



## Bullying victimization and perpetration in a community sample of youth with psychotic like experiences

Gregory P. Strauss<sup>a,\*</sup>, Ian M. Raugh<sup>a</sup>, Vijay A. Mittal<sup>b</sup>, Brandon E. Gibb<sup>c</sup>, Meredith E. Coles<sup>c</sup>

<sup>a</sup> Department of Psychology, University of Georgia, Athens, GA, USA

<sup>b</sup> Department of Psychology, Northwestern University, Evanston, IL, USA

<sup>c</sup> Department of Psychology, Binghamton University, Binghamton, NY, USA

### ARTICLE INFO

#### Article history:

Received 13 July 2017

Received in revised form 23 August 2017

Accepted 29 August 2017

Available online 6 September 2017

#### Keywords:

Prodrome

Psychosis

Clinical high-risk

Ultra high-risk

Bullying

### ABSTRACT

Prior studies indicate an association between psychotic-like experiences (PLEs) and bullying victimization; however, the most frequent types of bullying victimization and the association with bullying perpetration are unclear. A community sample of 1563 adolescents completed questionnaires examining PLEs and frequency of bullying victimization and perpetration. Compared to adolescents scoring below the psychosis-risk cut-off ( $n = 1294$ ), those with PLEs (who are putatively at-risk) ( $n = 269$ ) were more likely to report being the victims of overt, relational, and reputational bullying and to have perpetrated bullying against others. Increased bullying perpetration among youth with PLEs may reflect reactive aggression in response to being bullied.

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### Letter to the Editor:

Prior studies indicate that peer victimization (i.e., being bullied) may be a risk factor for developing a psychotic disorder in youth with attenuated psychotic symptoms (Kelleher et al., 2008; Masillo et al., 2017; Valmaggia et al., 2015). However, it is unclear which types of peer victimization (e.g., overt, relational) are most frequently experienced by youth with psychotic-like experiences (PLEs). It has also yet to be determined whether youth with PLEs are more likely to be perpetrators of bullying, despite evidence that adolescents who experience peer victimization are at increased likelihood of committing reactive aggression (i.e., a hostile act displayed in response to a provocation or perceived threat, rather than an unprovoked act aimed at influencing, intimidating, or dominating others) (Poulin and Boivin, 2000).

The current study examined peer victimization and peer aggression (i.e., perpetration) in relation to PLEs. Participants included 1563 middle and high school students in the northeastern United States. The study utilized passive consent from parents and active consent from youth. Specifically, parents of all students were sent a letter detailing the study. Those who did not wish their child to participate were asked to sign the form and return it to the school. Following this, students were asked to give their assent to participate in the study by signing an active assent form. Participation was limited to those students whose parents

had provided passive consent and who themselves provided active assent.

A series of questionnaires was administered online via Survey Monkey. Participants completed the surveys in small groups within their school computer laboratories. The entire survey duration was ~1 h. Questionnaires included: 1) the Revised Peer Experiences Questionnaire (RPEQ; Prinstein et al., 2001), and 2) the Youth Psychosis At-Risk Questionnaire-Brief (YPARQ-B) (Ord et al., 2004). The R-PEQ is a self-report questionnaire asking how frequently the youth is the perpetrator or victim of different forms of bullying (from 1 = never to 5 = a few times a week) across 4 domains of perpetration and victimization: overt, relational, reputational, and prosocial behavior (recipient vs. provider) ( $\alpha = 0.94$ ). The YPARQ-B contains 28 items measuring psychotic experiences. Responses are scored as yes (present) or no/uncertain (absent) ( $\alpha = 0.96$ ). Using an established psychosis risk cut-score of  $\geq 13$  (Kline et al., 2012),  $n = 269$  (17.2%) youth with PLEs who are presumably at-risk for psychosis and  $n = 1294$  (82.7%) comparison control (CON) subjects were identified. The PLE and CON did not differ in age or sex, but PLEs had a lower proportion of Caucasian participants. The proportion of PLE cases did not differ as a function of grade (see Table 1).

Group means and standard deviations, as well as Repeated Measures ANOVA and post hoc test results are presented in Table 1. PLEs were more likely to report being the victims and perpetrators of bullying than CON; these findings were true for both the overt and relational domains. PLEs were also less likely to report being the recipient of prosocial behaviors from others, but did not differ from CON in how

\* Corresponding author at: University of Georgia, Department of Psychology, 125 Baldwin St., Athens, GA 30602, USA.

E-mail address: [gstrauss@uga.edu](mailto:gstrauss@uga.edu) (G.P. Strauss).

**Table 1**  
Group means, ANOVA, and post hoc results.

Demographics	PLE (n = 269) M (SD)	CON (n = 1294) M (SD)	Test statistic, p-value	
Age	14.22 (2.22)	14.12 (2.04)	F = 0.54, p = 0.46	
% Male	51.7%	51.8%	$\chi^2 = 3.98, p = 0.14$	
Ethnicity			$\chi^2 = 23.53, p < 0.001$	
American-Indian/Alaskan native	4.8%	2.8%		
Asian/Pacific Islander	5.2%	2.9%		
African-American	11.9%	8.3%		
Hispanic	4.1%	4.8%		
Bi-racial	14.9%	9.2%		
Caucasian	57.2%	70.7%		
Grade distribution			$\chi^2 = 6.01, p = 0.54$	
6th	13.4%	13.8%		
7th	16.7%	16.4%		
8th	12.3%	16.5%		
9th	14.1%	15%		
10th	12.6%	12.2%		
11th	15.2%	13.3%		
12th	14.9%	12.6%		
Repeated measures ANOVA results		F, p-value	$\eta_p^2$	
Group		105.02, p < 0.001	0.063	
Bullying Type		21.63, p < 0.001	0.014	
Bullying Domain		625.55, p < 0.001	0.286	
Bullying Type × Bullying Domain		201.92, p < 0.001	0.115	
Group × Bullying Type		7.09, p = 0.008	0.005	
Group × Bullying Domain		33.6, p < 0.001	0.021	
Group × Bullying Type × Bullying Domain		2.91, p = 0.048	0.002	
Post hoc One-Way ANOVAs	PLE M (SD)	CON M (SD)	F, p-value	$\eta_p^2$
Bullying victimization				
Overt victimization	2.09 (1.26)	1.43 (0.76)	132.81, p < 0.001	0.078
Relational victimization	2.21 (1.26)	1.77 (0.87)	47.28, p < 0.001	0.029
Reputational victimization	2.33 (1.38)	1.66 (0.95)	91.12, p < 0.001	0.055
Prosocial behavior recipient	2.56 (1.22)	2.43 (1.01)	3.7, p = 0.054	0.002
Bullying perpetration				
Overt aggression	1.87 (1.27)	1.31 (0.66)	106.7, p < 0.001	0.064
Relational aggression	1.97 (1.2)	1.58 (0.72)	50.31, p < 0.001	0.031
Reputational aggression	1.72 (1.2)	1.31 (0.66)	61.29, p < 0.001	0.038
Prosocial behavior toward others	2.98 (1.27)	2.91 (0.99)	1.06, p = 0.303	0.001

Note. PLE = Psychotic Like Experiences; CON = Comparison control; Group = between-subjects effect (PLE, CON); Bullying Type (perpetration, victimization) and Bullying Domain (overt, relational, reputational, prosocial) = within-subjects effects; The prosocial scale is reverse coded, such that higher scores reflect more psychopathology;  $\eta_p^2$ : 0.01 (small), 0.09 (medium) and 0.25 (large).

likely they were to engage in prosocial behaviors toward others. Group differences are therefore not likely attributable to simple over-reporting by the PLE youth. Adding race as a covariate did not change the pattern of results.

Consistent with past studies (Catone et al., 2015; Kelleher et al., 2008; Masillo et al., 2017; van Dam et al., 2012; Valmaggia et al., 2015), youth with PLEs are at increased risk for bullying victimization. Our results extend prior findings by suggesting that increased victimization encompasses overt and relational domains. We also extended the literature by finding that PLE youth are at increased likelihood for being the perpetrators of both overt and relational bullying and less likely to receive prosocial behaviors from others. The greater frequency of bullying perpetration may represent reactive aggression in response to being bullied. A significantly stronger association between bullying victimization and perpetration in the PLE ( $r = 0.62$ ) than CON group ( $r = 0.52$ ) ( $Z = 2.39, p < 0.02$ ) may support this possibility, although causality cannot be inferred.

Bullying may be a risk factor for several mental health problems during adolescence, including psychosis. The nature of the bullying-PLE association is unclear. Bullying may be a stressor that increases risk for psychosis, similar to other environmental factors. Alternatively, the social and problem-solving skill abnormalities that emerge during the premorbid/prodromal phases make youth vulnerable to bullying.

Longitudinal research is needed to examine these possibilities. Regardless of which of these explanations is correct, bullying prevention programs are likely to be beneficial to youth with PLEs. School-based bullying programs have typically focused on preventing perpetration (Arseneault, 2017); however, the current results suggest that programs should also target bullying victimization. The confluence of both approaches may be critical for reducing the long-lasting effects of bullying, which can persist past the adolescent period.

#### Role of funding source

There was no funding for this study.

#### Conflict of interest

None.

#### Contributors

GPS, BEG, and MEC designed the study. GPS performed statistical analyses. GPS and IR wrote the initial draft of the manuscript. All authors contributed to drafts/writing of the manuscript.

#### Acknowledgments

Thank you to the participants who dedicated their time to this research, as well as superintendent Sue McLeod and the principals, teachers, and staff at the schools that were involved with the study. Thank you to Katherine Visser and Liam Cashin for assistance with data collection and processing.

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