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# **FINAL REPORT**

## **Effects of a Middle School Social-Emotional Learning Program on Bullying, Teen Dating Violence, Sexual Violence, and Substance Use in High School**

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**Report submitted to the National Institute of Justice  
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### **What are the major goals and objectives of the project?**

This proposed study leveraged an existing RCT of The Second Step anti-bullying program, which was implemented when the sample of students was in middle school, by measuring related aggressive behaviors (e.g., bullying, cyberbullying, sexual violence) during the high school years. Our specific aims were (1) to determine treatment effects of the Second Step middle school program on reductions in youth aggression (including bullying), sexual violence, substance use, and teen dating violence when in high school; (2) to evaluate middle school belonging as a mediator of these treatment effects on trajectories of bullying, victimization, homophobic teasing, sexual harassment, substance use, and teen dating violence in high school. School belonging was examined as potential mediator between treatment effects and high school aggression, violence, and substance use outcomes because of two reasons. First, the social-emotional learning programs focuses on building positive, prosocial relationships among peers. Second, belonging to school is a documented predictors of aggression and correlated outcomes (Losel & Farrington, 2012).

### **Methods**

#### **Participants, Procedure, & Measures**

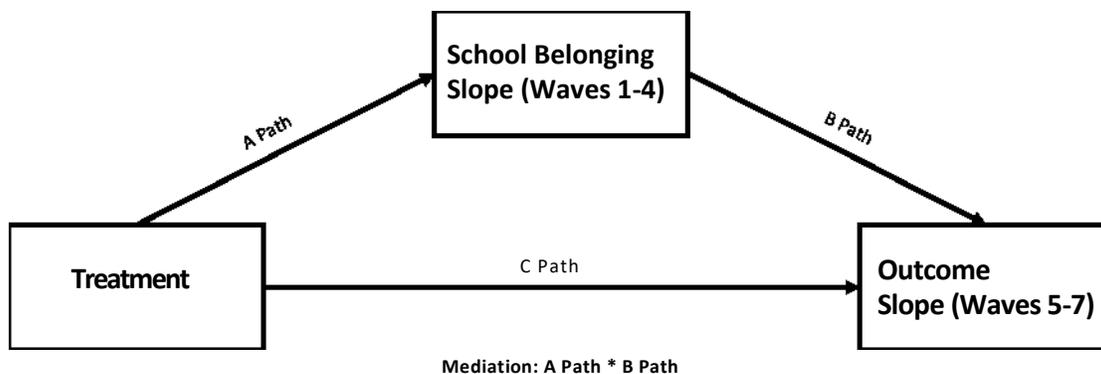
Participants consisted of 1,565 students from 15 middle schools within the state of Illinois who were followed into six high schools. School districts were contacted by the principal investigators in each state to introduce the project and to identify schools that would be interested in participating. Schools had

to agree to random assignment and not to implement other school-wide bully prevention programming for the three year study. Males accounted for 52% of the sample; 22% identified as white, 31% as African-American, 33% as Hispanic, and 11% as Biracial etc. Mean age of students was 11 years of age at wave 1. See other studies for more detail (Espelage, Van Ryzin, Low, & Polanin, 2015; Espelage, Low, Polanin, & Brown, 2015). The university review board and the school district agreed to the use of a waiver of active (passive) parental consent. Parents received information about the study through several outlets, including electronic newsletters, presentations to parent-teacher associations, email blasts from school administration, and family information nights. Information letters were sent to all parents of sixth graders in the participating districts. Parents could opt their child out of the study by calling the school or the researcher, or returning the signed parent form. Non-consented youth did not complete the survey and were removed from the room during the administration. Of note, active parental consent was used in Chicago schools (n = 9). However, non-consented youth did take part in the SEL program. Students provided assent to participate by signing the front page of the survey. An 86% participation rate was achieved in schools in the analyses reported here. Teams of researchers administered the survey, and this team included advanced psychology graduate students, a faculty member, and several trained undergraduate research assistants. There was a total of seven waves of data (4 middle school, 3 high school). to determine whether students who were part of the intervention group in a randomized control trial of Second Step in middle school demonstrated reductions in youth aggression (including bullying), sexual violence, and substance use, and teen dating violence when in high school

### **Analysis Plan**

To examine the effect of treatment on various longitudinal outcomes (i.e., bullying perpetration and victimization, sexual harassment perpetration and victimization, homophobic perpetration and victimization, cyberbullying perpetration and victimization, cyber sexual harassment perpetration and victimization, and teen dating violence) we fit path models to examine the direct and indirect effects of treatment. Specifically, we examined the extent to which treatment was associated with linear growth in school belonging during the time of the prevention program (T1 – T4). We then used linear growth in

school belonging during the prevention program (T1 – T4) to predict linear growth in outcomes after the prevention ended (T5 – T7). Following, we examined the mediation between school belonging and outcome variables and outcome variables respectively. Final models use the treatment variable to predict linear growth in school belonging during middle school (prevention period), and then used linear growth in school belonging to predict linear growth in outcomes during high school (after the prevention period) to examine the extent to which effects of the prevention program sustained into high school. We then tested the mediation by multiplying the effect of treatment on school belonging (A path) with the effect of school belonging on the outcome (B path). The figure below presents our analytic path model.



All models were run using Mplus 7.4. Full Information Maximum Likelihood (FIML) was used to address missing data. Unlike listwise deletion that removes participants with missing data, FIML allows individuals to contribute whatever information they have available to the likelihood function without the need to remove anyone from the analysis. To address non-normality all models were run using the Robust Maximum Likelihood (MLR) estimator.

## Results

### **Bullying Perpetration and Victimization**

We examined the extent to which the prevention program was associated with reductions in bullying perpetration and victimization respectively. For bullying perpetration, there was no direct effect of the treatment on reductions in bullying perpetration in high school ( $b = .012, p = .187$ ), however, there was an indirect effect. That is, individuals in the treatment group reported significantly higher levels of

growth in school belonging from T1 – T4 ( $b = .013, p = .042$ ), growth in school belonging was in turn associated with reductions in growth in bullying perpetration from T5 – T7 ( $b = -.147, p = .067$ ). More specifically, individuals in the treatment group reported significantly higher growth in school belonging during middle school (T1 – T4), in turn, growth in school belonging was associated with significantly lower rates of bullying perpetration in high school (T5 – T7). We then examined the mediation however the mediation was not found to be statistically significant ( $b = -.002, p = .174$ ).

For bullying victimization, there was no direct effect of treatment on reduction in bullying victimization in high school ( $b = .027, p = .121$ ), however, the indirect effect was significant. That is, individuals in the treatment group reported significantly higher levels of growth in school belonging from T1 – T4 ( $b = .013, p = .042$ ), growth in school belonging was in turn associated with reduction in growth in bullying victimization from T5 – T7 ( $b = -.434, p < .001$ ). More specifically, individuals in the treatment group reported significantly higher growth in school belonging during middle school (T1 – T4), in turn, growth in school belonging was associated with significantly lower rates of bullying victimization in high school (T5 – T7). A significant mediation was found ( $p < .10$ ) indicating a suppression effect of school belonging on bullying victimization ( $b = -.005, p = .086$ ).

### **Sexual Harassment Perpetration and Victimization**

We examined the extent to which individuals that received the prevention program were associated with reductions in sexual harassment perpetration and victimization respectively. For sexual harassment perpetration, there was not direct effect of the treatment on reductions in sexual harassment perpetration in high school ( $b = -.001, p = .828$ ). Additionally, the indirect effect was not significant either. That is, individuals in the treatment group reported significantly higher levels of growth in school belonging from T1 – T4 ( $b = .013, p = .033$ ), however, growth in school belonging was not associated with reductions in growth in sexual harassment perpetration from T5 – T7 ( $b = -.039, p = .297$ ). More specifically, individuals in the treatment group reported significantly higher growth in school belonging during middle school (T1 – T4), however, growth in school belonging was not associated with

significantly lower rates of sexual harassment perpetration in high school (T5 – T7). The mediation was also not found to be statistically significant ( $b = -.001, p = .347$ ).

For sexual harassment victimization, there was no direct effect of treatment on reduction in sexual harassment victimization in high school ( $b = -.005, p = .653$ ), however, the indirect effect was significant. That is, individuals in the treatment group reported significantly higher levels of growth in school belonging from T1 – T4 ( $b = .012, p = .048$ ), growth in school belonging was in turn associated with reduction in growth in sexual harassment victimization from T5 – T7 ( $b = -.337, p < .001$ ). More specifically, individuals in the treatment group reported significantly higher growth in school belonging during middle school (T1 – T4), in turn, growth in school belonging was associated with significantly lower rates of sexual harassment victimization in high school (T5 – T7). A significant mediation was found ( $p < .10$ ) indicating a suppression effect of school belonging on sexual harassment victimization ( $b = -.004, p = .088$ ).

### **Homophobic Teasing Perpetration and Victimization**

We examined the extent to which the prevention program was associated with reductions in homophobic teasing perpetration and victimization respectively. For homophobic teasing perpetration, there was no direct effect of the treatment on reductions in homophobic teasing perpetration in high school ( $b = -.001, p = .946$ ), however, the indirect effect was significant. That is, individuals in the treatment group reported significantly higher levels of growth in school belonging from T1 – T4 ( $b = .013, p = .036$ ), growth in school belonging was in turn associated with reductions in growth in homophobic teasing perpetration from T5 – T7 ( $b = -.365, p = .003$ ). More specifically, individuals in the treatment group reported significantly higher growth in school belonging during middle school (T1 – T4), in turn, growth in school belonging was associated with significantly lower rates of homophobic teasing perpetration in high school (T5 – T7). A significant mediation was found ( $p < .10$ ) indicating a suppression effect of school belonging on homophobic teasing perpetration ( $b = -.005, p = .086$ ).

For homophobic teasing victimization, there was no direct effect of treatment on reduction in homophobic teasing victimization in high school ( $b = .007, p = .489$ ), however, the indirect effect was

significant. That is, individuals in the treatment group reported significantly higher levels of growth in school belonging from T1 – T4 ( $b = .013, p = .037$ ), growth in school belonging was in turn associated with reduction in growth in homophobic teasing victimization from T5 – T7 ( $b = -.339, p < .001$ ). More specifically, individuals in the treatment group reported significantly higher growth in school belonging during middle school (T1 – T4), in turn, growth in school belonging was associated with significantly lower rates of homophobic teasing victimization in high school (T5 – T7). A significant mediation was found ( $p < .10$ ) indicating a suppression effect of school belonging on homophobic teasing victimization ( $b = -.004, p = .074$ ).

### **Cyberbullying Perpetration and Victimization**

We examined the extent to which the prevention program were associated with reductions in cyberbullying perpetration and victimization respectively. For cyberbullying perpetration, there was no direct effect of the treatment on reductions in cyberbullying perpetration in high school ( $b = .016, p = .089$ ). Additionally, there was no indirect effect either. That is, individuals in the treatment group reported significantly higher levels of growth in school belonging from T1 – T4 ( $b = .013, p = .038$ ), however, growth in school belonging was not associated with reductions in growth in cyberbullying perpetration from T5 – T7 ( $b = .058, p = .399$ ). More specifically, individuals in the treatment group reported significantly higher growth in school belonging during middle school (T1 – T4), however, growth in school belonging was not associated with significantly lower rates of cyberbullying perpetration in high school (T5 – T7). The mediation was not found to be statistically significant ( $b = .001, p = .444$ ).

For cyberbullying victimization, there was no direct effect of treatment on reduction in cyberbullying victimization in high school ( $b = -.022, p = .063$ ), however, the indirect effect was significant. That is, individuals in the treatment group reported significantly higher levels of growth in school belonging from T1 – T4 ( $b = .013, p = .038$ ), growth in school belonging was in turn associated with reduction in growth in cyberbullying victimization from T5 – T7 ( $b = -.336, p = .003$ ). More specifically, individuals in the treatment group reported significantly higher growth in school belonging during middle school (T1 – T4), in turn, growth in school belonging was associated with significantly

lower rates of cyberbullying victimization in high school (T5 – T7). A significant mediation was found ( $p < .10$ ) indicating a suppression effect of school belonging on cyberbullying victimization ( $b = -.004$ ,  $p = .086$ ).

### **Teen Dating Violence Perpetration and Victimization & Substance Use**

We examined the extent to which the prevention program were associated with reductions in teen dating violence perpetration and victimization and substance use. No direct or indirect effects were found.

#### **Clinical and Policy Implications**

Results indicated that the social-emotional learning middle school program improved students sense of belonging across the middle school years in comparison to students who were in the control schools. This increase in school belonging was associated with decreases in multiple forms of aggression and victimization as these students transitioned into high school. Given research that indicates that middle school is a developmental period in which attachment to school decreases and aggression increases, it is promising that the social-emotional learning program prevented the normative decline in school belonging. However, school belonging increases in middle school were not associated with teen dating violence involvement or substance use. Teen dating violence was not directly addressed in the middle school program, which may have contributed to these non-significant findings. Programs need to address teen dating violence more directly in middle school in order to impact these behaviors in high school. In contrast, the middle school program did address alcohol and drug use prevention, but there were not treatment effects when these youths transitioned to high school.

#### **List of Peer-Reviewed Articles**

**Van Ryzin, M., & Espelage, D.L. (revise & resubmit). Trajectories of teen dating violence (TDV) victimization and links to substance use in high school. *Aggressive Behavior*.** We found that both verbal and relational TDV victimization increased during high school (i.e., from 9<sup>th</sup> to 11<sup>th</sup> grade). We also found that females tended to experience more verbal TDV victimization than males, but there were no sex differences in relational TDV victimization. Finally, we found that verbal and relational TDV victimization are significant risk factors for escalating rates of substance use between 9<sup>th</sup> and 11<sup>th</sup> grade.

With regards to prevention, our findings suggest that both verbal and relational TDV represent significant risk factors for later substance use and indicates that substance use prevention should include discussions of TDV experiences.

**Holt, M.K., Espelage, D.L., Van Ryzin, M., & Bowman, C. (in press). Peer victimization and sexual risk taking among adolescents. *Journal of School Health*.** Latent difference score models indicated that bullying victimization was not related to sexual risk taking behaviors. Baseline levels of cyberbullying and verbal teen dating violence, however, were both associated with more sex under the influence of alcohol at Wave 2. Further, findings revealed that changes over time in verbal teen dating violence victimization were associated with changes over time in sex under the influence of alcohol. Given links between peer victimization exposures and sexual risk taking behaviors, school-based prevention and intervention efforts should address these in concert with one another.

**Rinehart, S., Espelage, D.L., & Bub, K. (2017). Longitudinal effects of gendered harassment perpetration and victimization on mental health outcomes in adolescence. *Psychology of Violence*.** Results indicated that increases from age 13 to 17 years in sexual harassment perpetration and victimization as well as homophobic name-calling perpetration and victimization predicted increases in depression symptoms and substance use. Gender did not moderate these pathways. These findings highlight that negative outcomes are associated with gendered harassment for all involved and emphasize the importance of prevention efforts. School-wide policies that promote gender equity and are intolerant of gendered harassment are associated with decreased sexual harassment (Espelage, 2016). These policies therefore should include clear language regarding teachers' responsibility for intervening when harassment is witnessed, and proactive teaching regarding the unacceptability of gendered harassment. Professional development regarding the impact of these acts, which are often normalized and ignored, is needed so that teachers and other school professionals can better understand the importance of intervening when harassment occurs and can be empowered to employ prevention efforts within their classrooms. School psychologists need to be aware of the potential involvement of gendered harassment when a

student presents with depression or substance use issues; psychologists can therefore assess for gendered harassment involvement when they are working with a student with these mental health outcomes.

**Hatchel, T., Espelage, D.L., & Huang, Y. (2017). Sexual harassment victimization, school belonging, and internalizing symptoms among LGBQ adolescents: Temporal and intersectional insights.**

*Journal of Orthopsychiatry*. Results demonstrated that both males and females reported comparable levels of harassment and school belonging, but females reported high levels of internalizing symptoms. An indirect model was used to examine the predictive role of sexual harassment victimization (time 1), the mediating role of school belonging (time 2), and subsequent internalizing symptoms (time 3). Internalizing symptoms at time 1 were used as covariates as to suggest directionality among study variables. The indirect effect from sexual harassment victimization through school belonging to internalizing symptoms was significant. Analyses also demonstrated that sexual harassment victimization appeared to be an antecedent to internalizing symptoms for LGBQ youth. As schools are increasingly being asked to adhere to their obligations under Title IX (U.S. Department of Education, Office of Civil Rights, 2010), effective prevention and intervention efforts will have to consider that LGBQ youth are experiencing sexual harassment and these experiences lead to distress over time. Recently, The Office of Civil Rights (OCR) in the U.S. Department of Education noted the legal obligations (in their “Dear Colleagues” letter) of schools to protect their students from gender-based harassment under Title IX. This protection extends to the prevention of sexual/gendered harassment; thus, given the results presented here, high school administrators should monitor closely the experiences of their LGBQ youth. Because school belongingness was found to mediate the association between peer victimization and depression, schools should pay particular attention to how LGBQ are being supported. One potential avenue to promote their sense of belonging is to support programs like gay-straight alliances (GSAs) given the fact that adolescents attending schools with LGBTQ support groups have been found to exhibit lower rates of victimization and subsequently diminished suicidality (Espelage, 2016).

**Espelage, D.L., Van Ryzin, M., & Holt, M.K. (2017). Trajectories of bully perpetration across early adolescence: Static risk factors, dynamic covariates and longitudinal outcomes**

*Psychology of Violence*. Group-based semiparametric mixture modeling yielded five distinct trajectories of bullying perpetration emerged: 1) Low (37.8% of the sample); 2) Moderate Flat (51.3% of the sample); 3) High Declining (3.4%); 4) Middle School Peak (4.2%); and 5) Moderate Escalating (3.4%). Early family relations and intervention status were found to be predictors of trajectory membership. Peer victimization, impulsivity, and depression as dynamic covariates predicted positive deviations from the bullying perpetration trajectories (i.e., increases in bullying), while empathy predicted negative deviations. Trajectory membership was differentially predictive of antisocial behavior, peer affiliation, and school belonging outcomes in the 10<sup>th</sup> grade.

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