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Longitudinal associations between self-esteem, depression, and student achievement

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Introduction

With mental health concerns increasing in youth, schools are challenged to better understand the impact that factors such as self-esteem and depressive symptoms have on student achievement. A large body of research has shown that low self-esteem predicts depression (Orth et al., 2015; Sharma & Agarwala, 2015; Sowislo & Orth, 2013) and other studies have linked depression to lower academic achievement (McArdle et al., 2014). However, few studies have examined these factors together in one longitudinal model. The aim of this study was to explore the associations between self-esteem, depression, and academic achievement over time. These associations were examined using a cascade model, which is an analytic approach that controls for all within-time association and across-time stability, while examining cross-lag effects (Masten & Cicchetti, 2010). The hypothesis for this study was that self-esteem would be positively associated with lower depression and better academic achievement over time. Because absenteeism is related to GPA and depression (Vaillancourt, Brittain, McDougall, & Duku, 2013), it was included in the model. Other potential confounders were controlled for, such as ethnicity, parental income, and level of education.

Methods

Participants:

- Participants were drawn from the *McMaster Teen Study*, which is a longitudinal study designed to examine the associations between peer victimization, mental health, and academic achievement
- 875 students from the Grade 5 classrooms from 51 schools agreed to take part in the longitudinal arm of the study, of which 80% (n = 703) participated in at least two time points between grades 5 to 8.
- Each year the study received ethical approval and parental consent and child assent were obtained. Parents also provided consent for access to their child's Ontario Student Records (e.g., report cards).

Measures

- Depressive Symptoms and self-esteem were measured by the Behavior System for Children Second Edition (BASC-2), child version (Time 1 & 2) and adolescent version (Time 3 & 4).
- For each student, schools provided data on the number of days absent each academic year.
- The school board provided archived results of the participating grade 5 students' results of the standardized Grade 3 EQAO tests in reading, writing, and mathematics.

Analysis

- Associations between self-esteem, depression, and student achievement were examined using a cascade model and path analysis in using Mplus (version 8). All within-time associations (e.g. depression and GPA, absenteeism and GPA, self-esteem and depression, and depression and absenteeism) and across-time stability paths (e.g. depression, absenteeism, self-esteem, and GPA from grade 5 to grade 8) were included, as were all cross-lag paths (e.g. GPA and absenteeism, depression and self-esteem, GPA and depression, and absenteeism and self-esteem). The control variables were subsequently added to the model.
- Model fit was examined using several indices, including the chi-square test of model fit, the Root Mean Square Error of Approximation (RMSEA), the Standardized Root Mean Square Residual (SRMR), the Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI).

Results

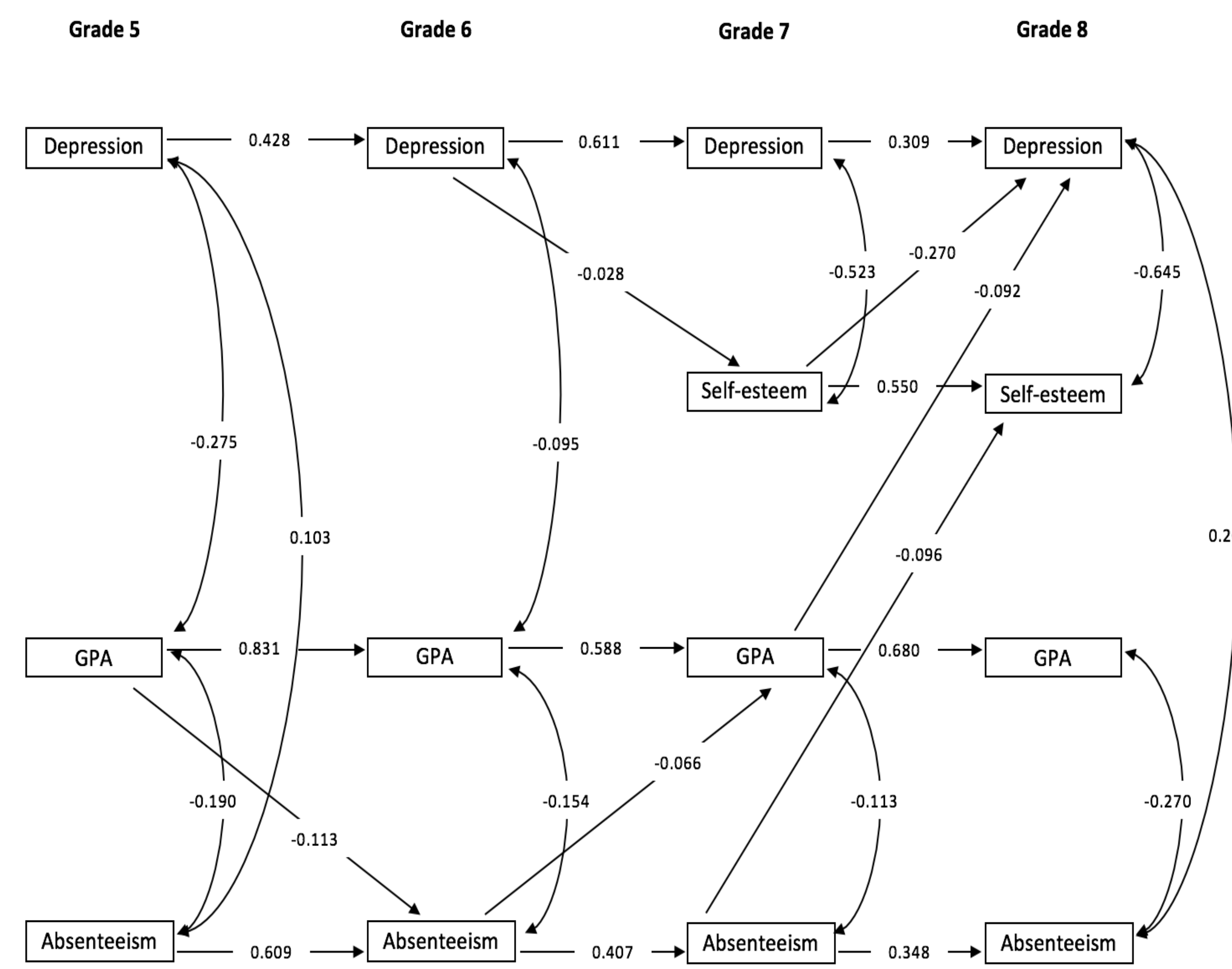


Figure 1. Cascade model of the longitudinal associations between depression, self-esteem, academic achievement, and absenteeism. Note: The values reported are the standardized coefficients and are all statistically significant with a p-value < 0.05. The pathways that were non-significant remained in the model but for the simplicity of interpretation, they are not presented in the figure.

The model fit the data well: $\chi^2 p = 0.0136$, RMSEA = 0.029, CFI = 0.994, TLI = 0.981, and SRMR = 0.032. As shown in Figure 1, the Key findings were:

1. Depression, self-esteem, absenteeism, and GPA were all stable across time.
2. There were within-time correlations between GPA and absenteeism, depression and self-esteem, depression and GPA, and depression and absenteeism.
3. There were cross-lag associations between GPA and absenteeism, depression, and self-esteem and absenteeism and self-esteem.
4. There were significant indirect effects between GPA in grade 5 and GPA in grade 7 via absenteeism in grade 6. In addition, there was a significant indirect effect between depression in grade 6 and depression in grade 8 via self-esteem in grade 7.
5. The control variables (ethnicity, parental income, and level of education) had little impact on the model (i.e., produced similar estimates and pathways) and were, therefore, removed from the final model for parsimony.

Conclusions

In this four-year longitudinal study, there were several key associations between self-esteem, depression, academic achievement, and absenteeism. In line with the hypothesis that positive self-esteem would be associated with better mental health and academic achievement, results indicated a consistently strong negative association between self-esteem and depression. Although the results show transactional relations between depression and self-esteem and GPA and absenteeism, the results did not support a direct relationship between self-esteem and student achievement. In contrast to the hypothesis, the findings suggest that absenteeism and not GPA is associated with subsequent poorer self-esteem; lower GPA was however associated with higher depression (from grade 7 to grade 8). Potential reasons for the unsupported hypothesis of this study may be explained by Balkis, Arslan and Duru (2016), who found that students were more likely to be absent from school when they had negative academic self-perception and attitudes toward school and lack motivation and purpose. Overall, the results highlight the importance of schools and parents creating the conditions whereby children develop confidence in their own worth and abilities. The results also point to the significant detrimental impact that low GPA has on school attendance and potentially leads to an ongoing cycle of poor academic success.

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Bibliography

- Balkis, M., Arslan, G., & Duru, E. (2016). The School Absenteeism among High School Students: Contributing Factors. *Educational Sciences: Theory & Practice*, 16(6), 1819-1831. doi:10.12738/estp.2016.6.0125
- Masten, A., & Cicchetti, D. (2010). Developmental cascades. *Development and Psychopathology*, 22(3), 491-495. doi:10.1017/S0954579410000222
- McArdle, J. J., Hamagami, F., Chang, J. Y., & Hishinuma, E. S. (2014). Longitudinal Dynamic Analyses of Depression and Academic Achievement in the Hawaiian High Schools Health Survey Using Contemporary Latent Variable Change Models. *Structural Equation Modeling: A Multidisciplinary Journal*, 21(4), 608-629. doi:10.1080/10705511.2014.919824
- Orth, U., Robins, R. W., Meier, L. L., & Conger, R. D. (2015). Refining the Vulnerability Model of Low Self-Esteem and Depression: Disentangling the Effects of Genuine Self-Esteem and Narcissism. *Journal of Personality and Social Psychology*, 110(1), 133-149. doi:10.1037/pspp0000038
- Sharma, S., & Agarwala, S. (2014). Self-Esteem and Collective Self-Esteem as Predictors of Depression. *Journal of Behavioural Sciences*, 24(1), 21-28.
- Sowislo, J. F., & Orth, U. (2013). Does Low Self-Esteem Predict Depression and Anxiety? A Meta-Analysis of Longitudinal Studies. *Psychological Bulletin*, 139(1), 213-240. doi:10.1037/a0028931
- Vaillancourt, T., Brittain, H., McDougall, P., & Duku, E. (2013). Longitudinal Links Between Childhood Peer Victimization, Internalizing and Externalizing Problems, and Academic Functioning: Developmental Cascades. *Journal of Abnormal Child Psychology*, 41(8), 1203-1215. doi:10.1007/s10802-013-9781-5