding and information were probed, gaining a better understanding of the participants experiences (Creswell, et al., 2020). Answers which directly related to the effects of Metta mediation on emotional regulation and were further probed to gain the participants understanding and experiences with Metta meditation on emotional regulation and other possible effects of Mett meditation.

The questions then transitioned to the participants experiences and understanding of emotional regulation, gaining an understanding of their knowledge of their experiences with emotional regulation. Through the interview the researcher The answered gathered from the

participants had information on how the participants regulate their emotions, when do they find it difficult to regulate their emotions, and their reactions to negative or difficult situations (Arteche, et al., 2018). The interview also gathered information regarding their understanding of how Metta meditation may influence the extent to which and context in which they have the ability to regulate their emotions.

The types of probing questions involved during the interviews were detail oriented probing which involves gaining an understanding of the details of what, who and where of the participants experiences (Creswell, et al., 2020). This was used to gain more specific information on the experiences of the participants. Elaboration probing questions were also used to gain a full understanding of the participants answers and experiences (Creswell, et al., 2020).. This probing technique involved asking further questions on certain ideas, or asking participants to elaborate on an answer they had given. The use of clarification probing was also implemented to verify and clarify the experiences of the participants and their understanding, making sure what the researcher interpreted from the answer is accurate to what the participants meant (Creswell, et al., 2020). All the mentioned probing techniques were used to ensure the data being collected matched the interpretations of their experiences.

Once all the questions had been answered the researcher briefly described and summarised his interpretations of the participants' answers on Metta meditation and emotional regulation, to further ensure the accuracy of the researchers' interpretations. The researcher described a summary of the data collected from the Metta meditation and emotional regulation questions to the participants then asked them to clarify or verify any points made, and if they would like to add anything to the interpretations made. Once the interpretations were clarified and verified with the participants they were thanked for participating, and were debriefed (Creswell, et al., 2020). This involved thanking the participants and allowing for any last questions or clarifications, as well as giving the participants the opportunity to contact the researcher after the interview for any further clarifications or questions. The participants were also given the opportunity to ask for the final results of the research to be sent to them upon completion.

Data Analysis Method

The data analysis method used for the research was thematic analysis.

Thematic analysis is a way of analysing or inspecting textual data collected to discover patterns and themes in the data (Jones, Snelgrove, Turunen & Vaismoradi, 2016). It involves the thematic process familiarisation, which involves the researcher reading through the transcripts and listening to the audio recordings to gain a comprehension of the data (Braun, Clarke & Hayfield, 2015). The themes were based on data collected from the interviews. The researcher analysed the data, identifying common statements or quotes that can be categorized together based on their similarities. The researcher analysed the data collected from the interviews and identified meaning and patterns in the data. When the patterns have been identified from the statements the researcher could start coding the data. This involved reducing the unfiltered data to more meaningful and thematic categories. This gives the researcher deeper insight and abstraction of the themes emerging from the data (Braun, Clarke & Hayfield, 2015).

Once the researcher had finished coding the data, the classification of the codes could be conducted. Which involved categorising codes together based on similarities (Jones, et al., 2016). This gives a common meaning to a collection of codes. Then the researcher did a revision of the codes to detect any negative cases, and to group codes together to form themes, this is part of the theme development (Braun, Clarke & Hayfield, 2015) which was guided by possible effects of Metta meditation on emotional regulation and well-being. The researcher could then label the important themes that had emerged by sorting themes with similar meanings together, and finding phrases to describe them. Finally, the data analysis included defining and describing the themes and how they were identified (Braun, Clarke & Hayfield, 2015). This involved how the process of data analysis was conducted.

The research was tasked with exploring the emerging patterns between Metta meditation and emotional regulation. This involved analysing the data for already existing patterns in Metta mediation and emotional regulation, which themes could then be derived from (Jones, et al., 2016).

Application of Data Analysis

The application of the data analysis involved using thematic analysis to analyse and find patterns and themes in the collected data. The first step involved in the thematic analysis of the data was familiarisation of the data. The familiarisation of the data was gained by engaging with the data with an in-depth knowledge of the content (Braun, Clarke & Hayfield, 2015). The transcripts from the interviews were read through thoroughly and the audio recordings were listened to again, and initial observations and notes were made. The initial observations and notes helped the researcher gain a comprehension of the data set and start recognising main concepts, and possible codes. The most obvious and evident meanings and concepts were identified by highlighting key words or statements in the transcripts (Braun, Clarke & Hayfield, 2015). The key words and statements were identified by analysing the data and concepts that relate to Metta meditation and emotional regulation.

After the researcher was familiarised with data the coding of the data started. This process involved a systematic identification and labelling of important characteristics and features in the data that are relevant to Metta meditation and emotional regulation. The researcher made use of axial and selective coding. Firstly, axial coding which involved the identification of the main connections between groups and sub groups (Braun, Clarke & Hayfield, 2015). This helped gain an understanding of the relationships between the groups. This was done by an initial identification of emerging patterns in the data. Then selective coding was used to then gather and group together pieces of data that had similar characteristics (Braun, Clarke & Hayfield, 2015). By identifying pieces of data which relate to each other groups could be created. This was done by analysing the transcripts, and the identified pieces of data that relate to Metta meditation and emotional regulation, and grouping the data with relating characteristics. The identification involved underlining the pieces data in the transcripts that related to Metta meditation and giving them a temporary label, i.e 1, 2, 3. This was used to group the similar points and concepts together, and then the groups were labelled to describe the content of the group (Braun, Clarke & Hayfield, 2015).

Once the data was coded the development of the themes began. The development of the themes involved establishing main categories that were identified by analysing the codes and then grouping codes that had commonalities together (Braun, Clarke & Hayfield, 2015). When looking for commonalities to group codes together Metta meditation and emotional regulation are the focus guiding the commonalities and the grouping of codes. Once codes

were gathered together and themes were developed, the themes were then placed in a hierarchy of main themes and sub themes, in order to find connections between themes and any further patterns that may emerge from the data and codes (Braun, Clarke & Hayfield, 2015). The main themes identified the main or overarching concepts of Metta meditation and emotional regulation from collected from the interviews. The subthemes identified more specific concepts within Metta meditation and emotional regulation, such as awareness, compassion, etc. The subthemes were developed in direct relation to the main themes and has some overlapping features. The process of identifying the themes by grouping codes together was done by highlighting codes with specific colours to group codes together into themes and subthemes. These themes and subthemes helped guide the research in finding possible effects of Metta meditation.

Once all the themes had been categorised and developed they were named, described and defined. This step involved elaborating on the themes to give a better understanding of each theme, which helps towards the writing of the results (Braun, Clarke & Hayfield, 2015). The definitions of each theme were developed by analysing and describing the meaning of the theme, what are the features of the theme and what it involves. Once the definitions were complete, an appropriate name was chosen for each theme to accurately give an indication of what the theme is about and what it means (Braun, Clarke & Hayfield, 2015).

Once all the data had been analysed the themes and definitions were gathered and placed into a coherent order to be used for the final results and findings of the research.

Findings and Interpretations of Findings

In the study themes emerged helped to answer the questions on the effects of Metta mediation on emotional regulation and its other effects on individuals' wellbeing. The themes showed some evidence to address the effects of Metta mediation on emotional regulation and the effect on emotions and individual's well-being. The findings also suggest Metta mediation to be a possible practice to increase well-being through the cultivation of positive emotions. Neuroplasticity suggests that the themes that emerged from the Metta meditators are a result of structural and functional changes in the brain associated with the themes (Ref).

The themes that emerged from the data were:

- Positive affect in relation to Metta meditation practice, which shows a link between Metta meditation and well-being.
- Compassion and Benevolence, which emerged from the Metta meditators experiences as positive regard or feelings towards others.
- Awareness and intent which allowed the Metta meditators to be more mindful of their thoughts, feelings and actions in everyday life similar to how they are mindful of these aspects during their meditation
- Negative reactions was a theme that emerged in relation to the Metta meditators difficult life experiences.

	The effects of Meta meditations	on emotional regulation
Theme 1: Positive affect	Sub theme 1.1: Desire to treat oneself better and focus on loving-kindness towards oneself	Sub theme 1.2: Feelings of calm, peace and relaxation
Theme 2: Compassion and benevolence	Sub theme 2.1: Benevolence	Sub theme 2.2: Empathy and compassion
Theme 3: Awareness and intent	Sub theme 3.1: Awareness of ones own and others emotions and perspectives	Sub theme 3.2: intention to cultivate positive emotions
Theme 4: Negative reactions	Sub theme 4.1: Openly expressive reaction to negative stimuli	Sub theme 4.2: Withdrawn reaction to negative stimuli

Table 1.1

Theme 1: Positive affect

All participants showed positive affect, and reported an increase in positive affect closer to the time they practiced their Metta meditation. Positive affect is described as experiencing feelings of positive in ones' mood, such as happiness and kindness (Miller, 2011). This may be supported by the theory of neuroplasticity which would suggest the practice of Metta meditation activates regions in the brain associated with positive affect and through this practice these regions increase in structural and functional activity (REF). What this suggests is brain regions associated with positive affect increase in activity in novice Metta meditators.

The participants personal information is kept confidential and therefore pseudo names will be used when referring to the participants. The five participants will be referred to as Sue, Jeanne, Paul, Craig, and Shannon. The sub themes which emerged from positive affect were desire to treat oneself better and focus on loving-kindness towards oneself. The participants experienced different types of positive affect in relation to their Metta mediation experiences. Four out of the five participants reported experiencing motivation or desire to treat themselves better emotionally - “like i said, I wished myself well and happiness, so I want to do things that make me happy” Sue (p. 2, line 36), and to focus on love and kindness towards themselves, during both negative and positive situations - “Gives you a more, a more sense of calm and the emotional state of being loving and kind” Craig (p. 25, lines 462-463), “it will guide you towards positive thoughts rather than negative thoughts, guide you towards more friendly rather than being agitated” Paul (p.14, lines 260-261).

The second sub theme was experienced by all participants, which were feelings of calmness, relaxation and peace, both during their meditation and after - “it calms you down immediately, it quietens your mind, tends to make you feel at peace” Paul (p. 14, lines 246-247), “it makes you take time completely out to like, calm down and relax” Jeanne (p. 9, line 150). This suggests that Metta mediation may have an effect on positive affect, while the positive affect that the participants experience may vary, all the participants experienced feelings of peace, calm and relaxation during and after their mediation practice. Neuroplasticity would suggest that over time the more one practices Metta meditation the more the brain will respond by increasing size and activity in the brain regions associated with positive affect such as states of calm and peacefulness (Falcone & Jerram, 2018). This also suggests that these states of mind are learnable and can be cultivated through Metta meditation, and could be used as possible intervention strategies for emotional dysregulation.

Theme 2: Benevolence and compassion

The second theme that emerged was benevolence and compassion. These themes were further divided into two sub themes namely benevolence and, compassion and empathy. Benevolence is the concern and care for others well-being (Deslandes & Mercier, 2020). Compassion and empathy on the other hand are defined as a concern and understanding for others experiences (Merriam- Webster dictionary, 2020), typically negative experiences. While not directly related to emotional regulation the cultivation of these emotions and

behaviours may be linked to well-being. Four out of five of the participants experienced benevolence in relation to their Metta meditation practices - “it made me feel happier and like, treat myself and other people better in general” Sue (p. 2, lines 26-27). All the participants experienced empathy and compassion towards others in relation to their Metta meditation practices - “I feel like I could experience and empathize with their emotions without actually taking on their emotions” Craig (p. 24, lines 438-439).

These themes suggest that there is a link between Metta meditation and benevolence. The participants feelings of wanting to be kind to others was more prevalent in the hours after their meditation. The findings also suggest there is a link between Metta meditation and compassion and empathy. The participants feelings of compassion for others was also more prevalent closer to the time they had meditated. The participants also reported a better understanding of others perspectives and situations closer to the time they had meditated. This could mean that both the calming effect and focus on loving-kindness involved in Metta meditation could activate certain brain regions which are involved in these cognitive skills (Falcone & Jerram, 2018). This is supported by the theory of neuroplasticity, which is that peoples brain can grow in size and activation in certain regions in relation to certain stimuli that activate these brain regions (Sternberg & Sternberg, 2017). This suggests that Metta meditation may not directly influence emotional regulation but it does seem to have a link to altruistic feelings, such as benevolence and compassion, which can ultimately lead to well-being.

Theme 3: Awareness and intent

The theme awareness and intent involved the participants being aware of the situation they were in, their feelings and intention to cultivate a certain feeling. The theme was divided in two sub themes. The first sub theme is awareness, which involved the participants remembering, typically in negative situations, that they have wished love and kindness towards others, and becoming aware in that moment that their intent has been love and kindness. All the participants remembered or were aware of their intent, and when they noticed this they questioned their own feelings - “I feel like it made me rethink when, like how I react to things” Sue (p. 2, line 37), “it makes you think more and more aware... and it makes you think of the bigger picture” Jeanne (p. 8 & 9, lines 144 & 151). The sub theme of

intent emerged from the participants first noticing others feelings and perspectives and then the intent to change their own emotions - "I try to remove raw emotions from it, from both sides, and also using empathy I try to understand the other persons position" Paul (p. 18, lines 319-320). These two sub themes were interrelated as the intent to change their emotions was only done once they became aware of their feelings or the feelings of others.

The themes suggest that Metta meditation increases mindfulness or awareness, as well as positive emotions. However, the participants noted that although they were able to be aware of their own and others emotions, they were not always able to regulate their emotions. This suggest that Metta mediation may only have a mild effect on emotional regulation in stressful situations and more of an effect on other aspects of emotion and well-being. As mentioned the participants were not always able to implement their intent however, they are novice meditators. This implies that there is previous conditioned neuroplasticity that overpowers the meditation. Neuroplasticity would suggest that certain regions of the brain have greater activation (Falcone & Jerram, 2018), and the novice meditators have not been practicing long enough to increase activation in the regions activated by Metta meditation. While awareness and intent may be an aspect to improve emotional regulation and well-being there may not be enough of an effect from Metta meditation on novice meditators.

Theme 4: Negative reactions

The participants had good intentions to be nicer and to be loving and kind however, they were not always able to regulate their emotions, which involves the fourth theme; negatively reacting. The theme had two sub themes, which were openly expressive reaction to negative stimuli and withdrawn in reaction to negative stimuli. Two out of the five participants reported being openly expressive in reaction to negative stimuli - "say something that irritates me and annoys me, I'm just like, then I be rude to them and then I'm like well I don't know why you think like that", Sue (p. 4, lines 70-72). While three out of the five participants reported being more withdrawn in reaction to negative stimuli - "you know, keep calm and don't open your mouth basically ", Jeanne (p. 10, line 171), "then I would not know how to do it or it would be difficult and then I would kind of just stress out so much that I just wouldn't do it" Shannon (p. 30, lines 548-550). All the participants were aware of their negative reactions but in certain situations they were unable to regulate their emotions, although they also reported these situations were less likely to happen when they had meditated.

These themes suggest that Metta meditation may have a mild or accumulative effect on emotional regulation, as the conditioned negative reactions of the novice meditators is still dominant in certain situations over their practices of cultivating a loving-kindness intent (Falcone & Jerram, 2018). This could indicate that although Metta meditation may have a link to awareness and increase in positive emotions, it may not have a large effect on emotional regulation in more stressful situations. Neuroplasticity suggests that the activation of the brain regions involved in Metta meditation would increase, but activation of other brain regions that are associated with conditioned reactions are dominant in stressful situations (Bode, Derntl, Heekeren & Morawetz, 2017). Therefore, Metta meditation may effect novice meditators emotional regulation through slowly and accumulatively reducing their negative reactions in stressful or difficult situations. If this effect of Metta meditation can be proven in further studies then it may be used as an intervention strategy to reduce negative affect and improve well-being.

Trustworthiness

A trustworthy study should include: credibility, transferability, dependability and confirmability (Creswell, Ebersohn, Eloff, Ferreira, Ivanka, Jansen, Nieuwenhuis, Pietersen & Plano Clark, 2020). To ensure the credibility of the study the research methods will be well constructed, and the research design will be aligned with the research question. While ensuring the exploration of the effects of Metta meditation on emotional regulation can be suitable answered by the qualitative exploratory research of design (Korstjens & Moser, 2018). The theoretical foundation will be aligned with the research method and the research question. In order to ensure information processing and neuroplasticity are suitable theories, which will be the backing for the possible effects of Metta meditation on emotional regulation. The credibility will be ensured by using persistent observations and prolonged engagement (Korstjens & Moser, 2018). The data collection method and the sampling will be clearly defined to ensure credibility.

The transferability of a study involves the researcher making connections between the components of the study and their own experiences (Creswell, et al., 2020). With a focus on how representative the participants are of adult novice Metta meditators in Sandton. This is to ensure the participants are appropriate for studying the effects of Metta meditation on emotion regulation in this context. This involves purposeful sampling, ensuring the participants are representative of adult novice meditators in Sandton. The use of thick descriptions ensures transferability, by using full and purposeful descriptions of the context,

design and participants, so that readers can determine for themselves the transferability of the study (Korstjens & Moser, 2018).

The dependability will be ensured by the choice and implementation of the research design, and by detailed descriptions of the data collection method. The dependability will be enhanced by keeping a record of the data analysis process, to determine how the research interpretations were made. The dependability of the research will be enhanced by keeping records of the different levels of analysis. Such as, the labels created for the categories, the revisions of the categories and other observations made during analysis (Creswell, et al., 2020).

The confirmability involves the degree to which the findings are shaped by the participants as opposed to the researcher (Creswell, et al., 2020). To ensure confirmability of the study the researcher will admit their predisposed biases related to the study. By reproducing enough of the textual data, it allows the readers to decide for themselves what participants are trying to convey, enhancing the confirmability of the study. This includes making sure the researcher does not force their interpretations onto the participants and the text to further enhance the confirmability. The researcher will state the limitations and issues with the study to help the readers understand how the conclusions were arrived at.

Conclusion

The research addresses the research question and the research problem in that Metta meditation may have a positive effect on emotional regulation in novice meditators, although the effects are limited in novice meditators. Metta meditation does however, seem to have other positive effects on the individuals' well-being and aims to reduce their own and others suffering. This is seen through the increase in positive affect, benevolence, compassion, empathy, awareness and intent. Metta meditation seems to effect emotional regulation through the themes that emerged, namely awareness and intent, empathy and benevolence, and positive affect. Although in high stress situations the novice meditators are still unable to regulate their emotions, they still experience a

positive effect on their awareness in these high stress situations. Both information processing theory and neuroplasticity suggest that the more one practices Metta meditation the more they will experience the effects of the various focuses of Metta meditation

(Sternberg & Sternberg, 2017; Falcone & Jerram, 2018). Further research needs to be conducted to address the effects of Metta meditation on emotional regulation.

Anticipated contributions

The research aimed to gain knowledge and insight into the effects of Metta meditation on emotional regulation, in adult, novice meditators in Sandton. This can contribute to an understanding into this Metta meditation and emotional regulation in this specific context. By gaining an understanding of how certain people regulate their emotions, and increase positive affect. This further provides an understanding of how Metta meditation may affect emotional regulation in adult novice mediators in Sandton. The study explored the application of Metta meditation on emotional regulation, and on well-being. With further exploration on the possible application of Metta meditation for the regulation of ones' emotions, in this specific context. The study found some evidence to support using Metta meditation as an intervention strategy to improve positive affect, and well-being, and to reduce the decrease in well-being. The anticipated contribution includes gaining insight into Metta mediation and emotional regulation, specifically in the context of adult novice mediators in Sandton. As this will provide an understanding of Metta and emotional regulation in a South African context, on adult meditators who are still at a novice level of meditating. The study possible association between Metta meditation and positive aspects of emotional regulation and well-being.

Ethical considerations

The researcher will ensure important ethical considerations will be implemented. Such as, screening for healthy individuals and any individuals with physical or psychological illnesses which may affect the results of the research and more importantly affect the individual's wellbeing as a result of the testing (Creswell, et al., 2020). With regards to obtaining permission and informed consent it is necessary that these considerations be implemented. The aims of the research, the design of the research and the details of the data collection will be clearly explained. This will be done so that the participants understand each aspect of the research and what they will be involved in.

The researcher will ensure the permission and consent of the participants. The researcher will also ensure their confidentiality and anonymity throughout the research and the researches findings and publication. The researcher will ensure their confidentiality and anonymity through the use of non-related symbols or representations of the participant's characteristics. Such as, using participant numbers instead of their name, and leaving out any information about the participants that may reveal something about who they are. The anonymity can be ensured through the data collection and analysis stages. This can be done by not including information recorded during data collection phase that will further influence the researcher during the data analysis stage. Such as, refereeing to a participant as participant X or 1, instead of referring to the by their name. Furthermore, ensuring the collected data does not include information about the participant such as she or he that could give away their identity. The participants will be completely voluntarily and will have the opportunity to stop at any point during the Interview.

The researcher will ensure the data is not misused, falsified or distorted to fit the researchers' biases or ulterior motives. No inappropriate methods should be used during the research process. The researcher should ensure that only relevant components be assessed during the research. The researcher will also make sure that the data is used for its' stated and intended purpose/s, and not used for any research which was not stated to the participants and initially intended to assess (Creswell, et al., 2020). The researcher will ensure that the researches intended purpose is fair and ethical in nature. For example, exploring unfair differences between people to find possible solutions to the differences, as opposed to using the research to justify the unfair differences between people.

Limitations

The limitations of the research include the size of the sample. The sample size is limited to a smaller size due to resource and time constraints. The research was limited to an exploratory study on Metta meditation and emotional regulation, as further research is needed in order to effectively conduct an experimental research design which can address the issue of Metta mediation and emotional regulation. This includes non-meditators, amateur, novice and expert meditators to gain a full description of the effects of Metta meditation on the emotional regulation of individuals. The study is unable to research the direction of the effects of Metta meditation on emotional regulation, as the study is qualitative

and more research needs conducting before that research can be done (Creswell, et al., 2020). The data collection methods may not contain enough information to make claims on research.

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Annexures:**Annexure A – Consent Form****EXPLANATORY INFORMATION SHEET**

To whom it may concern,

My name is Alexander Daly and I am a student at Varsity College. I am currently conducting research under the supervision of Evelyn Naggayi about the effects of Metta meditation on emotional regulation in novice meditators. I hope that this research will enhance our understanding of how Metta meditation affects emotional regulation in novice meditators in a South African context.

I would like to invite you to participate in my study. In order to explain to you what your participation in my study will involve, I have formulated questions that I will try to fully answer so that you can make an informed decision about whether or not to participate. If you have any additional questions that you feel are not addressed or explained in this information sheet, please do not hesitate to ask me for more information. Once you have read and understood all the information contained in this sheet and are willing to participate, please complete and sign the consent form below.

What will I be doing if I participate in your study?

I would like to invite you to participate in this research because I believe you, as a meditator, can help me gain an understanding of Metta meditation and emotional regulation. If you decide to participate in this research, I would like to interview you on your experiences around Metta meditation and emotional regulation.

You can decide whether or not to participate in this research. If you decide to participate, you can choose to withdraw at any time or to decide not to answer particular interview questions.

Are there any risks/ or discomforts involved in participating in this study?

Whether or not you decide to participate in this research, there will be no negative impact on you. There are no direct risks or benefits to you if you participate in this study. You might, however, indirectly find that it is helpful to talk about your experiences of Metta, meditation and your emotional regulation. If you find at any stage that you are not comfortable with the line of questioning, you may withdraw or refrain from participating.

Do I have to participate in the study?

- Your inclusion in this study is completely voluntary;
- If you do not wish to participate in this study, you have every right not to do so;
- Even if you agree to participate in this study, you may withdraw at any time without having to provide an explanation for your decision.

Will my identity be protected?

I promise to protect your identity. I will not use your name in any research summaries to come out of this research and I will also make sure that any other details are disguised so that nobody will be able to identify you. I would like to ask your permission to record the interviews, but only my supervisor, I and possibly a professional transcriber (who will sign a confidentiality agreement) will have access to these recordings. Nobody else, including anybody at Varsity College will have access to your interview information. I would like to use quotes when I discuss the findings of the research but I will not use any recognisable information in these quotes that can be linked to you.

What will happen to the information that participants provide?

Once I have finished all interviews, I will write summaries to be included in my research report, which is a requirement to complete my honours degree in psychology. You may ask me to send you a summary of the research if you are interested in the final outcome of the study.

What happens if I have more questions about the study?

Please feel free to contact me or my supervisor should you have any questions or concerns about this research, or if there is anything you need to know before you decide whether or not to participate.

You should not agree to participate unless you are completely comfortable with the procedures followed.

My contact details are as follows:
Alexander Daly

The contact details of my supervisor are as follows:
Evelyn Naggayi

CONSENT FORM

I, _____, agree to participate in the research conducted by **Alexander Daly** about **exploring the effects of Metta meditation on emotional regulation**.

This research has been explained to me and I understand what participation in this research will involve. I understand that:

1. I agree to be interviewed for this research.
2. My confidentiality will be ensured. My name and personal details will be kept private.
3. My participation in this research is voluntary and I have the right to withdraw from the research at any time. There will be no repercussions should I choose to withdraw from the research.
4. I may choose not to answer any of the questions that are asked during the research interview.
5. I may be quoted directly when the research is published, but my identity will be protected.

Signature

Date

Consent form for audio-recording

I, _____, agree to allow **Alexander Daly** to audio record my interviews as part of the research about **exploring the effects of Metta meditation on emotional regulation**.

This research has been explained to me and I understand what participation in this research will involve. I understand that:

1. My confidentiality will be ensured. My name and personal details will be kept private.
2. The recordings will be stored in a password protected file on the researcher's computer.
3. Only the researcher, the researcher's supervisor and possibly a transcriber (who will sign a confidentiality agreement) will have access to these recordings.

Signature

Date

Annexure B - Interview Schedule

The schedule for a semi-structured interview for the study: Exploring the effects of Metta meditation on emotional regulation;

Hi, it's good to see you, thank you for agreeing to participate in my interview. How are you doing today? Before we begin the questions I would like to briefly describe what the process will involve.

The interview is contributing towards the completion of my Psychology Honors Degree. The interview will start with questions on Metta mediation trying to gain your understanding and experiences with it. The questions will then move to emotional regulation and your experiences with emotional regulation and its relation to Metta meditation. I hope this interview can help me gain an understanding of the effect of Metta mediation on emotional regulation.

I would like to ask you a few questions about your background, and your experience with Metta mediation as well as emotional regulation. Do you understand both these terms?

The interview should take about 10 minutes to complete is that alright with you?

Please stop me at any point if you need clarification or feel uncomfortable.

Do you have any questions or anything to say before we begin?

Let me start by asking you some questions on your experience with Metta meditation.

- 1) How would you describe your experiences with Metta meditation?
- 2) From your personal experiences does Metta mediation have any effect on your emotional regulation?
- 3) What do you think are the benefits of Metta meditation on your emotions and the well-being of adults?

Now with regards to your emotional regulation...

- 4) Can you please tell me how you learned to regulate your emotions?
- 5) Can you describe a time you had to regulate your emotions?
- 6) Can you please tell me about a time when you remember being emotionally reactive?

7) How do you usually react to negative or difficult situations?

Closing and clarification:

Thank you for answering all the questions and participating in the interview.

Let me briefly summarise your answers and you can clarify...

You feel your experiences with Metta meditation...

You feel your experiences of emotional regulation...

I appreciate the time you have taken to partake in this interview. Is there anything else you would like to add, or any questions you would like to ask?

Again, thank you for your time, and if you have any queries please feel free to contact me.

If you would like the final results of the research please leave your contact details and I can email the final report when it is complete.

Take care.

Annexure C – Ethical Clearance Letter

29 July 2020

Student name: Alexander James Daly

Student number: 16012694

Campus: IIE's Varsity College Sandton

Re: Approval of Honours in Psychology Proposal and Ethics Clearance

HONOURS/PGDIP ETHICAL CLEARANCE LETTER

Your research proposal and the ethical implications of your proposed research topic were reviewed by your supervisor and the campus research panel, a subcommittee of The Independent Institute of Education's Research and Postgraduate Studies Committee.

There are some aspects that you still need to address in your proposal. You will need to address these aspects in consultation with your supervisor before you may proceed (see below):

Please discuss with your supervisor/navigator/lecturer how you will address these issues listed below:

Please note: Your fieldwork may only proceed once you address the following issues:

- Please make all the changes suggested/recommended by your supervisor.

In the event of you deciding to change your research methodology in any way, kindly consult your supervisor to ensure all ethical considerations are adhered to and pose no risk to any participant or party involved. A revised ethical clearance letter will be issued.

We wish you all the best with your research!

GENERAL CONDITIONS TO BE FULFILLED IN RELATION TO RESEARCH

Permission is granted to proceed with the above study subject to the conditions listed below being met and may be withdrawn should any of these conditions be flouted.

Please note: The panel has not considered the merits, accuracy or ethical soundness of the research. The only merits examined are the use of The IIE as a sample.

Permission is granted subject to the following conditions:

1. The researcher(s) will need to obtain informed consent in writing from all of the participants in his/ her sample if the study is not anonymous.
2. The researcher(s) may only use the data collected for research purposes and in no other way.
3. Photographs of human subjects may only be taken if relevant to the research, informed consent was obtained, and even with informed consent, the photographs may not be published on any online platforms.
4. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
5. No names or identifying information of participants may be used within the research and the research must be voluntary.
6. Please make it clear that the information will not be used punitively in any way and participants may in no way be counselled/advised based on this.

Supervisor: Evelyne Naggayi

Campus Postgraduate Coordinator (CPC):

JENNA-LEE RAMNARAIN

Annexure D – Summary Document Table

Title Exploring the effects of Metta meditation on emotional regulation A qualitative study using interviews on adult novice meditators in South Africa

Research purpose	Primary research question	Research rationale	Sources	Conceptual framework	paradigm	Approach	Data collection methods	Ethics	Key findings	Recommendations
The purpose of this research is to explore: the effects of Metta meditation on emotional regulation; the possible prevention an intervention strategies that improve well-being; whether or not meditation is an effective coping mechanism in novice meditators.	What effect does Metta meditation have on emotional regulation, for adult, novice meditators, in South Africa?	Certain Problems such as: negative affect; maladaptive behaviours; maladaptive emotional responses and regulation; and psychological disorders, have limited solutions. The use of emotional regulation as a cognitive skill to help treat psychopathology has increased over the past years. The exploration of the effects of possible adaptive emotional and behavioural practices can provide insight into solutions to these problems of well-being. kindness based mediation practices have found moderate decreases in self-reported states of depression, and increased reports of mindfulness, compassion and positive emotion.	Sternberg & Sternberg. (2017). Hofmann, S. G., Hinton, D. E., Grossman, P. (2011). Lee, T. M. C., Leung, W., Hou, W., Tang, J. C. Y., Yin, J., So, K., Lee, C., Chan, C. C. H. (2012). Fricchione, G, L., Luberto, C, M., Park, Y, Y., Philpotts, L, L., Shinday, N., Song, R., & Yeh, G, Y. (2018). Falcone, G., & Jerram, M. (2018). Chin, T, C., Morrish, L., Rickard, N., & Vella-Brodrick, D, A. (2018).	Theme 1: Lovingkindness Theme 2: Emotional regulation Theme 3: Meditation and neuroplasticity	Interpretivism Give people an understanding of how they can improve their well-being and cultivate positive emotions. Reality has laws which govern it and is then interpreted by people and society to construct an understanding of reality. Understanding what is right and wrong is valued in research, discovering what is good, what betters individuals and groups, what improves people and what does not. What behaviours, actions, thoughts and beliefs are valued	Qualitative	Semi-structured Interview	To screen for healthy individuals and any individuals with psychical or psychological illnesses. confidentiality, anonymity, participant voluntarily and the opportunity to stop at any point during the interview. Relevant components should be assessed during the research, and the data used for it's stated and intended purpose/s. Ensure the data is not used for any research which was not stated to the participants and initially intended to assess.	Metta meditation is associated with positive affect, altruistic behaviour and feelings such as compassion and benevolence, and awareness and intent. While these aspects may not directly relate to emotional regulation they are elements of emotional regulation	Metta meditation can possibly be used as a cultivation practice for positive affect as well as awareness and intent. However, further research on the effects of Metta meditation and emotional regulations and aspects of emotional regulation should be conducted.
Research problem	Objectives	Key concepts	Key theories		Population	Sampling	Data analysis methods	Limitations	Key contributions	

Low levels of emotional regulation have been linked to symptoms of psychopathology and negative affect. The interventions to improve emotional regulation are limited and further research needs to be conducted on possible interventions and preventions, such as Metta meditation, on adult, novice meditators in a South African context.	To discover if Metta mediation increase or decrease emotional regulation in novice meditators. To explore the effects of Metta meditation on emotional regulation in novice meditators. To explore how novice meditators experience Metta meditation and emotional regulation.	*Meditation *Metta meditation *Emotional regulation *Loving-Kindness.	*Neuroplasticity.		The population for the study was adult novice meditators living in South Africa. The population parameters include being an adult, being a novice meditators and living in South Africa.	Non-probability sampling Snowball sampling sample size: 5	<i>Unit of analysis</i>-people. <i>Data analysis method</i>-Thematic analysis.	The sample size may not reflect the population. The data collection methods may not contain enough information to make claims on research. There may need to be more in-depth data collection methods. Other factors that are characteristic of the sample may influence the results. The link that may be found does not depict causation.	An understanding of how certain people regulate their emotions, and increase positive affect. An understanding of how Metta meditation may affect emotional regulation, in adult novice mediator. The application of Metta meditation on wellbeing. Insight into Metta meditation and emotional regulation, in the specific context.	
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