

Childhood and Adolescent Peer Bullying Perpetration and Later Substance Use: A Meta-analysis

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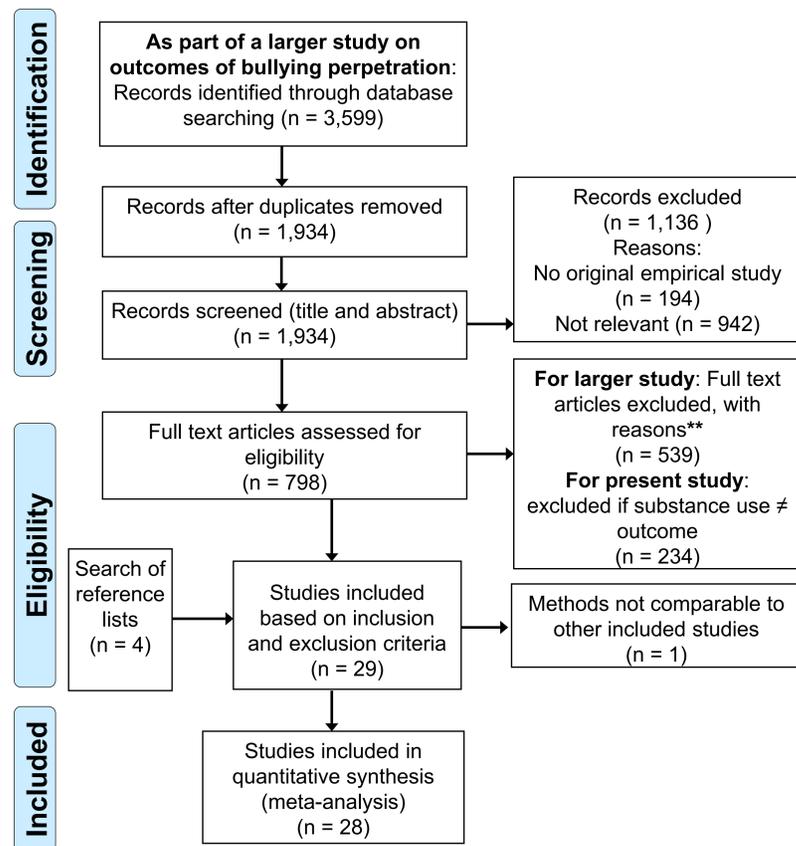
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Background	Main aims	Method
<p>Previous meta-analyses on bullying perpetration and substance use (Ttofi et al. 2016; Valdebenito et al, 2015) reported that bullies had a higher risk of drug use than their non-bullying peers.</p> <p>The present study updates an earlier prospective meta-analysis on drug use (Ttofi et al. 2016) and is more inclusive with respect to type of perpetrator ('pure' bullies and bully-victims, i.e., victims that also bully themselves) and type of substance (drugs, alcohol, tobacco, and non-subtyped).</p>	<p>Investigate prospective associations between bullying perpetration in childhood and adolescence and later substance use.</p> <p>Main hypotheses:</p> <ol style="list-style-type: none"> Childhood and adolescent bullying perpetrators have a higher risk of later substance use. Stronger effects for double-jeopardized bully-victims than for "pure" bullies. 	<p>Search: March 2019 in Medline, PsycINFO, Web of Science, ERIC, SocINDEX</p> <p>Data extraction: 215 effects from 28 publications, 22 samples, based on > 28,000 participants</p> <p>Analyses: three-level multilevel random effects models with R package Metafor</p> <p>Separate models for unadjusted and adjusted effects</p> <p>Moderation: for models ≥ 10 effect sizes (e.g., child versus adolescent bullying)</p>

Open Science Statement: This study was preregistered (OSF: <https://osf.io/tu5vd/>; PROSPERO: CRD42019127712). Excel files including all full text screening assessments, calibration files with initial disagreements between authors and final decisions, the data extraction and bias assessment manual, and all data and syntaxes have been made available on the Open Science Framework: <https://osf.io/57aqh/>

Flowchart of search & selection Results of the separate models



Outcome	Model		Effect				
	Predictor	Adj.	n samples/articles	n effects/participants	OR	95% CI	p
Drugs	bully	No	9/9	21/11,763	1.76/1.88	1.41 - 2.20	<.001
	bully	yes	13/13	33/17,749	1.47	1.29 - 1.68	<.001
	bully-victim	no	4/5	7/6,461	1.61	1.14 - 2.28	.007
	bully-victim	yes	8/8	13/12,201	1.49/1.75	0.89 - 2.47	.127/<.001
Alcohol	bully	no	11/14	25/12,022	1.62/1.54	1.35 - 1.93	<.001
	bully	yes	12/13	33/17,970	1.40	1.18 - 1.66	<.001
	bully-victim	no	4/5	5/6,340	1.16/1.00	0.88 - 1.54	.295/.998
	bully-victim	yes	8/8	13/12,203	1.31	0.76 - 2.24	.330
Smoking	bully	no	7/7	11/9,911	1.96/1.65	1.50 - 2.57	<.001
	bully	yes	10/10	22/15,669	1.66/1.46	1.33 - 2.06	<.001
	bully-victim	no	4/4	4/5,629	2.61	1.14 - 5.98	.023
	bully-victim	yes	6/6	9/10,716	1.49	1.23 - 1.80	<.001
Non-subtyped	bully	no	2/2	2/7,013	3.25	1.96 - 5.38	<.001
	bully-victim	no	3/3	3/7,432	3.61	2.07 - 6.31	<.001

Adj. No = unadjusted effect; Adj. Yes = effect adjusted for possible confounders; Odds ratios (ORs) and p-values after the dash (/) are the results after outliers were excluded; **bold** = statistically significant

** Reasons: no peer Bullying perpetration (BP) (n = 310); not longitudinal (n = 79); intervention study (n = 44); BP covariate or outcome (n = 22); not English (n = 9); unavailability full text (n = 17); other (n = 58)

Main findings

- Childhood and adolescent bullying perpetrators have a higher risk of all types of substance use later in life. ✓
- No evidence of the hypothesized stronger effects for bully-victims than for "pure" bullies. ✗
- Bullying perpetration during childhood constituted a slightly higher risk of later alcohol and tobacco use than bullying during adolescence. ✓

Generally, the effects we found were small.

Discussion

Based on the present study, we cannot infer if the links between bullying perpetration and substance use are causal.

Future research

- Mechanisms: underlying (genetic) vulnerability to become a bully and a substance user?
- We still need more studies on bully-victims

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Key references
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