The role of bullying in depressive symptoms from adolescence to emerging adulthood: A growth mixture model

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Background: The present study sought to identify trajectories of depressive symptoms in adolescence and emerging adulthood using a school-based sample of adolescents assessed over a five-year period. The study also examined whether bully and cyberbully victimization and perpetration significantly predicted depressive symptom trajectories.

Method: Data from a sample of 1042 high school students were examined. The sample had a mean age of 15.09 years (SD = .79), was 56.0% female, and was racially diverse: 31.4% Hispanic, 29.4% White, and 27.9% African American. Data were examined using growth mixture modeling.

Results: Four depressive symptoms trajectories were identified, including those with a mild trajectory of depressive symptoms, an increasing trajectory of depressive symptoms, an elevated trajectory of depressive symptoms, and a decreasing trajectory of depressive symptoms. Results indicated that bully victimization and cyberbully victimization differentially predicted depressive symptoms trajectories across adolescence, though bully and cyberbully perpetration did not.

Limitations: Limitations include reliance on self-reports of bully perpetration and a limited consideration of external factors that may impact the course of depression.

Conclusions: These findings may inform school personnel in identifying students’ likely trajectory of depressive symptoms and determining where depression prevention and treatment services may be needed.

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1. Introduction

The World Health Organization estimates that Major Depressive Disorder (MDD) and Dysthymia are among the leading sources of mental health burden worldwide (Üstün et al., 2004). The lifetime prevalence rate of MDD and Dysthymia in adolescence has been estimated at 11.7% by age 18 years (Merikangas et al., 2010) and as many as 29.9% of high school students report feeling so sad or hopeless almost every day for two or more weeks in the past year that they stopped doing some usual activities (Centers for Disease Control and Prevention, 2014). These data demonstrate the substantial unmet mental health burden of depression symptoms and disorders in youths – and additional data demonstrate the high impact of adolescent depressive symptoms on academic, social, and physical functioning (e.g., Jaycox et al., 2009).

Adolescent-onset depressive symptoms are associated with a high rate of recurrence and may be indicative of a chronic course (Harrington and Dubicka, 2001; Dunn and Goodyer, 2006). Even so, depressive symptoms show considerable heterogeneity over time during adolescence and emerging adulthood, as evidenced in several recent studies (e.g., Brendgen et al., 2005; Hill et al., 2014; Rodríguez et al., 2005; Stoolmiller et al., 2005; Yaroslavsky et al., 2013). Yaroslavsky et al. (2013) identified three depressive symptom trajectories among adolescents, in which some adolescents reported elevated symptoms from mid-adolescence through age 30 years, while others reported moderate or mild symptoms that decreased across adolescence and emerging adulthood.

Various initiatives and policies have been implemented with the goal of integrating mental health services into schools to increase the availability of evidence-based strategies (e.g., mental health services, bullying prevention programs) (Centers for Disease Control and Prevention, 2014; Knorr & Delamarter, 2013). Despite these efforts, few studies have examined whether bullying experiences predict trajectories of depressive symptoms across adolescence and emerging adulthood.

In the current study, we examined how bullying experiences (victimization and perpetration) predict depressive symptoms trajectories. We used a school-based sample of adolescents assessed over a five-year period. We used growth mixture modeling to identify distinct trajectories of depressive symptoms over time in adolescence and emerging adulthood. Additional research has identified the role of bullying victimization and perpetration in the etiology of depression in adolescence (Hill et al., 2014; Rodríguez et al., 2005; Yaroslavsky et al., 2013). The present study sought to identify the role of bullying victimization and perpetration in the trajectories of depressive symptoms in adolescence and emerging adulthood.

The current study is also novel in that prior studies have examined trajectories of depressive symptoms and bullying experiences. The current study examined trajectories of depressive symptoms and how bullying experiences predict trajectories of depressive symptoms. These findings may inform school personnel in identifying students’ likely trajectory of depressive symptoms and determining where depression prevention and treatment services may be needed.
history of psychopathology, parental psychopathology, gender, and social variables as predictors of depressive symptom trajectories (Stoolmiller et al., 2005; Yaroslavsky et al., 2013). Despite these findings, additional work is needed to better understand factors associated with the heterogeneity of depressive symptoms across adolescence and emerging adulthood.

A more thorough understanding of depressive symptom trajectories in adolescent and emerging adult populations, as well as the factors that predict those trajectories, can assist mental health service providers in identifying adolescents at risk for increased depressive symptoms or major depressive episodes. The ability to predict likely symptom trajectories a priori would afford mental health service providers an opportunity to implement preventive interventions more efficiently. For example, identifying adolescents whose symptoms are likely to escalate over time may afford providers the opportunity to intervene early and provide prevention services closer to the onset of symptom course (e.g., Hill et al., 2014). Further, identifying which adolescents are most likely to maintain their depressive symptoms over time, as opposed to showing a more transitory symptom pattern, may allow service providers to selectively deliver more intensive prevention programs to adolescents in greatest need of them (Hill et al., 2015).

Increasingly, high schools are being utilized as a point of intervention for mental health services and often provide services directly (Wells et al., 2003). As such, school counselors and other school-based mental health professionals have an enormous opportunity to impact student mental health via early identification and treatment. School counselors and personnel are actively involved with students, are aware of social dynamics within the school setting, and therefore may be particularly adept at identifying adolescents at risk for depression. Identifying factors relevant to school personnel as well as their relation to adolescent depressive symptom trajectories is therefore critical to optimizing school-based intervention efforts.

1.1. Bullying and victimization impact depressive symptoms

A growing body of research suggests that various forms of bullying and victimization are associated with adolescent depressive symptoms both cross-sectionally (Klomek et al., 2007; Seals and Young, 2003) and longitudinally (Kaltiala-Heino et al., 2000, 2010). Bullying is defined as “any unwanted aggressive behavior(s) by another youth or group of youths...that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated” (Gladden et al., 2014: pp. 7). Craig and Pepler (2003) consider bullying as a relational problem between perpetrators and vulnerable victims. Both bully victimization and perpetration have been linked with elevated depressive symptoms in high school students (e.g., Klomek et al., 2007, 2013; Hong et al., 2014), though some studies have failed to identify a link between bully perpetration and depressive symptoms (i.e., Perren et al., 2010).

Aside from traditional forms of bullying, such as physical and verbal bullying, cyberbullying has also been linked to depressive symptoms (Wang et al., 2011). Cyberbullying refers to aggressive, intentional acts using electronic forms of contact, such as messages sent via text, email, or social media, repeatedly and over time, against a victim who cannot easily defend him or herself (Smith et al., 2008; Vollink et al., 2013). Though cyberbullying may occur less frequently than traditional bullying, it appears to have similar adverse effects as traditional forms of bullying (Smith et al., 2008). Evidence demonstrating a link between cyberbullying and depressive symptoms has emerged in recent years, with a study by Perren et al. (2010) providing evidence that cyberbully victimization may predict depressive symptoms even after controlling for other forms of bully victimization. Evidence also indicates that individuals who are both cyberbully victims and perpetrators report greater depressive symptoms than those who are either perpetrators or victims alone (Kaltiala-Heino et al., 2000). Thus, cyberbullying may have especially profound effects on adolescents as compared to more traditional forms of bullying (Smith et al., 2008; Vollink et al., 2013).

With the increased focus on the impacts of bullying in schools, knowledge of the impact of various forms of bully victimization and perpetration on depressive symptom trajectories may help school personnel better identify at-risk individuals and provide prevention and intervention services more efficiently. To our knowledge, the potential impact of bullying victimization and perpetration on depressive symptom trajectories has not yet been evaluated in the empirical literature. Existing studies provide evidence of overall linear associations between depressive symptoms bully victimization and perpetration and depressive symptoms, but have not examined potential subgroups of adolescents who may be differentially impacted by bully victimization and perpetration, while examining symptom trajectories over extended longitudinal follow-ups. A more nuanced understanding of the impact of bullying victimization and perpetration on changes in depressive symptoms over time may be useful for informing clinicians and researchers in providing and developing efficacious prevention services. For example, the ability to predict which adolescents with elevated depressive symptoms are likely to have consistently elevated symptoms over time, as opposed to time-limited elevations in symptoms, would allow clinicians to direct more intensive treatments to those whose symptoms are likely to be maintained. Alternatively, if it is possible to identify adolescents with minimal depressive symptoms but whose symptoms are likely to increase, clinicians could direct those adolescents to preventative interventions. Finally, examination of the differential impact of types of bullying on depressive symptom trajectories may direct researchers to the most salient forms of bullying for the development of targeted prevention efforts.

1.2. The present study

The present study sought to identify trajectories of depressive symptoms in adolescents and emerging adults using a school-based sample of adolescents assessed over a five-year period. Consistent with previous research, multiple trajectories were expected (e.g., Stoolmiller et al., 2005; Yaroslavsky et al., 2013). The present study then sought to assess whether bully victimization and perpetration – both in-person and cyberbullying – significantly predicted depressive symptom trajectories. Finally, given the known relations between hostility, gender, race, and depressive symptoms (Felsten, 1996; Nolen-Hoeksema et al., 1999; Saluja et al., 2004), these factors were included as covariates in all analyses. Both victims and perpetrators of bullying and cyberbullying express greater hostility than children not involved in bullying (Ireland and Archer, 2004; Vollink et al., 2013). In addition, hostility has been linked to depressive symptoms (e.g., Mao et al., 2003) and thus hostility represents a potential confounding variable. Thus it was important to control for potential impacts of hostility on depressive symptom trajectories. Moreover, covarying for hostility (i.e., trait anger), helps differentiate between the adolescents’ affective state (anger) and bullying behaviors. Utilizing covariates emphasizes the unique variance accounted for by bullying-related variables in the analyses.
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