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Peer Relationship and Mental Health Damage from Academic-Stress and Depersonalization in High School

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ABSTRACT

An examination of how student stress impacts their mental health and peer relationships used an explanatory sequential mixed methods design with a quantitative survey of 136 students from an independent school student body and follow-up qualitative interviews of 8 students. A positive correlation between academic stress and depersonalization was identified in all 4 grades with both indicators increasing with grade level before plateauing in grade 12. The main stressors identified were to achieve high grades and accomplish schoolwork to satisfy their own and parental expectations. High academic stress is attributed to depersonalization symptoms when students cut social interactions during "crunch time" to focus on studying by entering a "trance state". However, some students instead became more social as a distraction or to study more efficiently in study groups. Overall, this study showed similarities in academic stress and depersonalization between university/professional and high school samples while analyzing the rationale behind reported scores.

Introduction

According to a recent worldwide survey conducted by the Organization for Economic Co-operation and Development (OECD), approximately 66% of students report feeling stressed about poor grades, and 60% worry about challenging tests (Pascoe et al., 2019; Bedewy et al., 2015; OECD, 2019). Stress is a major issue in high school students, specifically from academic sources that may pressure students to go to extreme lengths to alleviate it. Furthermore, student well-being has been on a consistent downward trend. The percentage of senior high school students in the USA who indicate “above average” emotional health has been at its lowest point in 2010 since it was surveyed in 1985 according to TheAmericanFreshman; the proportion of females who reported “above average” was 13.2% lower compared to men (Pryor et al., 2010). Increasing competition for university applications means greater and more consistent pressure is put on students to overachieve while poor grades lead to increasing anxiety (Pascoe et al., 2019). The Covid-19 pandemic has only exacerbated this trend when students’ school and personal life becomes more disoriented which distracts them from their studies (Barbayannis et al., 2022).

To relieve stress, students rely on coping strategies like depersonalization (Popa-Velea et al., 2017, Schweden et al., 2018), which describes the tendency to detach themselves from their feelings or emotions enabling them to take on more stress and make them less sensitive to their environments. Students often must choose between utilizing their time for greater academic success or social activities. To focus on the former, students may forgo social connections to cut off distractions which results in worsening peer relationships. This study aims to look at the relationship between depersonalization and high academic stress as a source of damage to social relationships and personal mental health.

Literature Review

Academic Stress

Stress is a concept that authors have defined in diverse ways to accommodate different scenarios. Stress can be a "physiological arousal to environmental threats or challenges" that are perceived as "overwhelming one's capabilities" (Mosanya, 2021; Wilks, 2008); alternatively, Malach-Pines and Keinan (2007) described it as "the insight of incompatibility between a person's ability to fulfill the burden from the environment" (Edjah et al., 2020). Whereas the first definition models stress as an active oppressor, the latter implies an always-present environmental demand to be fulfilled. Both types can be identified in the form of academic anxiety, mostly for students at the secondary and tertiary levels, and they include stressors such as high scores, upcoming tests, studying, and a lack of physical exercise (Bedewy et al., 2015; Simpson, 2018; Pohlmann et al, 2005).

A survey for test anxiety of 120 medical students in Dow Medical College found that 90.8% of respondents reported an extensive course load and 77.5% of respondents reported the long duration of exams to be the leading source of stress (Bedewy et al., 2015). Procrastination and unrealistic expectations were prominent compounding psychological factors that influenced students' days leading up to an exam (Paduraru, 2018). Most students who described these symptoms reported being unable to reduce anxiety and having poor knowledge of test-taking (Pascoe et al., 2019; Bedewy et al., 2015).

Furthermore, the pressure to perform has been shown to exacerbate the effects of stress. For example, Indian dentistry students who conformed to their parents' wishes described a greater feeling of stress from fearing parental disappointment if they fail than those who decided their education of their own accord (Bedewy et al., 2015). Since parents are powerful influences on goal setting, parent-student congruence is a strong factor on what becomes stressors and to what degree. An inclination to obey one's parents can create internal stress in students between what is externally portrayed as the ideal and what they themselves desire for their own future (Celik, 2019; Wilks, 2008). Long-lasting effects have been shown to have lasting negative self-esteem impacts due to both unsatisfactory results and deprecating self-perceptions (Paduraru, 2018; Mosanya, 2021).

An extreme version of academic stress is academic burnout, which refers to a state of emotional exhaustion, feelings of diminished personal accomplishment, and depersonalization (Lin & Huang, 2014; Velea et al., 2017; Pohlmann et al., 2005). From the perspective of psychology, student assignments can be analogous to jobs as their studies involve structured activities with high expectations such as attending class and submitting assignments. Approximately 20-35% of students in university and college and 40% of schoolchildren in the USA report test anxiety impairments (Schweden et al., 2018). Common descriptions include persistent and palpable fear and anxiety before, during, and/or after tests (Schweden et al., 2018). This often is due to an intense concern regarding the consequences of performing poorly which can lead to further impairment of their performance.

Academic-related stress is also shown to be associated with psychological disadvantages such as lower well-being and depression which in turn can lead to concentration difficulties, poor learning capabilities, worsening social relationships, and difficulty reading and writing which sometimes trap students in a spiral of failure (Pascoe et al., 2019; Bedewy et al., 2015; Wilks, 2008; Simpson, 2018). For example, a longitudinal study of American law students found that law students started displaying symptoms of obsessive-compulsive behavior, interpersonal sensitivity, and isolation in just the first few months of their study (Bergin & Pakenham, 2015).

Depersonalization

Depersonalization is a "freeze reaction" that manifests in situations of highly anticipated stress as an alternative to the body's fight-or-flight response to situations that are unavoidable (Schweden et al., 2018). Depersonalization results in

under activity in the autonomic nervous system yet with high levels of alertness which cause certain emotional processes to be inhibited (Schweden et al., 2018). People describe this as a sensation of "unreality or detachment" to one's experiences and emotions (Schweden et al., 2018). Psychoanalysts recognize two main reactions to stress events: limiting exposure through avoidance or simplifying the situation to become more manageable (Universität, 1999). As dissociation is viewed as a more active form of coping to minimize but not eliminate stress, it is related to the latter. From an evolutionary standpoint, Roth interpreted its use to increase chances of survival in danger as a heightened sense of arousal with dissociation of emotion (Sierra & Berrios, 1997; Universität, 1999). This utilizes opposing reactions that increase alertness while dampening chaotic emotional tendencies. This also reflected Freud's conception of dissociation, not as an isolated mechanism, but a part of repression. In contrast, Janet argues that dissociation can be used to reorganize disruptive life trauma or stress by detaching these experiences from their stream of consciousness (Universität, 1999). Overall, depersonalization is meant to dissociate emotions from one's actions to protect one's mental balance. This can lead to passive coping behaviors like self-blame, resignation, self-compassion, and social isolation (Schweden et al., 2018).

Dissociation is frequently associated with mental disorders including post-traumatic stress disorder, panic disorder, borderline personality disorder, and derealization disorder (Sierra & Berrios, 1997; Schweden et al., 2018). Most patients with depersonalization report a loss of emotions such as affection, pleasure, fear, or disgust as it relates to feelings of unreality.

Gap Analysis

Academic anxiety is a well-documented phenomenon prevalent in schools, mainly at a university or graduate level, but lacking high school data. It has been shown to be a strong predictor for symptoms of depersonalization. Students have been found to dissociate from schoolwork and test-induced stresses to manage their anxiety and fears. However, this can instead lead to worsening academic success since dissociation affects students so that they do not absorb learned material well (Pascoe et al., 2019). The unique social and academic environment of high school, as well as the developmental stage of high school students, make studying these phenomena at the secondary level vital. If managed early, the negative symptoms of academic stress can be mitigated with support.

Depersonalization has mainly been documented in cases of mental impairments or because of career or school burnout. As such, most work has focused on explaining sources of depersonalization and understanding its effects on the behaviors of those affected. However, the effects of depersonalization can also extend to daily emotions unrelated to the source of stress such as social relationships. Although the isolating effects of depersonalization as a symptom of mental disorders are known, there has not been in-depth research on its relationship to student social life. The development of children's maturity and habits is critical when in their educational environment. This makes it important to properly understand the effects of depersonalization and academic stress, not only for the student's academic success but also for the potential damage to their social life to avoid negative feedback loops. This study aims to address this gap by analyzing how depersonalization induced by academic stress can function as a predictor of peer-to-peer relationship harm and mental deterioration in high school students.

Methodology

Overview of Design

This research was an explanatory sequential mixed methods design that began with a quantitative survey followed by subsequent recruitment of participants for cohorted qualitative interviews. Dr. John W. Creswell, a senior researcher in the Michigan Mixed Methods program at the University of Michigan, and his son Dr. J. David Creswell, an associate professor of psychology at Carnegie Mellon University, justified this approach in their text *Research Design* (Creswell

& Creswell, 2018). Mixed methods have multiple characteristics that provide in-depth analysis and conclusion, especially for topics without much preexisting research (Creswell & Creswell, 2018). Dr. Nataliya Ivankova, the associate editor of the Journal of Mixed Methods Research and Qualitative Research, described its ability to analyze trends from quantitative methods and inspect case studies in qualitative methods while minimizing the limitations of both (Ivankova, 2008). This provides a complex and comprehensive approach to under-researched philosophies or theories related to human participants. In the explanatory sequential version, a quantitative survey was first conducted to plan a follow-up qualitative phase and choose the participants (Ivankova, 2008). The quantitative phase provided demographic information and baseline results from a large sample usually representing a larger population. According to Dr. Michael D. Fetters, the co-director of the University of Michigan's Mixed Methods Program, the following qualitative phase is meant to build upon initial results by inquiring more nuanced questions and contextualizing responses (Fetters, 2013). This method provided different perspectives for a more complete understanding of the cases or theories being researched that would otherwise be missed from quantitative methods.

Rationale for Design

The cohorted explanatory sequential mixed method design provided more data points to determine trends and effects while reducing invalid data by following the same participants throughout the full study (Fetters, 2013). Exclusively quantitative methods would mean nuanced details and processes would be missed as a numerical survey can be limiting (Creswell & Creswell, 2018). This study also required a more generalized assessment of academic stress and depersonalization before it explained its relationship to social harm to identify a range of responses and adjusted interview questions based on any unexpected responses (Creswell & Creswell, 2018). Since the topic of depersonalization and its effect on high school student social relationships is under-studied, mixed methods provide extensive research on a broader scale.

Data Collection

This study collected data exclusively from the student population in 9th to 12th grade of an independent school in the Greater Toronto Area (GTA), Ontario. This controlled population has been selected to match the range of ages being studied (14-18). This sequential study will consist of a qualitative cross-sectional survey to collect data on the general level of academic stress across the school and serve as recruitment for a follow-up qualitative interview phase.

The quantitative phase featured an initial 18 question Likert-scaled survey sent to the student body to gather a baseline assessment of academic stress and the level of depersonalization experienced due to stress. As a preface to the survey, an informed consent form was also included. A non-proportional stratified random sampling was used to determine a relationship between the four grades in the school (9, 10, 11, 12) and determine suitable interview participants (Creswell & Creswell, 2018). The survey assessed two categories: academic stress, and depersonalization symptoms, and to determine potential correlations. In addition to custom questions, both the Maslach's Burnout Inventory and TAS-20 were consulted for a more holistic survey incorporated with academic stress and depersonalization aspects. Maslach's Burnout Inventory is widely used as the leading questionnaire for assessing burnout and is validated within multiple studies to show good reliability (Popa-Velea et al., 2017; Lin & Huang, 2014; Taylor et al., 2000). Furthermore, the survey is easy for participants to complete and understand, which results in good construct validity, and criterion-related validity. The survey also included aspects of the TAS-20 as it is the latest and most reliable method currently of measuring alexithymia (difficulty recognizing and communicating feelings) as a signifier of depersonalization as well as assessing it as a source of relationship harm. The replicability of the TAS-20 has been demonstrated with both clinical and non-clinical populations for results consistent with the theoretical construct of alexithymia (Popa-Velea et al., 2017; Lin & Huang, 2014; Taylor et al., 2000).

The subsequent second phase consisted of interviewing an equal number of students from each grade which was recorded for post-interview analysis. Interviewees were picked from those who took the survey and expressed

willingness to participate in follow-up interviews. The main goal of these interviews is an explanatory follow-up to trends of academic stress and depersonalization, and its correlation, as well as perceived reasons for damage to social relationships or mental health. These 30-minute interviews were to be repeated twice. The interview had a semi-structured format to accommodate the different personal situations of each participant. The date of a subsequent interview was to be determined during the previous interview as a predicted time of low or high academic stress by the participant. Ideally, one interview is conducted during a period of low stress while one is conducted during a period of high stress although deviations are acceptable to accommodate for the participant.

Ethics

The major ethical concerns were the age of participants and the sensitive data pertaining to student relationships. Since the group of interest was students from grades 9-12, they were under 18 years old and were thus a protected group. This protection was enforced by making participation voluntary and allowing those who participated to opt out of the study at any time. Furthermore, the extent of information they would disclose was made clear both in a consent form in the initial survey and before the interviews. How the information will be used and the aim of the survey was briefly outlined in the survey but emphasized more thoroughly before the first interview. Personal information remained confidential to all but the researcher and the advisor and will remain anonymous in the analysis of the data. Raw data such as interview records and survey data will be deleted a year after the completion of the study in July 2024 to ensure the validity of findings. This research was approved by my school's internal ethics review board.

Findings

This study collected 136 student responses in total from a student body of 660. The student response breakdown for the source of collected responses is 52 from grade 9, 26 from grade 10, 27 from grade 11, and 31 from grade 12 as graphed in figure 1.

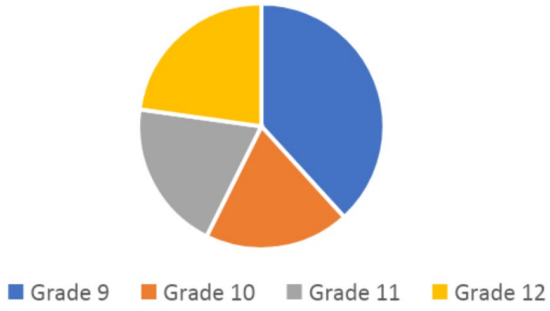

Figure 1. Categorization of student survey submissions based on grade level. Grade 9 students encompass the most responses while the other grades have similar response quantities.

Quantitative Phase One

The distribution of responses to each question from all respondents is plotted in figures 2, 3, 4, 5. Questions from figures 2 and 3 aim to assess academic stress. Questions from Figures 4 and 5 aim to assess depersonalization. Seven-point Likert type scales were utilized to determine the frequency of occurrences when each statement applies to respondents in figures 2 and 4 and the degree of applicability of each statement to respondents in figures 3 and 5. Higher scores are more blue which indicates greater academic stress/depersonalization for the individual while lower scores are red which indicates lower academic stress/depersonalization.

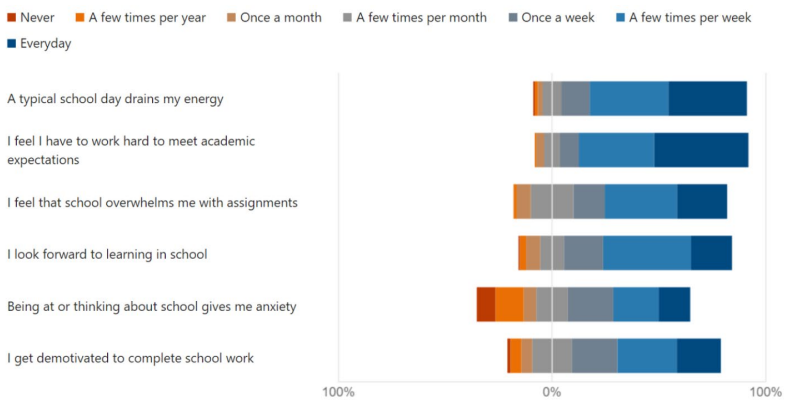

Figure 2. Frequency of academic stress statements applying to the respondent.

Most answers indicate high academic stress in the majority of respondents while the statement "Being at or thinking about school gives me anxiety" is lower in comparison. Note the high frequency of high levels of reported academic expectations in statement 2.

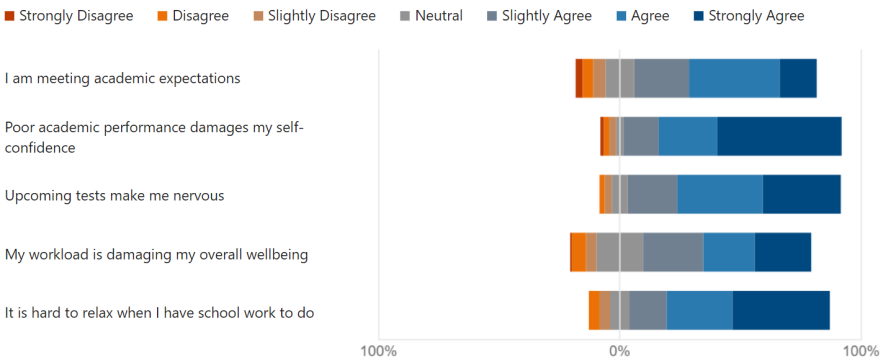

Figure 3. Degree of applicability of academic stress statements to the respondent.

Similarly, findings in Figure 3 show high academic stress in the majority of respondents. Note that relatively less respondents indicate they are meeting academic expectations compared to the high expectations reported in statement 2 of the previous figure.

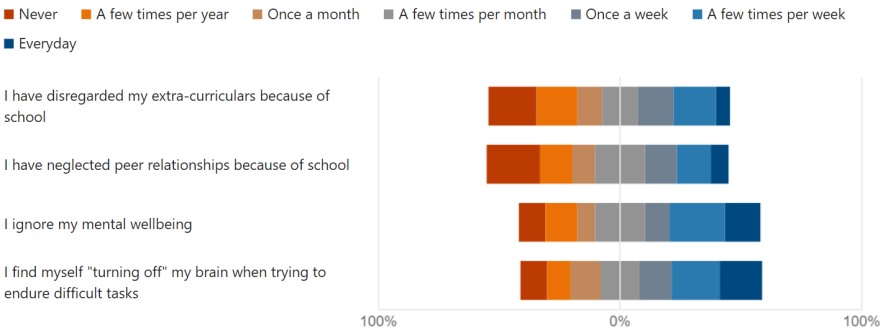

Figure 4. Frequency of depersonalization statements applying to the respondent.

This figure shows a medium frequency of depersonalizing symptoms overall. Note that respondents more often have depersonalizing symptoms in questions relating to the self (questions 3, 4) in comparison to questions about social responsibility (questions 1, 2).

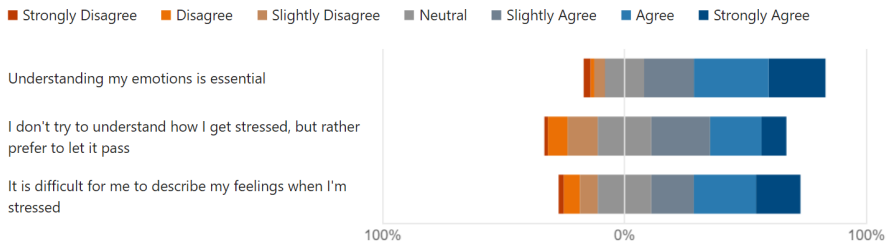

Figure 5. Degree of applicability of depersonalization statements to respondent.

In this figure, respondents indicate that reflecting on their own emotional status is important but have a hard time actually doing it.

Each respondent is evaluated with Overall scores for Academic Stress (OAS), Depersonalization (OD), and Total (OT). The OAS was obtained by calculating the sum of response scores from statements in figures 2 and 3. The OD was obtained by calculating the sum of response scores from statements in figures 4 and 5. The OT was obtained by adding the OAS and OD of each respondent. OAS and OD were plotted on the X-axis and Y-axis respectively to determine its correlation and the steepness of its regression line. A residual plot underneath the regression plot is included to determine the validity of a linear regression. The correlation coefficient *"r"* reveals the strength of the correlation between the two variables being analyzed (OAS, OD). The strength of correlation for an *r*-value is labeled in ranges: 0-0.19 is very weak, 0.2-0.39 is weak, 0.40-0.59 is moderate, 0.6-0.79 is strong, and 0.8-1 is very strong. The values of *r* have been rounded to the nearest thousandth value to this categorization.

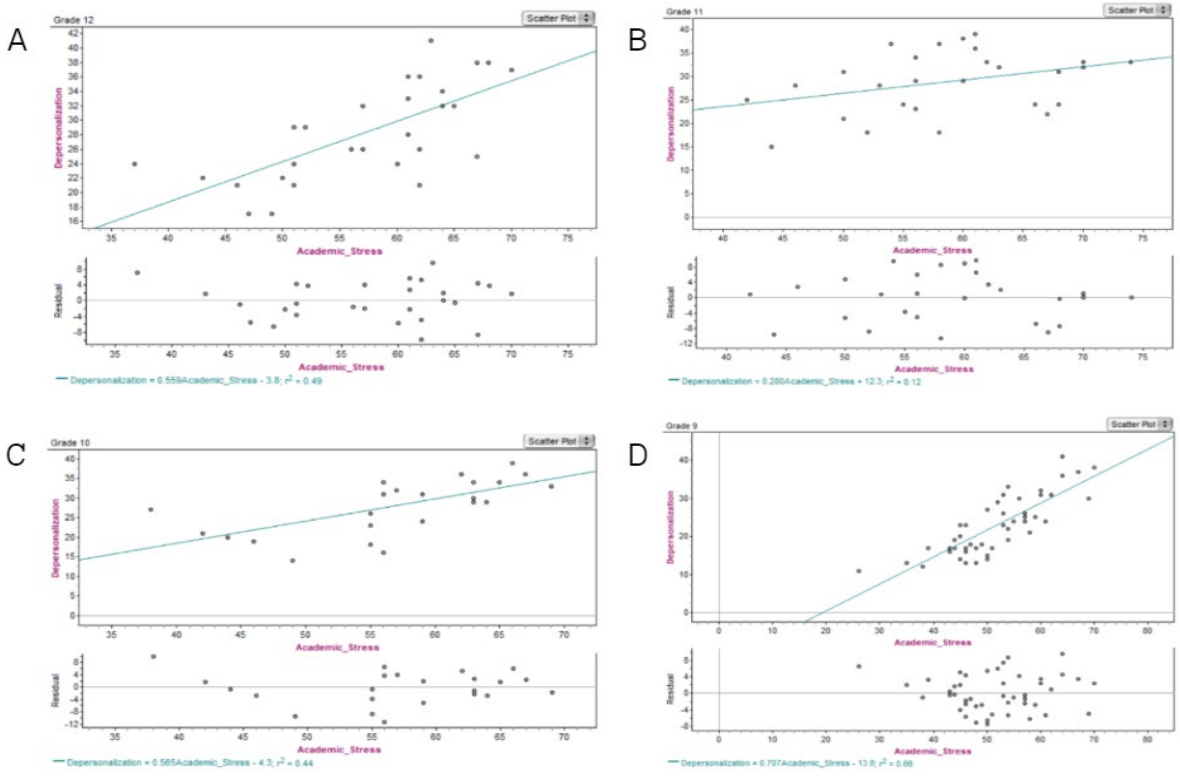

Figure 6. Figure 6a: Linear regression plot of OAS against OD scores for grade 12 students, 6b: Linear regression plot of OAS against OD scores for grade 11 students, 6c: Linear regression plot of OAS against OD scores for grade 10 students, 6d: Linear regression plot of OAS against OD scores for grade 9 student.

Table 1. Primary data collected from regression plots from grades 9-12.

Grade Level	r	Strength	r^2	Slope
Grade 9	0.81	Very Strong	0.66	0.707
Grade 10	0.66	Strong	0.44	0.565
Grade 11	0.35	Weak	0.12	0.280
Grade 12	0.7	Strong	0.49	0.559
All Grades	0.71	Strong	0.51	0.605

The slope for the set of grade 9 student data was highest at 0.707, while grades 10 and 12 slopes were flatter at 0.565 and 0.559 respectively. A positive correlation between OAS and OD scores is noted for students from all grades. Grade 9 data had a very strong correlation between OAS and OD while grades 10 and 12 had a strong correlation. Grade 11 data presented as an outlier with a flatter slope of 0.280 and a weak correlation. The residual plots were sufficiently random to validate all linear regressions.

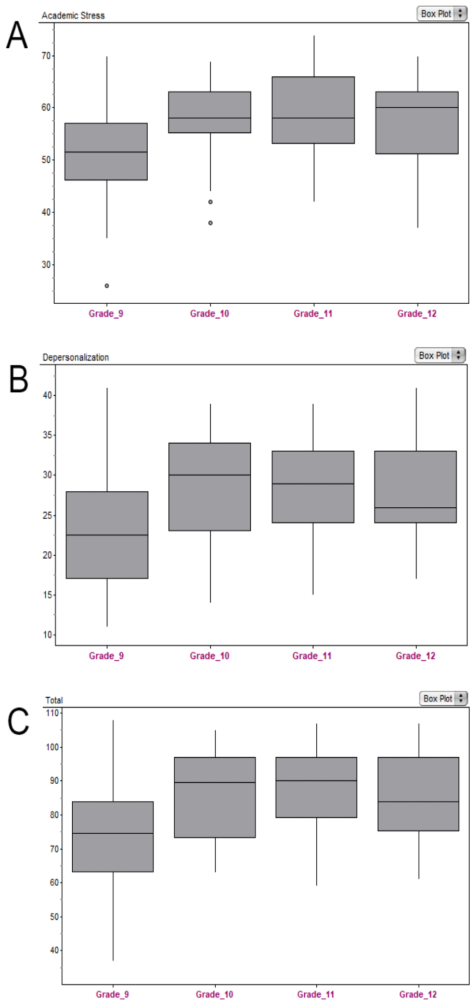

Figure 7. 7a: Comparative boxplots between grades 9-12 for Academic Stress Scores (OAS), 7b: Comparative boxplots between grades 9-12 for Depersonalization Scores (OD), 7c: Comparative boxplots between grades 9-12 for Overall Total Scores (OT)

OAS, OD, and OT scores generally increase with grade level but plateau or slightly decrease for grade 12 students.

Qualitative Phase Two

Two students from each grade were selected for an interview and gave informed consent through the initial survey. The interview questions responses can be split into 3 main topics: Main stressors in academics, impacts of academic stress on social relationships, and impact on self during academic stress.

Academic Stressors

Respondents unanimously reported academic stress was achieving academic success in the form of "high grades". Their definitions differed since six out of the eight respondents reported a quantifiable number goal while the two grade 12 respondents did not want to "limit" themselves and qualitatively assessed their work based on the effort they put in. Academic success was sought after to "make them proud of themselves." Six of eight respondents also reported some form of parental pressure; these include pressure to "impress" parents, internalized parental expectations, and justifying the money their parents spent on private school tuition. Similarly, respondents report pressure from a mutual comparison of academic success and marks with peers to "fuel their teenage ego" and "fit in". A "studious image" was important to their self-perception and school position. The long-term goal of acceptance into their university of choice was a stressor reported by grade 9, 10, and 11 students. Respondents report a high workload as an additional source of daily stress; students cite reasons such as a difficult transition period to the next grade, having many assignments due at once, and procrastination leading to work buildup.

Impact on Social Life

Respondents all reported living an active social life which included extroversion, a predisposition to make friends and close relationships with friends. The common reason for socializing was because it's "fun" and a "distraction from school". During periods of academic stress, there were reports of both increased and decreased levels of socialization.

Socializing is often attributed as a "de-stressor" during times of high academic stress to cope with a high workload. Respondents often shared their personal problems with friends in a "complaining circle" because it provided "relief" knowing others "acknowledged your stress" and they can "feel a connection". Besides acting as emotional aid, social interactions were reported to have practical uses as well; common strategies for mutual academic aid were completing homework or studying together.

Alternatively, some respondents socialized less often during times of academic stress to "bunker down". This was because they had to "value their future over current, short-term relationships" which often led to strained friendships when friends think the respondent is ignoring them. The respondent then has to repeatedly mend friendships after each wave of academic stress. It was reportedly "emotionally draining" going through this cycle. Some respondents also felt forced to socialize less since it did not improve their mental health but rather "only finishing my work will get rid of stress". Alternatively, some students did not report a decrease in socialization but did have varying degrees of the quality of social interactions, while some students were able to separate stressful and social mindsets.

Impact on Self

During times of high academic stress, school assignments made up a majority of students' schedules and most respondents reported a "crunch time" work habit. Students reported sitting at their desks for extended hours staying in a state of "hyper-focus". However, staying in this state of increased production drains the students' stamina and mental health quickly as "taking in so much information is a lot". As a result of the "crunch time", students often report losing sleep either to gain additional time to complete work or involuntarily from stress. Due to both mental and physical burdens, respondents report feeling "burned out" and "drained".

When students are initially presented with large quantities of new assignments, they report feeling their "mind is cluttered", "all over the place", and "clouded". However, they often can process their workload by making "mental to-do lists" which lets them focus on tasks with more precedence.

Working efficiently during this "crunch time" is associated with a "trance state" when the student feels like a "robot" completing "repetitive tasks". Students don't feel connected to their work since being "emotionally invested" in or "passionate" about their work impedes their productivity. Instead, projects become "just tasks to finish" based on a rubric and satisfying teachers' expectations.

Limitations

During the qualitative interview process, there was a limit of only 1 interview per respondent. This was due to many respondents being unable to commit more time to the study during a time of stress. Furthermore, due to logistical differences within the school system, the survey was sent out to separate grades at different times over the course of a month evenly so there were approximately one-week intervals due to different assembly schedules to share the survey. These intervals might impact the reliability of the comparison of academic stress and scores between grades.

Discussion

Regression and Boxplot Graphs

Overall, analysis of the linear regression models for the relationship between academic stress and depersonalization between all grades have a positive slope and strong correlation. This means that, with an increase in academic stress in students, there is a predicted rise in depersonalization scores as well. This finding strengthens previous claims by Popa-Velea et al. and Schweden et al. that depersonalization symptoms have a strong correlation with stressful situations (Popa-Velea et al., 2017; Schweden et al., 2018). Specifically, the slope of the regression line is highest for students in grade 9 before subsequently dropping in grades 10&11 and finally rising for grade 12. This high initial slope can be explained by initial stresses compounding in students who first transitioned from middle school to high school and were exposed to a new environment with an increase in academic difficulty. Because fewer students were admitted by transferring during grades 11 and 12 years, this phenomenon was not prevalent in higher grade levels. Previous study habits that would be sufficient for succeeding in middle school become inadequate for fulfilling both the student's and their parents' expectations. It was reported that an unfamiliar social environment led to feelings of "exclusion" and increased competitiveness in some respondents. These feelings were reported to be the cause of "some people breaking down in class", which may account for initially high depersonalization.

Overall, depersonalization and academic stress start low for students in grade 9 but increase until grade 11 before plateauing during grade 12. Students in grades 10 and 11 often attribute this to the increase in coursework difficulty and quantity. Student recounts corroborate Paduraru's claims that procrastination and unrealistic teacher and parental expectations compounded student stress before due dates or tests; procrastination or unexpected high course loads lead to an initial lag in work progress which then affects the punctuality of submitting further assignments, creating a "cycle of lateness" (Paduraru, 2018).

Grade 11 students have a large variance in the regression analysis which shows a greater divergence in student experiences. This finding can be explained by the degree of preparation each student invests in university applications the following year, which is in alignment with Pascoe et al.'s predictions that increasing university competition puts constant pressure on students (Pascoe et al., 2019). Not only do university applications prove to be emotionally stressful due to high stakes, but students also reported that working on university applications distracted them from their immediate academic studies leading to a build-up of assignments and feelings of being overwhelmed.

Impacts on Self and Relationships

Most students report that their parents' expectations are a source of significant pressure for their academic success but for different reasonings. Most applicants reported congruence when setting academic grade goals with their parents. This corroborates the research by Celik and Wilks in which goal setting was found to be a source of stress (Celik, 2019; Wilks, 2008). However, rather than due to discrepancies between parents' and self-expectations, these results show that the stress is due to students utilizing high parental expectations as effective motivation to study harder. The main pressure for other students is from personally set goals but is reported to be adapted from past parental expectations. This builds on Paduraru's and Mosanya's theory that self-expectation is shown to result in more drastic damage to the student's self-worth and self-esteem than external pressure when goals aren't achieved (Paduraru, 2018; Mosanya, 2021). These findings suggest the greater damage students incur to their self-worth when they fail to reach what they perceive, as personally set goals may actually be in part due to subconscious parental pressure that has persisted.

Most students reported some degree of detachment from emotions during a "crunch time" while others reported feeling grounded during these moments. When completing large amounts of "repetitive" work, the robotic trance state experienced closely resembles depersonalization symptoms that Schweden et al. described as a detachment from current activities (Schweden et al., 2018). This likely occurred due to the low brain processing power needed for these tasks which automatically resulted in lower cognition overall, much like an "auto-pilot" setting. In this case, prolonged stress in the form of tedious tasks compelled students to adapt to limit their exposure. Furthermore, some students also feel that time restraints did not allow them to "emotionally invest" in their work, which is reminiscent of Universität's active coping mechanism of minimizing the task so it is more manageable (Universität, 1999). However, some students reported that they instead felt focused and "in control" when working under stress. They were able to stay calm by employing strategies like instilling confidence in themselves by remembering enduring more difficult times or organizing their tasks with mental "to-do" lists.

Mixed responses were recorded on the impacts of academic stress on the students' social relationships. The students who chose to decrease their social interactions in favor of reaching academic success can be compared to the coping behaviors associated with depersonalization symptoms outlined by Universität like isolating and repressing chaotic emotions for increased alertness (Universität, 1999). However, for some students, these actions do not indicate a detachment from their consciousness but rather are a result of a logical conclusion of the best course of action since avoiding work will not cure stress. High stress forces students to resort to suppressing distractions and emotions which allows them to focus on their main academic goals. Alternatively, some students actually had normal or elevated levels of sociability. It was likely that students did not face high enough academic stress to trigger a noticeable response which allows them to easily separate their social and academic life. For students with elevated levels of sociability, academic-related stress became a source for socializing; students were adept at using social interactions as a tool to help release tension.

Conclusion

This study adds to previous literature by showcasing the positive correlation between academic stress and depersonalization in high school students and its relationship with psychological health and peer relationships. A survey sample of 136 students and 8 interviews was taken from an independent school in the GTA.

It was found that depersonalization and academic stress symptoms increased from grades 9 to 11 before plateauing or decreasing slightly in grade 12 with increasing course difficulty and university stress being the main reasons. Difficulty adapting to more coursework, mostly during the start of grade 9 but also at the beginning of subsequent years, lead to lagging assignments and further stress. Furthermore, another variable between the grades surveyed was noted to be competitiveness; although initially assumed to be negligible, certain accounts of competitive

culture showed it was much more intense in lower grades. This compounds academic stress and may lead to depersonalization symptoms as a coping mechanism. Recorded sources for academic stress focused on meeting the expectations of parents and themselves while also trying to maintain a positive student image.

Depersonalization symptoms were less congruent among respondents. Many corroborated symptoms like a detachment from emotions and consciousness when enduring long or repetitive tasks while others felt in control due to experience and employing strategies. Impacts on social life also have mixed responses as some students actively decided to ignore socializing in favor of academic success which displays partial depersonalization symptoms, while others maintained or escalated socializing as a de-stressor.

Further research can be done to investigate the sources of a competitive culture between students and its impacts on students' academic abilities and stress. Such a focus may reveal the relationship between pressure and peer perceptions in more detail as a major stressor for students. Furthermore, further differences in how students choose to modify their social life under academic stress can explain why some students are able to ask for aid and why some students endure it independently. Results from this focus may lead to more effective learning and mental health strategies to combat academic stress.

References

Barbayannis, G., Bandari, M., Zheng, X., Baquerizo, H., Pecor, K. W., & Ming, X. (2022). Academic Stress and Mental Well-Being in College Students: Correlations, Affected Groups, and COVID-19. *Frontiers in Psychology*, *13*. https://www.frontiersin.org/articles/10.3389/fpsyg.2022.886344

Bedewy, D., & Gabriel, A. (2015). Examining perceptions of academic stress and its sources among university students: The Perception of Academic Stress Scale. *Health Psychology Open*, *2*(2), 2055102915596714. https://doi.org/10.1177/2055102915596714

Bergin, A., & Pakenham, K. (2015). Law Student Stress: Relationships Between Academic Demands, Social Isolation, Career Pressure, Study/Life Imbalance and Adjustment Outcomes in Law Students. *Psychiatry, Psychology and Law*, *22*(3), 388–406. https://doi.org/10.1080/13218719.2014.960026

Çelik, E. (2019). Stress regarding academic expectations, career exploration, and school attachment: The mediating role of adolescent–parent career congruence. *Australian Journal of Career Development*, *28*(1), 51–60. https://doi.org/10.1177/1038416218792314

Chun Tie, Y., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE Open Medicine*, *7*, 205031211882292. https://doi.org/10.1177/2050312118822927

Edjah, K., Ankomah, F., Domey, E., & Laryea, J. E. (2020). Stress and Its Impact on Academic and Social Life of Undergraduate University Students in Ghana: A Structural Equation Modeling Approach. *Open Education Studies*, *2*(1), 37–44. https://doi.org/10.1515/edu-2020-0100

Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving Integration in Mixed Methods Designs—Principles and Practices. *Health Services Research*, *48*(6pt2), 2134–2156. https://doi.org/10.1111/1475-6773.12117

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice. *Field Methods*, *18*(1), 3–20. https://doi.org/10.1177/1525822X05282260

Lin, S.-H., & Huang, Y.-C. (2014). Life stress and academic burnout. *Active Learning in Higher Education*, *15*(1), 77–90. https://doi.org/10.1177/1469787413514651

Mosanya, M. (2021). Buffering Academic Stress during the COVID-19 Pandemic Related Social Isolation: Grit and Growth Mindset as Protective Factors against the Impact of Loneliness. *International Journal of Applied Positive Psychology*, *6*(2), 159–174. https://doi.org/10.1007/s41042-020-00043-7

Păduraru, M. E. (2019). Coping strategies for exam stress. *Mental Health: Global Challenges Journal*, *1*(1), 64–66. https://doi.org/10.32437/mhgcj.v1i1.26

Pascoe, M. C., Hetrick, S. E., & Parker, A. G. (2020). The impact of stress on students in secondary school and higher education. *International Journal of Adolescence and Youth*, *25*(1), 104–112. https://doi.org/10.1080/02673843.2019.1596823

Pohlmann, K., Jonas, I., Ruf, S., & Harzer, W. (2005). Stress, burnout and health in the clinical period of dental education. *European Journal of Dental Education*, *9*(2), 78–84. https://doi.org/10.1111/j.1600-0579.2004.00359.x

Popa-Velea, O., Diaconescu, L., Mihăilescu, A., Jidveian Popescu, M., & Macarie, G. (2017). Burnout and Its Relationships with Alexithymia, Stress, and Social Support among Romanian Medical Students: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, *14*(6), Article 6. https://doi.org/10.3390/ijerph14060560

Pryor, J. H., Hurtado, S., DeAngelo, L., Blake, L. P., & Tran, S. (2010). *The American Freshman: National Norms Fall 2010.*

Schweden, T. L. K., Wolfradt, U., Jahnke, S., & Hoyer, J. (2018). Depersonalization Under Academic Stress: Frequency, Predictors, and Consequences. *Psychopathology*, *51*(4), 252–261. https://doi.org/10.1159/000489468

Sierra, M., & Berrios, G. E. (1998). Depersonalization: Neurobiological perspectives. *Biological Psychiatry*, *44*(9), 898–908. https://doi.org/10.1016/S0006-3223(98)00015-8

Simpson, S. (n.d.). *Stress Triggers, the Effects Stress Has on Social, Mental and Physical Behavior in College Students, and the Coping Mechanisms Used*. 62.

Taylor, G. J., Bagby, R. M., & Luminet, O. (2000). ASSESSMENT OF ALEXITHYMIA: SELF-REPORT AND OBSERVER-RATED MEASURES. *The Handbook of Emotional Intelligence*, 23.

Wilks, S. E. (2008). Resilience amid Academic Stress: The Moderating Impact of Social Support among Social Work Students. *Advances in Social Work*, *9*(2), Article 2. https://doi.org/10.18060/51

Wolfradt, U., & Engelmann, S. (1999). Depersonalization, fantasies, and coping behavior in clinical context. *Journal of Clinical Psychology*, *55*(2), 225–232. https://doi.org/10.1002/(SICI)1097-4679(199902)55:2<225::AID-JCLP10>3.0.CO;2-E