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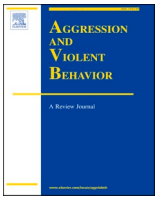

Does peer victimization predict future suicidal ideation? A meta-analysis on longitudinal studies

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ABSTRACT

In the current study a meta-analysis is performed on longitudinal studies about peer victimization and suicide ideation. The databases PsycINFO, MEDLINE, ERIC, and Web of Science were searched for relevant literature. A total of 209 articles were independently screened for inclusion by two authors, and 11 longitudinal studies were included in the meta-analysis. Articles were independently coded by two authors, with good interrater agreement. A total of 16,962 youth were included in the meta-analysis. A significant prospective pathway was found from peer victimization to suicide ideation. Analyses suggested a publication bias, but it seems unlikely that enough unpublished results exist to nullify the obtained significant relation. The current meta-analysis shows that experiences of peer victimization are predictive of future suicide ideation.

1. Introduction

Suicide remains one of the leading causes of child and adolescent mortality in the Western world (Ruch et al., 2019). Estimates vary, but in the USA 18.7% of girls and 10.3% of boys seriously considered suicide, and 9.3% of girls and 4.6% of boys reported having attempted suicide (Cash & Bridge, 2009). In a study spanning 17 European countries 13.7% of girls and 6.9% of boys reported to have attempted suicide (Kokkevi et al., 2012). Though not all youth who think about suicide also attempt suicide, suicide ideation almost invariably precedes suicide attempts and is an important predictor of future suicide attempts (Bridge et al., 2006; Lewinsohn et al., 1996). Adolescents may consider suicide for many reasons, but one variable that has consistently been linked to child and adolescent suicide is peer victimization (Van Geel et al., 2014) or bullying (Holt et al., 2015; Klomek et al., 2015; Moore et al., 2017). Peer victimization is often defined as aggressive transactions between peers with a core element of bullying, but does not necessarily include a power imbalance or repetition (Turner et al., 2015).

Several meta-analyses on prospective studies now show that peer victimization may affect later depression and internalizing problems (Reijntjes et al., 2010; Ttofi et al., 2011), delinquency and antisocial problems (Reijntjes et al., 2011; Ttofi et al., 2012), self-esteem (Van Geel et al., 2018), and drug use (Ttofi et al., 2016). Taken together, these studies show that experiences of victimization may have long lasting negative consequences. Specifically, the meta-analysis by Moore et al. (2017) also suggests that there may be prospective relations between bullying and suicide ideation. Most published articles do not strongly consider, let alone test, the theoretical links between peer victimization and negative outcomes. However, the social defeat model has been cited as an explanation for the links between peer victimization and adverse outcomes, and is based on animal studies wherein it is shown that animals defeated in fights against animals of the same species will show lowered testosterone, less exploratory behavior and increased sleep (Björkqvist, 2001). The general strain theory states that relationship strains, such as peer victimization, can result in negative outcomes such as self-harm (Hay & Meldrum, 2010). Bullying may also negatively affect a person's world views and core schemas, ultimately resulting in negative outcomes (Mikkelsen & Einarsen, 2002). With regard to prospective links it is important to note that adverse outcomes are often simultaneously a predictor of peer victimization, as well as predicted by peer victimization (Van Geel et al., 2018). The prospective link specifically from peer victimization to adverse outcomes has received scant theoretical attention. One possible way to explain prospective links between peer victimization and future adverse outcomes is that for some children experiences of peer victimization may be an indication of future victimization experiences (McDougall & Vaillancourt, 2015), though it could also be that peer victimization has a delayed effect on adverse outcomes through changing core schemas (Mikkelsen & Einarsen, 2002)

The current meta-analysis aims to statistically summarize the prospective relations between peer victimization and suicide ideation. The

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current work overlaps but is distinct from previous meta-analyses by Moore et al. (2017) and Castellví et al. (2017), because since the publication of their meta-analyses several new studies were published that can now be included. Based on Van Geel et al. (2014) who reported an odds ratio of 2.23 for the relation between peer victimization and suicide ideation, Holt et al. (2015) who reported an odds ratio of 2.34 for the relation of being a victim of bullying and suicide ideation and Moore et al. (2017) who reported an odds ratio of 1.68 for the prospective relation between bullying victimization and suicide ideation, we expect to find significant relations between suicide ideation and peer victimization. Furthermore, in meta-analyses moderator analyses can explain heterogeneity between effect sizes and publication bias can be analyzed. Publication bias may emerge because journals may favor studies that report significant results. Studies that report non-significant results are less likely to be published and end up in the 'file drawers' of researchers. The preference for significant results may ultimately lead scientists and practitioners to overestimate the strength of a relation between two variables (Dickersin, 1990; Sutton et al., 2000). In the current study we will focus on same-method variance and study length as potential moderators. Same method variance (Hawker & Boulton, 2000) refers to the use of the same informant to measure both the dependent and independent variables. The use of a single informant has been shown to inflate effect sizes in several meta-analyses about peer victimization (Hawker & Boulton, 2000; Van Geel et al., 2017). Study length refers to the temporal space between moments of data collection. In two meta-analyses about peer victimization it was found that effect sizes tend to diminish when longer time periods are considered (Ttofi et al., 2011; Van Geel et al., 2018). Furthermore, we will use a cumulative meta-analysis to establish potential relations between publication year and effect size: early publications about a phenomenon tend to produce relatively large effect sizes, but later publications may suggest smaller effect sizes, or even refute the statistical significance reported in initial investigations altogether because later publications tend to take a more critical approach towards the topic studied (Ioannidis, 2005).

2. Method

The databases PsycINFO, MEDLINE, ERIC and Web of Science were searched using the key words *bully*, *bullied*, *bullying*, *peer victim**, *teasing*, or *"school violence"* in combination with *suicide*, *suicidality*, *suicidal*, or *parasuicide* and *longitudinal*, *prospective* or *"repeated measures"* (January 19th, 2019-updated on September 30th 2019). Furthermore, reference lists of obtained studies were checked for further studies to include in the meta-analysis. Two authors independently assessed the retrieved literature to find articles suitable for inclusion in the meta-analysis. A flow diagram of the search results is provided in Fig. 1. Our search strategy yielded 209 non-duplicate studies. Studies had to include a prospective effect size, or enough information to compute an effect size between peer victimization and suicide ideation to be included in the meta-analysis. We only focused on peer victimization. This includes bullying between peers, but excludes articles that focused on victimization by siblings or adults were excluded, because they were considered conceptually different from *peer* victimization. Articles that focused only on cybervictimization were excluded; results suggest that cybervictimization may have different outcomes than traditional peer victimization (e.g., Wolke et al., 2017), so that we felt it best not to combine those outcomes with those about traditional peer victimization. Studies that included participants aged 19 years or more at the start of the study were excluded. Studies that included participants aged 20 years or more at the end of the study were also excluded. These ages were chosen so that the meta-analysis would focus on adolescents and not on adult samples. Studies had to include a measure of suicide ideation to be included in the meta-analyses. We did not include studies that only provided measures of suicide attempts, or composites of suicide attempts and suicide ideation. We only included articles focused on community samples; articles focusing on clinical samples were excluded because results may

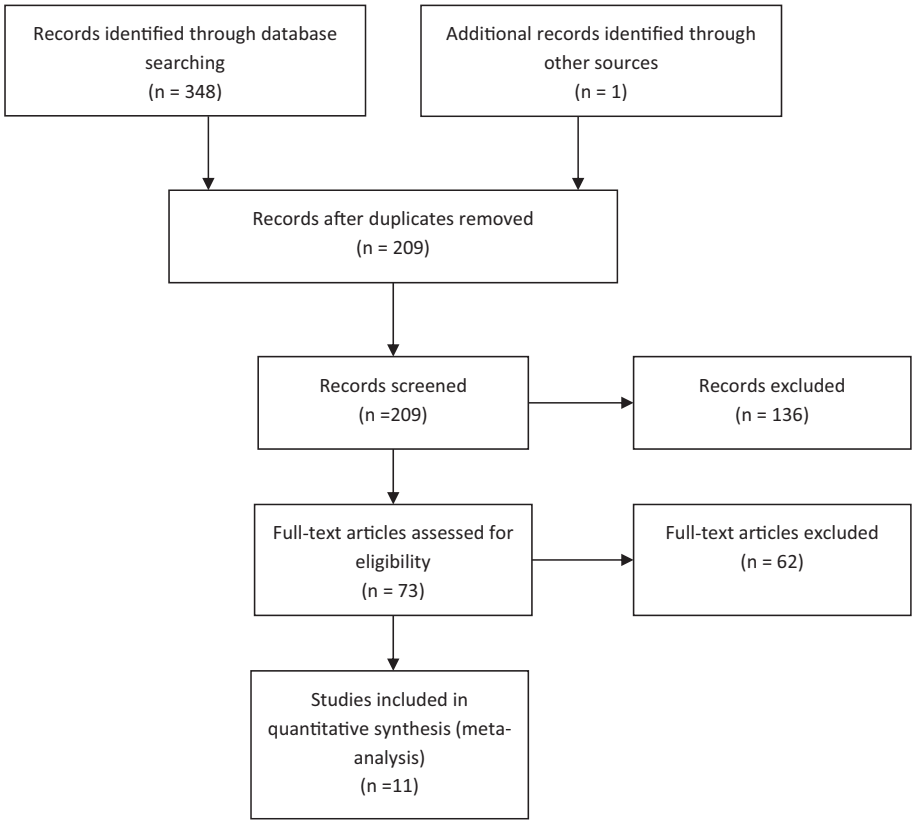

Fig. 1. A flow diagram of the search results.

not be generalizable to the general population. We only included articles if the measurement of peer victimization was prior to the measurement of suicide ideation: for this reason, articles that focused on trajectories of peer victimization were excluded because they often combined prior and concurrent measures of peer victimization to operationalize peer victimization trajectories. If multiple articles made use of the same dataset, we only selected the study using the following three criteria in the order presented: the study using the largest sample, the study that reported odds ratio as a measure of effect size, or the most recent study. Not only English studies were eligible for inclusion but also manuscripts written in other languages. Articles, book chapters and doctoral dissertations were all eligible for inclusion. All articles that met the inclusion criteria were written in English. These included ten peer reviewed articles, and one doctoral dissertation. Included studies and their relevant characteristics are summarized in Table 1.

2.1. Coding

From seven articles we coded odds ratios as a measure of effect size (Bannink et al., 2014; Geoffroy et al., 2016; Kim, 2005; Klomek et al., 2008; Le et al., 2019; Sigurdson et al., 2018; Turner et al., 2012). From three articles we coded correlations (Cho & Glassner, 2019; Heilbron & Prinstein, 2010; Roeder & Cole, 2018), and from one article *p*-values (Klomek et al., 2019). If articles reported on several forms of peer victimization (e.g., physical, relational, verbal) in relation to suicide, these were averaged prior to inclusion in the meta-analysis. If articles reported multiple independent effect sizes for subsamples (for example boys and girls), these were entered in the meta-analyses separately. If an article presented adjusted and unadjusted effect sizes, we consistently chose to include the effect size that was adjusted for most confounders, in order to not overestimate the relations between peer victimization and suicide ideation. Articles were coded independently by two of the authors. Differences were resolved through discussion. Prior to discussion, the rate of agreement was 88.3%.

2.2. Analyses

All analyses were performed with the Comprehensive Meta-Analysis 2.2 software (Borenstein et al., 2006). We analyzed the data using a random effects model: a fixed effect model would be appropriate if studies are believed to be functionally identical and means of studies only differ because of estimation error (Hedges & Vevea, 1998). The use of a fixed effect model precludes generalization to other populations. For most meta-analyses the fixed effect assumptions are implausible and thus the random effects model should be used. In the random effects model, variation in effect sizes is incorporated in the weighing scheme and sources of variation can be studied using moderator analyses (Borenstein et al., 2009; Card, 2012). To address potential sources of variation between included effect sizes, we ran moderator analyses on same-method variance, and a meta-regression analysis to analyze effects of study length. Potential effects of year of publication were addressed with a cumulative meta-analysis where the oldest studies were entered first.

To address the problem of publication bias we used a Funnel plot, Kendall's τ and the Duval and the Tweedie Trim and Fill method. Using Kendall's τ we calculated the association between variances and standardized effect sizes. A significant Kendall's τ suggests that small studies with non-significant results tend not to be published, whereas a non-significant Kendall's τ suggests the absence of such publication bias. The Duval and Tweedie Trim and Fill method (Duval & Tweedie, 2000) imputes effect sizes until the error distribution closely approximates normality, to provide a more unbiased estimate of the effect size than the observed estimate (Borenstein et al., 2009).

3. Results

There were 11 studies that considered prospective relations between peer victimization and suicide ideation. The smallest sample was 133 respondents (Roeder & Cole, 2018), and the largest sample was 3181 respondents (Bannink et al., 2014). The total number of included respondents was 16,962, and the average number of respondents was 1542 per study, and the median was 1186 respondents. Studies ranged in timespan from 4 months (Roeder & Cole, 2018) up to 10 years (Klomek et al., 2008). Most included studies considered a time span of approximately two years (Bannink et al., 2014; Geoffroy et al., 2016; Heilbron & Prinstein, 2010; Turner et al., 2012). Studies were conducted in Europe (4), the USA (3), Canada (1), South Korea (2) and Vietnam (1).

The 11 studies contained 15 samples (*k*) that were included in the meta-analysis about peer victimization and suicide ideation. A significant relation between peer victimization and suicide ideation was found, with higher reports of peer victimization related to higher suicide ideation (OR = 1.691 [95% CI = 1.360, 2.104]). A forest plot is provided in Fig. 2. Effect sizes within this group of studies were heterogeneous (I^2 = 78.373, Q (14) = 64.734, $p < .001$). Because of the high degree of heterogeneity, we also calculated the prediction interval (OR = 1.691 [95% CI = 0.754, 3.788]); the prediction interval estimates where 95% of the true effects are to be expected in future studies (IntHout et al., 2016). Kendall's τ was 0.44 ($p = .02$). A funnel plot is included in Fig. 3. The Duval and Tweedie Trim and Fill method suggested that five studies needed to be imputed, providing a lower but still significant effect size, based on a more symmetrical funnel plot (OR = 1.331 [95% CI = 1.067, 1.660]). The funnel plot and the significant Kendall's τ value suggest publication bias. The Duval and Tweedie trim and fill method suggests that there is publication bias, but that the publication bias is not likely strong enough to change the main results of this meta-analysis. An assumption about publication bias is that large studies tend to be

Table 1
Studies and relevant characteristics.

Source	*N* (age/grade range)	Retention	Country (% female)	Victimization measure	Study length (sampling)
Bannink et al. (2014)	3181 (1st grade)	38%	Netherlands (49%)	SR (BU)	2 years (convenience)
Cho and Glassner (2019)	542 (4th to 6th grade)	73%	South Korea (NA)	SR (BU)	6 years (stratified clusters)
Geoffroy et al. (2016)	1168 (13y)	55%	Canada (54%)	SR (PV)	2 years (cohort)
Heilbron and Prinstein (2010)	493 (11–14y)	82%[a]	USA (51%)	PR (PV)	2 years (convenience)
Kim (2005)	1666 (7th & 8th grade)	95%	S. Korea (45%)	PR (BU)	6 months (cohort)
Klomek et al. (2019)	2933 (13–18y)	85%	Europe-Seyle (56%)	SR (BU)	1 year (randomized cluster)
Klomek et al. (2008)	2081[b] (8y)	80%	Finland (0%)	TR, PR, SR (BU)	10 years (cluster)
Le et al. (2019)	1167 (11–16y)	82%	Vietnam (55%)	SR (BU)	6 months (convenience)
Roeder and Cole (2018)	113[c] (9th to 12th grade)	59%	USA (62%)	SR (PV)	4 months (convenience)
Sigurdson et al. (2018)	2532 (13–17y)	96%	Norway (50%)	SR (BU)	1 year (cluster)
Turner et al. (2012)	1186 (10–17y)	57%	USA (NA)	SR (PV)	2 years (random)

a = calculated by dividing wave 3 participants by wave 1 participants, article reports 73% retention. b = based on respondents in analysis on victimization and suicide ideation. c = respondents present at wave 1 and 2. Full sample consisted of 192 high schoolers. d = based on respondents included in analysis. Only the high school sample was included in this meta-analysis. SR = self report; TR = teacher report; PR = peer report; BU = study measured bullying; PV = study measured peer victimization.

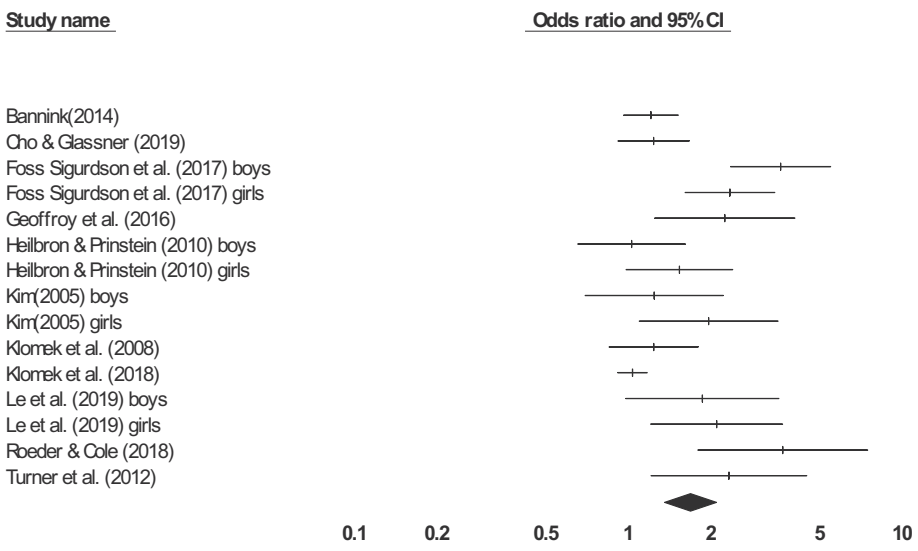

Fig. 2. A forest plot of the main meta-analysis.

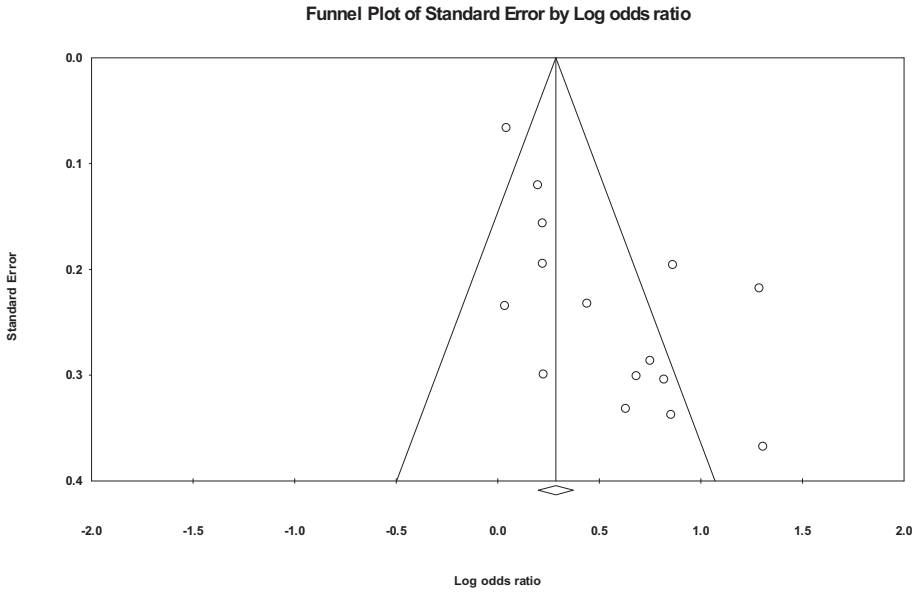

Fig. 3. A funnel plot of the main meta-analysis.

published regardless of the results, and small studies will only be published if they provide significant results (Borenstein et al., 2009). We therefore reran our analysis, including only the studies with more than 1000 respondents. Results were very similar to the initial analysis (k = 11, OR = 1.764 [95% CI = 1.344, 2.315]), which again suggests that publication bias did not likely affect the key findings. We also ran the leave-one-out procedure which suggested that no single included study had a very large effect on the obtained outcomes, see Fig. 4.

To address potential sources of heterogeneity we conducted a number of moderator analyses. To test for a potential inflation of effect sizes due to same method variance we compared studies that used only self-reports (k = 10, OR = 1.906 [95% CI = 1.410, 2.575]) to studies that used multiple informers or peer reports (k = 5, OR = 1.337 [95% CI = 1.081, 1.653]). Studies that used only self-reports reported a larger effect size than studies that used multiple informers or peer reports, and this effect size almost reached statistical significance, $Q(1) = 3.553$, p = .059. Using a meta-regression we found that studies' time-span was not a significant moderator of effect sizes $Q(1) = 0.454$, p = .503. The results of a cumulative meta-analysis did not suggest that there were effects for year of publication, see Fig. 5.

4. Discussion

In the current meta-analysis we found significant prospective relations between peer victimization and suicide ideation among youth. These relations proved quite robust; in moderator analyses we obtained smaller, yet significant effect sizes for studies that considered multiple informers or peer reports. There is evidence for publication bias, but our analyses suggest that it is unlikely that the overall effect size would be non-significant if we could have included all 'disappeared' studies into the meta-analysis. Furthermore, a re-analysis including only larger studies, which tend to be more easily published when they report non-significant results than smaller studies with non-significant results (Borenstein et al., 2009), also provided significant results, again suggesting that publication bias did likely not affect the key findings presented in this study.

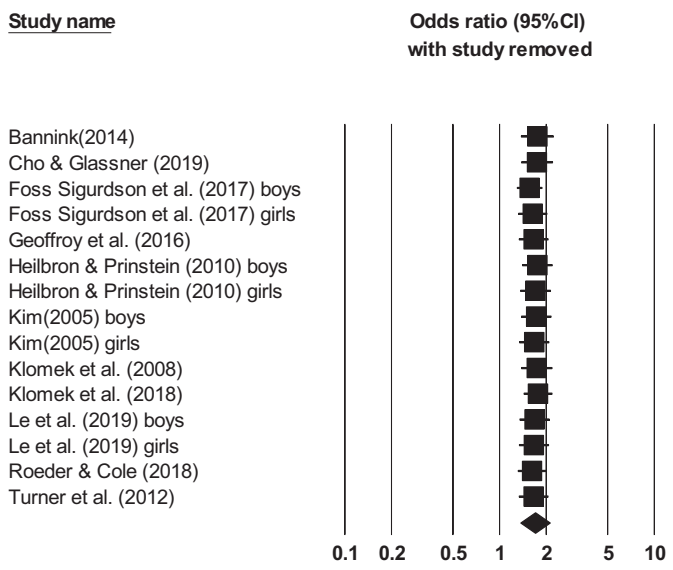

Fig. 4. Results of the one-study-removed analysis.

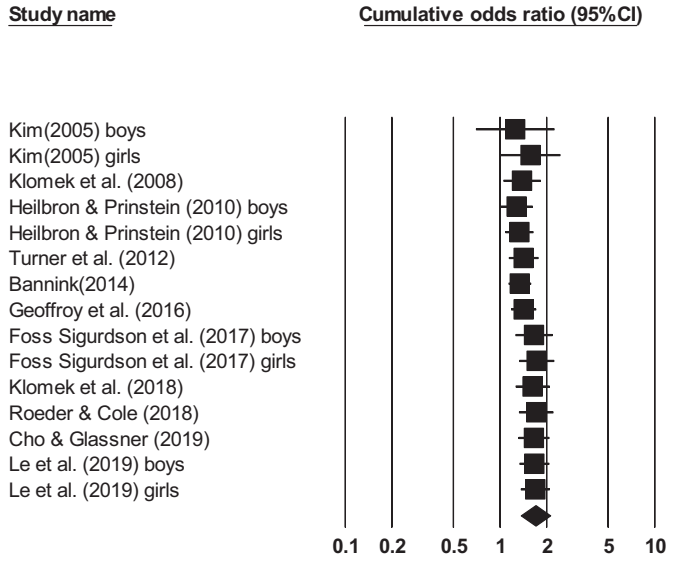

Fig. 5. Results of the cumulative meta-analysis with studies entered based on publication year.

Though our meta-analysis provides no insights as to why prospective relations between peer victimization and suicide ideation exist, we can think of several possibilities. Peer victimization is a relatively stable phenomenon, especially over the course of one year (Pouwels et al., 2016). Experiences of peer victimization in the past may be indicative of more incidents of peer victimization in the future. A recent longitudinal study indeed points out that adolescents who are consistently victimized are more at risk for suicide ideation than adolescents for whom victimization declines (Le et al., 2017); in short, past victimization may be indicative of a stable pattern of victimization, and prolonged suicide ideation. Another possibility is that incidents of peer victimization may lead to a broad range of interrelated problems such as trauma (Kelleher et al., 2008), drug use (Ttofi et al., 2016) and low self-esteem (Van Geel et al., 2018) which in turn could make adolescents more susceptible to suicide ideation (Bridge et al., 2006). Wolke and Lereya (2015) review the processes that may explain why bullying leads to adverse adult outcomes. Though they do not explicitly tie these processes to suicide or suicide ideation, they suggest that negative experiences with peers may alter stress responses in those with genetic vulnerabilities and may make adolescents hypervigilant to social cues, straining social relationships with parents and friends. Future research should determine how negative peer experiences relate to later adverse outcomes, including suicide ideation.

The included studies varied strongly in their reported effect sizes. This is also reflected in the high measures of heterogeneity reported in the current meta-analysis. We tested two potential methodological moderators, namely same method variance and study length. Our moderator analysis on multiple informers and peer reports versus self-reports almost reached statistical significance, with studies that used multiple informers or peer reports suggesting smaller overall effect sizes. This is consistent with a range of existing meta-analyses on peer victimization (Hawker & Boulton, 2000; Van Geel et al., 2017), and likely reflects that effect sizes from studies that use only self-reports may be inflated because of same method variance (Hawker & Boulton, 2000). We did not find that effect sizes for studies that consider longer time periods between peer victimization and suicide ideation report smaller effect sizes than studies that consider shorter time periods. Indeed, several of the studies that ran for two years or longer reported significant relations between peer victimization and suicide ideation (e.g., Cho & Glassner, 2019; Heilbron & Prinstein, 2010; Turner et al., 2012). Some caution is needed when interpreting these results, because they are contrary to earlier meta-analyses on longitudinal studies on peer victimization and negative effects (e.g., Van Geel et al., 2018), and the variation in time-span of the included studies was limited. Finally, using a cumulative meta-analysis we did not find that more recently published studies provided smaller effect sizes than older studies. This is an indication of robust results, because initial significant results may become refuted when later studies use more rigorous methodologies (Ioannidis, 2005). However, it is important to note that the first prospective study included in this meta-analysis about peer victimization and suicide ideation is relatively 'young' (Kim, 2005), and more critical studies may yet appear.

There are several limitations to the current meta-analysis. Though we found enough studies for a meaningful meta-analysis (see Borenstein et al., 2009, for a discussion about required studies and respondents in meta-analyses), a larger number of studies would have allowed an expanded set of moderator analyses. Some studies suggest that the type of peer victimization (physical vs verbal) is an important factor to include in the design (Klomek et al., 2019), but there were too few studies that included this distinction to test this in our meta-analysis. Furthermore, we know from previous meta-analyses on longitudinal studies that relations between youth problems and peer victimization are often bidirectional (Reijntjes et al., 2011; Van Geel et al., 2018); being victimized may lead to problems, but experiencing problems (depression, low self-esteem) likely also puts youth at a higher risk for victimization. Most included studies only considered whether there were prospective pathways from peer victimization to suicide ideation (but see Le et al., 2019; Klomek et al., 2019), and therefore we could not test for bi-directionality in the current meta-analysis. We should also consider that pre-existing genetic vulnerabilities may make adolescents more susceptible to being bullied, and these pre-existing vulnerabilities may also simultaneously affect the risk of being victimized and suicide, making causal conclusions from the current meta-analysis even more difficult (Schoeler et al., 2019). Lastly, we ran a meta-regression on study length, but only two of the included studies lasted longer than two years. As such, the included length range in this analysis is small, and this moderator analysis should be repeated when more longitudinal studies, especially studies running for more than two years, are available.

Despite these limitations, the current meta-analysis more firmly establishes peer victimization as a risk factor for youth suicide ideation. The current meta-analysis also shows that experiences of victimization predict suicide ideation even years later. A caveat in our knowledge is that we are not sure why peer victimization may have long lasting

negative effects, and this should be addressed in future studies. Along with other studies and meta-analyses (Reijntjes et al., 2011; Ttofi et al., 2016; Van Geel et al., 2018) this again stresses the long-lasting negative effects that peer victimization may have, which is also the most important practical implication from this study. Negative effects of peer victimization may appear immediately, and though we do not know the reasons, negative effects of bullying may also appear months and even years later, meaning that we have to be vigilant around those whom have expressed experiences of peer victimization.

References[1]

*Bannink, R., Broeren, S., van de Looij-Jansen, P. M., de Waart, F. G., & Raat, H. (2014). Cyber and traditional bullying victimization as a risk factor for mental health problems and suicidal ideation in adolescents. *PLoS One, 9*(4), Article e94026.

Björkqvist, K. (2001). Social defeat as a stressor in humans. *Physiology & Behavior, 73*(3), 435–442.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. (2006). Comprehensive meta-analysis version 2. http://www.meta-analysis.com.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. Chichester, UK: John Wiley & Sons.

Bridge, J. A., Goldstein, T. R., & Brent, D. A. (2006). Adolescent suicide and suicidal behavior. *Journal of Child Psychology and Psychiatry, 47*(3–4), 372–394.

Card, N. A. (2012). *Applied meta-analysis for social science research*. New York: Guilford Press.

Cash, S. J., & Bridge, J. A. (2009). Epidemiology of youth suicide and suicidal behavior. *Current Opinion in Pediatrics, 21*(5), 613–619.

Castellví, P., Lucas-Romero, E., Miranda-Mendizábal, A., Parés-Badell, O., Almenara, J., Alonso, I., … Alonso, J. (2017). Longitudinal association between self-injurious thoughts and behaviors and suicidal behavior in adolescents and young adults: A systematic review with meta-analysis. *Journal of Affective Disorders, 215*, 37–48.

*Cho, S., & Glassner, S. (2019). Examining the mediating effects of negative emotions on the link between multiple strains and suicidal ideation: A longitudinal analysis. *Archives of Suicide Research*. https://doi.org/10.1080/13811118.2019.1586604

Dickersin, K. (1990). The existence of publication bias and risk factors for its occurrence. *JAMA, 263*(10), 1385–1389.

Duval, S., & Tweedie, R. (2000). Trim and fill: A simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics, 56*, 455–463.

*Geoffroy, M. C., Boivin, M., Arseneault, L., Turecki, G., Vitaro, F., Brendgen, M., … Côté, S. M. (2016). Associations between peer victimization and suicidal ideation and suicide attempt during adolescence: Results from a prospective population-based birth cohort. *Journal of the American Academy of Child & Adolescent Psychiatry, 55*(2), 99–105.

Hawker, D. S., & Boulton, M. J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *The Journal of Child Psychology and Psychiatry and Allied Disciplines, 41*, 441–455.

Hay, C., & Meldrum, R. (2010). Bullying victimization and adolescent self-harm: Testing hypotheses from general strain theory. *Journal of Youth and Adolescence, 39*(5), 446–459.

Hedges, L. V., & Vevea, J. L. (1998). Fixed- and random-effects models in meta-analysis. *Psychological Methods, 3*(4), 486–504.

*Heilbron, N., & Prinstein, M. J. (2010). Adolescent peer victimization, peer status, suicidal ideation, and nonsuicidal self-injury: Examining concurrent and longitudinal associations. *Merrill-Palmer Quarterly, 56*(3), 388–419.

Holt, M. K., Vivolo-Kantor, A. M., Polanin, J. R., Holland, K. M., DeGue, S., Matjasko, J. L., … Reid, G. (2015). Bullying and suicidal ideation and behaviors: a meta-analysis. *Pediatrics, 135*(2), e496–e509.

IntHout, J., Ioannidis, J. P., Rovers, M. M., & Goeman, J. J. (2016). Plea for routinely presenting prediction intervals in meta-analysis. *BMJ Open, 6*(7), Article e010247.

Ioannidis, J. P. (2005). Why most published research findings are false. *PLoS Medicine, 2*(8), Article e124.

Kelleher, I., Harley, M., Lynch, F., Arseneault, L., Fitzpatrick, C., & Cannon, M. (2008). Associations between childhood trauma, bullying and psychotic symptoms among a school-based adolescent sample. *The British Journal of Psychiatry, 193*(5), 378–382.

Kim, Y. S. (2005). *School bullying among Korean adolescents in a prospective follow-up study: Time trends, trajectories, predictors and adverse outcomes of bullying*. Berkeley: University of California.

Klomek, A. B., Sourander, A., & Elonheimo, H. (2015). Bullying by peers in childhood and effects on psychopathology, suicidality, and criminality in adulthood. *The Lancet Psychiatry, 2*(10), 930–941.

*Klomek, A. B., Barzilay, S., Apter, A., Carli, V., Hoven, C. W., Sarchiapone, M., … Kaess, M. (2019). Bi-directional longitudinal associations between different types of bullying victimization, suicide ideation/attempts, and depression among a large sample of European adolescents. *Journal of Child Psychology and Psychiatry, 60*(2), 209–215.

*Klomek, A. B., Sourander, A., Kumpulainen, K., Piha, J., Tamminen, T., Moilanen, I., … Gould, M. S. (2008). Childhood bullying as a risk for later depression and suicidal ideation among Finnish males. *Journal of Affective Disorders, 109*(1–2), 47–55.

Kokkevi, A., Rotsika, V., Arapaki, A., & Richardson, C. (2012). Adolescents' self-reported suicide attempts, self-harm thoughts and their correlates across 17 European countries. *Journal of Child Psychology and Psychiatry, 53*(4), 381–389.

Le, H. T. H., Nguyen, H. T., Campbell, M. A., Gatton, M. L., Tran, N. T., & Dunne, M. P. (2017). Longitudinal associations between bullying and mental health among adolescents in Vietnam. *International Journal of Public Health, 62*(1), 51–61.

*Le, H. T. H., Tran, N., Campbell, M. A., Gatton, M. L., Nguyen, H. T., & Dunne, M. P. (2019). Mental health problems both precede and follow bullying among adolescents and the effects differ by gender: A cross-lagged panel analysis of school-based longitudinal data in Vietnam. *International Journal of Mental Health Systems, 13*, Article 35.

Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1996). Adolescent suicidal ideation and attempts: Prevalence, risk factors, and clinical implications. *Clinical Psychology: Science and Practice, 3*(1), 25–46.

McDougall, P., & Vaillancourt, T. (2015). Long-term adult outcomes of peer victimization in childhood and adolescence: Pathways to adjustment and maladjustment. *American Psychologist, 70*(4), 300–310.

Mikkelsen, E. G. E., & Einarsen, S. (2002). Basic assumptions and symptoms of post-traumatic stress among victims of bullying at work. *European Journal of Work and Organizational Psychology, 11*(1), 87–111.

Moore, S. E., Norman, R. E., Suetani, S., Thomas, H. J., Sly, P. D., & Scott, J. G. (2017). Consequences of bullying victimization in childhood and adolescence: A systematic review and meta-analysis. *World Journal of Psychiatry, 7*(1), 60–76.

Pouwels, J. L., Souren, P. M., Lansu, T. A., & Cillessen, A. H. (2016). Stability of peer victimization: A meta-analysis of longitudinal research. *Developmental Review, 40*, 1–24.

Reijntjes, A., Kamphuis, J. H., Prinzie, P., Boelen, P. A., Van der Schoot, M., & Telch, M. J. (2011). Prospective linkages between peer victimization and externalizing problems in children: A meta-analysis. *Aggressive Behavior, 37*(3), 215–222.

Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse & Neglect, 34*, 244–252.

Roeder, K. M., & Cole, D. A. (2018). Prospective relation between peer victimization and suicidal ideation: Potential cognitive mediators. *Cognitive Therapy and Research, 42*(6), 769–781.

Ruch, D.A., Sheftall, A.H., Schlagbaum, P., Rausch, J., Campo, J.V., & Bridge, J.A. (2019). Trends in suicide among youth aged 10 to 19 years in the United States, 1975 to 2016. JAMA Network Open, 2(5), e193886. doi:https://doi.org/10.1001/jamanetworkopen.2019.3886.

Schoeler, T., Choi, S. W., Dudbridge, F., Baldwin, J., Duncan, L., Cecil, C. M., … Pingault, J. B. (2019). Multi–polygenic score approach to identifying individual vulnerabilities associated with the risk of exposure to bullying. *JAMA Psychiatry, 76*(7), 730–738.

*Sigurdson, J. F., Undheim, A. M., Wallander, J. L., Lydersen, S., & Sund, A. M. (2018). The longitudinal association of being bullied and gender with suicide ideations, self-harm, and suicide attempts from adolescence to young adulthood: A cohort study. *Suicide and Life-threatening Behavior, 48*(2), 169–182.

Sutton, A. J., Duval, S. J., Tweedie, R. L., Abrams, K. R., & Jones, D. R. (2000). Empirical assessment of effect of publication bias on meta-analyses. *BMJ, 320*(7249), 1574–1577.

Ttofi, M. M., Farrington, D. P., & Lösel, F. (2012). School bullying as a predictor of violence later in life: A systematic review and meta-analysis of prospective longitudinal studies. *Aggression and Violent Behavior, 17*, 405–418.

Ttofi, M. M., Farrington, D. P., Lösel, F., Crago, R. V., & Theodorakis, N. (2016). School bullying and drug use later in life: A meta-analytic investigation. *School Psychology Quarterly, 31*(1), 8–27.

Ttofi, M. M., Farrington, D. P., Lösel, F., & Loeber, R. (2011). Do the victims of school bullies tend to become depressed later in life? A systematic review and meta-analysis of longitudinal studies. *Journal of Aggression, Conflict and Peace Research, 3*, 63–73.

*Turner, H. A., Finkelhor, D., Shattuck, A., & Hamby, S. (2012). Recent victimization exposure and suicidal ideation in adolescents. *Archives of Pediatrics & Adolescent Medicine, 166*(12), 1149–1154.

Turner, H. A., Finkelhor, D., Shattuck, A., Hamby, S., & Mitchell, K. (2015). Beyond bullying: Aggravating elements of peer victimization episodes. *School Psychology Quarterly, 30*(3), 366–384.

Van Geel, M., Goemans, A., Zwaanswijk, W., Gini, G., & Vedder, P. (2018). Does peer victimization predict low self-esteem, or does low self-esteem predict peer victimization? Meta-analyses on longitudinal studies. *Developmental Review, 49*, 31–40.

Van Geel, M., Toprak, F., Goemans, A., Zwaanswijk, W., & Vedder, P. (2017). Are youth psychopathic traits related to bullying? Meta-analyses on callous-unemotional traits, narcissism, and impulsivity. *Child Psychiatry & Human Development, 48*(5), 768–777.

Van Geel, M., Vedder, P., & Tanilon, J. (2014). Relationship between peer victimization, cyberbullying, and suicide in children and adolescents: A meta-analysis. *JAMA Pediatrics, 168*(5), 435–442.

Wolke, D., Lee, K., & Guy, A. (2017). Cyberbullying: A storm in a teacup? *European Child & Adolescent Psychiatry, 26*(8), 899–908.

Wolke, D., & Lereya, S. T. (2015). Long-term effects of bullying. *Archives of Disease in Childhood, 100*(9), 879–885.

[1] References marked with an asterisk indicate studies included in the meta-analysis.