

The Impact of Facets of Emotional Intelligence on Depressive Symptoms in Undergraduate Students

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Abstract

The rate of depression, which is one of the most common mood disorders in the world, has tripled since the beginning of the COVID-19 pandemic (Ettman, Abdala, & Cohen et al., 2020). Previous research has demonstrated that individuals with high levels of emotional intelligence (EI), which refers to the ability to assess, express, regulate, and intentionally utilize one's emotions, are less likely to experience depression (Joorman & Stanton, 2016). One potential and relatively accessible way to improve EI is by engaging in mindfulness practices. In the current study, we explored the relationship between three common symptoms of depression and two components of EI amongst a sample of undergraduate students, and measured participants' engagement with mindfulness activities. Participants completed three measures to indicate their experience with depressive symptoms, one scale to measure their EI, and self-reported their frequency of mindfulness activities. A significant negative correlation was found between each symptom of depression and both components of EI. Additionally, participants who practiced mindfulness on average exhibited higher levels of EI than participants who did not practice mindfulness. Future research on EI should continue to investigate mindfulness practices as potential preventative measures against depression.

The Impact of Facets of Emotional Intelligence on Depressive Symptoms in Undergraduate Students

As we navigate a global pandemic and a slew of unprecedented tensions in our society, it is more important than ever for one of our primary focuses to be on mental health. During COVID-19, there has been a rise in the frequency of symptoms of depression and anxiety (Czeisler, Lane, & Petrosky et al., 2020). Depression rates amongst American adults have tripled since the beginning of the COVID-19 pandemic (Ettman, et al., 2020). Thirty-one percent of individuals who responded to representative panel surveys mentioned dealing with either depression or anxiety symptoms (Czeisler et al., 2020). Additionally, 13.3% reported substance use for coping with negative feelings and 26.3% reported trauma- and stressor-related disorders (Czeisler et al., 2020).

Undoubtedly, COVID-19 has brought about many unparalleled levels of stress, anxiety, and depression. Experiencing stress during an infectious disease outbreak can increase fear and worry about one's health and the health of loved ones, changes in sleep and eating patterns, and worsened mental health conditions such as anxiety and depression (CDC, 2021). Additionally, people with pre-existing mental health conditions are at a higher risk of experiencing stress due to COVID-19, because the psychological effects of the pandemic may inhibit abilities to cope with depressive symptoms due to the uncertainty it presents. Due to this rise in psychologically detrimental symptoms, researchers are anxious to look for new and accessible methods to combat depression. One strategy may entail strengthening one's emotional intelligence (EI), which refers to one's ability to regulate, clarify, and perceive emotions (Mayer, Salovey & Caruso, 2008). These relations between pandemic-related stress and mental health conditions highlight the importance of conducting emotion and mental health research at this time.

Emotions

Emotions are currently defined as specified experiential, behavioral, and physiological reaction patterns which allow one to process significant life events (APA, 2021). Humans experience a wide array of emotions that they must be able to perceive and regulate in order to properly function in society. These emotions are largely dependent on the context in which the individual lives, oftentimes varying by gender, race, and culture. Furthermore, these emotions are contingent on how they view and interpret events in their lives. Individuals undergo primary appraisal, an automatic evaluative process by which they assign value to events in terms of the individual's concerns (Oatley, Keltner, & Jenkins, et al., 2006).

Secondary appraisal succeeds the initial appraisal of the event, and refers to when the individual is able to attribute their emotions to certain objects or people and can describe those emotions in words (Oatley et al., 2006). An individual's goals and values influence how they see an event, which further determines their perception of the event and which emotions are elicited. Since this subjective perception occurs, the same event can spark different emotions depending on the person and how they attribute meaning to that event (Oatley et al., 2006). Additionally, stimuli and situations can evoke various emotions, which then guide an individual's subsequent thoughts and behaviors (Trampe, Quoidbach, & Taquet, 2015). Understanding emotions that are caused by thoughts and behaviors is an essential aspect of human communication. This communication can be interpreted nonverbally through both facial expressions and body language (Banzinger & Scherer, 2009). Emotions are intertwined with almost all major psychological concepts, yet there is still much to be discovered in regards to emotion research.

Emotional Intelligence (EI)

The construct of Emotional Intelligence (EI) has been defined in many different ways in the field of emotion research. As the concept of EI progressed into more psychological journals, its definition shifted from an assessment of related mental abilities to a concept that also incorporated personality traits. This change led to a variety of scientific viewpoints discussing the true limitations within the definition of EI, some more strict than others. One of the most widely accepted definitions of EI in the field of psychology is based on the Four-Branch Model of EI developed by psychologists John D. Mayer, Peter Salovey, and David R. Caruso. This model consists of four emotion-related constructs: managing one's emotions, understanding others emotions, using emotions to facilitate clear thinking, and perceiving emotions of oneself and others accurately (Mayer et al., 2008). This model is based primarily on emotional skills rather than personality traits, and is the model most similar to our definition of EI.

Although the Four-Branch Model of EI has been more accepted in psychological research as of late, controversy on how to define EI remains. Many different terms exist to explain similar concepts such as emotional repair and emotional regulation, which essentially resemble the same cognitive function. For this reason, we broadly define EI as the ability to assess, express, regulate, and intentionally utilize one's emotions. Emotions function as a universal communication system (Mayer et al., 2008). EI is related closely to mental health, as individuals in previous studies who scored high on EI have exhibited lower levels of depressive symptoms (Batoool & Khalid, 2009).

In recent years, various models and measures of EI have been presented in psychological literature, many of which create the distinction between two concepts of the EI construct: trait and ability. There are disputes within the field of emotion research about whether EI can be attributed to trait characteristics or should be classified as a skill that can be improved with

practice. Trait EI refers to the concept that an individual is born with a fixed level of intelligence related to emotions (Petrides, Mikolajczak, & Mavroveli et al., 2016). Alternatively, ability EI refers to the concept that an individual's EI can improve with training (Mayer, Caruso, & Salovey, 2016). Trait EI is typically measured via self-report questionnaires in which the individual must identify the degree to which they can accurately assess, perceive, and regulate their emotions. Trait and ability constructs can be helpful for understanding how an individual's emotional capabilities play a significant role in psychological well-being and potentially contribute to the development of mood disorders.

EI is not only a construct used to interpret emotions, but can also be considered a form of intelligence. Intelligence is defined as consisting of a single, general mental ability factor which allows for the existence of more specific ability factors (Carroll, 1993). Intelligence has previously been divided into two groups: verbal/propositional and perceptual/organizational (Mayer et al., 2008). Researchers then suggested the existence of a type of social intelligence, and as emotion research grew more popular, the idea of EI was created. EI originated as the belief that some individuals were able to interpret and process emotions more effectively than others (Mayer et al., 2008). Due to the broadness of the original definition, psychologists have long disputed which capacities may be impacted by EI. In an attempt to narrow the definition, Mayer et al. (2008) redefined EI as a form of standard, human intelligence. This definition illustrates that EI is a subtype of intelligence and can allow us to come to a deeper understanding of how humans function. Redefining EI in a way that emphasizes it as a form of intelligence is important in understanding how intelligence is a multifaceted construct.

Components of Emotional Intelligence

There are various significant components of EI, three of which are: attention to feelings, emotional clarity, and emotional regulation. Attention to feelings refers to the extent to which individuals attend to their emotions (Mayer & Salovey, 1997). Some individuals fall into the habit of suppressing their feelings, which can negatively impact mental health. Two elements of EI which may impact the likelihood of experiencing depression are emotional clarity and emotional regulation. Emotional clarity refers to one's ability to recognize and label the emotions that they experience. Clarity is crucial for one's ability to effectively regulate their emotions. Emotional regulation refers to when one actively engages with their emotions with the goal of maximizing positive affect and minimizing negative affect (Mayer & Salovey, 1997). In addition to identifying the different components of EI, many psychologists have also theorized the sequence and relationship of each component to the overall process of EI. Previous research has identified low emotional clarity as a significant predictor of depression (Flynn & Ruldolph, 2010). It is theorized that those with higher rates of emotional clarity are able to dedicate more mental resources to formulation of goal-oriented cognition and behavior, rather than comprehension of experiencing negative affect (Flynn & Ruldolph, 2010). With this understanding of how emotional capabilities interact, it is obvious that emotional regulation would succeed emotional clarity as the next step of emotional processing. This is because emotional regulation determines which coping strategies will be utilized to respond to feelings of positive or negative affect. Vine and Marroquín (2017) analyzed the relationship between emotional clarity, emotional regulation, and negative affect. Their findings indicated that intensity of negative affect moderated levels of emotional clarity and emotional regulation in individuals with depression.

In order to use emotional regulation as a coping strategy, it is theorized that emotional clarity must also be present to signal which coping strategies are needed (Vine & Marroquin, 2017). Those with lower levels of emotional clarity are less likely to engage in effective emotional regulation strategies. They may be more likely to enable coping strategies such as rumination (Jacobson, Martell, & Dimidjian, 2001), which is a less effective strategy that focuses one's attention on their depressive symptoms. Rumination has been linked to future depressive episodes and exacerbated sad moods and is far more difficult to control or terminate (Jacobson et al., 2001). Further understanding of how low EI can lead to less effective coping strategies, and ultimately depression, is essential. Understanding the impact of EI on depression allows for the implementation of adaptive coping mechanisms.

Depression

Depression is a mood disorder characterized by persistent depressed mood, loss of interest in activities, and feelings of hopelessness that impair everyday life (Bromet, Andrade, & Hwang et al., 2011). There is an array of other symptoms that classify depression, but an individual with depression will not necessarily experience every symptom. Depression oftentimes inhibits an individual's ability to perform everyday tasks such as eating, sleeping, and working. Individuals with depression often feel as if it is impossible to bring themselves out of these states. An individual must present symptoms for at least two weeks in order to be diagnosed with depression (Bromet et al., 2011). Although there are many symptoms of depression, some are more prevalent than others. Negative affect, anhedonia, and low self-esteem are all common symptoms of depression (American Psychological Association).

Depression Symptoms: Negative Affect, Anhedonia, and Low Self-Esteem

There is a large variety of depressive symptoms because the disorder presents itself differently in each individual. Recently, depression has been conceptualized as a centralized network of symptoms rather than a random assortment of depressive symptoms (Fried, Epskamp, & Nesse et al., 2015). Main symptoms of depression are central to a network of subsequent symptoms. This means there is no underlying depression factor that gives rise to all other symptoms, but rather that the symptoms reinforce one another. Central symptoms such as negative affect (a propensity to feel negative emotions) and anhedonia (a difficulty feeling pleasure) activate impulses through an individual's network, triggering a subsequent series of less frequent symptoms that vary from person to person (Fried, 2015). For these reasons it can be difficult to diagnose depression, as the disorder may activate different secondary symptoms across individuals. More centralized symptoms are stronger indicators of depression.

Negative Affect

Those with depression may experience increased negative affect and low positive affect as symptoms (Gross & Jazaeri, 2014). Negative affect is defined as general feelings of distress which may evoke different negative emotional states such as fear, anger, and guilt (Watson & Tellegan, 1988). Personality traits such as neuroticism may also cause one to exhibit higher levels of negative affect (DeNeve & Cooper, 1998). In a study analyzing personality traits as predictors for life satisfaction, Hayes and Joseph (2003) found that neuroticism was associated with all measures of subjective well-being, but was most strongly associated with the Depression-Happiness Scale. The Depression-Happiness Scale is a measure in which greater happiness is defined by higher scores on positive emotions and lower scores on negative emotions (Hayes & Joseph, 2003). Therefore, those with higher levels of neuroticism may be

prone to more frequent and more intense experiences of unpleasant states such as sadness, anxiety, and irritability.

A large meta-analysis of individuals with depression found that those participants exhibited lower levels of emotional reactivity to positive stimuli than non-depressed participants, demonstrating their low levels of positive affect (Bylsma, Taylor-Clift, & Rottenberg et al., 2011). Individuals with low EI are more likely to experience higher levels of negative affect due to difficulty in regulating their emotions. Extremera and Rey (2016) examined the relationship between affect, perceived EI, and life satisfaction and found that both negative and positive affect mediated the relationship between EI and life satisfaction. These results suggested that individuals with high EI may have higher life satisfaction due to their low negative affect, meaning they do not frequently experience negative or unpleasant emotions.

Anhedonia

Anhedonia is also one of the core symptoms of major depressive disorder (MDD). Anhedonia is defined as a lack of pleasure from typically enjoyable experiences (Treadway & Zald, 2011). More recent evidence has demonstrated that in addition to anhedonia leaving an individual with a deficit in pleasure, it can also reduce anticipation and motivation (Treadway et al., 2011). There are two types of anhedonia that address an individual's loss of pleasure: social and physical. Social anhedonia is a lack of pleasure from social interaction whereas physical anhedonia refers to a lack of pleasure from physical sensations (Rey, Jouvent, & Dubal, 2009). Social anhedonia would cause a lack of pleasure from spending time with friends, family, or otherwise pleasurable social experiences. Physical anhedonia would present itself as a lack of pleasure from sex or other physical activities and sensations. Anhedonia is present in other mental disorders such as schizophrenia and therefore is a transdiagnostic symptom (Barch,

Treadway, & Schoen, 2014). Individuals that have lower levels of EI are more likely to suffer from anhedonia because of their inability to regulate their negative and positive affect.

Low Self-Esteem

Self-esteem is the level of respect and confidence that an individual has for oneself. Low self-esteem, which is associated with feelings of worthlessness, is also a strong indicator of depression (Fried et al., 2016). All of these symptoms are common in individuals diagnosed with depression, and negative affect and anhedonia are considered to be centralized symptoms of depression. The exact role self-esteem plays in psychological well-being remains unclear because self-esteem is a hypothetical construct that presents itself differently across different cultures. Due to this inconsistency, the predictive nature of self-esteem is low and its connection to adaptive and maladaptive behaviors remains unclear (Kernis, 2006).

Self-esteem is commonly measured by making the distinction between “self-esteem level” and “self-esteem stability.” Self-esteem level refers to a person’s typical or general feelings of self-worth, while self-esteem stability refers to the frequency of short-term fluctuations in feelings of self-worth (Kernis, 2006). Individuals with lower EI are less likely to be able to overcome these feelings of low self-esteem or worthlessness due to their lower levels of emotional clarity and emotional regulation. Research is limited on the effect of self-esteem as a mechanism for the relationship between perceived EI and well-being. According to Rey, Extremera, and Pena (2011), individuals with higher EI should theoretically be able to better maintain a positive mood and effectively repair negative mood. This ability to regulate their emotions could enable them to maintain higher self-esteem and feelings of self-worth.

Mindfulness

Improving one's levels of emotional clarity and emotional regulation could minimize the likelihood of experiencing depression. One accessible way to increase levels of EI is through mindfulness practices, which can serve as effective tools for improving emotional clarity. For example, in meditation one focuses on the present moment and observes both their internal and external worlds without judgement (Cooper et al., 2018; Tang et al. 2015). Mindfulness practices can be beneficial for improving an individual's emotional regulation over time (Tang et al., 2015; Cooper et al., 2018). Research conducted by Tang et al. (2015) indicated that mindfulness can reduce emotional interference and allow the individual to have a faster and more controlled return to their usual emotional state after processing a stressful event. Lack of judgement when processing emotions leads to more clarity in labeling and identifying one's emotions. Mindfulness allows for more control over emotional regulation abilities, which leaves more opportunity to practice identifying and labeling one's emotions (Cooper et al., 2018).

Positive affect is also linked to mindfulness, and one possible reason for this is that in meditation, there is emphasis on observing one's internal state non-judgmentally, which aids in reducing one's negative affect (Cooper et al., 2018). Meditation is a type of cognitive reappraisal, which is an emotional regulation strategy where an individual makes a conscious shift from viewing a scenario through a negative lens to using a neutral or positive one (Greeson & Eisenlohr, 2014). Other mindfulness activities such as journaling and yoga can also raise one's level of positive affect. Engaging in these activities may train individuals to be more mindful and thus increase their levels of trait mindfulness (Cooper et al., 2018). Trait mindfulness refers to one's propensity to view life events in a non-judgment manner and to simply be aware and acknowledge them. High levels of trait mindfulness are linked with high levels of characteristics such as satisfaction, optimism, high self-esteem, etc. (Cooper et al., 2018). Thus, mindfulness

practices could help improve one's mood and potentially aid in overcoming mood disorders such as depression. Low mindfulness is associated with various mental illnesses such as alexithymia, depression, and anxiety. Therefore, mindfulness practices can have a positive impact on one's mental health.

Current Study

Previous literature has demonstrated a link between an individual's EI and depression (Joorman & Stanton, 2016; Vine & Marroquin, 2017). However, there are multiple components that comprise both EI and depression, and it is unclear how these constructs are related in terms of their underlying elements. We investigated how two primary components of EI (emotional clarity and emotional regulation) interacted with negative affect, anhedonia, and low self-esteem. Prior studies have also indicated that mindfulness practices can improve emotional clarity (Cooper et al., 2018). We examined participants' engagement with mindfulness activities such as meditation, journaling, yoga, and others. With the current study, we hope to expand on this research and delve deeper into the connection between EI, depression, and mindfulness practices.

Hypotheses

We hypothesized that there would be a negative correlation between EI and negative affect, anhedonia, and low self-esteem. We predicted that individuals who scored high on EI would have a lower propensity to experience depression symptoms because of their ability to clarify and regulate their emotions.

We also predicted that emotional clarity would moderate the relationship between emotional regulation and negative affect, anhedonia, and self-esteem. Since emotional clarity is one's ability to recognize and label the emotions that they experience, it should serve as an

essential factor for moderating the relationship between one's emotional regulation and depression symptoms.

Lastly, we hypothesized that individuals who regularly practice mindfulness would have higher EI scores. People who practice mindfulness have better control over their emotional regulation due to a heightened sense of emotional clarity.

Methods

Participants

One hundred and fifty-seven undergraduate students from Whitman College in Walla Walla, Washington were recruited via Whitman email lists, such as the Psychology Department subject pool. Ultimately, only 98 participants fully completed the study and their data were used for analyses. Students were eligible to participate in this study if they were at least 18 years of age. The mean age of participants was 20.9 years¹. 75.5% of participants identified as female, 21.4% as male, and 3.1% as non-binary. In regards to race, 64% of students identified as White, 16% of students identified as Asian, 9% Mixed, 4% Black, 2% Pacific Islander, 2% Hispanic, and 1% preferred not to report their race.

Measures

The Trait Meta-Mood Scale (TMMS) is a 48-item scale ($\alpha = .777$) that measures three subscales: attention to feeling, clarity in discrimination of feeling, and mood repair (Salovey et al., 1995). Due to programming error, we only used 37 items from this scale, but still computed the three subscales. The TMMS assesses individual differences in the ways in which individuals respond to their feeling states (Fitness & Curtis, 2005). 13 items on the TMMS measure attention to feeling, 11 assess clarity in discrimination of feeling, and 6 measure mood repair (e.g., "I am usually very clear about my feelings," or "When I become upset I remind myself of all the

¹ Most of the participants ranged from 18 to 22 years old. However, we had a few outliers: 38, 57, 67

pleasures in life”). For the current study, we focused primarily on emotional clarity and emotional repair. Emotional repair represents similar qualities of emotional regulation, and therefore we reviewed emotional repair scores as a measure of emotional regulation. Participants ranked their agreement with statements on a five-point Likert scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (5). Internal consistencies for each of the three subscales have been high according to previous reports (coefficient $\alpha = .86, .88, .82$, respectively; Salovey et al., 1995).

The Rosenberg Self-Esteem Scale is a 10-item scale ($\alpha = .924$) that examines positive and negative self-esteem. Since general feelings of high self-esteem and self-worth are largely context dependent, it is important to measure the stability of an individual’s self-esteem to provide a more general sense of their overall self-esteem (e.g., “On the whole, I am satisfied with myself”). Participants responded to these questions on a four-point Likert scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (4). Higher scores indicate higher levels of self-esteem.

The SHAPS (Snaith-Hamilton Pleasure Scale) is a 14-item anhedonia measure ($\alpha = .677$) that measures both social and physical anhedonia. Participants were asked whether or not they got enjoyment from social activities (e.g., “I would enjoy being with family or close friends”) and also physically stimulating activities (e.g., “I would find pleasure in the scent of flowers or the smell of a fresh breeze or freshly baked bread”). Participants responded with either *Yes* or *No* to these questions, and higher scores indicated lower levels of anhedonia.

The PANAS (Positive and Negative Affect Schedule) measure is a 20-item scale ($\alpha = .646$) that assesses positive and negative affect. Participants were asked to indicate the extent to which they have felt various emotions such as interest, guilt, and enthusiasm on a five-point

Likert scale ranging from *Very slightly or not at all* (1) to *Extremely* (5). Scores on individual questions were averaged together to measure both positive and negative affect.

Procedure

Participants provided informed consent to a protocol approved by the Whitman College Institutional Review Board. Participants' information and identities were kept entirely anonymous throughout the study. Participants then completed the measures and a basic demographic survey (age, gender, ethnicity, and race) via an online Qualtrics survey. Participants were presented with a survey for four total measures to examine EI and symptoms of depression. The Trait Meta-Mood Scale was presented first, followed by the Rosenberg Self-Esteem Scale, the SHAPS Pleasure Scale, and the PANAS (Positive and Negative Affect Schedule). Participants were also asked about their experiences with mindfulness practices such as yoga, journaling, meditation, and others. Participants reported whether they engage in mindfulness practices and two groups were created accordingly. After completion of all four scales and mindfulness questions, participants were issued a debriefing form which reiterated the purpose of the study. Some participants received credit towards their Intro Psychology course for completing the study and all other participants received no compensation.

Results

Hypothesis 1: EI and Depression symptoms

We hypothesized that there would be a negative correlation between EI and negative affect, anhedonia, and low self-esteem. To investigate this, we conducted separate correlation analyses between both EI facets (emotional clarity and emotional repair) and depression symptoms (anhedonia, low self-esteem, and negative affect).

Consistent with our hypotheses, emotional clarity ($M = 26.1$, $SD = 6.40$) was significantly positively correlated with positive affect, $r(97) = .47$, $p < .001$, and significantly negatively correlated with negative affect, $r(97) = -.50$, $p < .001$. Clarity was also significantly positively correlated with self-esteem, $r(97) = .66$, $p < .001$ and significantly positively correlated with anhedonia, $r(97) = .22$, $p = .026$.

Emotional repair ($M = 17.6$, $SD = 4.38$) was positively correlated with positive affect, $r(97) = .55$, $p < .001$ and negatively correlated with negative affect, $r(97) = -.53$, $p < .001$. Repair was positively correlated with self-esteem, $r(97) = .69$, $p < .001$, and also positively correlated with anhedonia, $r(97) = .40$, $p < .001$.

Hypothesis 2: Moderation of emotional clarity

We also predicted that emotional clarity would moderate the relationship between emotional regulation and negative affect, anhedonia, and self-esteem. Using multiple regression, we separately regressed negative affect ($M = 24.8$, $SD = 7.82$), anhedonia ($M = 13.3$, $SD = 1.25$), and low self-esteem ($M = 27.6$, $SD = 6.01$) on clarity, regulation, and the interaction of clarity and regulation. The clarity by regulation interaction term was not significant in any of these models. A moderate correlation was discovered between emotional clarity and emotional regulation, $r = .54$, $p < .001$. These models also provided an opportunity to examine which facet of EI was a stronger predictor of each facet of depression. Both facets were significant predictors, except for in the case of anhedonia, in which only repair was a significant predictor.

The results of the regression for self-esteem revealed the two predictors and their interaction term predicted 60% of the variance ($R^2 = .60$, $F(3,94) = 46.60$, $p < .001$). Emotional clarity ($\beta = .01$, $p = .885$) and emotional repair ($\beta = .40$, $p = .415$) were both significant

predictors of self-esteem, but the interaction wasn't significant ($\beta = .02, p = .860$), indicating that emotional clarity does not moderate the relationship between emotional repair and self-esteem.

The results of the regression for anhedonia showed the two predictors and their interaction term predicted 16% of the variance ($R^2 = .16, F(3, 94) = 6.04, p < .001$). Emotional clarity ($\beta = .01, p = .885$) and emotional repair ($\beta = .40, p = .415$) were both significant predictors of anhedonia, but the interaction term was not significant ($\beta = .02, p = .860$), indicating that emotional clarity does not moderate the relationship between emotional repair and anhedonia.

For our final regression analysis, we examined the interaction between emotional clarity and emotional repair and negative affect. For this analysis, only negative affect data was used from participants' PANAS scores and positive affect data was excluded. The results of this regression revealed the two predictors and their interaction term predicted 34% of the variance ($R^2 = .34, F(3, 94), p < .001$). Neither clarity ($\beta = -.28, p = .113$) nor repair ($\beta = -.36, p = .087$) were significant predictors of negative affect. The interaction term was also not significant ($\beta = .06, p = .461$), demonstrating that emotional clarity does not moderate the relationship between emotional repair and negative affect.

Hypothesis 3: Mindfulness and EI

We conducted an Independent Samples *t*-test to compare EI scores for individuals that do and do not practice mindfulness. Sixty-two percent of participants practiced mindfulness activities such as yoga, journaling, meditation, etc. We asked participants how often they practiced those activities in which they either responded with never, occasionally, once a week, multiple times a week, or every day. Thirty seven participants reported never, 20 occasionally, 16 once a week, 19 multiple times a week, and 6 every day.

In the t-test, we examined differences in EI between people who did and did not practice mindfulness. The results of this test indicated that means of the mindfulness and no-mindfulness groups were significantly different for emotional clarity and emotional regulation. In fact, mean scores for all three EI facets (attention to emotions, emotional clarity, and emotional repair) for the mindfulness group were all significantly higher than means of each respective facet in the no-mindfulness group. A statistically significant difference for emotional clarity was found, $t(97) = -2.01, p = 0.047$, with the mindfulness group scoring ($M = 27.1, SD = 5.97$) and the non-mindfulness group scoring ($M = 24.5, SD = 6.82$). Also, we found a statistically significant difference for emotional regulation, $t(97) = -2.45, p = 0.016$, with the mindfulness group scoring ($M = 18.4, SD = 3.98$) and the non-mindfulness group scoring ($M = 16.2, SD = 4.71$). Mean differences in emotional clarity across mindfulness groups can be seen in Figure 1 below, and those for emotional repair can be seen in Figure 2. These results indicate that on average, individuals who practiced mindfulness had higher levels of EI.

Figure 1

Violin plot representing differences in emotional clarity means across mindfulness categories

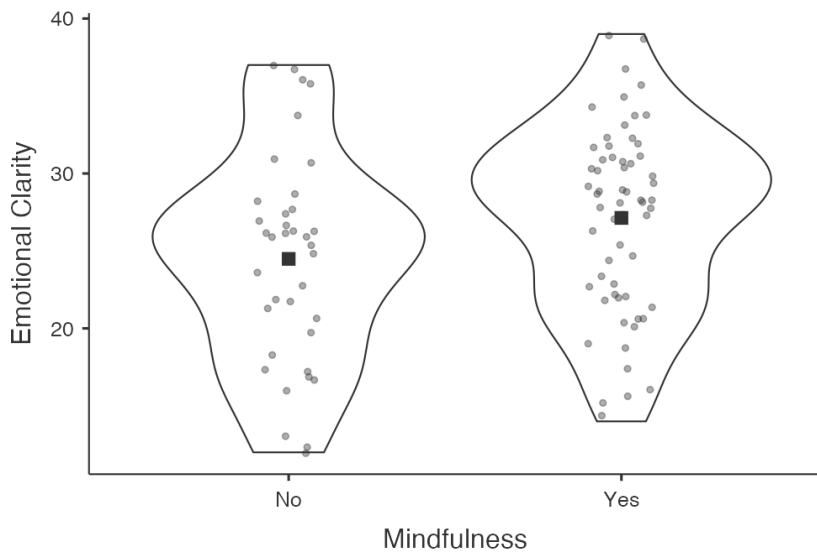


Figure 2

Violin plot representing differences in emotional repair means across mindfulness categories



Discussion

Previous research conducted by Joorman & Stanton (2016) found both emotional clarity and emotional regulation to be significant predictors of depression. Our results aligned with these findings and supported our first hypothesis, in which we predicted a negative correlation between EI and each depressive symptom, respectively. We discovered a negative correlation between emotional clarity and both negative affect and low self-esteem. Due to the manner in which anhedonia was scored, higher scores on the SHAPS measure indicated lower levels of anhedonia. For this reason, we identified a positive correlation between emotional clarity and anhedonia, meaning that individuals with high clarity exhibited lower levels of anhedonia. Emotional repair was also negatively correlated with low self-esteem and negative affect. Similarly to emotional clarity, emotional repair was also positively associated with anhedonia.

Our second hypothesis, which predicted emotional clarity would moderate the relationship between emotional regulation and each depressive symptom, was not supported by our results. Salovey et al. (2015) has previously theorized that emotional clarity may be necessary to proceed to emotional regulation. Vine & Marroquín (2017) found low emotional clarity and high levels of negative affect to be significant predictors of depression. Based on this research, we hypothesized that emotional clarity would moderate the relationship between emotional regulation and each depressive symptom. Our results did not find emotional clarity to be a significant moderator between emotional regulation and depressive symptoms. We predict that since emotional clarity and emotional regulation were strongly correlated, there was no moderating effect of clarity on regulation and depression symptoms. If clarity and regulation weren't as highly correlated, we may have discovered a moderation.

Our last hypothesis, which predicted a positive correlation between EI and mindfulness, was supported by our results. Mean scores for the mindfulness and non-mindfulness groups were

significantly different. For EI facet, participants who practiced mindfulness exhibited higher EI scores.

Hypothesis 1: EI and Depression symptoms

Since depression is a mental disorder largely composed of negative emotions, we predicted that depression symptoms would be significantly correlated with facets of EI. In light of previous research that has observed connections between EI and symptoms of depression, we predicted that EI and each depression symptom would be negatively correlated. Research conducted by Rudenstine & Espinosa (2018) suggested that EI greatly determines an individual's handling of mood disturbances such as depression and anxiety. Our research design differed from Rudenstine & Espinosa's (2018) because we measured depression in terms of its facets of negative affect, anhedonia, and low self-esteem.

Our research indicated that those with higher levels of both emotional clarity and emotional regulation had lower rates of negative affect, higher self-esteem, and lower anhedonia. These findings align with previous research and suggest that individuals with higher levels of EI are more likely to use adaptive coping strategies when regulating their emotions. Joorman and Stanton (2016) suggested that both emotional clarity and emotional regulation are crucial to selecting an effective coping strategy to regulate one's emotions. Certain coping mechanisms such as rumination may be more likely to exacerbate depressive symptoms. Improved emotional regulation may allow one to choose to engage in more positive coping strategies, such as behavioral activation (Jacobson et al, 2001). In addition to experiencing problems of life which may cause depression, Jacobson et al. (2001) argue that these problems of life encourage maladaptive coping mechanisms such as rumination and avoidance patterns. Behavioral activation targets these behaviors by encouraging short and attainable goals rather than fixating

on larger goals that may seem too overwhelming, and may prolong the depressive episode. This creates a habit of reaching for a goal-oriented strategy rather than maladaptive strategies which will increase levels of negative affect.

Our study also supported previous findings that suggested a relationship between self-esteem and facets of EI. Rey et al. (2011) extended previous findings observed an association between increased perceived EI, increased self-esteem and higher life satisfaction. In Rey et al.'s (2011) study, researchers found that self-esteem was significantly associated with life satisfaction in adolescents, suggesting that EI may increase life satisfaction by increasing self-esteem. The current study, although conducted with an older sample of participants, also found a positive correlation between self-esteem and EI. Participants who reported having high self-esteem also scored higher on emotional clarity and emotional regulation than those with low self-esteem. Individuals with high EI are better able to maintain a positive mood and effectively repair negative mood. This ability to regulate positive and negative emotions could enable them to maintain higher levels of self-esteem (Rey et al., 2011).

Hypothesis 2: Moderation of emotional clarity

Next, we predicted that emotional clarity would moderate the relationship between emotional regulation and depression symptoms. Our results did not support this hypothesis, as there was not a significant moderating effect of clarity on emotional regulation and depression symptoms. Previous research conducted by Flynn and Ruldoph (2010) suggests adequate emotional clarity is crucial to effectively regulating emotions. Effective emotional clarity allows an individual to utilize positive coping strategies and cognition to regulate their emotions. Additionally, research conducted by Vine and Marroquín (2017) demonstrated emotional regulation mediated the relationship between emotional clarity and depressive symptoms. Vine

and Marroquín (2017) considered the impact of affect intensity as a mediating variable. If negative affect intensity was high, emotional clarity levels strongly predicted the likelihood of depressive symptoms. In the current study, the sample had low levels of negative affect. If participants' negative affect levels were higher, a significant emotional clarity moderation may have been detected.

Hypothesis 3: Mindfulness and EI

Our last hypothesis was that individuals who practiced mindfulness would exhibit higher levels of EI compared to participants who did not practice mindfulness. Our findings aligned with previous research conducted by Cooper et al. (2018), which suggested that mindfulness can boost one's emotional clarity, perhaps because mindfulness directs awareness towards one's internal state. According to our results, those who reported practicing mindfulness on average had higher levels of EI than those who did not practice mindfulness. Mindfulness is positively associated with emotional regulation because mindfulness activities encourage one to nonjudgmentally regulate their thoughts and emotions, providing a greater amount of emotional clarity. This lack of judgment is a positive method for regulating emotions.

Limitations

These findings should be interpreted with the following limitations in mind. Our study relied entirely on participants self-reporting information about their EI, depression, and mindfulness habits. By only capturing self-report data, we did not get the most objective perspective on our measures, specifically EI and depression. Our study would have benefited from gathering behavioral data and informant data (others answering questions about an individual), however, due to the limitation of online studies, it would have been difficult to

gather those types of data. One could argue that there are limitations to how accurately one can introspect and also individuals might report biasedly and portray themselves in a better light.

Also, because our study was correlational in nature, we cannot assume causation among any of our variables. If this study were to be conducted with an experimental design that manipulated EI, we would be able to potentially infer a causal relationship between EI and depression or mindfulness. We also recognize that EI is not the sole predictor of depression symptoms because many confounding variables may be present that could lead to developing depression or having a depressive episode. Environmental factors, genetics, life circumstances, and a number of other aspects may play an influential role in developing depression symptoms.

Overall, the goal of this study was to examine the relationship between EI and various symptoms of depression. Our study was not able to conclude which participants experience depression because it only measured a few common symptoms. Depression is a mental disorder that is composed of a large variety of symptoms, and to be classified as depressed, one has to display multiple symptoms. Therefore, two individuals can display different symptoms but still have depression. For example, participants in our study may have exhibited high levels of negative affect and low self-esteem, but could still not be classified as having depression. For this reason, we designed our study to measure each common symptom of depression individually, rather than test for depression on a larger scale. We hoped this separation of depressive symptoms could be useful in that it measures how specific symptoms interact with EI facets. The depressive symptoms examined in the current study also may present themselves in other mental disorders separately, informing future research about the role of EI in mental disorders outside of depression. Regardless, analyzing separate symptoms of depression in this way may complicate a diagnosis of Major Depressive Disorder.

Our study also did not examine participants' family history of depression, which could be useful information for obtaining a more holistic understanding of genetic factors that may influence a participant's depression. Participants in our study may also have been experiencing situational depression rather than MDD, which is an important distinction because of the negative implications that having MDD presents as far as treatment. Emotional clarity and emotional regulation also may impact situational depression differently than MDD. We also predict that due to the circumstances brought upon by COVID-19 that participants were more likely to report experiencing negative emotions in our survey.

Another limitation of our study was that we didn't include all of the items from the Trait Meta-Mood Scale. The full version of the TMMS for EI contains 48 items and due to experimenter error, only 37 questions were included in the survey. Our study also did not include data from individuals outside of the Whitman College undergraduate student sample, so our results are not generalizable to people of all ages, as well as for samples with more ethnic and racial diversity than Whitman College. This is important because individuals of all ages can experience depression and the risk factors for depression can vary depending on sociodemographic characteristics.

Our last group of limitations relate to our mindfulness measure. We asked our participants to report if they practiced mindfulness, how often they practiced, and which mindfulness activities they engaged in. When asking participants if they engaged in mindfulness activities, we did not provide them with a definition of mindfulness to inform their responses. If we had more explicitly defined mindfulness, that may have impacted participant responses because they could have compared their experience participating in the activities to our definition of mindfulness. Additionally, we left an "Other" option, which 13 participants selected

when answering what kind of mindfulness practices they engage in. We could have allowed participants to specify what their “Other” mindfulness practice was rather than leaving it as a close-ended question.

We also measured mindfulness as a dichotomous variable, listing the options of “Yes” or “No” when asked if they practiced mindfulness. We additionally collected information about how frequently each participant practiced mindfulness, however we did not analyze this information. Another approach to analyzing our mindfulness data could have been to examine the frequency of practicing meditation as a continuous variable rather than dichotomous. This would have allowed us to examine the differences in EI between those who practice mindfulness every day and occasionally. We also could have investigated significant differences in frequency of mindfulness practices. Measuring mindfulness on a continuous basis could have provided more insight into the impact of mindfulness on improving EI.

Future Direction

Our results suggest that those with higher levels of EI may be less likely to experience depression. Previous research has indicated that EI can be improved through EI training programs. A meta analysis of 24 EI training programs compiled by researchers Hodzick, Scharfan, and Ripoll et al. (2017) reported a significant mean EI change when comparing pre-program levels of EI to post-program EI levels. These programs that focus on more individualized wellness training may be more beneficial for those attempting to seek treatment for mental disorders such as depression.

A longitudinal study that compares the effects of both mindfulness and EI interventions on depression could be useful for better understanding of which factor influenced development of depression and potentially other mood disorders. Improving accessibility to these new

wellness-based programs and perhaps encouraging their use in places like schools could potentially combat the development of depression. Additionally, mindfulness practices could potentially be a part of these accessible EI training programs. Mindfulness-based Cognitive-Behavioral Therapy (CBT) has been an effective strategy for combating depression (Hawley et al., 2017). Therefore, mindfulness-based EI interventions may also serve to prevent depression and other mood disorders.

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