Examining the Relationship Between Attachment Styles, Academic Performance, and Mental Well-Being in McMaster University Undergraduate Students

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Abstract

Research on the implications of attachment style on well-being and academic performance among university students has grown considerably in recent years. However, previous literature has not evaluated how these variables interconnect within the daily lives of university students. The purpose of this study was to evaluate the relationship between insecure attachment styles, academic performance, and mental well-being. Three research questions were developed: (1) Do explanatory styles (pessimism, optimism) predict an individual's attachment style? (2) Do attachment styles influence mental well-being? (3) Does attachment style predict academic performance? To investigate this phenomenon, MREB reviewed and approved our research proposal. An online anonymous survey was then distributed to McMaster University undergraduate students through posters and club advertising. Qualitative data was analyzed using thematic analysis and quantitative data using the statistical software Jamovi. It was found that avoidant and anxious attachment styles are negatively correlated with mental well-being, and that avoidant attachment is positively correlated with GPA. Additionally, qualitative data revealed a positive association between GPA and well-being. Our findings contribute to the field of attachment theory by providing a deeper insight into how McMaster undergraduate students' academic and well-being services can be improved using an attachment-informed lens.

Introduction

Entering adulthood and exploring endless relationships, whether they be intimate, platonic, or intellectual, provides access to a variety of new experiences. Events like these may be difficult to manage, especially if academia is a present factor. For many undergraduate students, the emotional connections or psychosocial relationships they form during this time are important aspects when examining and navigating their sense of self. Specifically, university students are a particularly vulnerable demographic when it pertains to stress and anxiety, especially due to significant concerns with their academic performance throughout their undergraduate programs. Therefore, when examining a

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critical component, such as student GPA, it is necessary to explore additional elements that may influence their overall academic success. These elements may include interpersonal or romantic connections, general mental health, stress or ongoing pressures, and individual explanatory styles. Hence, our research study focused on examining the relationship between attachment styles, academic performance, and mental well-being among McMaster University undergraduate students.

In our research, attachment is defined as "a unique relationship between an infant and his caregiver that is the foundation for further healthy development" (Bowlby, 1969/1982, as cited in Flaherty & Sadler, 2011, p. 115). There have been two defined forms of attachment: secure and insecure, however, our research has focused on insecure attachment, specifically avoidant and anxious styles. Students' academic performance will be measured through qualitative and quantitative questions examining their overall reported GPA, and their perspectives will be reviewed by their obtained explanatory styles (historicism, dispositionism, and controllability). Moreover, mental well-being will be defined through students' reported levels of stress, perceived program difficulty, and negative emotions, along with how they handle these factors. We predict our findings will allow for a deeper insight into how an individual's attachment style might impact their academic performance and mental well-being. We hope our research findings allow for a deeper comprehension of McMaster's undergraduate population to aid in the implementation of attachment-informed services on campus.

Research Questions

Three research questions are being investigated in this study: (1) Do explanatory styles predict an individual's attachment style? (2) Do attachment styles influence mental well-being? (3) Does attachment style predict academic performance? These three questions were drafted to help ensure detailed findings when conducting our research study.

Statement of Purpose

Within the confines of our general research topic concerning the influence of attachment styles on academic performance and mental well-being, our study aims to further investigate this relationship by analyzing the adult attachment styles of undergraduate students at McMaster University. In doing so, we strived to establish a causal relationship between attachment styles, academic performance, and mental well-being. This is of particular importance because attachment styles have been consistently empirically proven to influence general well-being, including mental health outcomes and academic achievement (Bonab & Kuhsar, 2011; Bradstreet et al., 2018; Bucci et al., 2015; Cutrona et al., 1994; Guarnieri et al., 2015; Kurland & Siegel, 2013; Lapsley & Edgerton, 2002; Lavy, 2016; Mikulincer & Florian, 2003; Pritchard & Wilson, 2003; Ramsdal et al., 2015; Wilkinson, 2004).

Additionally, we aim to address and mitigate the gaps in the existing literature, as it presently lacks a focus on university students specifically. Ideally, our findings should corroborate current literature that has promising findings on the general negative implications of insecure attachment on well-being (Bonab & Kuhsar, 2011; Bradstreet et al., 2018; Bucci et al., 2015; Cutrona et al., 1994; Guarnieri et al., 2015; Kurland & Siegel, 2013; Lapsley & Edgerton, 2002; Lavy, 2016; Mikulincer & Florian, 2003; Pritchard &

Wilson, 2003; Ramsdal et al., 2015; Wilkinson, 2004). Building on this, our research on the influence of McMaster undergraduate students' attachment styles on their academic achievement and mental well-being will be utilized to establish the importance of attachment-informed campus services for students. More specifically, we will substantiate practical applications of attachment theory by determining how attachment styles may aid in the development of academic advising and campus services. We predict the findings of our study will contribute to a growing understanding of impactful student-centered services at McMaster University.

Paper Overview

There are seven covered sections in this research report. Firstly, the literature review presents a summary of prior research conducted on the subject being studied, identifies any gaps, and displays deeper context to our research questions. Secondly, the theoretical framework section will introduce the theoretical models we aim to incorporate in our research study. The two models are (1) attachment theory and (2) explanatory styles. The methodology section will review our data collection and analysis procedures, as well as provide insight into our ethical considerations. It will also provide the objective timeline of our data collection, outline possible risks or benefits involved in this study, as well as include the specifics of our data collection and analyses. The results section will provide the qualitative and quantitative findings of our research project concerning our research questions. Our discussion section will situate our findings within broader literature, including both previous studies and theories. Lastly, the conclusion will review the limitations encountered within our research project, along with the significant insights and concluding statements.

Literature Review

Thirteen academic articles were compiled and examined to determine the scope of the current literature on attachment styles as they relate to academic performance and mental well-being. The influence of attachment styles on the help-seeking behaviours of university students was explored by assessing the effects of adult attachment styles on academic performance and mental well-being. While there is a significant amount of literature on attachment theory as it relates to mental well-being and academic performance, much of this research evaluates these variables independently, not in relation to each other. Moreover, there is scarce research on how these two variables affect post-secondary students specifically, failing to account for extraneous variables found specifically in university student life. Upon evaluating the existing literature, notable gaps were found that this study aims to address. There is a significant knowledge gap, in that there are few studies on specific attachment styles as they correlate with academic performance and mental well-being, with even fewer on university students in particular. Within this limited research, findings on the differences between various insecure attachment styles, such as avoidant and anxious, are either contradictory or inconclusive. Expectantly, we aim to contribute to the existing literature by addressing and fulfilling this knowledge gap with our findings.

Attachment Styles and Academic Performance

The current literature has consistently proven that secure attachment styles correlate with better academic performance as well as emotional and social success in college (Bonab & Kuhsar, 2011; Cutrona et al., 1994; Kurland & Siegel, 2013; Lapsley & Edgerton, 2002; Lavy, 2016; Pritchard & Wilson, 2003; Ramsdal et al., 2015). Conversely, insecure attachment styles have been found to contribute to worse overall academic performance, including factors such as grade point average (GPA), drop-out rates, and emotional adjustment to college (Bonab & Kuhsar, 2011; Cutrona et al., 1994; Kurland & Siegel, 2013; Lapsley & Edgerton, 2002; Lavy, 2016; Pritchard & Wilson, 2003; Ramsdal et al., 2015). Several articles also delve into the applicability of these findings, particularly in the context of providing support to students (Heisserer & Parette, 2002; Kurland & Siegel, 2013) as well as general mental healthcare implications (Bucci et al., 2015). Evidently, there is an amalgamation of literature concerning attachment theory and academic performance. However, the existing literature does not take mental well-being into account when evaluating the relationship between attachment styles and academic outcomes. It is also worth noting that much of the current literature utilizes parent-child attachment theory to make sense of research findings, with insufficient focus on adult attachment. For the purposes of this study, adult attachment is of utmost interest.

Lapsley & Edgerton (2002) explored a research question fairly like one explored in this study: “What is the relationship between adult attachment styles and college adjustment?” (p. 486). Aiming to move away from parent-child attachment, Lapsley & Edgerton (2002) had 156 Canadian university students complete adult attachment style assessments and 2 subscales from a college adjustment questionnaire. In the context of this study, college adjustment refers to social and emotional adjustment as well as adaptability (Lapsley & Edgerton, 2002). It was found that secure adult attachment was positively correlated with college adjustment, and the opposite was true for preoccupied and fearful attachments (Lapsley & Edgerton, 2002). Lapsley & Edgerton (2002) also broached the subject of counselling practices, suggesting that adult attachment style could “be a useful diagnostic screen or… aid in the assessment of presenting problems” (p. 491). Furthermore, it was proposed that adult attachment style assessment may aid counsellors in formulating more effective, client-specific interventions (Lapsley & Edgerton, 2002). While Lapsley & Edgerton’s (2002) finding of secure attachment’s correlation with better academic outcomes has been substantiated by several studies (Bonab & Kuhsar, 2011; Cutrona et al., 1994; Kurland & Siegel, 2013; Lavy, 2016; Pritchard & Wilson, 2003; Ramsdal et al., 2015), their study is correlational and potentially limited in generalizability due to its small (N = 156), largely female (N = 102), and Caucasian (87%) sample (Lapsley & Edgerton, 2002).

Another study that employed adult attachment theory explored the influence of perceived parental social support on academic achievement under the assumption that consistent parental support encourages people to “develop adaptive attitudes… that facilitate… skill development, without inhibitory anxiety or self-doubt” (Cutrona et al., 1994, p. 376). A sample of 418 undergraduate students participated in a one-hour session during which sets of measures were completed to assess perceived social support from parents, family conflict, and parental achievement orientation (Cutrona et al., 1994). This test was repeated the following academic year with new participants, and a final third time

with a subset of participants from Study 2 (Cutrona et al., 1994). It was found that the relationship between parental social support and GPA was significant, even when statistically controlled for the other measures, such as level of family conflict and parental achievement orientation (Cutrona et al., 1994). This finding is corroborated by Ramsdal et al., (2015), who evaluated parent-child attachment in relation to academic performance and found that secure attachment influenced academic success. Cutrona et al., (1994) contribute to a larger theme within the current literature of secure attachment's association with better academic achievement ((Bonab & Kuhsar, 2011; Kurland & Siegel, 2013; Lapsley & Edgerton, 2002; Lavy, 2016; Pritchard & Wilson, 2003; Ramsdal et al., 2015). However, Cutrona et al., (1994) could not confirm a causation between parental support and academic behaviour due to their correlational design, illuminating the necessity for novel research designs on the subject.

What many of these articles have in common is their research design; five out of six of the articles evaluating attachment styles and academic achievement utilized a cross-sectional design and ran the risk of self-report bias and social desirability bias due to their use of surveys. Additionally, the generalizability of several of these articles is very questionable due to the disproportionate demographics in their samples. For example, Bonab & Kuhsar's (2011) study consists of solely Iranian students, Pritchard & Wilson's 2003 study has an 88% Caucasian sample, and Kurland & Siegel's 2013 study has a 75.3% female sample. This lack of variety in research design is detrimental to the validity of the findings on the subject, and different research designs with higher validity, such as experimental studies, are largely missing in the current literature (Cutrona et al., 1994). To mitigate these gaps in the literature, our study employs several strategies to combat self-report and social desirability bias, such as ensuring the anonymity of participants and framing questions neutrally to encourage authentic answers.

Attachment Styles and Mental Well-being

Existing literature has frequently provided findings that suggest a strong correlation between secure attachment styles and better mental well-being (Bradstreet et al., 2018; Bucci et al., 2015; Cutrona et al., 1994; Guarnieri et al., 2015; Mikulincer & Florian, 2003; Wilkinson, 2004). Accordingly, the current literature has also found that insecure attachment styles increase individuals' predisposition for mental health issues (Bradstreet et al., 2018; Bucci et al., 2015; Cutrona et al., 1994; Guarnieri et al., 2015; Mikulincer & Florian, 2003; Wilkinson, 2004). Although a novel division of the literature, a few articles dissect attachment theory's relationship with mental well-being to develop, as one article put it, "attachment-informed general mental health service model[s]" (Bucci et al., 2015, p. 1). Notably, the studies that also investigated specific attachment styles, not simply 'secure' vs. 'insecure' attachment styles, yielded contradictory or inconclusive findings (Lavy, 2016; Mikulincer & Florian, 2003; Pritchard & Wilson, 2003; Ramsdal et al., 2015; Wilkinson, 2004). Like the studies looking at attachment styles and academic outcomes, the literature on attachment styles and mental well-being is largely homogeneous in research design, mostly consisting of survey-based cross-sectional studies or narrative reviews.

One study examining attachment theory and "life satisfaction in emerging adulthood" (p. 833) found that parent attachment was a "fundamental indicator" of well-being (p. 834) due to the significant impact of secure attachment on long-term happiness (Guarnieri et

al., 2015). A sample of 385 Italian participants completed scales assessing perceived parental attachment, peer attachment, and romantic attachment (Guarnieri et al., 2015, p. 837). This study is distinguishable from the existing literature as it evaluated a mediating variable; Guarnieri et al., (2015) investigated the intersection of parental attachment, peer attachment, and romantic attachment as they relate to life satisfaction specifically in young adulthood. As a result, the findings contain the kind of detail and nuance we hope to replicate by evaluating academic achievement and mental well-being in relation to each other. It was discovered that parental attachment is the most significant, followed by romantic attachment, with peer attachment being the least influential on life satisfaction. Guarnieri et al., (2015) emphasized that their findings should be contextualized; for example, the minuscule significance of peer attachment on life satisfaction may be because "attachment to friends operates differently across the life span," (p. 842) demonstrating a distinct consideration for various extraneous variables, such as age, that situationally influence attachment styles and well-being. However, like the other studies analyzed thus far, they also utilized a research design that lacks validity and is prone to self-report and social desirability bias (Guarnieri et al., 2015).

As mentioned earlier, a segment of the current literature focuses on the applicability of attachment theory to mental well-being initiatives, such as academic advising (Heisserer & Parette, 2002; Kurland & Siegel, 2013) and general mental health services (Bucci et al., 2015). One research study provided a comprehensive literature review on the aforementioned "attachment-informed general mental health service model" (Bucci et al., 2015, p. 1). Bucci et al., (2015) asserted that attachment theory serves as a beneficial framework to aid in the development and implementation of mental health services. Their findings suggest that utilizing attachment-style assessment tools in clinical settings for general mental health services, such as clinical interviews and self-report measures, can improve patient outcomes, staff satisfaction, and costs (Bucci et al., 2015). In a similar, more academic context, Kurland & Siegel (2013) compared anxiously attached students with avoidantly attached students and provided recommendations on student advisement suited to each attachment style, emphasizing that effective academic advising would propel students "toward a more secure attachment style" (p. 26). Further, Heisserer & Parette (2002) corroborated this claim, emphasizing the importance of intentional academic advisement for 'at-risk' students, whom Kurland & Siegel (2013) found tend to have insecure attachment styles. Notably, the intrusive advising model is a recommended approach to students who are 'at-risk' or suffer from insecure attachments, defined as "intensive advising intervention with an at-risk student that is designed to (a) facilitate informed responsible decision-making, (b) increase student motivation toward activities in his/her social/academic community, and (c) ensure the probability of the student's academic success" (Heisserer & Parette, 2002, p. 74). It is important to acknowledge that the research on attachment-informed services is largely speculative, and more research is needed to establish the efficacy of such an approach to mental health care services and student services. This study aims to contribute to the building of evidence that attachment-informed student services are worth researching and implementing.

The current literature on attachment theory, academic performance, and mental well-being is predominantly cross-sectional and survey-based, causing an overarching gap in the validity and statistical power of these articles' findings. While the literature provides

compelling evidence for the relationship between attachment styles and academic performance as well as mental well-being, it scarcely evaluates the two latter variables' intersectionality, and almost none of the articles utilized for this literature review take into consideration the specific extraneous variables that arise in university student life. Secure attachment is positively correlated with better support-seeking (Cutrona et al., 1994), better mental abilities (Ramsdal et al., 2015), better academic performance (Bonab & Kuhsar, 2011; Cutrona et al., 1994; Kurland & Siegel, 2013; Lapsley & Edgerton, 2002; Lavy, 2016; Pritchard & Wilson, 2003; Ramsdal et al., 2015), higher self-esteem (Pritchard & Wilson, 2003), and overall life satisfaction (Guarnieri et al., 2015). Insecure attachment is positively correlated with the exact opposite (Bradstreet et al., 2018; Bucci et al., 2015; Cutrona et al., 1994; Guarnieri et al., 2015; Mikulincer & Florian, 2003; Wilkinson, 2004). Further research on attachment theory as it relates to academic achievement and mental well-being is crucial as predicting life and behavioural outcomes based on attachment styles has great implications for mental health and student health services. Our study hopes to gain more insight into how attachment styles influence academic performance and mental well-being to inform enhancements for student mental health services.

Theoretical Framework

The theoretical concept of attachment theory explains how individuals form interpersonal connections with one another. According to this framework, individuals possess an innate desire to form ties with their caregivers during childhood or infancy, which determines the nature of their communication as adults (Shaver & Mikulincer, 2009). Attachment theory was presented by John Bowlby and Mary Ainsworth in 1969, but the mid-1900s marked the beginning of its growth. Ainsworth contributed through her interest in security theory, whereas Bowlby focused primarily on the connections between maternal deprivation and psychosocial development (Bowlby & Ainsworth, 1991). Moreover, the psychoanalytical work of Sigmund Freud, from which both scholars drew inspiration (Shaver & Mikulincer, 2009), contributed to the development of this theory's emphasis on the formative years of an individual.

His early placements underlined Bowlby's practical involvement in the attachment mechanism, which led to the beginning of his development of the attachment theory. After World War II, he first claimed to be capable of making therapeutic discoveries by examining caregivers' childhood experiences in front of their kids (Bowlby & Ainsworth, 1991). Ainsworth's previous research in this field also greatly contributed to the development of attachment theory, as the basic principles of security theory emphasize the importance of children acquiring a safe reliance on their caregivers before navigating novel environments (van Rosemalen et al., 2016).

Attachment in Infant-Caregiver Relationships

The first empirical attachment study was the Ganda Project, conducted in Uganda in the mid-1960s, which witnessed the emergence of connections between mothers and their babies. Interviewing mothers was completed to determine how responsive they were to the indications provided by their newborns. Hence, there were three indicated attachment styles: (1) *secure*: babies were comfortable with their surroundings and rarely cried, (2): *insecure*: infants explored little and cried frequently, even in their mothers' arms,

and (3): *not yet attached*: infants were indifferent and have not yet formed an attachment to their mothers (Bowlby & Ainsworth, 1991). It was concluded that secure attachment was the most positive of the three and ranked the highest in mother-infant responsiveness.

The experiment that helped further frame the emergence of the attachment theory was the strange situation conducted in the early 1970s (Bowlby & Ainsworth, 1991). It was a routine observing process that involved brief intervals and recoveries between the child and their caregiver (Bowlby & Ainsworth, 1991). This approach involved watching an infant play in a room of toys for approximately 20 minutes, whilst their caregiver and outsiders enter, and exit said room (Bowlby & Ainsworth, 1991). The objective was to stimulate this pattern, and the infant's behaviours are monitored as the scenario is altered and stress levels fluctuate (Bowlby & Ainsworth, 1991). The four primary characteristics of the children that were monitored were their degrees of exploration or engagement with their surroundings, their response to their caregiver leaving, their stress when an outsider walked in, and their conduct when rejoined with their caregiver (Bowlby & Ainsworth, 1991).

Based on this procedure, there were two main forms of attachment: secure and insecure. All infants were grouped based on their responsiveness, with each category representing their attachment and connection to their caregiver. Secure attachment displays a safe and comfortable connection between the child and the caregiver. There were three declared forms of insecure attachment: (1) anxious/ambivalent, (2) dismissive/avoidant, and (3) fearful/disorganized (Bowlby & Ainsworth, 1991). Infants grouped with the dismissive/avoidant insecure attachment style exhibit minimal responsiveness when the carer leaves or comes back; this is done by disregarding or ignoring them (Bowlby & Ainsworth, 1991). Bowlby & Ainsworth (1991) also found that the avoidant attachment group engaged in minimal exploration or engagement with their surroundings. On the contrary, infants with the anxious/ambivalent attachment type displayed discomfort before being separated from their carer and became overly attached and challenging to soothe after being reunited (Bowlby & Ainsworth, 1991). Additionally, it was revealed that this attachment style is the most unforeseen and most prone to misinterpretation. Lastly, infants grouped with the disorganized attachment style are characterized by ambiguous and contradictory behaviours, such as crying for their caregiver whilst physically withdrawing from them or panicking when they re-enter (Bowlby & Ainsworth, 1991). As a result, the type of attachment style that infants obtain will influence their social connections and romantic relationships in adulthood.

Categories of Adult Attachment Styles

In addition to infant-caregiver relationships, there have been four established adult attachment styles: (1) secure, (2) anxious, (3) avoidant, and (4) disorganized (Bartholomew & Horowitz, 1991).

Secure Attachment

This individual possesses a high sense of worthiness and can build trustworthy connections comfortably. They also anticipate that others are generally embracing and receptive. This type has high self-worth and a positive view of others (Bartholomew & Horowitz, 1991).

Anxious Attachment

This insecurely attached individual seeks approval from others to achieve a sense of self-worth (Bartholomew & Horowitz, 1991). They are preoccupied with ruminations about their relationships and tend to need constant reassurance. This type has low self-worth, but positive views of others (Bartholomew & Horowitz, 1991).

Avoidant Attachment

This insecurely attached individual anticipates rejection and failure in relationships (Bartholomew & Horowitz, 1991). Hence, they are dismissive, avoid building close connections, and prefer shallow relations due to negative views of others while holding a high sense of self-worth (Bartholomew & Horowitz, 1991).

Disorganized Attachment

This insecurely attached individual tends to exhibit unpredictable or erratic behaviour, including lashing out in their relationships (Bartholomew & Horowitz, 1991). They lack a sense of trust in both them and others, while also holding a low sense of self-worth. This type is also known as “fearful-avoidant” (Bartholomew & Horowitz, 1991).

Attachment in Adulthood

As stated, the support and care one receives from their parent or caregiver as an infant will determine the causality of their relationships as they grow through life. Fraley (2019) examined a sample of caregivers and their children who have been studied over time (from the age of 1 month to 18 years old). It was discovered that, by the time they were 18 years old, secure individuals had a greater probability than those insecurely attached of having grown up in consistent households, had more parental encouragement throughout their lives, and experienced more durable friends throughout their youth (Fraley, 2019). Secure and stable families may include, but are not limited to, a present paternal figure, or minimal parental mental illness. It was also prominent that secure individuals have developed effective communication and positive problem-solving skills, become more dedicated to their partners or friends, and improved physically and mentally (Fraley, 2019; Mikulincer & Shaver, 2016).

Moreover, Stevens (2014) examined approximately 100 anxiously and avoidantly attached undergraduate students. Each student had to complete two scales, which would give the researcher a deeper insight into their attachment style (Stevens, 2014). It was determined that individuals who are avoidant or anxious have difficulty expressing their feelings effectively (Stevens, 2014). In their infancy, anxiously attached children’s behaviour is linked to a hypervigilant approach, which is when an individual acts out by displaying excessive emotion to get notice from their parents. This carries over into adulthood, as anxiously attached people (more than avoidants) fail to express or manage their feelings. Hence, they tend to act more abruptly, as they allow their feelings to obstruct their true intentions (Stevens, 2014). On the other hand, avoidants lack emotional self-awareness compared to anxious individuals, which explains avoidants' impulsivity and emotional dysregulation (Stevens, 2014). This is due to the deactivation strategy of emotions, where avoidants disconnect from their feelings of rejection when a caregiver,

or in this case a partner, is failing to satisfy their objective demands (Mikulincer & Shaver, 2016).

Since every attachment style favours a distinct type of approach, it is crucial to keep in mind that different treatments are needed for each kind of attachment. While metacognition might be more effective for treating avoidant attachment as it helps them self-reflect on their emotions more accurately, anxiously attached individuals might profit more from emotion management strategies to help them deal with challenging feelings (Stevens, 2014). These factors explain the importance of caregiver-infant relationships and the significance they hold on a person's personality development.

Attachment theory is the powerhouse of our research study, as it will help us assess each participant's attachment style, and it will provide a deeper insight into how it is associated with their academic performance and their mental well-being. A student's susceptibility to anxiety is vital and being able to understand its connotations from all angles is crucial. Hence, this theory will help further comprehend McMaster University undergraduate students' ideal psychosocial communications and academic routines.

Explanatory Styles

Psychological characteristics known as explanatory styles reveal how individuals justify to themselves the reasons for their experiences of specific events. This theory was founded by positive psychologists Martin Seligman and Christopher Peterson in the early 1970s (Seligman, 1972). There are two forms of explanatory styles: optimistic and pessimistic. Justifications indicative of a pessimistic explanatory style tend to characterize positive results as external, specific, and unstable (Peterson et al., 2013). This means that the reason this good event occurred was due to a situation outside of their control, and it is unlikely to happen again. Pessimists also tend to view negative results as stable, global, and internal (Peterson et al., 2013). This means that the reason this negative event occurred was due to a situation that was personally their fault, and that said situation will continue to occur. On the contrary, justifications indicative of an optimistic explanatory style tend to characterize positive results as internal, global, and stable (Peterson et al., 2013). From an optimist's perspective, negative situations will be characterized as external, specific, and unstable (Peterson et al., 2013).

Two concepts helped formulate this theory: depression research and the theory of learned helplessness. Following a conversation on depression with colleagues, Seligman developed the idea of attributional and explanatory styles, concluding that people with depression often have a more pessimistic outlook and describe their experiences accordingly (Peterson et al., 2013). Thus, the notion of learned helplessness supported this theory by stating that people eventually come to believe that they have no control over or ability to alter their current circumstances after being exposed to several hardships (Seligman, 1972). An animal study that involved subjecting a dog to several electric shocks was conducted to corroborate this. After a day, the dog was moved into a setting where the jolts could be terminated with a straightforward fix, but it continued to receive them without fighting back (Peterson et al., 2013)

However, Peterson et al., (2013) recognized that their hypothesis could not be verified on human beings due to unethical protocols and the general simplicity of the experiment. Hence, they interviewed individuals who have experienced a negative event and asked

them for their perceived justification. They discovered that if an individual's experience is intrinsically linked to their attributions, it is considered stable, global, and internal, which results in a protracted state of helplessness (Peterson et al., 2013). However, if they obtained a specific, external, and unstable association with the negative situation, there was no protracted helplessness (Peterson et al., 2013). This experiment also revealed that pessimistic individuals possess lower self-esteem than optimists, as internal attributions are taken more personally (Peterson et al., 2013).

A study conducted by Schulman et al., (2014) had approximately 175 college students from all four levels complete the Attributional Style Questionnaire (ASQ) to determine if explanatory styles predict GPA scores and to measure each student's explanatory style depending on the outcome. Using the scale, Schulman et al., (2014) presented individuals with hypothetical scenarios to measure their perceived attributions. First, each student was asked to list one primary reason for the incident and then assign a rating based on three attributional criteria (Semmel et al., 1978). The results of this study indicated that one's explanatory style accurately predicted their GPA (Schulman et al., 2014). These outcomes can also be explained using the theory of learned helplessness, which holds that when unfavourable experiences (poor grades in this case) escalate, students' negative attributions increase, as their confidence levels begin predicting their performance rather than their true proficiency (Schulman et al., 2014).

Within explanatory styles, there have been three additional dimensions examined: dispositionism, historicism, and controllability. Dispositionism is the degree to which individuals attribute situations to internal factors. Historicism shows the degree to which individuals attribute situations to factors perceived as consistent, whereas controllability is the degree to which individuals hold perceived control over situations or outcomes. Andreychik & Gill (2014) have utilized these dimensions in the development of the Social Explanatory Styles Questionnaire (SESQ) to further explore individual attributional differences.

Through a total of six studies, Andreychik & Gill (2014) assessed the psychometrics of the SESQ using statistical analyses, along with the scale's overall validity. The validity assessment had participants provide explanations for behavioural attributes of individuals in hypothetical scenarios on the basis of the three attributional dimensions. Andreychik & Gill's (2014) results and findings supported the SESQ as a valid scale with three structured dimensions. They discovered that controllability rankings were substantially higher than both styles, but dispositionism rankings surpassed historicism immensely (Andreychik & Gill, 2014). As their study was composed of mostly Western participants, their results have been attributed to the individualistic mindset that situations tend to be perceived as highly controllable (Andreychik & Gill, 2014).

As attachment theory is the primary focus of our research project, explanatory styles measured by the SESQ will serve as a secondary theoretical framework. Helplessness is a relatable emotion that many students may experience if receiving negative feedback on their academic performance. Moreover, such helpless events may also place a negative strain on their mental health. Therefore, the SESQ will be situated within our study as an additional framework to help ensure a broader understanding of McMaster University's undergraduate population, as well as raise awareness of the ties between attachment, mental well-being, and academic performance.

Methodology

Overview

This study was conducted under the supervision of Dr. Sarah Clancy by four fourth-year Honours Social Psychology students as part of their thesis requirement. Approval from the McMaster Research Ethics Board (MREB) was obtained, and the MREB-approved survey platform LimeSurvey was utilized for data collection. Convenience sampling was used since our target population was McMaster University undergraduate students over the age of 18. We recruited participants by reaching out to third parties (McMaster clubs and societies) and by putting up posters around campus. Our survey was open from mid-November 2023 until mid-February 2024 and consisted of 11 questions.

Ethical Concerns

In this study, we identified ethical issues regarding psychological and social risks. However, the severity of these risks was not greater than those commonly encountered in daily life. Feelings of embarrassment, discomfort, concern, or distress might have emerged while completing the study due to the sensitive questions regarding academic performance, attachment styles, and mental well-being. We have taken precautions regarding these possible psychological risks by providing support resources in the letter of information and maintaining the participants' anonymity. In addition to this, we ensured confidentiality through third parties which also prevented potential biases. Additionally, there are potential social risks surrounding confidentiality; if a participant completed the survey in a public setting, this may raise concerns about identity disclosure. Therefore, we advised participants to complete the survey in a private setting to preserve their anonymity. It is also important to note that this research poses no greater risks than those in everyday life.

Additionally, we advised participants not to engage with posts about our study on social media (e.g., comments, likes) to further safeguard their anonymity and protect against any potential breaches of confidentiality. Since we used a non-probability convenience sampling method with snowballing, we prevented conflict of interest and potential biases through third parties during the data collection. However, a researcher's personal traits (e.g., gender, age, ethnicity, and economic background) might have shaped the research from the start, influencing how it was designed, how data was collected and analyzed, and how the results were interpreted and shared.

Recruitment

Group members who were not affiliated with McMaster clubs contacted the third party using the provided Appendix B script to avoid a conflict of interest. The third parties, who agreed to distribute the study, contacted the club members using the Appendix C script. Appendix D consists of our direct script, which was posted on our behalf without a conflict of interest present. Since the study was distributed by a third party through email and/or social media depending on their permission, this process allowed us to minimize the possibility of conflict of interest. Our printed posters were approved by the McMaster Students Union (MSU) and placed at MSU-approved locations. The letter of information (Appendix A), outlining benefits, risks, and details, was provided to participants at the

beginning of the survey. Their implicit consent was approved once clicking "I certify that I have read the above information and consent to participate in this study" under the letter of information.

Survey Procedure

Prior to beginning the survey, participants were provided with a comprehensive letter of information. This details information about the researchers, the purpose of the study, potential risks of completing the survey, confidentiality, the right to withdraw consent, and how to obtain the study results if desired. Participants were also informed that the survey would take 10-15 minutes to complete. Our survey consisted of 11 questions, most of which utilized a Likert scale. There were four demographic questions, three qualitative questions which assessed academic performance, and the remainder evaluated attachment style, explanatory styles, and academic performance.

Data Collection

The survey was open to the public starting November 21st, 2023 and closed February 17th, 2024. The data files were exported from LimeSurvey and securely stored in a password-protected document on password-protected computers. Moreover, the access was limited solely to members of the research team. Our goal was to obtain 75 participants. The survey garnered a total of 504 responses, with 389 partial responses and 115 full responses. Data was collected from 115 participants (Mage=3.40, SDage= 1.59; Myear of study=2.59, SDyear of study=1.39), but three participants were removed as they were graduate students (n = 1) or not students at all (n = 2). Thus, the total sample size after removals was 112.

Challenges in Data Collection

In the process of recruitment and data collection, we encountered several challenges. We reached out to 35 clubs and societies at McMaster, and only three responded and agreed to distribute our survey. Consequently, this limited the reach of our survey. This was exacerbated by the fact that we had a limited time frame for which the survey was active, as it was open for just under three months. We also received a staggering number of incomplete responses, with only 33% of responses being fully completed. This could be due to a plethora of reasons, such as research design, participants finding the subject topic boring, or changing their minds in terms of consent to participate. Lastly, due to unforeseen technical difficulties, we lost demographic data on gender identity. We acknowledge that the absence of gender as a variable in our study may impact the depth of our analysis and understanding of the sample population.

Data Analysis

In terms of quantitative data analysis, we obtained the participants' responses through the LimeSurvey platform to analyze and interpret the data using the statistical software Jamovi. The Short Warwick-Edinburgh Mental Well-being Scale was used to measure university students' mental well-being (NHS Health Scotland, 2007), including seven items (e.g., "I've been feeling optimistic about the future"). A 5-point Likert scale was used ranging from 1 (None of the time) to 5 (All of the time). The Relationship Structures (ECR-RS) Questionnaire was used to measure general attachment style (Fraley et al., 2014),

including eight items (e.g., “It helps to turn to people in times of need”, α = 0.79). Items one through six measured avoidance, item seven was an attention check, and item eight measured anxiety. A 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) was used. The Social Explanatory Styles Questionnaire (SESQ) was used to measure the degree of historicism, dispositionism, and controllability, using three hypothetical scenarios (Andreychik & Gill, 2014). For each scenario, we included three items (e.g., “A major factor is Steven’s character traits”), and used a 5-point Likert scale ranging from 1 (No) to 5 (Yes).

For qualitative data analysis, we coded the data and identified themes, subthemes, and relationships across the responses provided to the three open-ended questions. The first open-ended question was used to assess participants’ ideal study techniques and environments, such as flashcards or group/individual study. We also asked participants to describe the perceived difficulty of the program as the second open-ended question. Lastly, we asked participants about the impact of academic pursuits on their well-being, prompting them to articulate the degree to which academics influence their well-being, whether positively or negatively.

Results

Demographics

Our survey’s respondents were made up of 112 McMaster undergraduate students ages 18 and above (*N* = 112). Of these 112 respondents, 29% of participants were 21 years old (*n* = 33) and 41% were in their fourth year of study (*n* = 46). Participants were 45% White, 14% East Asian, 13% South Asian, 11% mixed, and 17% of various other ethnicities. The mixed category, for our purposes, included all responses that listed two or more ethnic categories or explicitly used the term ‘mixed’ in their response. Across the data, majors were also categorized into seven faculties: Social Sciences (34%), Science (32%), Engineering (19%), Health Science (5%), Business (5%), Humanities (5%), and Arts & Science (<1%).

Quantitative Results

The results of our questions with close-ended responses are detailed in this section. These questions include the questionnaire on explanatory styles, the well-being questions, and students’ self-reported GPA.

GPA

Out of 112 responses, we found that the majority (*n* = 69) of participants reported an A-range GPA (Figure 1). The second most common (*n* = 33) GPA was within the B-range. We received no responses reporting an F-range GPA, and the least common response (*n* = 1) was a D-range GPA.

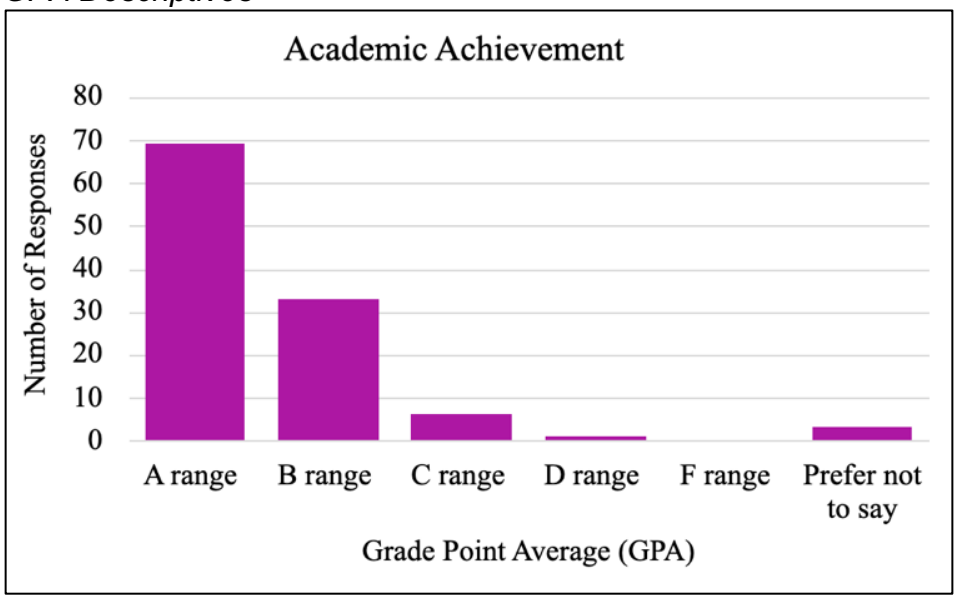
Explanatory Styles

The study assessed explanatory styles across three hypothetical situations by posing three specific questions (e.g., “Steven never tries to take another’s perspective. When he disagrees with someone, he is stubborn, angry, and insulting.”). The first question gauged

dispositionism, the second examined historicism, and the third evaluated controllability. We were not able to produce any significant findings concerning explanatory styles due

Figure 1

GPA Descriptives



to our scale styles lacking internal reliability. Consequently, our first research question, do explanatory styles predict attachment styles, resulted in a null hypothesis.

While some of our findings produced significant p-values ($p < .05$), the lack of internal reliability means these findings are not statistically significant. We first looked at whether the three dimensions of explanatory styles (dispositionism, historicism, and controllability) were associated with our two insecure attachment styles, avoidance and anxiety. As seen in Table 1, dispositionism was negatively associated with average avoidance. We also

Table 1

Means, standard deviations, and Pearson's correlations for Attachment Styles

	1	2	3	4	5
1. Dispositionism					
2. Historicism	-0.128				
3. Controllability	0.145	-0.066			
4. Average Anxiety	0.138	-0.017*	-0.027		
5. Average Avoidance	-0.046*	0.077	0.078	0.164	
Mean	4.08	3.65	3.98	5.52	2.99
SD	0.72	0.79	0.87	1.74	1.18

Note. *p < .05, **p < .01, ***p < .001

Table 2
Means, standard deviations, and Pearson's correlations for Well-being

	1	2	3	4
1. Dispositionism				
2. Historicism	-0.128			
3. Controllability	0.145	-0.066		
4. Well-being	-0.047*	0.073	-0.100	
Mean	4.08	3.65	3.98	3.71
SD	0.72	0.79	0.87	0.62

Note. *p < .05, **p < .01, ***p < .001

found a negative correlation between historicism and average anxiety. However, historicism was not associated with average avoidance based on p-value. In terms of controllability, it did not produce a significant p-value in association with attachment anxiety or attachment avoidance.

Next, we looked at the three dimensions of explanatory styles and mental well-being. While we knew the findings would ultimately be insignificant, we were still curious about whether an association could be determined by way of p-value. As shown in Table 2, historicism was positively associated with mental well-being with an insignificant p-value ($p > .05$), and dispositionism being negatively associated ($p < .05$) as well as controllability ($p > .05$). Lastly, we evaluated explanatory styles against GPA. As seen in Table 3, none

Table 3
Means, standard deviations, and Pearson's correlations for GPA

	1	2	3	4
1. Dispositionism				
2. Historicism	-.128			
3. Controllability	.145	-.066		
4. GPA	.038	-.030	.012	
Mean	4.08	3.65	3.98	1.56
SD	.72	.79	.87	.97

of the three dimensions of explanatory styles produced significant p-values for GPA.

Attachment Styles

Attachment styles were evaluated in question four, with avoidance assessed in items one through six, and anxiety assessed in item eight. We then averaged the scores to determine the severity of respondents' insecure attachment styles. Descriptive statistics and Pearson's correlations are reported in Table 4, and the results of the multiple regression analysis are reported in Table 5. As shown in Table 4, avoidant attachment garnered a mean score of 2.99 (out of 7) and a standard deviation of 1.18. The mean score for anxious attachment was 5.52 with a standard deviation of 1.74. Utilizing Cronbach's alpha, the reliability analysis suggested good internal consistency. Both avoidant attachment and anxious attachment were significant, and negatively associated with well-being (ravoidance= -.400, pavoidance < .001; ranxious= -.402, panxious< .001). Additionally, the correlation matrix revealed that GPA was negatively associated with well-being (*r= -0.195,* < .001*)*. Interestingly, avoidant attachment was positively associated with GPA (*r*= -.279, *p* < .01). However, anxious attachment was not significantly associated with GPA (*p* > .05).

As seen in Table 5, our R^2 value is 0.28, meaning 3% of the variance in mental well-being can be explained by the predictors as a whole. While this is a fairly low percentage, our R^2 value may be low because the amount of variables involved in human behaviour, an intrinsically complex subject, is enormous and beyond the scope of this project. As for our statistically significant findings, both anxious attachment was negatively associated with well-being (β = -.34, *p* < -.001), and avoidant attachment was negatively associated with well-being (β = -.32, *p* < -.001). Contrary to the correlation matrix, GPA was not significantly associated with well-being when a linear regression test was conducted.

We conducted linear regression analyses to compute the estimated marginal means. Figures 2 and 3 display our results. Figure 2 displays three parallel lines when examining average avoidance, GPA, and well-being. In this interaction, GPA and average avoidance are the independent variables, whereas well-being is the dependent variable. As these

Table 4

Means, standard deviations, and Pearson's correlations

	Well-being	GPA	Average Avoidance	Average Anxiety
Well-being	—			
GPA	-0.195*	—		
Average Avoidance	-0.400***	0.279**	—	
Average Anxiety	-0.402***	0.118	0.164	—
Mean	3.28	1.56	2.99	5.52
SD	0.62	0.97	1.18	1.74

Note. *p < .05, **p < .01, ***p < .001

Table 5

Standardized regression coefficients for the predictors of well-being

Predictors	Well-Being
Anxious Attachment	-0.339***
Avoidant Attachment	-0.324***
GPA	-0.064
R^2	0.28

Note. *p < .05, **p < .01, ***p < .001

lines do not intersect, we conclude that there is no interaction between GPA and average avoidance. Figure 3 also displays three parallel lines and examines average anxiety, GPA, and well-being. In this interaction, average anxiety and GPA are the independent variables, whereas well-being is still the measured variable. As the lines in Figure 3 do not intersect, we concluded that there is no interaction between GPA and average anxiety.

Qualitative Results

To get an in-depth analysis of McMaster students' university experiences, we asked three main open-ended questions that are outlined below.

Figure 2

Well-being x Avoidance; by GPA

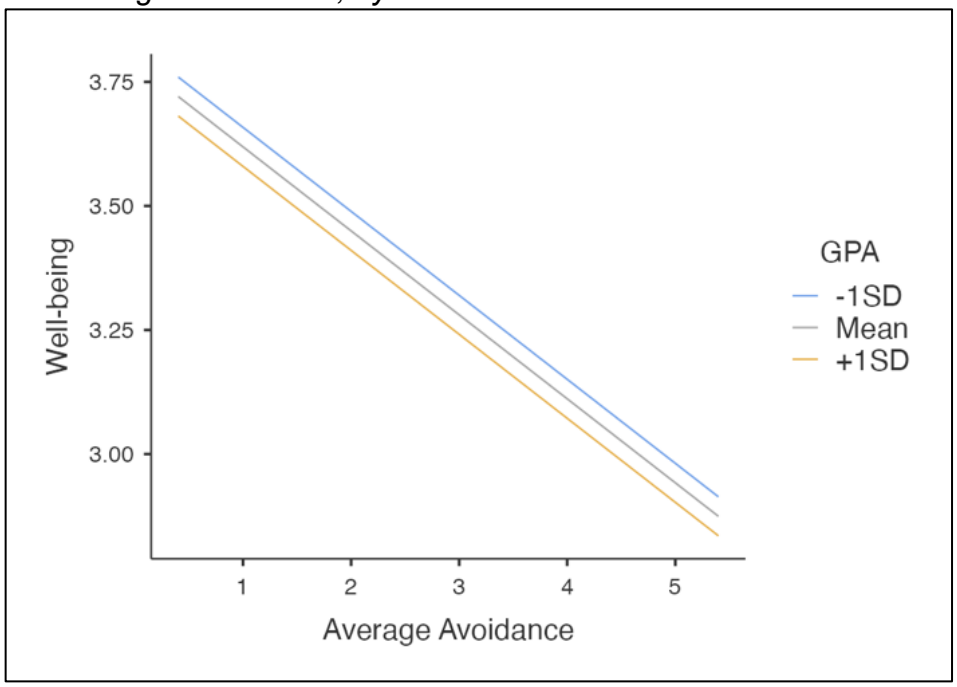
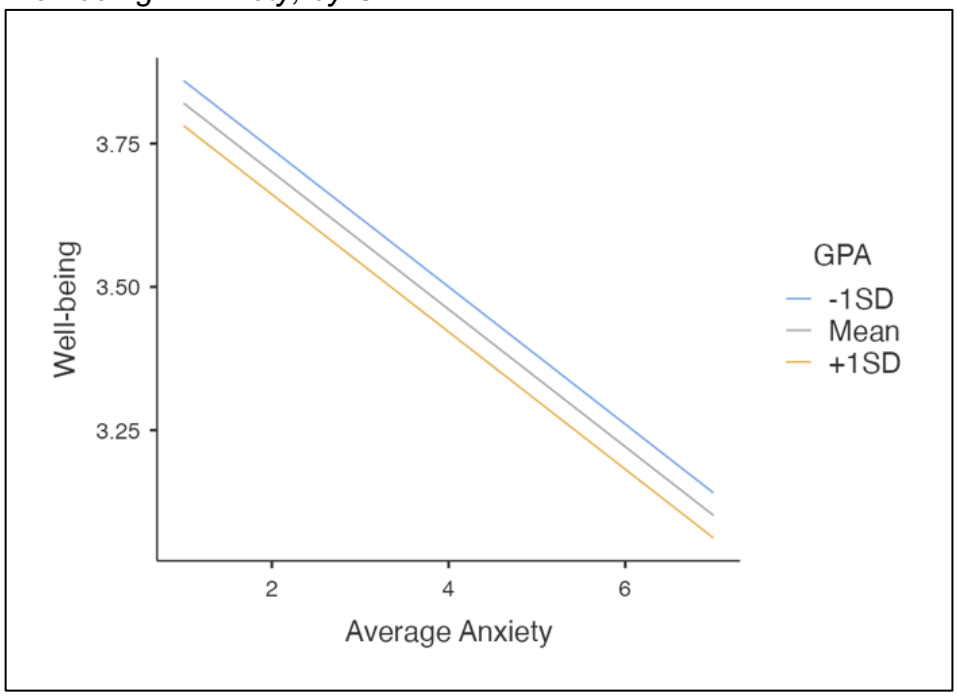


Figure 3
Well-being x Anxiety; by GPA



Qualitative Question 1: Please briefly describe your ideal study environment(s) or techniques (e.g., Flashcards, Group/Individual Study, etc.).

The results of the qualitative survey question on ideal study environments and techniques provided valuable insights into the preferences and strategies of the respondents, particularly in light of their attachment styles. Coding this particular question was difficult due to its ambiguous wording, causing participants to answer in diverse ways. Therefore, participants' responses overlapped within the different categories and subcategories utilized for thematic analysis. Common study techniques included active recall methods such as flashcards and the blurt method, as well as techniques such as doing practice questions, rewriting notes, and reviewing concepts. Interestingly, there were multiple mentions of participants switching study techniques depending on what courses they were preparing for. The most commonly reported study technique was individual study (*n*=46). The prevalence of individual study preferences among respondents, coupled with the predominance of avoidantly attached individuals within the sample, may suggest a potential correlation between attachment orientation and study habits. Individuals with avoidant attachment tendencies may prefer solitary study environments and techniques that emphasize independent learning. We theorize that these findings shed light on the intersection between attachment theory and educational practices, highlighting the need for resources to accommodate diverse learning styles and attachment orientations among students.

Qualitative Question 2: Please provide a brief description of the perceived difficulty of your program.

The results of our second qualitative question regarding the perceived difficulty of the program, in conjunction with the demographic information provided, offer intriguing insights into the experiences and academic performance of the respondents. Notably, a significant portion of the sample (n = 55) reported finding their program perceived as difficult, suggesting the presence of substantial academic challenges and rigor. This finding is particularly noteworthy given that the majority of respondents were A-range students, indicating that even high-achieving individuals may encounter academic difficulties or perceive their program as demanding. Moreover, being avoidantly attached was positively associated with higher GPAs within the sample adding an additional layer of complexity to these findings. It suggests that individuals with avoidant attachment tendencies, who may be more inclined to prioritize academic pursuits and independent study habits, may also excel academically due to perceiving their program as challenging. We theorize that this may be because the perceived difficulty of one's program may evoke avoidant tendencies, such as focusing time and labour on academic pursuits instead of relationships. Overall, these results underscore the multifaceted nature of academic experiences and the interplay between attachment styles, perceived difficulty, and academic performance, warranting further exploration to better understand and support students in their educational endeavours.

Table 6

Qualitative Question 2, Survey Question 5

Theme	Response
1. **Difficult:** "My program is perceived to be very difficult for its large course load and difficult concepts"	2. n = 55 (50%)
3. **Not difficult:** "Everyone says that my program is either interesting or easy. There is an expectation that I probably will have low job prospects once I graduate and that my industry is not valued as much as others are."	4. n = 22 (20%)
5. **Both (difficult and not difficult):** "I think some people think it is a difficult program, if they don't enjoy reading or writing lots. Other who are in very difficult programs like engineering might think it's not so difficult."	6. n = 22 (20%)
7. **Neutral:** "Perceived difficulty - basic/ medium?"	8. n = 24 (21%)

Qualitative Question 3: Please briefly describe the extent to which your academics impact your well-being, either positively or negatively.

The results of the qualitative survey question on the extent to which academics impact students' well-being revealed a significant distribution across various response categories. We found a significant positive association between academic performance and well-being. Interestingly, a sizable proportion of students (*n* = 51) indicated that their academics had both positive and negative effects on their well-being, suggesting a complicated and nuanced relationship between mental health and academic achievement. Furthermore, a considerable portion (*n* = 32) reported largely negative effects, whilst the least common response (*n* = 11) mentioned primarily positive effects. Curiously, some (*n* = 15) depicted not being impacted by their academics at all. These results showcase the complex relationship between academic experiences and well-being, which emphasizes the need for more research and the implementation of specialized support systems to meet the range of requirements of students and their learning environments.

Table 7

Qualitative Question 3, Survey Question 7

Theme	Responses
9. **Positive:** "My academics make me disciplined which is a great thing. It makes me sharper, knowledgeable although it gives me countless sleepless night. So, I would say it impacts me positively 9 on a scale of 10"	1. *n* = 11 (10%)
10. **Negative:** "Academics impact my well-being negatively because of the stress factor and constant studying"	2. *n* = 32 (29%)
11. **Both:** "A good grade positively affects my mental health, validates my feelings of worthiness and competence. A bad grade and/or increased workload increases feelings of self doubt and stress"	3. *n* = 51 (47%)
12. **No effect:** "I don't think my academics impact my well-being because I don't let it get to me…"	4. *n* = 15 (14%)

Discussion

Our quantitative data analysis yielded four main findings. The first finding was that there was no significant correlation between explanatory styles and any of our other

variables: attachment styles, well-being, or academic performance. We also found that both anxious and avoidant attachment styles were negatively correlated with well-being. Most surprisingly, avoidant attachment was positively associated with GPA. Similarly, it was found that GPA was negatively correlated with well-being. In contrast, our qualitative data revealed a positive association between academic performance and well-being. These findings are further explored in the context of current literature in the following sections.

Explanatory Styles and Attachment Styles

The theory used in this section was Seligman and Peterson's attributional explanatory styles, which explain the different dimensions to which individuals may attribute situations or outcomes. We hypothesized positive correlations when associating explanatory styles with attachment styles, academic performance, and mental well-being. In terms of explanatory and attachment styles, we found no significant correlations between the two variables. Explanatory styles also presented a null hypothesis when examining their relation to mental well-being and academic performance. This means that regardless of the attributions an individual may possess, their perceptions pose no effect on their academic success or their psychosocial relationships with others. Some potential explanations for these results may include the lack of representations for securely attached individuals, as our study focused on anxious and avoidant attachment. Moreover, the SESQ's reliability analysis presented lower internal reliability, making it impossible to produce significant findings.

Our findings are not situated within the existing literature, as previous studies possess a large knowledge gap. However, some studies have found a positive correlation when relating an individual's explanatory styles to attachment styles and academic performance. For instance, Schulman et al. (2014) presented a positive correlation between students' explanatory styles and their GPA. A study conducted by Greenberger & McLaughlin (1998) also found that securely attached individuals also exhibit a positive explanatory style. However, there is a lack of recent literature regarding the associations between attachment and explanatory styles, meaning that further research is needed. Moreover, existing literature is immensely limited when examining the effect of explanatory styles on mental health; previous studies have only covered effects on self-esteem (Macsinga & Nemeti, 2012). The lack of current literature supports the notion that extended research is needed to further explore the relationships between explanatory styles, attachment styles, and mental well-being.

Attachment Styles, Grade Point Average, & Mental Well-Being

A statistically significant negative correlation between GPA and well-being was established. Interestingly, our qualitative findings contradicted this quantitative finding. When analyzing our open-ended questions, a positive relationship between GPA and well-being was discovered. Respondents mentioned that performing well academically improved their mood, whereas performing poorly decreased their emotional well-being. There are several possible explanations for these contradictory findings. Most notably, our sample is fairly small and heavily skewed; our respondents overwhelmingly possessed high GPA scores, preferred independent modes of study, and were in their

fourth year of study. It is entirely plausible that respondents scored high in GPA but low in well-being due to confounding factors outside the bandwidth of this study, such as socioeconomic status, gender identity, and ethnicity. Moreover, participants may be prioritizing their academic performance over other aspects of their university experience, such as relationships and mental health, leading to good GPA performance and poor mental well-being.

Furthermore, we hypothesized that insecure attachment styles would negatively influence mental well-being. Our findings supported this hypothesis, as we found a statistically significant negative correlation between anxious attachment styles and well-being, as well as a statistically significant negative correlation between avoidant attachment and well-being. These findings are corroborated by existing literature, as the negative influence of insecure attachment styles on well-being is well documented. Nonetheless, further research utilizing different research methods and larger, more representative sample sizes is needed when examining attachment styles, GPA, and well-being. Notably, past literature has revealed a knowledge gap, with inconsistent findings on specific attachment styles. Consequently, further research focusing on specific attachment styles is of particular importance, as well as the interrelation of GPA and well-being.

Attachment Styles and Academic Performance

We found a statistically significant positive correlation between GPA and avoidant attachment. This finding did not align with our hypothesis, as we predicted that insecurely attached individuals would demonstrate poor academic performance. Our qualitative findings, particularly questions 2 and 3, helped contextualize this relationship between avoidant attachment and academic performance. When asked about ideal study techniques and environments, most respondents disclosed a preference for individual study and quiet environments. This aligns with the tendencies of avoidantly attached individuals, as they tend to isolate and maintain shallow relationships. With this understanding, it is conceivable that avoidant attachment and GPA are positively correlated because avoidant individuals have a penchant for an individualized, narrow focus on their academics.

While our finding on GPA and avoidant attachment contradicted our hypothesis, it is not entirely unsupported in existing literature. Notably, Kurland & Siegel's (2013) study revealed that avoidantly attached high school students obtained higher GPAs and enrolled in more college credits, exhibiting academically driven behaviour. As it stands, current literature has an inconclusive consensus on the relationship between GPA and avoidant attachment. This is in opposition to findings on insecure attachment styles in general, which have consistently yielded a negative relationship with GPA. Hence, further research is needed to establish a generalizable and statistically powerful understanding of specific attachment styles and their influence on academic performance.

Broader Significance of Research

The main purpose of our research was to establish a deeper understanding of how insecure attachment styles influence mental well-being and academic performance. Subsequently, our findings contribute to a small but growing amount of literature that explores the potential benefits of attachment-informed support services at universities.

As such, further research on the effects of attachment style on student well-being is crucial in understanding the efficacy of attachment-informed services and how to implement them.

Conclusion

Summary of Findings

Our data analysis aimed to answer four research questions. Firstly, we aimed to examine if explanatory styles predicted attachment style, which presented a null hypothesis. Second, we evaluated the relationship between insecure attachment styles and mental well-being, which produced our most significant finding; we found that both avoidant and anxious attachment were associated with decreased well-being. Lastly, we analyzed the relationship between attachment styles and academic performance. Surprisingly, we found that avoidant attachment was associated with a higher GPA. While our quantitative analysis produced a negative relationship between well-being and GPA, our qualitative data revealed a positive correlation between academics and well-being, as well as a majority preference for individualized study. Interestingly, the majority (n = 84) of our sample displayed an anxious attachment style and almost half (n = 50) exhibited avoidant attachment.

Limitations

Although our research provided valuable insights into how undergraduates' attachment styles affect their academic endeavours and mental health, there were several limitations throughout our research study that must be acknowledged for both present and future investigations surrounding this topic.

Research Design

Similar to studies in the literature review section, this research study also utilized a cross-sectional research design. Cross-sectional studies only capture a snapshot in time of data which makes it difficult to determine causal relationships and changes over time between variables Therefore, in our study, we can identify associations and correlations between variables, but we cannot with certainty determine the direction of those causalities. Furthermore, among the seven items in the scale on the survey, only one was dedicated to examining anxious attachment, while the remaining six focused on avoidant attachment style. A more equal and balanced distribution of questions pertaining to both insecure attachment styles could generate a more comprehensive and holistic understanding of their impacts on our participants. Our study was also limited by the imposed time constraint on data collection. The survey was open for just under 3 months and could have benefited from a greater data collection period to gather more participants. Future investigations should utilize a longitudinal research design and more thorough scales for attachment styles.

Sampling Bias

Convenience sampling is a non-sampling method of selecting research study participants that is easily accessible and convenient (Emerson, 2015). This study was limited to undergraduate students at McMaster University, and thus results may be

skewed towards this specific demographic cohort and the lived experiences of these young adults. Thus, replicability issues arise considering the use of convenience sampling in our study. We acknowledge that further research with larger and more diverse samples is required to understand the true effect of the associations between the variables and for the results to be more generalizable to the broader population.

Self-Report Bias

Self-report bias, also known as respondent bias, is a prevalent issue in research and surveys in which participants may knowingly or unknowingly provide false or deceptive information about themselves or their experiences (Lavy, 2016). This bias can occur for a multitude of reasons such as social desirability, memory limitations, cognitive biases, social context, or emotional state (Bonab & Kuhsar, 2011). To minimize the effect of self-report bias we utilized tools such as an anonymous take-home survey and careful wording. Anonymous surveys ensure confidentiality and comfort and avoid creating a heightened emotional state or threatening environment for the participant as opposed to surveys that are completed under the direct supervision of a research associate (Alessie & Martin, 2010). However, despite our proactive efforts to implement these varied precautions, it is still likely that respondents may have provided inaccurate or dishonest responses.

External Validity

External validity refers to the extent to which the research survey's findings can be generalized or applied to contexts, populations, and circumstances that extend beyond that of the current research study (Lynch, 1999). As our research is entirely aimed at the McMaster student population the results may not be useful nor generalizable beyond this specific demographic. Additionally, post-data analysis, it became evident that the majority of our sample was insecurely attached and in the A-range GPA bracket. Moreover, the majority of our sample consisted of fourth-year social science students, further impacting external validity.

Gender Demographic Data

Unforeseen technical difficulties led to the data loss of the gender identity question on our survey. The inclusion of a gender question in a research survey is beneficial as it allows researchers to gather essential demographic information that can provide insights into how various groups experience or respond to different phenomena (Smith & Koehoorn, 2016). Gender is a fundamental aspect of identity that can influence behaviours, attitudes, and perspectives in significant ways (Heidari et al., 2017). The loss of this data limited the comprehensiveness and generalizability of our findings.

Attention Check Question

Attention check questions are strategically placed in surveys to ensure that participants are paying attention to the contents of the survey (Franki et al., 2017). Our attention check did not specify which response participants should choose to indicate they are paying attention, resulting in participants choosing varied responses on the Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Consequently, it was difficult to determine which respondents to exclude. Thus, survey question four, item seven, would have benefited from more clarity and precise instruction. Designating a specific number

on the Likert scale for participants to choose, would have provided participants with adequate clarity and increased the validity of our findings.

Significant Insights and Contributions

Our research provides a deeper understanding of the intricate dynamics between attachment styles, academic performance, and mental well-being. Notably, we anticipate our findings will aid future research in evaluating the potential efficacy of attachment-informed campus services. These findings and recommendations could have implications for McMaster facilities that provide student welfare, such as the Student Wellness Centre, Maccess, and Student Accessibility Services. Although previous findings on the efficacy of attachment-informed services are speculative, our research serves as a stepping stone for further research on the subject.

Concluding Statements

By examining the relationship between attachment styles, academic performance, and mental health among undergraduate students, we have built upon previous research to develop a better understanding of how these variables intersect in the specific context of university life. We hope future research expands on our findings, especially in the context of attachment-informed services for students. Despite the various limitations in this study, it still serves as a stepping stone for future research toward more accurate academic and mental health services for university students. Ultimately, it is imperative to create inclusive and effective university support services to foster the academic, social, and emotional success of students.

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