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Exploring the Nexus of Gratitude, Flourishing, and Anxiety in Young Adults

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DECLARATION

The research work titled “*Exploring the Nexus of Gratitude, Flourishing, and Anxiety in Young Adults*” has been carried out by me at the Department of Psychology, DAV College, Chandigarh, Punjab University. The manuscript was subjected to plagiarism checks. The work submitted for Consideration for the Masters in Psychology programme is original.

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ABSTRACT

Gratitude has been a potent source of happiness for as long as anyone can remember. It is often described as the initial burst that ignites a flame of happiness within us. Positive psychology also holds that supportive social relationships are necessary for human flourishing. Quite recently, the concept of gratitude and flourish dawned on most of us and ignited a way towards a more flourishing lifestyle, which eventually assisted us in alleviating torment and anxiety. Gratitude is the emotion that people feel when they get something as a present or benefit from someone else. It can also refer to the attitude of viewing life as a gift. People who are grateful tend to experience such emotions more frequently, and intensely, towards more and more people, and for additional things in their lives at any given time. In essence, gratitude is a widespread feeling of expressing thanks and recognizing the value and significance of things that matter to us. It involves acknowledging what is beneficial and meaningful in our lives. Every single one of us wishes to thrive, no matter what stage we are at in life. Research on gratitude suggests that enjoying the positive things in life contributes to our fulfilment on both a personal and professional level, which invariably leads to a flourished mind-set. The objective of this research was to examine the relationship between gratitude, flourishing and anxiety in young adults. The study enlisted 88 young adults aged between 18-35 years, who were asked to complete standardized measures of gratitude, anxiety, and flourishing. The findings indicated a positive association between gratitude and flourishing, while both were negatively linked with anxiety. Additionally, the t-ratio results showed that women had a higher level of anxiety as compared to men.

Keywords: Gratitude, Flourishing, Anxiety, Young adults.

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Chapter 1

Introduction

Gratitude

Various religious traditions such as Buddhism, Jainism, Christianity and Islam encourage fostering gratitude as a vital moral virtue. Gratitude is a prevalent notion in various aspects of our lives, including religious, cultural, and academic traditions. These traditions generally emphasize the importance of gratitude in cultivating virtues such as morality, goodness, and global citizenship. Gratitude can simply be defined as recognizing and embracing the good things in life. Researchers suggest that gratitude possesses biological roots as well, that is embossed in our brains and DNA. It also comprises certain evolutionary aspects and evidence that make us believe that grateful behaviour was also seen among non-humans. A research on primates convinces us that gratitude arises from an evolutionary adaptation (Bonnie & de Waal, 2004). In addition to anecdotal accounts of chimpanzees displaying gratitude towards humans, there is scientific evidence indicating that certain primate communities rely on complex, reciprocal interactions that are likely fuelled by some form of gratitude. According to a study, chimpanzees are more inclined to share their food with fellow chimps who have previously provided them with grooming assistance (De Waal, 1997). Reciprocal altruism is observed in several species, including fish, birds, and vampire bats. This behaviour compels us to help an unknown individual, because of a belief that the altruistic act will be repaid in future (Trivers, 1971). The correlation between reciprocal altruism and gratitude can shed light on why individuals tend to express more gratitude towards benefits extended by strangers or distant acquaintances as compared to those offered by close family members (Bar-Tal et al., 1977; Rotkirch et al., 2014). According to some theories, gratitude has played a role in the development of upstream reciprocity, a form of reciprocal altruism wherein receiving benefits from one individual motivates someone to be generous towards a third party (Nowak & Roch, 2007).

Neuroimaging research has revealed that specific regions of the brain are implicated in the experience and communication of gratitude. An fMRI study demonstrated that emotions linked to upholding social norms, like gratitude and pride, stimulated the mesolimbic and basal forebrain regions, which are associated with the formation of social bonds and the experience of pleasure (Zahn et al., 2009). In a follow-up study, it was found that individuals who experience gratitude more profoundly have greater volume of grey matter in the right inferior

temporal cortex, a region that has previously been linked to the interpretation of others' intentions (Zahn et al., 2014).

A study was carried out where participants were instructed to imagine themselves as survivors of the holocaust who had been provided with gifts like accommodation and food by strangers. The study found that those who anticipated experiencing higher levels of gratitude in such situations showed increased brain activity in the medial prefrontal cortex (PFC) and anterior cingulate cortex (ACC), areas of the brain associated with moral reasoning, perspective-taking, and the processing of rewards (Fox et al., 2015). In an earlier study, it was observed that when participants envisioned being assisted by another person, brain regions such as the anterior cingulate cortex (ACC), dorsomedial prefrontal cortex (DMPFC), and ventromedial prefrontal cortex (VMPFC) were activated (Decety & Porges, 2011).

Studies have also suggested that individuals who experience gratitude more frequently tend to exhibit greater levels of altruism. One study found that individuals with a higher disposition towards gratitude showed increased activity in the ventromedial prefrontal cortex (VMPFC) and other brain regions associated with altruistic behaviour when they were informed that a charitable organization would be receiving a donation (Karns et al., 2017). Moreover, this neural activity can be amplified through regular practice. Participants who were instructed to maintain a gratitude journal for three weeks exhibited higher neural responses in these brain regions as compared to those who did not practice gratitude regularly. This implies that the act of cultivating gratitude could potentially rewire the brain to associate the benefit of others with a sense of reward, potentially elucidating the reason why gratitude is linked to prosocial behaviour.

While the aforementioned studies have focused on the experience of gratitude, researchers have also been interested in understanding how expressing gratitude impacts the brain. In a particular study, participants were given an opportunity to express gratitude by donating some of the money they had received during the experiment to a charitable organization. The study revealed that individuals who expressed more gratitude by giving a larger amount of money exhibited heightened neural activity in brain regions such as the parietal and lateral prefrontal cortex, which are associated with cognitive processes like mental calculations, suggesting that gratitude involves cognitive processing as well as emotional processing (Kini et al., 2016). The same study also found that participants who took part in a therapeutic intervention that involved writing gratitude letters reported increased levels of gratitude and exhibited greater neural

activity in the pregenual anterior cingulate cortex three months after the intervention had ended. The pregenual anterior cingulate cortex is a region of the brain that plays a role in predicting the outcomes of actions. These findings suggest that a brief intervention focused on cultivating gratitude can potentially produce long-lasting changes in the brain, persisting even months after the intervention has been completed. Taken together, these studies highlight the fundamental role of gratitude in human cognition, emotion, and behaviour. They also suggest that variations in activity in distinct brain regions may be associated with differences in levels of gratitude observed among individuals.

Studies have provided evidence that some individuals possess a higher degree of dispositional gratitude compared to others, and this may be attributed to their genetic composition. For instance, in one study, a group of twins completed the Values in Action survey, which asked them to rate how well they embodied 24 different character strengths (Steger et al., 2007). The study found that the correlation in self-reported gratitude was more pronounced among identical twins, who share 100% of their DNA, than among fraternal twins who share only 50% of their DNA. This finding suggests that genetics may play a role in the development of dispositional gratitude.

The question that arises is which specific genes may be responsible for the genetic component of gratitude. A study has found that a particular variant in the CD38 gene, which plays a role in the release of oxytocin, was strongly associated with the quality and frequency of expressing gratitude to a romantic partner in both laboratory settings and daily life (Algoe & Way, 2013).

A recent study has found that individuals with particular variants of the COMT gene, which is involved in the recycling of the neurotransmitter dopamine in the brain, reported having higher levels of dispositional gratitude. This suggests that dopamine may play a role in the experience of gratitude (Liu et al., 2017). Taken together, these studies suggest that gratitude is a fundamental aspect of human biology and is deeply rooted in our cognition, emotion, and behaviour.

While some studies focus on the biological and evolutionary origins of gratitude, others examine how gratitude develops during childhood, and suggest parenting and educational techniques for cultivating this quality in children. Research has suggested that children's ways of expressing gratitude tend to shift and develop as they grow and mature. A study conducted in 1938 on Swiss children aged seven to fifteen found that younger children were more likely to display concrete gratitude, such as wanting to give something back to the person who helped

them, while older children were more likely to express verbal gratitude by thanking the person, though individual differences were also observed (Baumgarten-Tramer, 1938). A more recent study has suggested that children's expressions of gratitude tend to increase as they age. Researchers found that 11-year-old children were four times more likely to say "thank you" immediately after receiving a gift or reward than children under the age of six, indicating that the tendency to express gratitude may develop and strengthen with age (Gleason & Weintraub, 1976).

Recent cross-cultural studies have shown that there are cultural variations in the types of gratitude expressions that are emphasized and valued; indicating that socialization by parents and the broader culture has a significant impact on the development and display of gratitude in children (Wang et al., 2015; Tudge et al., 2016). Research indicates that children who have a better grasp of emotions at an early age and a deeper understanding of other people's mental states tend to have a better understanding of gratitude as they grow older. In addition, studies suggest that children between the ages of five and six are not influenced by the motives of a benefactor when expressing gratitude, but older children tend to feel less grateful when they are aware that the benefactor is being kind solely to follow the rules (Graham, 1988). Research suggests that even though children as young as six can differentiate between gratitude and showing good manners, they may not fully comprehend the same prompts used to evaluate gratitude in adults, suggesting that children may have distinct interpretations of gratitude compared to adults (Hussong et al., 2017).

Flourishing

Positive psychology has extensively researched the concept of flourishing, which encompasses a range of positive elements that have the potential to improve people's quality of life globally. Flourishing goes beyond mere comfort and takes into account the broader impact of sensory experiences on health and well-being, which are the fundamental building blocks of human energy, driving innovation and productivity (Clements-Croome, 2018). Fredrickson (2001) states that "flourishing is an optimal state of human functioning" (Huppert & So, 2013) talks about a survey conducted in 23 countries with 43,000 participants aimed to determine the definition of flourishing, and the result was the identification of ten characteristics of flourishing. These characteristics include competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, and

vitality. These attributes are similar to those described in the work of Maslow (1943), and Diener and Biswas-Diener (2008).

Coming across the pieces of a flourishing puzzle and understanding the implementation of research findings in real-life situations, as well as the timing of their implementation, have significant implications for our daily lives, relationships, and overall well-being. Flourishing, which is not limited to basic happiness or well-being, covers a wide range of positive psychological factors and provides a more comprehensive perspective on what it means to live a fulfilling and joyful life.

Corey Keyes states “...even if we could find a cure for mental illness tomorrow, it does not mean that most people would necessarily be flourishing in life. In other words, we cannot treat our way out of the problem of mental illness; we must also promote a life of balance in which people can achieve happiness and realize lives in which they can flourish” (Keyes, 2016).

Preliminary research on flourishing revealed that positive emotions, at the very least, have a substantial impact on it (Fredrickson & Losada, 2005). After the publication of Fredrickson and Losada's study, it was discovered that the mathematical model used had flaws, but the overall finding remained that those who are flourishing report higher levels of positive emotions. While there is still debate regarding the specific components of flourishing, it is generally agreed upon that it refers to more than just the absence of mental illness or depression. Flourishing has various benefits, including increased resilience, clearer life goals, improved intimacy, reduced risk of cardiovascular diseases, lower healthcare utilization, and fewer work absences (Keyes, 2007).

Several factors contribute to achieving flourishing, including having high levels of conscientiousness and extraversion, low levels of neuroticism, experiencing positive life events that provide social support, and attaining both hedonic happiness and eudaimonic wellbeing. (Schotanus-Dijkstra et al., 2016).

There are various characteristics that helps us define people who flourish and who do not;

Directing and redirecting ones attention: Just as we manage our time, relationships, finances, it is very crucial to manage our attention as well. Anger, sadness, irritating are all instances of poor attention.

The proclivity to mould your time with purpose and impact: The ability to use time effectively and purposefully is essential for achieving flourishing. Instead of surrendering to time

constraints, individuals can choose to spend their time on tasks that bring them joy and move them towards their goals. Flourishers are not necessarily born with the skill, but rather are always seeking ways to improve, grow, and thrive. They also understand the importance of communication and listening to others, valuing their feedback and guidance. To thrive, individuals must commit to positive experiences, such as pursuing pleasure, discovering their purpose, and taking care of their physical and emotional wellbeing. In essence, thriving requires a conscious effort to maintain the ability to flourish (Davis, 2014).

Individuals can inculcate the benefits of flourishing by indulging themselves in various cognitive exercises, behaviour modifications, engaging in meaningful relationships and by incorporating different ways to deal with psychological distress.

Practising Gratitude: In a study, participants were instructed to spend some time each week reflecting on and writing down five things in their lives for which they were grateful. This exercise was repeated for a duration of 10 weeks. As a result of this gratitude intervention, participants displayed increased levels of gratitude and a more optimistic outlook towards life when compared to those who were assigned to write about life events or hassles or had no specific instructions. Additionally, they also reported experiencing fewer physical symptoms and better quality of sleep (Emmons & Mccullough, 2003).

A variation of the gratitude intervention involved participants in writing down three positive things that occurred in their lives every day for a week. Compared to those who wrote about their memories, the individuals who completed this exercise had higher levels of happiness and lower levels of depression and anxiety even after six months. (Seligman et al., 2005). A recent meta-analysis that included various gratitude interventions found that these activities have a positive impact on gratitude and overall psychological well-being in individuals (Davis et al., 2016).

Savour every moment: Savouring is sometimes characterized by the capacity to undertake, recognise, and strengthen positive experiences in life (Bryant & Veroff, 2007). Various methods and techniques have been developed to enhance and promote the practice of savouring, including reflecting on meaningful achievements, recognizing the positives in current situations, enhancing focus and awareness of positive experiences, and expressing or celebrating something positive (Smith et al., 2014; Bryant & Veroff, 2007). Meta-analytic studies of numerous randomly selected interventions aimed at promoting savouring suggest that these interventions have a limited impact on overall happiness and life satisfaction (Smith

et al., 2014). In one investigation, participants were randomly assigned to two sets of instructions. One group was asked to take a 20-minute walk each day and the other group was told to take a walk and notice all positive things around them. It was seen that the participants who were asked to notice the positivity around them reported higher levels of happiness (Bryant & Veroff, 2007).

Envisioning Oneself as the Best : According to some studies, visualising and trying to write about one's best possible self improves a broad spectrum of our health (King, 2001; Boehm et al., 2011; Layous et al., 2013). A training was conducted on participants where they were asked to envision their future self who has succeeded in all spheres of life, be it, relationship, family or career (King, 2001). They can possibly term it as the ideal self. Evidence after performing this exercise suggests that the participants started feeling positively about one self. Their optimism and life satisfaction increased (King, 2001; Boehm et al., 2011; Layous et al., 2013; Peters et al., 2013). A recent meta-analysis of evidence from ten different experiments found that the intervention had consistent results in significantly increasing optimism (Malouff & Schutte, 2017). One way to further enhance this effect is by documenting aspirations, objectives, and actions that can aid in achieving one's ideal life.

Utilizing personal character strengths: Aristotle believed that the way to achieve happiness is by engaging in actions based on virtuous behaviour. While the empirical investigation of virtues remains in its initial phases (Peterson et al., 2005). Various statistical evidence suggest that virtue can make a significant contribution to happiness and fulfilment. An intervention was conducted in which the participants had to take up a survey, which helped them to identify their main five character strengths. They were asked to incorporate each strength every day, for at least a week. Those who were instructed to do this, rather than those who were just asked to write down memories, had higher levels of happiness and a decrease in anxiety and depressive symptoms. A latest reveal integrating evidence from 9 different trials found similar effects on joy and fulfilment in life (Schutte & Malouff, 2019).

Being kind: Acts of generosity such as supporting others, and going beyond one's own way to help people who need assistance can optimise the well-being of other people. A variety of research studies also proposes that certain acts of compassion not only strengthen the well-being of others, but also enhances one's own perception of well-being. Some studies indicate that individuals who are encouraged to perform acts of kindness on a regular basis, which they would not typically, do, can experience an increase in happiness and overall life satisfaction. It

will also make us feel more committed, less stressed, and more affiliated to our day-to-day chores (Buchanan & Bardi, 2010; Ouweneel et al., 2014; Kerr et al., 2015). Focusing on performing acts of kindness once a week for a minimum of six weeks has a stronger impact on our well-being compared to spreading out acts of kindness over the entire week, according to research (Lyubomirsky et al., 2005). A latest study reveals that after combining various evidences from 27 experimental tests revealed that joy and positive energy had similar effects (Curry et al., 2018). These little acts of kindness increases one's own and others' well-being. Nevertheless, there is evidence that such acts of selflessness often stimulate others to behave in a similar manner (Fowler & Christakis, 2010; Jordan et al., 2013; Chancellor et al., 2018).

Offering voluntary help to others: Various observation based studies have found that volunteering positively affects our well-being. Participating in volunteering activities and regularly engaging with various programs and organizations can contribute to the betterment of a community. Volunteering groups can also foster a strong sense of social connection and a common purpose. Research indicates that individuals who engage in volunteer work experience greater levels of happiness and well-being compared to those who do not. They also exhibit better physical and mental health, and tend to live longer and more fulfilling lives (Okun et al., 2013; Anderson et al., 2014; Pool et al., 2017; Post, 2017).

An experiment conducted with teenagers showed that those who participated in a 10-week volunteering program at a nearby primary school had better cardiovascular health. Similarly, another study with older adults who volunteered for 15 hours per week for a year to assist young children showed that the volunteers demonstrated higher levels of generativity (Gruenewald et al., 2012). According to an empirical study, dedicating just two hours per week to volunteering can have significant positive effects on the health and well-being of individuals (Post, 2017).

Job Crafting: Work and the choice to work entails collaborating alongside other people to fulfil the wants and requirements of humankind. Job involvement has been proven to improve a variety of wellbeing and health related results on average. Researchers say that work helps us to improve our relationships, physical and mental wellbeing, and life satisfaction and increases our focus towards a goal (McKee-Ryan et al., 2005). There is evidence to suggest that losing one's job typically leads to a decrease in these outcomes (Paul & Moser, 2009).

Apart from simply working, there is an approach which says that we can make our work better which would help in developing a positive environment and helps with an increase in one's

well-being and satisfaction. This approach is termed as Job crafting. Job crafting (Wrzesniewski & Dutton, 2001) is the process of reflecting on one's job setting and executing actions at work which, helps us to understand our tasks at home more practically and successfully, assists us in having better and meaningful interactions in a work space and aids us in finding satisfaction and a meaning in life. Longitudinal studies have shown that job crafting can lead to improvements in work engagement and performance, and may also have positive effects on psychological well-being and other indicators of job effectiveness (Frederick & VanderWeele, 2018). By dedicating time to evaluating their work environment and adjusting how they behave, organize tasks, interact with others, or approach their work, individuals can easily engage in job crafting. This may lead to improvements in work engagement and productivity, as well as various aspects of psychological well-being, according to longitudinal studies.

Recovery from depression: Depression is a common mental health concern, and there are numerous effective treatments available, including different types of therapy and medication. One of the most widely used therapies is cognitive behavioural therapy, which aims to modify negative thought patterns and behaviours that can contribute to depression. Cognitive behavioural therapy can effectively reduce symptoms of depression (Cuijpers et al., 2016).

Anxiety

It is natural to feel anxious about relocating, beginning a fresh endeavour, or taking an examination. Performance anxiety can be uncomfortable, but it can also motivate you to work harder and do your best. On the other hand, normal anxiety is a temporary feeling that does not significantly impact your daily life. However, in the case of an anxiety disorder, the fear can be constant, severe, and disabling. This type of anxiety can lead to avoidance of enjoyable activities and, in extreme cases, can prevent individuals from leaving their homes or engaging in routine activities. Without treatment, anxiety disorders can worsen over time.

The APA Dictionary of Psychology (2022) defines anxiety as “an emotion characterized by apprehension and somatic symptoms of tension in which an individual anticipates impending danger, catastrophe, or misfortune. The body often mobilizes itself to meet the perceived threat: Muscles become tense, breathing is faster, and the heart beats more rapidly. Anxiety may be distinguished from fear both conceptually and physiologically, although the two terms are often used interchangeably. Anxiety is considered a future oriented, long-acting response broadly focused on a diffuse threat, whereas fear is an appropriate, present-oriented, and short-

lived response to a clearly identifiable and specific threat.” Anxiety disorders are not just temporary feelings of nervousness or fear that occur occasionally. They arise when anxiety starts to interfere with your ability to function normally, when emotional triggers frequently provoke an overreaction, and when you have little to no control over how you respond to situations. Research has shown that anxiety disorders are more prevalent in women than in men, and the exact reasons for this are still being studied. One possible explanation is that the fluctuation of hormones, particularly those that change during the menstrual cycle, could contribute to the development of anxiety. It is also possible that testosterone, which is more commonly found in men, will have a protective effect against anxiety. Another contributing factor could be that women are less likely to seek medical attention for anxiety, which can exacerbate their symptoms. Various exercises can be beneficial in reducing anxiety and promoting long-term wellness.

Alternate Nostril Breathing: It is also referred as Nadi Shodhan, which is a yoga breathing technique. Here, the person closes one nostril and breathes through the other. He then switches and exhales through the other nostril. He places his left hand on his left knee while being seated. This breathing exercise should be performed in rounds of 10. Once the person feels lightheaded, they should resort to their normal breathing patterns.

Relaxation by Visualization: When experiencing anxiety, try to locate a calm and comfortable place to sit and relax. This location can be real or imaginary, as long as it provides a sense of comfort, happiness, pleasure, and safety to you. Keep it simple so that you can easily recall it during future anxiety episodes. Pay attention to all the small details you would notice in that space, such as the smells, textures, and sounds. Visualize yourself in that place, feeling at ease and enjoying the surroundings.

Relax by counting: When feeling overwhelmed with anxiety, finding a peaceful and quiet spot is beneficial. Once situated, close your eyes and begin to count slowly from one to ten. If necessary, continue counting to a higher number until the feeling of anxiety subsides. This technique may provide quick relief, but it can also take time, so it is important to remain patient. Focusing on counting distracts the mind from the anxiety, making it a helpful tool to use in public places with crowds of people, such as stores or trains.

Relax by staying in the present: Mindfulness is the practice of being aware of the present moment without any judgment or criticism. It involves being fully engaged in the current experience, paying attention to your thoughts, feelings, and surroundings. Mindfulness can

help calm the mind when racing thoughts and anxiety are present; allowing you to stay grounded and focused. One can practise being in the present state by – Finding a comfortable place to sit, closing their eyes, noticing ones breathing pattern and how their body feels. In order to practice mindfulness and calm your anxiety, it is important to shift your attention away from your racing thoughts and focus on the present moment. Pay attention to your senses and observe your surroundings. Ask yourself questions like "What can I hear right now?" or "What can I see, smell, or feel around me?" This technique can help you shift your focus away from internal worries and onto external sensations, helping to calm your mind and reduce anxiety.

Pursed Lip Breathing Technique: A breathing technique called slow, deep breathing can help manage anxiety by allowing you to take deliberate, slower breaths. It is a technique used by people with lung conditions like COPD and emphysema. To do this technique, find a comfortable position while sitting, maintain a relaxed posture, breathe in through your nostrils for 2 seconds with your mouth closed and relaxed, purse your lips as if you are going to kiss someone, and exhale slowly and evenly through your mouth.

Resonance Breathing Exercise: This technique is also known as coherent breathing. It can assist with anxiety reduction and enable an individual to enter a more relaxed mood. To perform the exercise one should breathe through their nose with mouth closed for 6 seconds while lying down with your eyes closed. Without forcing the breath, exhale gently and slowly for a count of six. Continue for up to 10 minutes if necessary. Just after the exercise, the individual should remain for a few minutes and concentrate on how their body feels.

Progressive Muscle Relaxation Technique: These exercises focus attention on tensing and relaxing each muscle group individually. Stretch out comfortably on your back. Inhale deeply and contract the first group of muscles for up to 10 seconds. Exhale quickly and relax the specific muscles. After tensing each muscle group for about 5-10 seconds, release the tension and relax the muscles for up to 20 seconds before moving on to the next muscle group. Once you have completed all the muscle groups, count backwards from 5 to 1 and bring your attention back to the present moment.

Chapter 2

Review of Literature

Gratitude

The term gratitude has its origins in the Latin word "gratia," which refers to qualities such as grace, graciousness, and thankfulness and “have to do with kindness, generousness, gifts, the beauty of giving and receiving, or getting something for nothing” (Pruyser, 1976, p. 69) When you are grateful, you are delighted by what another person has done for you and actual result you witnessed because of their help. Unlike borrowings, you are not worried about not being able to repay them back. However, it is still crucial that you convey your gratitude to the recipient and let them know much their efforts mean to you. Expressing gratitude is a fundamental aspect of human well-being and promoting kindness towards others has been a significant focus in positive psychology research (Kini et al., 2016).

We can experience positive emotions through gratitude in our everyday life (Kini et al., 2016; Watkins et al., 2015; Emmons & McCullough, 2003; Froh et al., 2008). While gratitude interventions have been shown to be effective, there has been limited research on the neurological processes associated with gratitude until recently (Kini et al., 2016; Fox et al., 2015). Understanding the neural mechanisms and associated experiences of gratitude may provide insight into its effects on mental health and resilience (Fox et al., 2015).

Gratitude can be considered as an emotional state or experience

Gratitude seems to be an inherently rewarding state that can lead to other positive subjective experiences (Emmons & Shelton, 2002). According to Gleason and Weintraub (1976) data, research has shown that children tend to develop an understanding of gratitude between the ages of 7 and 10. The study found that younger children, under the age of 6, would express gratitude when given treats by adults, while most children aged 10 and older would exhibit gratitude in the same situation. Gratitude entails several steps, and the sentimentality felt when receiving something often tends to result in an action, such as showing appreciation for the nice gesture. This emotion appears to grow as children enhance their interpersonal competence, which is associated with empathy. Empathising can be the most powerful key asset for fostering the intense experience of gratitude (Saarni, 1999). Empathy focuses on how people behave in relation to other people's feelings and experiences. It incorporates both perspectives and empathic consideration (Booker & Dunsmore, 2015). Empathy may help in promoting

favourable impressions of others. It consists of more prosocial and less inappropriate behaviour (Booker & Dunsmore, 2015).

Several scholars and theorists have observed that gratitude is normally associated with positive emotional responses (Lazarus & Lazarus, 1994). According to research, expressing gratitude is linked to an increase in positive emotions and thoughts, as well as a decrease in negative emotions. (Nelson et al., 2016). One study found that individuals who possessed the trait of gratitude experienced positive emotions frequently, while also experiencing a decrease in negative emotions (Kashdan et al., 2006).

Emmons and McCullough (2003) during a two-week period discovered that respondents who were told to count their good wishes expressed happier emotions and increased emotions of togetherness with others. This was further evaluated on a young population of students (6th and 7th grade) who were advised to count their good wishes. Over the span of three weeks, they confirmed few negative emotional states and an elevated degree of happiness and satisfaction with their school experience (Froh et al., 2008).

Further studies on gratitude have indicated that practicing gratitude can lead individuals to feel more connected to others, ultimately resulting in greater increases in overall well-being (Wood et al., 2008). Many research studies have discovered proof that gratitude causes people to report feeling in a more positive way and less negatively. Positive emotions can be enhanced by indulging in positive activities (such as practising gratitude) which may improve our overall well-being (Lyubomirsky & Layous, 2013).

Gratitude can be seen as a morally uplifting experience

McCullough and colleagues (2001) proposed that gratitude has ethical implications and can serve as a moral compass. Additionally, gratitude can function as a motivating factor, inspiring individuals to engage in prosocial behaviours after receiving kindness from others. Finally, gratitude can act as a positive reinforcement, encouraging further acts of kindness and fostering positive social interactions. They proposed that Gratitude results from replicates of morality, which is motivated by consideration for another human. Gratitude consists of acknowledging we have been treated pro socially and should be thankful for the same. This may cause one person who feels grateful, to extend generosity to the same individual or to somebody else (Booker & Dunsmore, 2015). As mentioned earlier, empathy can be a potent tool for fostering the emotional experience of gratitude, as it arises from an understanding of and connection with the thoughts and emotions of others (Gleichgerricht et al., 2013). Additionally, empathy

has a strong association with moral judgement, and positive emotions like empathy, gratitude, and kindness towards others promote virtuous behaviour.

Gratitude: An interactive social experience

It is said that regardless of whether it is difficult and expensive for the helper, they tend to show gratitude. A study was conducted in which participants were induced in a state of gratitude. It was seen that they knowingly and willingly spent greater amounts of time completing an uninteresting survey as a favour to their friend than respondents who were in a normal emotional state (Bartlett & DeSteno, 2006). As mentioned earlier, social interactions seem to play a role in the formation of our emotions, suggesting that emotions have a social function (Algoe et al., 2013). Expressing gratitude can establish a meaningful bond between a person feeling grateful and the person who performed the kind action, creating a positive relationship between them (Algoe et al., 2008). Gratitude tends to increase when a person perceives that another individual has intentionally acted to benefit his or her well-being (Emmons & Shelton, 2002).

Expressing gratitude involves having the ability to empathize with others, and beneficiaries feel grateful when they perceive that the benefactor went out of their way with an intention of offering a selfless present (Lazarus & Lazarus, 1994). Gratitude can be seen as a motivation to act selflessly towards oneself and others, which expands rather than contracts. Grateful individuals tend to consider a broad range of helping behaviours as possible expressions of their gratitude, and they have a unique way of thinking about it (Fredrickson, 2004). It was discovered that whenever a person feels a sense of gratitude in response to a reward, it is because the receiver has observed a notably sensitive behaviour on the part of the person who has provided him with the reward (Algoe, 2012). This act of support stands out because it demonstrates that the person recognizes, empathizes with, or truly values themselves (Reis et al., 2004).

In a study involving 2000 children, they were instructed to imagine receiving something they wanted. The results showed that most of the children reported a desire to reciprocate the kindness in some manner. The children did this by getting involved in things that would make them more connected to the benefactor, such as engaging in an activity they both relished or providing friendship or commitment in exchange for a favour. For that reason we should indeed consider gratitude as being far greater than tit-for-tat repayment as it focuses more on the wellbeing of society as a whole (Algoe & Haidt, 2009).

Gratitude: Helps in developing positive emotions

Emotions are categorized into two types, positive and negative affect (Gazzaniga et al., 2014; Russel & Barret, 1999; Snyder et al., 2010). According to the core affect theory of emotions (Barett et al., 2007), our emotional responses are elicited based on the level of arousal and valence, which are influenced by our perception, understanding, and behavioural patterns (Oatley & Johnson-Laird, 2014). James Russel's model suggests that emotions can be classified based on two dimensions: valence (the degree of pleasure or displeasure) and arousal (the level of activation or stimulation). This model organizes emotions into circular regions within a two-dimensional space defined by these dimensions (Posner et al., 2005). The circumplex model of affect (CMA) is a tool that is employed to portray emotions based on their position in terms of both valence and arousal levels (Rubin & Talerico, 2009). Arousal is depicted by the vertical axis, while valence is displayed by the horizontal axis. In the circumplex model of affect, the centre of the circle represents emotions with a neutral valence and a moderate level of arousal (Remington et al., 2000).

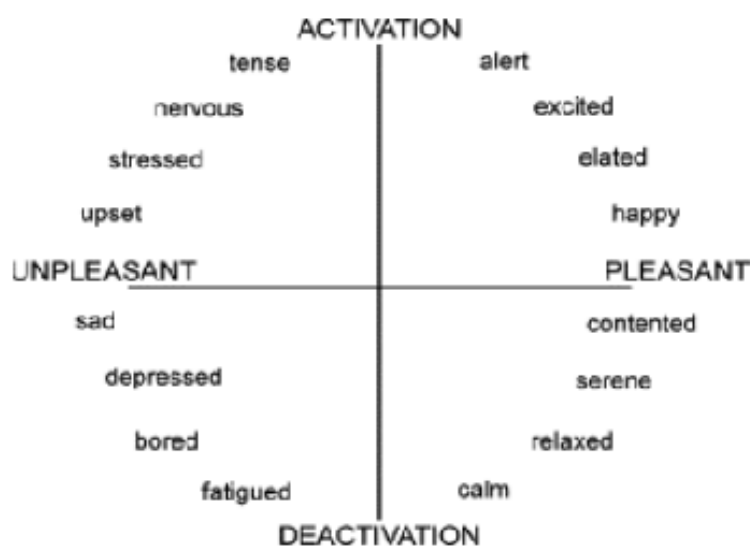


Figure 1. The Circumplex model draws each emotion along continuous dimensions of arousal (vertical axis) and valence (horizontal axis). It is adapted from “The circumplex model of affect: An integrative approach to affective neuroscience, cognitive development, and psychopathology”, by J. Posner, J. A., Russel, and B. S. Peterson, 2005, *Development and psychopathology*, 17, p. 715-734.

Many researchers have noted that gratitude is commonly linked with a state of positive emotions (Lazarus & Lazarus, 1994). A study examined 30 emotions to figure out which ones were pleasant emotions and the ones that were unpleasant or if they displayed an elevated or decreased excitation (Reisenzein, 1994). Among the 30 emotions that were identified, gratitude was categorized as a positive emotion with moderate arousal and a slightly lower level of stimulation.

The circumplex model of affect (CMA) suggests that all emotional states "cognitive interpretations of core neural sensations produced by two independent neurophysiological systems" (Posner et al., 2005, p. 1).

The Impact of Gratitude as a Positive Emotion on the Brain

Kini et al. (2016) conducted a study to examine the neural correlates of gratitude and identify the brain regions that are activated during experiences of gratitude. The study focused on both the experience and expression of gratitude, as it has been established that gratitude can motivate individuals to act. 43 participants (32 females) were divided into two conditions: a gratitude intervention condition (22 participants) and a psychotherapy-only condition (21 participants). The researchers used a trust game called the Pay It Forward task (PIF) to investigate the impact of gratitude on brain activity. During the PIF task, the gratitude intervention participants acted as trustees and received cash from a benefactor whose face was displayed on a screen in an fMRI scan. The participants were also shown a third beneficiary with whom they could share a portion of the benefactor's gift. The researchers found that on each trial of the PIF task, participants donated an average of 60% of their endowment to the beneficiaries. This suggests that the gratitude intervention was successful in promoting altruistic behaviour. Although the participants did not give away all of the money, they also did not keep it all for themselves. When participants felt grateful, activity was detected in the parietal and lateral prefrontal cortex. On the other hand, when they felt the desire to contribute, certain regions were activated including the left mid-occipital region, left precentral gyrus, left superior parietal lobule, and left cerebellar decline.

Functional findings suggest that gratitude can be considered an optimistic emotion.

According to Borod and colleagues (1998), previous research did not consider the possibility that pleasurable and unpleasant emotions could be localized to specific structures in the left hemisphere of the brain, and vice versa. Additionally, there was a lack of differentiation between positive and negative valence and arousal in these studies (Spielberg et al., 2008).

Based on the CMA, one study sought to determine the neural activity of respondents when introduced with words that provoked positive/negative valence and high/low arousal. Posner et al. (2009) conducted an fMRI study with a sample size of 10 participants (comprising 5 men and 5 women) to investigate the correlation between BOLD signals and valence and arousal ratings elicited by presentation of dissimilar words. Posner et al. (2009) found that presentation of negative words led to heightened activity in the right dorsolateral prefrontal cortex (DLPFC) and right praecuneus. They also identified a network of brain regions involved in emotional experiences, including the left DLPFC, bilateral medial prefrontal cortex (PFC), amygdala, cingulate gyrus, insular cortex, and praecuneus. The left insula contained a network that grew in response to positive stimulation and increased positive valence.

Activation in the prefrontal cortex, specifically the frontal lobe, is known to be associated with positive emotions. Studies utilizing EEG have found that increased stimulation of the left frontal cortex is associated with more intense positive emotional responses (Posner et al., 2005; Posner et al., 2009). Miller et al. (2015) wrote a research article that spoke about various studies, which thus backed frontal variations in activation when monitoring emotional valence. Miller et al. (2015) discovered that positive sensations were related with left-frontal activation and negative impulses with right-frontal activation. A research (Baumgartner et al., 2006) used 24 females to elicit emotional responses by using both auditory and visual stimuli. Baumgartner and his colleagues aimed to elicit three fundamental emotional states: happiness, sadness, and fear. As happy situations became more frequent, there was a greater increase in EEG activity observed in the left hemisphere compared to the right hemisphere. Basic emotions are distinguished by the fact that they can be explicit and have morphed from our environment and surroundings (Ekman & Cordaro, 2011).

Ekman's theory identifies seven fundamental emotional responses, namely happiness, sadness, surprise, contempt, fear, disgust, and anger (Tracy & Randles, 2011). According to Ekman and Cordaro (2011), instead of counting the number of emotions, it is important to group the basic emotions together in order to better understand them. Each emotion is a group of associated states instead of an only one affective or psychological state. It includes feelings that the person enjoys and seeks. Furthermore, different pleasurable emotions are stimulated by various events, each incorporating a different pattern and behavioural responses (Ekman & Cordaro, 2011). A study involving 10 right-handed male students used positron emission tomography (PET) to observe brain networks during the viewing of positive and negative photographs, as well as neutral photographs. The results showed that the left amygdala and ventromedial prefrontal

cortex were activated during positive emotions. These findings suggest that positive feelings are amplified in the frontal lobe, specifically the left side of the brain (Hamann et al., 2002).

Cerqueira et al. (2008) used fMRI and analyse happy emotional reactions in a research. They looked into the areas of the brain that were automatically triggered when 11 healthy individuals were made happy which included six males and five females. Changes in blood oxygen level dependent (BOLD) signals were recorded. The scripts included content related to joyful, neutral, and negative situations. The presentation of joyful content was found to be associated with increased neural activity in several anterior cortical areas, such as the medial and lateral prefrontal cortex, and the dorsal anterior cingulate gyrus.

According to one research (Northoff et al., 2000), Neuroimaging studies have revealed that the orbitofrontal cortex plays a crucial role in emotional processing. The orbitofrontal cortex can be divided into medial and lateral regions, with each region being activated during processing of either positive or negative emotions. In other words, both the medial and lateral parts of the orbitofrontal cortex are involved in emotional processing, and their activation depends on the valence of the emotion being experienced. They used both favourable and adverse images in the research to elicit conflicting emotions in subjects. Neuroscientific research has shown that negative emotions are primarily processed in the medial orbitofrontal cortex, whereas positive emotions are primarily processed in the lateral prefrontal cortex (Northoff et al., 2000).

In recent years, researchers have utilized functional neuroimaging techniques to investigate emotional responses and their underlying neurological processes. Studies have found evidence of distinct patterns of brain activity associated with different emotional valences, such as increased activity in certain brain regions. The amygdala and prefrontal cortex have emerged as key brain areas involved in emotional processing, based on this research (Nielen et al., 2009).

Researchers generally agree that the amygdala is a key brain region involved in the regulation of emotions (LeDoux, 2003; Wendling et al., 2015). Activation of the amygdala has been associated with both positive and negative emotional stimuli (Hamann et al., 2002; Sergerie et al., 2008). According to Nielen et al. (2009), the amygdala is generally considered more responsive to excitability and highly involved in processing emotional information, while the prefrontal cortex is known to be effective in processing both positive and negative emotional valence. The amygdala plays a crucial role in rapidly detecting and responding to potential threats or rewards, while the prefrontal cortex is involved in regulating emotions and making

decisions based on the evaluation of emotional stimuli. Together, these brain regions contribute to the complex processing and regulation of emotions.

Positive emotions are typically described as subjective experiences that arise from the activation of neurobiological systems associated with incentives, rewards, and pleasure. Incentive processing has been linked to the experience of positive emotions, as the anticipation or receipt of a reward or pleasurable stimulus can elicit positive emotional responses (Schultz, 2013). Animal studies have been utilized to establish reinforcement or punishment methods to encourage or discourage a behaviour that will persist over time, a phenomenon known as instrumental conditioning. Through instrumental conditioning, animals learn that their actions can lead to either rewarding or punishing consequences and they can choose to engage in behaviours accordingly. This type of conditioning helps animals to acquire new behaviours that are advantageous to their survival and well-being, and it is an important tool for studying the neural and behavioural mechanisms underlying learning and decision-making. Instrumental conditioning has also been assessed in humans using fMRI, and the dorsal and ventral striatum were found to be active (O'Doherty et al., 2004). The instrumental conditioning task employed in the study included two distinct trials: a reward trial and a neutral trial. During the reward trial, participants were presented with two stimuli and had to choose between them, with one stimulus associated with a higher probability of receiving a juice reward and the other stimulus associated with a lower probability of receiving a juice reward. In the neutral trial, participants were presented with two stimuli that had varying probabilities of yielding a neutral outcome (O'Doherty et al., 2004). Research has shown that when humans experience positive emotions, such as recalling happy memories, certain brain regions such as the striatum and medial prefrontal cortex (MPFC) become activated, indicating a rewarding or pleasurable experience. Previously, they have been using brain electrical stimulation to stimulate various regions of the brain in human psychiatric patients. To alleviate their discomfort, the patients would hit a certain button. Patients reported experiencing positive emotions during self-generated mental simulations and referred to this experience as pressing the "pleasant button". The researchers found that the nucleus accumbens, a brain region associated with reward and pleasure was fully responsible for the feelings of excitement and euphoria that the patients reported (Burgdorf & Panksepp, 2006).

According to a research study on individuals with psychological symptoms such as anhedonia, individuals who do not feel pleasure, involvement and curiosity in various desired stimuli are at the centre of major depression. Anhedonia is described as the incapability to maintain

positive mood and a diminished experience of enjoyment. Positive images were used in an experiment of such patients to elicit positive mood. They discovered that these patients' nucleus acumens activity was not maintained (Heller et al., 2009). The ventral striatum includes the nucleus acumens (Gazzaniga et al., 2014). The findings from this research suggest that due to decreased activity in the nucleus acumens, individuals may have difficulty experiencing positive emotions or reward (Heller et al., 2009).

Gratitude as a positive emotion: Neuroendocrine Findings

Isen (1990) hypothesised when people were stimulated with positive affect rather than neutral condition; medium dopamine concentrations were significantly increased. The dopaminergic theory of positive affect is one of several theories suggested for clarifying the neurological processes underlying positive emotions (Chiew & Braver, 2011). According to this theory, positive emotions are associated with broadened cognition, and the psychological effects of positive emotions are specifically linked to increased dopamine release via the substantia nigra pars compacta (SN) and ventral tegmental area (VTA), which then project to regions such as the prefrontal cortex (PFC) and striatum (Chiew & Braver, 2011).

By engaging in gratitude journaling, we are essentially reflecting on positive experiences and emotions we have encountered throughout the day. This process is akin to recalling positive memories and the associated pleasant feelings. In their study, Speer et al. (2014) aimed to explore the neural circuits that underlie the rewarding aspect of reflecting on positive memories, which can elicit positive emotions and feelings associated with experiences. According to Speer and his colleagues, the reason we are able to recall and sustain positive feelings associated with good memories is because they hold internal significance and meaning for us. They further suggest that this ability to recover and maintain positive emotions is linked to mood regulation, which may aid in stress adaptation. In this study, nineteen people took part, which comprised of 10 females and 9 men. Prior to the fMRI scan, the respondents shared stories about positive feelings (such as holiday) as well as neutral emotions (like packing). In the study, when participants recalled positive memories that induced positive emotions, there was observed activity in the prefrontal cortex and specifically in the striatum. The striatum is a component of the basal ganglia, which comprises the caudate nucleus, putamen, globus pallidus, subthalamic nucleus, and substantia nigra.

We could indeed regulate how we feel from within by using emotion regulation, and current findings has used neuroscientific methods to comprehend these mechanisms (Ochsner et al.,

2012). In a study conducted by Ochsner et al. (2012), several functional imaging studies on emotional processing were discussed, and four brain regions were identified as potentially involved in regulating and controlling emotions. The very first was the amygdala, which is associated with both incentives and penalties as well as emotional facial gestures. When we encounter possible dangers, such as when we express fear, the amygdala alerts us. The ventral striatum is the second brain structure responsible for emotional regulation. It may foresee rewards and recognition for various outcomes. As previously stated, the ventral striatum appears to have a role in restoring strong positive emotions and feelings, as a result, could indeed help educate us how to grow accustomed to stress. Reviving positive memories as well as the linked positive feelings is rewarding for us (Speer et al., 2014). The third neural activity identified in relation to emotional processing was the ventromedial prefrontal cortex (Ochsner et al., 2012) which detects the favourable or unfavourable valuation of a stimulus, which causes us to conduct ourselves in a particular manner. Fox et al. (2015) discovered that when respondents were feeling grateful, the ventral medial PFC was involved. This study discusses additional research findings which suggest that the ventral medial prefrontal cortex was activated during positive cues, indicating its association with positive emotions (Hamann et al., 2002). The fourth neural system identified in emotional processing is the insula (Ochsner et al., 2012) and is connected to adverse emotional experiences in general. Posner et al. (2009) discovered that the insula exhibited activation in response to negatively valenced stimuli.

Studies have shown that serotonin plays a crucial role in reward and positive mood, while the amygdala contains various neurotransmitters, including dopamine, glutamate, norepinephrine, serotonin, and acetylcholine (Gazzaniga et al., 2014). One approach to induce positive and negative emotions in participants is by presenting them with different melodies or music pieces. The researchers discovered that serotonin levels were greater during the presentation of soothing music than that of undesirable music, where serotonin levels were relatively low (Evers & Suhr, 2000). It has been suggested that serotonin neurons play a significant role in modulating the function of the PFC (Puig & Gullledge, 2011). It is essential in physiological psychiatry to learn how to modify the serotonergic system with medications for the treatment of depression. Serotonin has been discovered to contribute not only in the management of depression, but also in the prevention of it (Young, 2007). In the past, pharmaceuticals were used to manipulate the serotonergic system, but current research is focused on exploring ways to enhance serotonin levels in the nervous system without the use of medication (Young, 2007). Additionally, maintaining happiness and wellbeing is important to protect ourselves from

various mental and physical health issues, and we can achieve this by boosting the levels of serotonin in the brain.

Flourishing

The empirical study of human flourishing is known as positive psychology. It highlights the positive facets and capabilities of people as well as communities and assists them in reaching towards the path of wellbeing. Martin Seligman's concept of flourishing has assisted psychology in steering away from its attention on disease and illness to helping clients in identifying and establishing their areas of strength and setting goals to initiate purposeful behaviour patterns (Seligman, 2012).

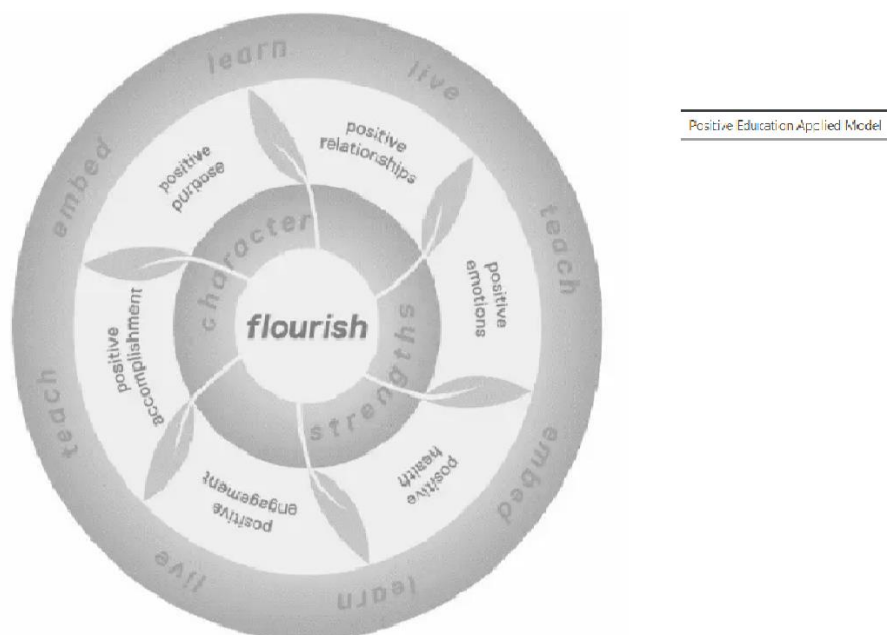


Figure 2 Source: *Norrish et al. (2013, p. 59)*

Seligman established the PERMA Model for comprehension and measuring human flourishing. Each dimension of the PERMA Model helps develop a higher-level construct that forecasts the flourishing of communities, societies, organisations, and countries (Forgeard et al., 2011). According to research, there is a substantial association between every single one of the PERMA components and physical wellbeing, strength, work satisfaction, general happiness, and commitment to the organization (Kern et al., 2014). PERMA also predicts mental anguish more accurately than prior findings of distress (Forgeard et al., 2011). This means that consciously acknowledging PERMA components not only improves certain aspects of health but also reduces mental distress.

Positive Emotions

Positive emotion constitutes a lot more than just “happiness.” These are instances of affirmative feelings or emotions, which include hopefulness, inquisitiveness, enjoyment, affection, empathy, status, amusement, and appreciation. Positive emotions are a reliable indicator of achieving success and happiness, and they can be developed or found to improve one's overall state of being (Fredrickson, 2001). By identifying, savouring, and integrating positive emotions into their daily habits and future aspirations, individuals can optimize their typical actions and thought processes. Positive emotions can counteract the negative impact caused by adverse emotions and increase resilience (Tugade & Fredrickson, 2004). Rising positive affect aids in the growth of physical, mental, psychological, and interpersonal resources that contribute to adaptability and overall health. Positive emotions can be incorporated by: Making time for individuals who matter to you (Kok et al., 2013), getting involved in various hobbies and interests and reaching out for creative pursuits (Conner et al., 2018), playing energising or insightful music (Juslin & Sakka, 2019), being extremely thankful for and the things that are heading well enough in your daily existence (Emmons & McCullough, 2003).

Engagement

Seligman (2012) provides a definition for engagement as "being one with the music." The notion of "flow," as described by Csikszentmihalyi (1989) is similar to Seligman's (2012) definition of engagement. The state of flow is characterized by being fully absorbed in a task and without self-awareness. Flow, or just this idea of engagement, takes place whenever the ideal balance of challenge and expertise is discovered (Csikszentmihalyi & LeFevre, 1989).

When individuals use their best personality characteristics, they are much more inclined to feel flow. According to engagement research, individuals who attempt to use their skills and talents in innovative ways on a daily basis for a week are satisfied and far less depressed after six months (Seligman et al., 2005). Engagement is an incredibly compelling idea than merely "being happy," but happiness is just one of the numerous breakdown products of engagement. One can increase their engagement by: Engage in tasks dearly you enjoy that you get lost in the moment while doing them (Bonaiuto et al., 2016). Even during every day routines or daily chores, actually practice enjoying the present moment (Belitz & Lundstrom, 1998). Spend quality time outside, observing, paying attention, and noticing what is going on all around you (Petersen et al., 2021). Recognize and gain knowledge about your positive traits, and engage in activities in which you thrive (Lai et al., 2018).

Positive Relationships

The PERMA model includes relationships as a fundamental component because humans are inherently social creatures and have a variety of connections with their spouses, family, friends, co-workers, supervisors, and the wider community. The relationships aspect of the model involves feeling valued, loved, and acknowledged by others (Seligman, 2012).

The social context has indeed been discovered to have a significant part in avoiding mental impairment, and large and powerful social networks are associated with improved physical wellbeing in elderly individuals (Siedlecki et al., 2014). Numerous individuals aim to enhance their relationships with those who matter to them. Studies suggest that actively sharing positive news or acknowledging achievements can promote strong relationships and favourable connections (Siedlecki et al., 2014). Furthermore, answering passionately to others, especially in close or loving relationships, tends to increase affection, wellness, and fulfilment. We can develop meaningful relationships by: Participate in a group or course that intrigues you. In order to learn something about individuals you are not acquainted with well, pose questions to them. Make new friends with individuals you already know. Reconnect with people you were not in touch or associated with in a long time.

Meaning

Another inherent human strength is the desire for meaning and a common understanding of worth and significance. According to Seligman's (2012) definition, meaning involves a sense of connection or contribution to something that extends beyond one's individual self. In the confronting of major challenging task or difficult circumstances, having a life purpose helps a person concentrate on the things that are genuinely valuable. The interpretation or purpose of one's existence is unique to each individual. People may find meaning through various avenues, such as a profession, a social or political cause, a creative pursuit, or a religious belief. It can be uncovered through hobbies, volunteerism, or community engagement. Personal beliefs direct a sense of significance, and those who claim to have a life that is meaningful to them live longer, are happier, and have less medical issues (Kashdan et al., 2009).

We can instil meaning in our lives by: Participate in a cause or association that is important to us (Tang et al., 2022). Trying out different, creative pursuits to discover what makes us happy. Consider the ways that you can utilize your interests to assist and guide others. Spend time interacting with those you care about.

Accomplishments

In PERMA, accomplishment is also understood as achievement, prowess, or expertise. Working towards and accomplishing success, perfecting a venture, and being enthusiastic to complete what you decided to do, all help create a feeling of accomplishment. This makes a significant contribution to satisfaction because individuals are able to reflect on what they have accomplished with dignity (Seligman, 2012). Accomplishment encompasses the notions of persistence and a hunger for accomplishing aims. However, flourishing and wellbeing occur when success is linked to aiming to accomplish something through an inner drive or working towards anything in order to foster pursuit and advancement (Quinn, 2018). Attaining practical goals (such as progress and connectedness) offers more benefits in well-being than attaining external goals such as fame or wealth (Seligman, 2013). One way to cultivate achievements is by setting pre-defined SMART goals, which are goals that are specific, measurable, achievable, realistic, and time-bound (Falecki et al., 2018). Considering previous achievements, looking for unique ways to recognise your accomplishments.

A study by Keyes (2002) on adults aged 25 to 74 in the United States found that 17.2% of participants were flourishing, while 12.1% were languishing, and 14.1% had a major depressive episode. The study's results indicated that individuals categorized as "languishing" had a significantly elevated risk of experiencing a major depressive episode in contrast to those who had either moderate mental health or flourishing mental health. Languishing and depression were associated with psychosocial impairment, such as limitations in daily activities and workdays lost or cutback. Conversely, the study found that individuals with flourishing mental health or moderate mental health had higher levels of psychosocial functioning compared to those with lower levels of mental health. The study also found that certain demographic factors, such as being male, older, more educated, and married, were associated with better mental health. These findings have implications for how we conceptualize mental health and how we can prevent and treat mental illness.

In Fredrickson and Losada's (2005) study, it was found that individuals who have a higher frequency of positive emotions compared to negative emotions are more likely to have better mental health and well-being, based on the broaden-and-build theory of positive emotions by Fredrickson and Losada's nonlinear dynamics model of team performance. The researchers hypothesized that a positive-to-negative affect ratio of 2.9 or higher would be indicative of flourishing mental health in individuals. The study involved 188 participants who were initially

assessed for their mental health status and then asked to report their daily experiences of positive and negative emotions over a period of 28 days. The study's results revealed that individuals who were considered to be flourishing had an average ratio of positive to negative affect that exceeded 2.9, whereas those who were not flourishing had a ratio that was below this threshold. These findings suggest that there may be underlying mathematical principles that influence the correlation between positive affect and flourishing mental health.

The study conducted by Gimple et al. (2014) aimed to assess the effectiveness of a holistic therapeutic approach called mind-body medicine (MBM) in improving the overall health of patients with different medical conditions by addressing their mental, physical, and environmental factors. The study evaluated the effectiveness of a comprehensive MBM program in improving well-being measures and clinical outcomes for outpatients with various diagnoses. A questionnaire battery before and after the 12-week MBM program was used to assess psychological health, flourishing, mindfulness, and sense of coherence. The results showed significant improvements in these measures, and we found correlations between them, with coherence being strongly associated with psychological health. The MBM program improved disease coping and quality of life, and we observed interactions between personal flourishing, coherence, and mindfulness. Overall, our findings support the use of MBM in clinical settings to enhance patient well-being and outcomes.

A study conducted by Akin and Akin (2015) aimed to investigate the impact of coping competence on the relationship between mindfulness and flourishing among university students. The research involved 284 participants who were given a survey containing the Cognitive and Affective Mindfulness Scale, Coping Competence Questionnaire, and Flourishing Scale. The study utilized statistical techniques such as correlation and regression analysis to analyse the associations between coping competence, mindfulness, and flourishing. The results showed that there was a positive correlation between mindfulness, coping competence, and flourishing. Additionally, flourishing was positively related to coping competence. The study also revealed that coping competence acted as a mediator in the relationship between mindfulness and flourishing. These findings demonstrate the importance of mindfulness in promoting psychological and cognitive adjustment. The authors discussed the implications of their research in the context of prior literature and provided suggestions for future investigations.

A research study conducted with 115 participants from Hong Kong aimed to assess the effectiveness of the 8-week Mindfulness Based Flourishing Program (MBFP), which is designed to enhance positive variables such as self-compassion, meaning in life, positive and negative emotions, gratitude, and mindfulness. The study employed a randomized wait-list controlled design and measured the outcomes of the program pre- and post-intervention for both Hong Kong Chinese and British participants. The findings indicated significant improvement in wellbeing measures for both groups, with the experimental groups exhibiting higher levels of wellbeing compared to their control counterparts. This study offers preliminary evidence of the MBFP's cross-cultural validity and supports its efficacy as an accessible tool for improving wellbeing (Ivtzan et al., 2018).

Borsboom (2021) conducted a national representative study in the Netherlands called "Geluk onder druk?" aimed to investigate the prevalence of anxiety disorders among adolescents aged 12-16 years and the potential protective factors, including flourishing, resilience, and social support. The study found that those with higher levels of flourishing tend to have lower levels of anxiety, and this relationship is moderated by resilience and social support. While resilience did not significantly affect the relationship between flourishing and anxiety, individuals with lower levels of resilience exhibited a slightly stronger negative association. Moreover, the negative relationship between flourishing and anxiety was observed only among those with high social support. These findings highlight the importance of considering resilience and social support in promoting mental health among young people. These findings underscore the importance of promoting flourishing mental health and cultivating resilience and social support in youth, especially those at higher risk for anxiety disorders.

The purpose of the study (Phillips et al., 2022) was to examine how gratitude affects the flourishing of adults who have disabilities over time and whether adaptation to disability mediates this relationship. The researchers collected data from 429 participants at three different time points over 21 months. The research discovered that expressing gratitude during the initial assessment (Time 1) was a predictor of flourishing at a later time point (Time 3), and adaptation to disability partially mediated this relationship, explaining 27% of the total effect. Both gratitude and adaptation to disability were found to have a positive influence on flourishing. Overall, the study highlights the importance of gratitude and adaptation to disability in promoting flourishing among adults with disabilities.

Anxiety

Anxiety is a common experience that people encounter from time to time, stemming from concerns about various aspects of life such as health, finances, or relationships. However, anxiety disorders are not just ordinary worries or fears. People with anxiety disorders experience prolonged and intensifying anxiety that can affect their daily activities, including work, school, and social interactions. These symptoms can interfere with their ability to perform tasks or participate in activities that are necessary for daily life, leading to a reduced quality of life.

Generalized Anxiety Disorder

Generalized anxiety disorder (GAD) is a condition marked by persistent feelings of anxiety or worry that affect a person's daily functioning. It is not the exact same as having worries every now and then or undergoing anxiety as a result of stressful occurrences in life. GAD patients experience repeated anxiety for months in a row. People with GAD suffer from Feeling fidgety and tense, becoming exhausted and having trouble in focusing, getting agitated, experiencing migraine, muscle pain, digestive problems, or other unknown aches, trying to control worries is challenging, sleeping issues, such as difficulty getting to bed or remaining asleep.

Panic Disorder

Individuals with panic disorder undergo repeated and unexpected panic attacks, which are brief episodes of intense fear, discomfort, or a feeling of being out of control, regardless of the absence of an imminent risk or trigger. Not every person who undergoes a panic attack will cultivate a panic disorder. People suffering from a panic attack may feel their heart thumping or racing, they are dripping with sweat, shivering or twitching, having chest ache, fear of imminent doom and thoughts of being powerless

People suffering from panic disorder frequently fear that a subsequent attack will occur and vigorously strive to prevent possible attacks by seeking to avoid places, scenarios, or actions associated with panic attacks. Panic episodes may occur as regularly as a few times per day or as infrequently as a few times per year.

Social anxiety disorder

Social anxiety disorder is a condition marked by persistent and intense fear or anxiety about social situations in which individuals may be scrutinized or evaluated by others. Those with

social anxiety disorder may experience heightened anxiety in situations where they feel they lack control or are under the observation of others. This worry may prevent a few individuals from heading to take a job, going to school, or performing daily tasks. People suffering from social anxiety disorder may undergo: shivering, stammering, or panting, heart thumping or racing, gastrointestinal discomfort, body rigidity or actually talking in an excessively low tone, trouble having eye contact or interacting with strangers, may be conscious of their self and feel that they would be unfavourably judged by people.

Agoraphobia

Agoraphobia is characterized by the fear or avoidance of certain situations or places where escape might be difficult, such as crowded areas or enclosed spaces. People with agoraphobia experience intense anxiety or panic when they are in these situations or anticipate being in them. They do not prefer being in situations where escape might be difficult or help may not be available if they experience a panic attack or other distressing symptoms. These situations may include using public transportation, being in open spaces, and being in enclosed spaces. They cannot make use of public transport services, being out in the open, being in confined spaces, walking through a crowd or waiting in line, being alone outside of a house.

Individuals who suffer from agoraphobia frequently bypass these situations, because they believe leaving will be challenging or unattainable if they encounter anxiety responses or other humiliating symptoms. Those with severe agoraphobia may become unable to leave their homes.

Separation anxiety

While it is commonly assumed that separation anxiety only affects children, adults can also suffer from separation anxiety disorder. Individuals with this disorder experience extreme fear or distress when separated from those whom they feel emotionally attached to. They often worry about potential harm coming to their secure attachment while they are away or isolated from them. This condition causes them to minimise separation from their attachment figures and they try to be as near as possible. Individuals with separation anxiety disorder may experience nightmares or physical symptoms such as headaches or nausea when faced with separation from their loved ones.

Obsessive-compulsive disorder

A person suffering from OCD has uncontrollable thoughts. They may discover themselves doing the same thing repeatedly. If you have OCD, you may be particularly worried with germs or keeping everything organized. You may be concerned about aggressive emotions you have towards everyone else or the feelings others have towards you.

You may also struggle to control your thoughts on controversial topics such as multiple partners, religious practice, or violent behaviour. Some individuals perform an action repeatedly, such as checking that a door is securely shut or counting things repeatedly.

Post-traumatic stress disorder

People suffering from PTSD undergo acute anxiety because of a distressing incident that occurred previously. It is a chronic illness, which may trigger symptoms for several years to come, particularly if left untreated. PTSD symptoms usually appear within three months of the incident. In some circumstances, they may still not appear for months or years. You may experience the following symptoms if you have PTSD: flashbacks, nightmares or terrifying thoughts, turmoil and anxiety, sleep disturbances, and frustration for no obvious cause. Some people alter their daily routine in order to prevent stimuli that remind them of the incident.

Treatment and Therapies

Anxiety disorders are treated with a combination of various medications and psychotherapy. These together can help an individual to cope up with his life and feel better about himself.

Cognitive Behavioural Therapy (CBT) and Acceptance and Commitment Therapy (ACT)

CBT is one kind of psychological treatment that can help individuals suffering from anxiety disorders. It allows learning various methods for pondering, taking actions, and responding to circumstances in a manner that makes them less nervous and frightened. CBT has been extensively researched and is regarded as the benchmark in psychotherapy. Exposure therapy is a type of cognitive behavioural therapy (CBT) which is employed to manage anxiety-related conditions. Exposure therapy is based on encountering the fears that underpin an anxiety attack in order to encourage individuals to engage in previously avoided actions. Exposure therapy is occasionally used in conjunction with relaxation techniques.

ACT (Acceptance and Commitment Therapy) is another option for treating certain types of anxiety disorders, which focuses on addressing negative thoughts in a different way than CBT

(Cognitive Behavioural Therapy). ACT uses techniques like mindfulness and values-based action to help individuals manage stress and uncomfortable emotions. Although ACT is a newer form of therapy compared to CBT, there is limited scientific research on its effectiveness and impact on patients.

Anti-Anxiety medication and Beta-blockers

Anti-anxiety medications can provide relief from anxiety, panic attacks, and feelings of intense worry and dread. The most frequently prescribed type of anti-anxiety medication is benzodiazepines. While these medications may be used as the initial treatment for Generalized Anxiety Disorder (GAD), it is important to note that they come with both benefits and drawbacks. Benzodiazepines are successful in alleviating anxiety and act faster than antidepressant drugs. However, a few people become accustomed to these prescription drugs and require more doses to accomplish results. Certain individuals may develop a dependence on benzodiazepines. To prevent this, healthcare professionals often suggest using these medications for a restricted duration.

Even though beta-blockers have been most commonly used to manage hypertension, they can also help with physiological symptoms of anxiety such as racing heart, wobbling, quivering, and flushing. When chosen to take for a brief duration, these drugs may assist people keep physiological signs at bay. They may additionally be employed to decrease anxiety and panic, including avoiding some kinds of consistent performance anxiety.

A study was conducted by Breslau et al. (1991) on a significant group of 1007 young adults residing in Michigan, where they were assessed using the National Institute of Mental Health Diagnostic Interview Schedule that was revised based on DSM-III-R criteria. The purpose of the research was to examine the relationship between nicotine dependence, categorized by severity, and other drug dependencies, severe depression, or any type of anxiety disorders. Using the DSM-III-R criteria for nicotine dependence provides a structured framework for researchers to differentiate between individuals who have a history of smoking and those who are actually dependent on nicotine. This framework also enables the examination of the prevalence of psychiatric disorders in individuals with nicotine dependence and nondependent smokers. Nicotine dependence was found in 20% of people over the course of their lives. Nicotine dependence was linked to alcohol, cannabis, and cocaine addiction. Even after taking into account the impacts of other substance addictions, people who were addicted to nicotine had elevated incidence of depression and anxiety. The intensity of above-mentioned

connections ranged according to the intensity of nicotine addiction. Non-smokers had a higher percentage of many other addictive disorders, but not major depression or anxiety disorders.

The study conducted by Thomson et al. (2000) had the objective of determining the occurrence of dental anxiety among young adults at the ages of 18 and 26 and determine if dental treatment experiences contributed to its onset. The researchers collected data from the Dunedin Multidisciplinary Health and Development Study, including dental anxiety scores, dental examinations, and self-reported dental service use. The study found an increase in dental anxiety prevalence over time and identified a subgroup of "recurrent" cases who were anxious at ages 15 and 26 but not at 18. The study suggests that aversive dental experiences may not be the only factor contributing to dental anxiety and those psychological or temperamental traits may also play a role.

Caldwell et al. (2002) conducted a study to investigate the relationship between alcohol consumption and levels of affect, depression, and anxiety in young adults. The study revealed that male non-drinkers and hazardous/harmful drinkers experience higher levels of distress compared to moderate drinkers. In contrast, for women, only hazardous/harmful drinkers had higher levels of depression and negative affect. The study concludes that male non-drinkers already exhibit higher levels of distress in early adulthood, indicating a need to understand the experiences of non-drinkers in a culture where alcohol consumption is prevalent. Overall, the study highlights the negative impact of hazardous/harmful drink.

Research by Castaneda et al. (2008) has described that cognitive dysfunction is becoming more common in depressive and anxiety disorders. An online search was conducted for research papers published in English between 1990 and 2006, focusing on cognitive impairments in young adults with depressive or anxiety disorders. The results indicated that cognitive deficits are prevalent in young adults with major depression and anxiety disorders, although their exact nature is not fully understood. While executive impairment is evident in major depression, deficiencies that are more specific seem to be related to the particular disorder. Cognitive dysfunction varies depending on the subtype of anxiety disorder, with obsessive-compulsive disorder being linked to deficits in executive functioning and visual memory. The inconsistent findings may be due to the diversity of individuals included in the study, such as ailment status, co - occurring psychiatric illnesses, and medication, as well as methodological considerations, such as insufficient matching of study groups and differing test methods.

A study by Weinstein et al. (2015) on Problematic Internet use (PIU) indicated that it involves unreasonable or inadequately addressed obsessions, urges, or habits related to computer and Internet usage, leading to impairment or emotional distress. Cross-sectional research conducted on patient samples has demonstrated a strong correlation between Internet addiction and psychiatric disorders, particularly affective disorders (such as depression), anxiety disorders (including generalised anxiety disorder and social anxiety disorder), and ADHD. The relationship between Internet addiction and social anxiety was examined in two groups of 120 university students (60 males and 60 females in each), and both samples indicated a significant association between Internet addiction and social anxiety ($r = .411$, $P < .001$; $r = .342$, $P < .01$). Furthermore, there was no distinction in the degree of Internet addiction between men and women. Finally, it was seen that participants who experienced high levels of social anxiety have no inclination for social networks.

Chapter 3

METHODOLOGY

Aim

The study's aim is to examine the relationship between Gratitude, Flourishing and Anxiety in young adults.

Objectives

- To examine the relationship between Gratitude and Flourishing among young adults.
- To examine the relationship between Flourishing and Anxiety among young adults.
- To examine the relationship between Anxiety and Gratitude among young adults.
- There will be no gender difference in Gratitude among young adults.
- There will be no gender difference in Flourishing among young adults.
- There will be a gender difference in Anxiety among young adults.

Research Gap

- 1) To investigate the relationship between gratitude, flourishing, and anxiety: An individual may be interested in understanding how these constructs are related to one another. Previous research has suggested that gratitude and flourishing are associated with lower levels of anxiety, but it is crucial to explore this relationship further or on an Indian population.
- 2) To identify interventions to improve mental health: It is necessary to find ways to improve mental health outcomes, particularly for individuals who struggle with anxiety. Previous research has suggested that practicing gratitude can improve mental health outcomes, including reducing symptoms of anxiety. By investigating the relationship between gratitude, flourishing, and anxiety, we would be able to identify effective interventions to improve mental health.
- 3) To explore the impact of positive psychology interventions: many researchers may be interested in exploring the impact of positive psychology interventions on mental health outcomes. Gratitude and flourishing are both constructs within positive psychology,

and previous research has suggested that interventions to increase gratitude and promote flourishing can lead to improved mental health outcomes. By investigating the relationship between gratitude, flourishing, and anxiety, we may be able to further explore the impact of positive psychology interventions on mental health.

Hypothesis

- A gender difference will emerge in gratitude.
- A gender difference will emerge in flourishing.
- Females report higher levels of anxiety as compared to men.
- Gratitude will have a significant positive relation with flourishing and a negative relationship with anxiety.
- Flourishing will have a significant positive relation with gratitude and a negative relation with anxiety.
- Anxiety will have a negative relationship with both gratitude and flourishing.

Inclusion Criteria

The study focuses on examining the relationship between Gratitude, Flourishing, and Anxiety among young adults aged between 18 to 25 years. The inclusion criteria for participants in this study were as follows:

- Participants must fall within the age range of 18 to 25 years to be eligible for the study.
- Both male and female young adults were considered for the study.
- The study was conducted within India.

Exclusion Criteria

- Any participant below or above the age group of 18-25 years were excluded.
- Any participant suffering from physical or mental ailments were excluded from the sample.
- Participants from countries other than India were excluded.

Sample

The study recruited participants based on the specified inclusion and exclusion criteria. Appropriate instructions were provided to the participants before filling out the questionnaire. The participants were given a consent form to fill out, and they were asked to do so willingly and voluntarily. Sample consisted of 88 participants, which included 44 females and 44 males within the age group of 18-25 years.

Design

The study centred on the relationship between gratitude, flourishing and anxiety in young adults. In order to obtain the review of literature, past researches, books, journals, articles and internet resources were used to have a better understanding of gratitude, flourishing and anxiety. The data collection was undertaken with the help of a purposive sampling method and it was quantitative in nature. The study was conducted with a total of 88 participants, with an equal number of 44 males and 44 females who willingly participated in the research. A descriptive correlation and t-ratio was incorporated in the present study. The data obtained from the study was analysed using Pearson product-moment correlation and independent T-test. The aim of a descriptive correlational research is to explain correlations between variables rather than inferring a cause and effect between them. The advantages of descriptive correlational research include its convenience and ease, high efficiency, and quick completion. It was discovered that a significant correlation emerged between gratitude, flourishing and anxiety. The t-test was followed to examine gender differences in the three variables.

Tools used

In order to investigate and decipher the role of gratitude, a gratitude questionnaire (GQ-6) was incorporated. To study the effects of flourishing and anxiety on participants, Flourishing scale and Hamilton Anxiety scale was used respectively.

Gratitude Questionnaire (GQ-6)

The Gratitude Questionnaire-6 (GQ-6) is a survey consisting of six items designed to assess an individual's propensity to experience gratitude on a daily basis. The scale was created by Dr.

McCullough and Dr. Emmons (2002) and measures a person's gratitude temperament, which refers to their general tendency to recognize acts of kindness and respond with grateful emotions. The scale has been found to have positive correlations with traits such as optimism and prosocial behaviour, and negative correlations with depression, anxiety, and envy. The GQ-6 uses a 7-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree," with items 1, 2, 4, and 5 being summed and items 3 and 6 being reverse-scored before being added to the total score, which can range from 6 to 42. The scores of GQ-6 are interpreted based on the results of a sample of 1,224 adults who completed the questionnaire. A benchmark for the scores are as follows;

Those who scored 41 out of 42 or higher were in the top 13% of people who took the survey, while those who scored 38 out of 42 or higher outperformed 50% of those who took the survey. Those who scored 35 out of 42 or higher outperformed 25% of those who took the survey. Scoring below these thresholds means that one's gratitude level is relatively lower compared to the sample population who took the survey.

The internal consistency reliability of the six-items was measured using Cronbach's alpha, and the results show that the estimates range from .76 to .84 (McCullough et al., 2002; McCullough et al., 2002).

Flourishing scale

The Flourishing Scale is an 8-item questionnaire designed to assess an individual's self-perceived success in key areas of life such as relationships, self-esteem, purpose, optimism, and social interactions. The questionnaire generates a single score that reflects an individual's level of psychological well-being. This score can be used to provide helpful feedback on areas for improvement and encourage self-reflection. This scale is effectively used with people who do not have clinical disorders and are looking to improve an already adaptable and flexible lifestyle.

The scale is developed by Diener et al. (2009). The Flourishing Scale is a 7-point Likert scale, with responses ranging from 1 (strongly disagree) to 7 (strongly agree). The scale consists of eight items, and the total score is obtained by adding up the responses to all eight items, with a possible score range of 8-56. Higher scores on the scale indicate greater levels of psychological well-being, optimism, resources, and strength. The factor loadings for the eight items ranged

from .61 to .77, indicating a strong relationship between the items and the construct being measured. The test has a high level of internal consistency, as evidenced by a Cronbach's alpha of .87, and good temporal stability over a one-month period, with a coefficient of .71.

Hamilton Anxiety Scale

The Hamilton Anxiety Rating Scale (HAM-A) is one of the oldest scales used to assess the severity of anxiety symptoms and is still commonly used in research and clinical settings. It was developed by Hamilton in 1959 and consists of 14 items, each of which is defined by a specific set of symptoms. The scale assesses both psychic anxiety, which includes mental agitation and psychological distress, and somatic anxiety, which refers to physical symptoms related to anxiety. The HAM-A has also been utilized in individuals with a history of anxiety disorders (McDowell, 2006).

The Hamilton Anxiety Rating Scale (HAM-A) uses a rating system of 0 (not present) to 4 to assess each of its 14 items, which are defined by specific symptoms related to anxiety. The total score on the scale ranges from 0-56, with scores less than 17 indicating mild severity, 18-24 indicating mild to moderate severity, and 25-30 indicating moderate to severe severity of anxiety symptoms. The HAM-A has good internal consistency, as measured by Cronbach's alpha, which ranges from 0.77 to 0.92.

Procedure

To identify participants who met the eligibility criteria for the study, a variety of methods were employed, including searching on social networking sites and reaching out to personal contacts. A purposive sampling method was employed. A formal invitation to take part in the research was sent to people who fitted the age bracket. The invitation described the purpose, what the study demands, and the inclusion criteria. People who responded enthusiastically were provided with a link to a Google Form, which included basic details like name, age, gender and contact information. A consent form was attached as well. The participants were told that they were free to reach out if they had any queries with the items or the test as a whole.

Analysis

The main objective of the study was to investigate the relationship between gratitude flourishing and anxiety in young adults. A suitable sample was chosen for the current study using the purposive sampling method. The participants were administered a test which comprised scales of gratitude, flourish and anxiety. Pearson correlation was used to explore the interrelationship between gratitude, flourish and anxiety. The significance was checked and the positive and negative relationship between the variables was assessed. A t-test was followed to compare the means of both males and females with regard to the three variables.

Ethical Considerations

The current study followed the ethical guidelines and research principles in psychology. The involvement of participants was voluntary, and prior to people's choice to agree or disagree with regard to willingness to participate, they were given sufficient information about the study's objective, thereby ensuring informed consent. The participants were clearly informed about their right to withdraw from the study at any point if they felt uncomfortable or no longer wished to participate. Participants' anonymity was preserved.

Chapter 4

RESULTS

Table 1

N, Mean and Standard Deviation

VARIABLES	N	GROUPS	MEAN	STANDARD DEVIATION
Gratitude	88	MALES	33.43	3.91
		FEMALES	33.84	5.17
Flourishing	88	MALES	47.77	4.74
		FEMALES	45.43	7.37
Anxiety	88	MALES	8.57	6.48
		FEMALES	14.93	10.78

Table 2

t-ratio for male and female college students (N=88)

VARIABLES	GROUPS	MEAN	STANDARD DEVIATION	T-RATIO
Gratitude	MALES	33.43	3.91	-0.42
	FEMALES	33.84	5.17	
Flourishing	MALES	47.77	4.74	1.77
	FEMALES	45.43	7.37	
Anxiety	MALES	8.57	6.48	-3.36**
	FEMALES	14.93	10.78	

In terms of gratitude, the mean scores for males and females are 33.43 and 33.84, respectively. The standard deviation for males is 3.91 and for females is 5.17. The t-ratio of -0.42 suggests that there is no significant difference in gratitude between males and females. For the variable flourishing, the mean score for males is 47.77 and females is 45.43. The standard deviation for males is 4.74 and for females is 7.37. The t-ratio of 1.77 indicates that there is no significant difference in flourishing scores between males and females. Lastly, the mean anxiety score is higher for females (14.93) than males (8.57). The standard deviation for males is 6.48 and for females is 10.78. The t-ratio of -3.36** indicates that the difference in anxiety scores between males and females is statistically significant.

Table 3*Correlation coefficients for Gratitude, Flourishing and Anxiety (N=88)*

	Gratitude	Flourish	Anxiety
Gratitude	-		
Flourishing	0.508**	-	
Anxiety	-0.505**	-0.448**	-

Note. ** *Correlation is significant at 0.01 level*

**Correlation is significant at 0.05 level*

The correlation coefficient between the three variables suggest that, there is a statistically significant positive correlation between gratitude and flourishing ($r = 0.508$, $p < .01$), indicating that individuals who are more grateful are also more likely to experience feelings of flourishing. Similarly, there is a statistically significant negative correlation between anxiety and gratitude ($r = -0.505$, $p < .01$), indicating that individuals who are more anxious are also more likely to be less grateful. There is also a statistically significant negative correlation between flourishing and anxiety ($r = -0.448$, $p < .01$), indicating that individuals who experience more flourishing are also likely to experience less anxiety.

Chapter 5

DISCUSSION

Gratitude can be better understood in terms of a state and a trait (Jans-Beken et al., 2020). To put it another way, one can be grateful for a particular individual or event at a specific point in time and another can be grateful in the long run as an optimistic personality characteristic trait. According to Emmons, gratitude involves two stages (Emmons & McCullough, 2003); The first step is to recognise the greatness in our existence. We tend to cherish life even more when we are grateful. We acknowledge that, overall; life is worth living and contains components that render it worthwhile to live. Second, gratitude acknowledges that the sources of this kindness exist beyond one's self. In today's society, there is a widespread misconception that people must be preoccupied in their endeavours to succeed. Human progress is hampered in the absence of human flourishing. Human flourishing is essential as it encourages both individual and collective growth, advancement, and overall well-being. Gratitude and flourishing together can be a powerful weapon against immense stress, anxiety, depression and other day-to-day hassles.

The study aimed to investigate the relationship between gratitude, flourishing and anxiety in young adults. These variables were considered since most previous research investigations that have been carried out do not consider the factors that contribute to gratitude, flourishing, and anxiety in general. The variables mentioned above make a significant contribution to the structure, function of young adults, and are vital for an individual's sociocultural, affective, and emotional growth. As a result, understanding them as a whole, rather than as distinct aspects of one's character, becomes even more important. To achieve the study's goal, respondents who fulfilled the requirements for inclusion criteria were selected. The study's objectives and aims were included in a consent form. After filling the consent form, the participants were asked to complete the questionnaire. The gratitude questionnaire (GQ-6), Flourishing scale and Hamilton anxiety scale were administered to the participants. SPSS was used to compute and evaluate the results for each scale. Several hypotheses were developed and tested based on the literature. The analysis of the data involved using descriptive statistics, the Pearson correlation coefficient, and the T-ratio. The conclusions would be addressed in this section in relation to prior research to trace the influence of Gratitude, flourish, and anxiety on young adults.

H₁: *A gender difference will emerge in gratitude.*

Rydh (2019) conducted a study with the aim of exploring possible gender differences in trait gratitude, positive affect, and negative affect. A relation between these two is also investigated, as are differences in culture between Swedish and international students studying in Sweden. This study found no variations in trait gratitude; however, there was a gender difference when it came to negative affect and certain cultural disparities in both positive and negative affect were also seen. A significant link between trait gratitude and positive affect was discovered. A negative association between trait gratitude and negative affect was always interpreted.

According to a study conducted by Khan and Singh (2013), there are notable differences in the levels of forgiveness, gratitude, and spirituality between male and female school teachers. The study found that male teachers were more grateful in their interactions than female teachers, as evidenced by a significant t-value of 3.59 ($p > 0.05$). On the other hand, there were significant gender differences in spirituality, with female teachers showing higher levels of spirituality than their male counterparts ($t = 4.09$, $p > 0.05$). The study also found that there were significant gender differences in forgiveness, although no specific values were provided. These findings suggest that gender may play a role in how teachers express gratitude, forgiveness, and spirituality in their daily interactions.

Psychiatric studies have shown that women are more likely to have higher levels of subjective well-being and depression than men. In 2017, Yue et al. conducted a study to further investigate this gender difference in mental health. The study involved 5648 undergraduate students from 55 universities in China. The results of the study indicated that women had higher levels of optimism, gratitude, subjective well-being, and depression compared to men. Furthermore, the study found that optimism and gratitude played a significant role in the correlation between gender and mental health (subjective well-being and depression). In other words, women were more likely to be optimistic and grateful, and these positive traits were associated with higher levels of subjective well-being and depression.

The hypothesis was formulated to test if there is a gender difference in the expression of gratitude. The hypothesis was tested, and the results indicated that there is no significant difference between males and females regarding how they show gratitude. As a result, the hypothesis was rejected.

H_2 : *A gender difference will emerge in flourishing.*

Verma and Tiwari (2017) conducted a study on the influence of gender and self-compassion on human flourishing in undergraduate and postgraduate students. The study included 500

participants, with equal numbers of males and females, aged between 17 and 25 years for males and between 18 and 25 years for females. The Self-Compassion Scale and the Mental Health Continuum-Short Form were used to assess self-compassion and flourishing, respectively. The findings indicated that there were no significant gender differences in self-compassion and flourishing among the participants. However, participants with different levels of self-compassion demonstrated significant variations in their mean scores of flourishing. Moreover, the study revealed positive correlations between self-kindness, common humanity, and mindfulness components of self-compassion, and various aspects of flourishing, including hedonic human flourishing, social well-being, psychological well-being, eudemonic human flourishing, and overall human flourishing.

The main objective of a study conducted by Shariff and colleagues (2022) was to explore the correlation between grit and flourishing in a sample of university students, and whether there were any gender differences in these constructs. A survey was conducted on 143 undergraduate students using the Short Grit Scale and The Flourishing Scale. According to the findings, there was a notable and statistically significant association between grit and flourishing among university students. Specifically, the results showed that grit was responsible for explaining 21% of the variation in flourishing. However, there were no significant gender differences in grit and flourishing. These findings highlight the importance of grit and flourishing in enhancing individual potential, and future research can further explore their role in promoting self-efficacy and well-being.

De la Fuente et al. (2020) conducted a study to investigate the characteristics of emerging adults that are most closely associated with their flourishing, using a gender-based approach. The study involved a sample of 1502 Spanish university students aged between 18 and 29 years, and examined various variables that may be related to flourishing, including perceived family income, developmental tasks, educational variables, and social support variables. The study found that there was a clear difference in flourishing between male and female participants, with females reporting significantly higher levels of flourishing than males. Moreover, the predictors of flourishing were found to differ by gender. The study variables explained 46% of flourishing in male participants and only 16% in female participants. These findings suggest that there may be different factors that contribute to the flourishing of males and females during emerging adulthood.

The hypothesis that there is a gender difference in flourishing was tested, and the results showed that there is no significant difference between males and females in their level of flourishing. Therefore, the hypothesis was not supported by the data and was rejected.

H₃ : *Females report higher levels of anxiety as compared to men.*

The authors of this study Zalta and Chambless (2012) aimed to investigate the factors that may contribute to gender differences in anxiety levels. The authors of the study put forward a hypothesis that involved a mediational model. The proposed model suggested that the differences in anxiety between genders could be explained by the variables of instrumentality and mastery. Additionally, the effects of environmental stress and social desirability were to be taken into account as controls in the analysis. The authors conducted a study to test their proposed mediational model on gender differences in anxiety, controlling for environmental stress and social desirability. The sample consisted of 159 male and 239 female undergraduate students who completed measures of mastery, instrumentality, daily hassles, social desirability, and anxiety. The results indicated that women had lower levels of instrumentality and mastery and higher levels of anxiety compared to men.

Lewinsohn et al. (1998) conducted a study to investigate anxiety differences between genders. The study involved a large sample of adolescents, including 1,079 individuals who did not meet the criteria for any disorder, 95 who had recovered from an anxiety disorder, and 47 who were currently experiencing an anxiety disorder. Female's outnumbered males in present and healed anxiety disorder cases, whereas this was not the case for those who had never suffered from an anxiety disorder. Female predominance emanates from the beginning, with retrospective data indicating that around the age of 6, females are in fact twice as probable as males to have encountered an anxiety disorder. A variety of psychological and social measures was administered to respondents.

Armstrong and Khawaja (2002) conducted a study to examine whether there were any gender differences in how symptoms, cognitions, and anxiety sensitivity were expressed. The study included 50 males and 50 females who were matched for maturity level and social desirability responses, and used a between-groups design to compare the measures related to anxiety in both groups. The Beck Anxiety Inventory (Beck & Steer, 1993) was utilized to assess the level of anxiety symptoms experienced by both male and female participants in the study. The Catastrophic Cognitions Questionnaire - Modified (Khawaja et al., 1994) was used to assess the participants' beliefs about anxiety and its consequences. The Anxiety Sensitivity Index

(Reiss et al., 1986) was used to measure the participants' sensitivity towards anxiety. The researchers used the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) as a means of accounting for any potential bias towards socially desirable responses in participants. According to the study, females expressed more concern compared to males about the misinterpretation of anxiety symptoms and beliefs at a cognitive level.

Based on the results of the study, it was found that there is a difference in anxiety levels between males and females, which supports the hypothesis that there is a gender difference in anxiety. Therefore, the hypothesis was accepted.

H₄: *Gratitude has a significant positive relation with flourishing and a negative relationship with anxiety.*

Tessy et al. (2022) studied a sample size of 130 Filipino college. Self-report measures such as the Adult Hope Scale, Gratitude Questionnaire, Life Orientation Test-Revised, and Flourishing Scale were used to evaluate the psychological well-being of students and gain valuable insights into the roles of hope, gratitude, and optimism in their flourishing. The conclusions of the hierarchy-based regression study revealed that hope trait, optimism and gratitude all make a significant contribution to flourishing.

The main objective of this study was to investigate how forgiveness, gratitude, and flourishing are interconnected among emerging adults who have experienced parental divorce at least two years prior to the study. The researchers (Banares et al., 2022) used voluntary convenience sampling to recruit 429 participants. The data was gathered using the Emotional Forgiveness Scale, Gratitude Questionnaire-Six Item Form, and the PERMA Profiler to measure forgiveness, gratitude, and flourishing. The study utilized multiple regression analysis to examine the relationship between forgiveness, gratitude, and flourishing in emerging adults who experienced parental divorce at least two years ago. The results showed a significant association between forgiveness, gratitude, and flourishing, with an R² value of .382, an F value of 131.634, and a p value of less than .05. Moreover, the findings indicated that gratitude ($\beta = 1.299$) had a stronger impact on flourishing than forgiveness ($\beta = .722$).

The study conducted by Petrocchi and Couyoumdjian (2016) on 410 Italian participants assessed trait gratitude, depression, anxiety, and three forms of self-relating (critiquing, attempting to attack, and reassuring the self). According to the study, individuals who report higher levels of gratitude tend to have lower levels of depression and anxiety. Furthermore, the study found that the three types of self-relating play a significant role in moderating the effect

of gratitude on depression and anxiety. In the predictive model of anxiety symptoms, self-reassuring was more impactful than self-attacking. Gratitude protects against psychiatric disorders not because of its better associations with everyone, but because it is associated with a less self-criticizing and more empathetic interaction with oneself.

The study conducted by Sun et al. (2020) aimed to examine the links between gratitude, anxiety, and depression in Chinese middle-school students, with a focus on the role of coping flexibility as a mediator. The study involved surveying 492 students and analysing the data through a mediation model based on previous research and theoretical frameworks. The results revealed that gratitude had a significant negative correlation with anxiety and depression in Chinese adolescents. Furthermore, coping flexibility was identified as a mediator in the relationship between gratitude and both anxiety and depression. These findings suggest that cultivating gratitude and enhancing coping flexibility could serve as protective factors against anxiety and depression in this population. A thorough scientific investigation has been carried out and has shown a noteworthy positive correlation between gratitude and flourishing. A notable negative correlation between gratitude and anxiety has also been seen. Hence, the hypothesis is deemed to be supported by the existing evidence.

H5: *Flourishing will have a significant positive relation with gratitude and a negative relationship with anxiety.*

In a study conducted by Doré et al. (2020), the aim was to investigate how baseline and short-term changes in mental health are related to the development of anxiety and depressive symptoms in college students. The study found that students who reported poor mental health at the beginning of the study were more likely to develop high levels of anxiety and depression. Additionally, those who felt a decline in mental health from flourishing to not flourishing, as well as those who remained consistently not flourishing, were also at increased risk for developing symptoms of anxiety and depression.

In a study conducted by Butler et al. (2019), the aim was to investigate the relationship between depression, anxiety, cannabis use, and flourishing in youth, and to explore whether flourishing moderated this relationship. A sample of 8179 high school students from ten schools in Canada was used, and they completed self-report questionnaires on depression, anxiety, flourishing and cannabis use. Logistic regression and product term interactions were used to examine the associations between the variables. Results indicated that over half of the participants reported elevated symptoms of depression (51%) and anxiety (38%). However, when flourishing was

added to the models, the relationships between depression, anxiety, and cannabis use were no longer significant. This suggests that flourishing may have a protective effect on the relationship between cannabis use and mental health symptoms.

Killen and Macaskill (2015) conducted a study to evaluate the effectiveness of a gratitude intervention called "Three good things in life" on the wellbeing and stress levels of non-clinically depressed older adults. The study involved 88 healthy community living adults aged 60 years or over, and the effects of online and paper delivery of the intervention were compared. The intervention lasted for two weeks, during which participants were asked to identify three good things that happened to them each day and reflect on why those things were meaningful to them. The study found that the intervention had a significant positive impact on eudemonic wellbeing, as measured by flourishing, from baseline to day 15. The rigorous scientific research has shown a significant positive correlation between flourishing and gratitude. There is a significant negative correlation between flourishing and anxiety. Therefore, it can be concluded that the available evidence supports the hypothesis.

H6: *Anxiety will have a negative relationship with both gratitude and flourishing.*

The study by Biber et al. (2022) investigated the relationship between anxiety, optimism, gratitude, and college students' perception of the effectiveness of the Physical Activity and Lifestyle (PAL) program during the COVID-19 pandemic. The researchers aimed to explore how these psychological factors may influence the students' perception of the program's effectiveness. 1640 students from a midsize university in the south-eastern United States were surveyed. The study found that anxiety had a significant negative correlation with optimism, gratitude, and the perceived effectiveness of the PAL program following the onset of COVID-19.

Park et al. (2019) study explores how perceiving gratitude from a romantic partner can predict a reduction in attachment anxiety in individuals over a 7-year period on 2,057 examinees. A random cross-lagged panel analysis suggests that when an individual perceives higher levels of gratitude from their partner, their attachment anxiety decreases, and this effect lasts for at least one year. This research highlights the potential for positive relationship experiences to downregulate attachment anxiety in individuals.

The study conducted by Harris and colleagues (2022) aimed to investigate the relationship between demographics, clinical characteristics, and post treatment symptom burden with the subjective sense of flourishing among head and neck cancer survivors. A total of 100

predominantly male survivors with an average age of 63 years were included in the study. The researchers found that there was a significant positive association between higher scores on the flourishing measure and advanced age, normal diet, employment, higher income, and decreased reported difficulty paying for needs. On the other hand, flourishing was negatively associated with higher symptoms of depression, anxiety, swallowing dysfunction, neck disability, and insomnia. Various researches have shown a significant negative correlation between anxiety and both gratitude and flourishing, then it can be concluded that the hypothesis is supported by the available evidence.

Chapter 6

CONCLUSION

The study focused on exploring the relationship between gratitude, flourishing and anxiety. The t-ratio was calculated to examine the differences between males and females on gratitude, flourish and anxiety. The study suggests that females had more anxiety than men. There was no gender difference when it came to gratitude and flourish. A significant positive correlation was observed between gratitude and flourish and a negative correlation was observed with anxiety.

Limitations

- 1) It is possible that the study results may be affected by response bias, as individuals may provide answers that they believe are socially desirable, rather than their true opinions or behaviours. This bias could occur due to various reasons, such as social pressure, fear of judgement or criticism, desire for social approval or conformity, or simply a lack of self-awareness.
- 2) The limitations imposed by time were a significant constraint factor that influenced the study's design, implementation, and analysis. These limitations could have affected the scope and depth of the research questions addressed the extent of data collection, the statistical analyses employed, and the interpretation of findings. Additionally, time constraints may have influenced the generalizability of the study's results, as a larger and more diverse sample size or longer study duration may have yielded different outcomes.

Future Implications

Gratitude, flourishing, and anxiety are important areas of research that have garnered increasing attention in recent years. Here are some suggestions for future work in this field:

1. Longitudinal studies: Conducting longitudinal studies to track changes in gratitude, flourishing, and anxiety over time would be beneficial. This approach would allow researchers to examine the causal relationships between these constructs and to determine whether changes in one construct predict changes in another construct.
2. Intervention studies: Investigating the effectiveness of gratitude interventions in reducing anxiety and promoting flourishing would be an important area of study.

Researchers could design and implement gratitude interventions and evaluate their effects on anxiety and flourishing.

3. Cross-cultural research: Examining gratitude, flourishing, and anxiety across different cultures and societies would provide valuable insights into how these constructs are understood and experienced across different contexts. This could lead to a better understanding of the universality and cultural specificity of these constructs.
4. Clinical implications: Investigating the clinical implications of gratitude, flourishing, and anxiety could help to identify ways in which these constructs could be incorporated into interventions for individuals with mental health disorders. This could lead to the development of new treatment approaches that are grounded in positive psychology and tailored to individual needs.

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APPENDIX A

The Gratitude Questionnaire (GQ-6)

Instructions: Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

- 1 = strongly disagree
- 2 = disagree
- 3 = slightly disagree
- 4 = neutral
- 5 = slightly agree
- 6 = agree
- 7 = strongly agree

- ___ 1. I have so much in life to be thankful for.
- ___ 2. If I had to list everything that I felt grateful for, it would be a very long list.
- ___ 3. When I look at the world, I don't see much to be grateful for.
- ___ 4. I am grateful to a wide variety of people.
- ___ 5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.
- ___ 6. Long amounts of time can go by before I feel grateful to something or someone.

APPENDIX B

Flourishing scale

Flourishing Scale (FS)

Instructions:

These questions are designed to measure your self-perceived success in important areas such as relationships, self-esteem, purpose, and optimism. Below are 8 statements with which you may agree or disagree. Using the scale below, indicate your agreement with each item.

		Strongly agree	Agree	Slightly agree	Mixed or neither agree nor disagree	Slightly disagree	Disagree	Strongly disagree
1	I lead a purposeful and meaningful life.	7	6	5	4	3	2	1
2	My social relationships are supportive and rewarding.	7	6	5	4	3	2	1
3	I am engaged and interested in my daily activities.	7	6	5	4	3	2	1
4	I actively contribute to the happiness and well-being of others.	7	6	5	4	3	2	1
5	I am competent and capable in the activities that are important to me.	7	6	5	4	3	2	1
6	I am a good person and live a good life.	7	6	5	4	3	2	1
7	I am optimistic about my future	7	6	5	4	3	2	1
8	People respect me	7	6	5	4	3	2	1

APPENDIX C

Hamilton Anxiety Rating Scale (HAM-A)

Hamilton Anxiety Rating Scale (HAM-A)

Below is a list of phrases that describe certain feeling that people have. Rate the patients by finding the answer which best describes the extent to which he/she has these conditions. Select one of the five responses for each of the fourteen questions.

0 = Not present, 1 = Mild, 2 = Moderate, 3 = Severe, 4 = Very severe.

1 Anxious mood ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Worries, anticipation of the worst, fearful anticipation, irritability.

2 Tension ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.

3 Fears ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.

4 Insomnia ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.

5 Intellectual ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Difficulty in concentration, poor memory.

6 Depressed mood ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.

7 Somatic (muscular) ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.

8 Somatic (sensory) ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.

9 Cardiovascular symptoms ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.

10 Respiratory symptoms ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Pressure or constriction in chest, choking feelings, sighing, dyspnea.

11 Gastrointestinal symptoms ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.

12 Genitourinary symptoms ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence.

13 Autonomic symptoms ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair.

14 Behavior at interview ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc.