ARTICLE REVIEW

Risk of Bullying-Induced Depression among Adolescents: A Systematic Review

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ABSTRACT

Depression is a serious mental disorder caused by multiple factors, including psychosocial stressors. Among adolescents, one potentially prominent psychosocial stressor is bullying. Our systematic review aimed to analyze the available studies to determine whether bullying could induce depression. Nine studies published between 2016 and 2021 were analyzed. Most studies were cross-sectional and of good quality. Results revealed that bullying causes various depressive symptoms among adolescents, with female and younger adolescents having more depression than male and older adolescents. Mild depression is the most common level of depression experienced, and relational bullying is the most common type of bullying. The two sexes were different for the most common type of bullying, with physical bullying being more common in males while verbal and relational bullying were more common in females. Future studies should also include articles with restricted access and with different research designs to better represent the currently available data.

Keywords: *adolescent, bullying, bullying in adolescents, depression*

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INTRODUCTION

Depression is an affective disorder marked by profound sadness, diminished interest in daily activities, reduced appetite, sleeping disturbance, and thoughts of uselessness and guilt.[1] World Health Organization data showed that in 2015, around 300 million people were estimated to suffer from depression, which is equivalent to 4.4% of the world's population. The Southeast Asia region had the highest incidence, with 86.94 million (27%) out of 322 million individuals suffering from the condition.[2] The Indonesian data reported depression to occur as early as adolescent age, with a prevalence of 6.1%.[3] At the age of 15, the incidence of depression is estimated to be 3% and increases to 17% at the age of 18.[4] Multiple factors influence depression, including psychosocial stressors.[5] One of the psychosocial stressors in adolescents is bullying.[4]

Bullying is a global problem among adolescents. Victims of bullying among adolescents have been reported to have various social issues and mental disorders.6 The prevalence of bullying victims varies across countries, but many have reported bullying as a common phenomenon in their region. A multi-country cross-sectional study found that the highest bullying rate was 34.4%. People with disabilities, obesity, or those who come from ethnic minorities are more likely to experience bullying than their peers.[7] Data from the 2018 PISA (Programme for International Students Assessment) research results stated that Indonesia ranks fifth for the highest number of bullying in the world, with 41.1% teenagers admitted to having experienced it.[8]

One previous study in Vietnam showed that bullying significantly increases the risk of depression and suicidal ideation.[6] Additionally, Naveed et al. (2019) found a significant correlation between depressive symptoms in adolescents and a history of bullying.[9] However, a study by Afifah et al. (2018) had different results.[10] These differences require further research on this issue. Therefore, we conducted this study to analyze the characteristics of the incidence of depression and exposure to bullying in adolescents and the correlation between the two.

METHODS

We conducted a systematic review without meta-analysis to analyze scientific articles obtained from databases including PubMed, Cochrane Library, Google Scholar, Springer, and Garuda Portal databases. The searching process utilized compilation of keywords using advanced search, bibliographic searching, Boolean operators (AND, OR, and NOT), and manual searching according to the Medical Subject Headings (MeSH). The keywords used for searching were determined using the PECO (Population, Exposure, Comparison, and Outcome) method (Table 1).

Table 1. PECO framework for data searching

Framework	Description
Population	Adolescents
Exposure	Bullying
Comparison	Adolescents who do not experience bullying
Outcome	Depression

The scientific articles obtained were then systematically reviewed to reach conclusions. We utilized the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) flow diagram to refine the retrieved articles into those ready for analysis and synthesis. Inclusion criteria include the suitability of the article to the topic, its free accessibility for the full-text, publication period between 2011 and 2021, written in English or Indonesian, and using cohort, cross-sectional, or case-control studies as research design. Articles of poor quality (scored <50% upon assessment with the Joanna Briggs Institute (JBI) Critical Appraisal Tools checklist), and those that included samples aged less than 10 years old or more than 19 years old, were excluded.

RESULTS

We initially retrieved 1865 articles, including 392 from PubMed, 97 from Cochrane Library, 984 from Springer, 389 from Google Scholar, and three from the Garuda Portal. The articles were subsequently checked for duplication, suitability to the research topic, availability of full-text access, year of publication, language, and fitness with the required study designs. Ten articles met the inclusion criteria. However, one article was excluded due to its poor quality. In the end, we included nine articles for the systematic review. The PRISMA flow chart for article searching is available in Figure 1.

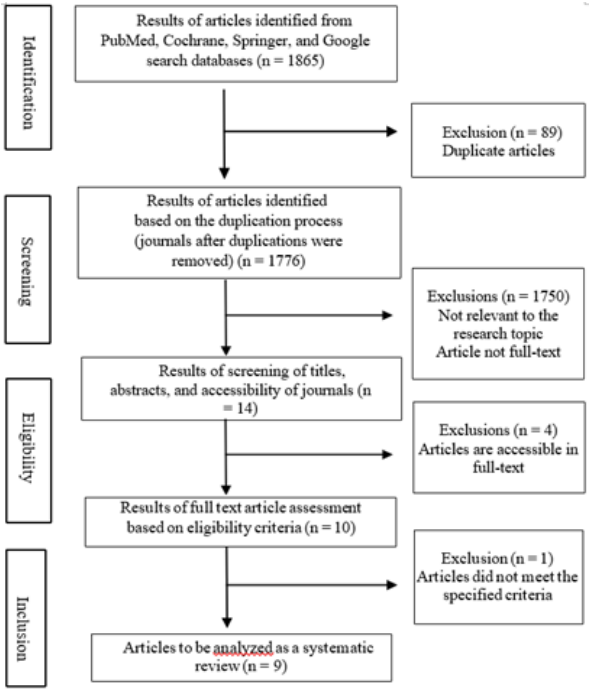


Figure 1. PRISMA Flow-chart of Literature Search on the Relationship Between Bullying and Depression Among Adolescents

Most articles were cross-sectional studies (n=8) and written in English (n=8). All articles were published between 2016 and 2021 and had good quality (Table 2).

Content analysis of the articles showed that studies were conducted in Asia (n=7), Australia (n=1), and America (n=1). The sample size ranged from 248 in the study by Kasoema et al. (2020) to 20,509 in Hong's research (2016).[11,12] Several types of bullying were evident, and these include verbal, relational, and physical bullying.

Table 2. Characteristics of the articles

Description	Quantity
Research Design	
Cross sectional	8
Cohort	1
Total	9
Language	
English	8
Indonesian	1
Total	9
Year of publication	
2016	2
2017	2
2018	2
2019	1
2020	1
2021	1
Total	9
JBI score	
100%	6
75%	3
Total	9

Eight studies revealed correlations between bullying and depression in 8 articles, while one article reported no correlation. Further details of the studies are presented in Table 3.

Ngo et al. (2021) explained that students/adolescents aged 12-13 years who had bullying experience had higher levels of depression than adolescents who did not experience bullying.[6] Hong's study in China similarly mentioned an independent association of bullying with increased risk of suicidal ideation among adolescent students, and this association was affected by depression.[12]

Ford et al. (2017) in their Australian study showed that adolescents involved in all bullying roles (victims, bullies, bully victims) scored higher on the depressive symptom scale than those who were not, with the victims having the highest scores.[13] Similarly, Weng et al. (2017) stated that adolescents who were involved in bullying either as bullies, victims, or victims/bullies experienced more anxiety and depression. However, this correlation was not statistically significant.[14]

Research on adolescents in Saudi Arabia, Pakistan, and Indonesia showed that bullying was significantly related to depression, and stated that adolescents who experience verbal and relational bullying were more likely to have depressive symptoms compared to their peers without the experience.[9,11,15] Duarte et al. (2018), who studied adolescents exposed to cyberbullying, mentioned that depression was more common among adolescents who reported experiencing cyberbullying than those who did not.[7] In an Israeli study, adolescents bullied by their siblings were 3.7 times more likely to have clinical depression than those who weren't.[16] Only one article analyzed the level of depression that occurred in adolescents who experienced bullying, with mild depression being the level that was mostly experienced.[9]

Four articles noted the different experiences of bullying between males and females. Ford et al. (2017) and Weng et al. (2017) stated that more women were reported to be victims compared to men, and more men were reported to be bullies. The victims experienced more depression than the perpetrators.[13,14] Similarly, Duarte et al. (2018) mentioned that adolescents who experienced cyberbullying were more likely to be women and non-white (OR (95% CI) 1.57 (0.72–3.42) and 1.27 (0.56–2.91), respectively).[7] Considering the type of bullying, the study in Vietnam stated that female adolescents were more likely to have relational bullying than males (OR 1.34 (0.56–1.66)).[6]

Table 3. Summary of the Content of the Articles

Author and Year of Publication	Location	Sample size	Research Design	Types of Bullying	Correlations between bullying and depression	
					Present	Absent
Ngo et al., (2021)	Vietnam	712	Cross Sectional	Physical, Verbal, Relational	✓	-
Hong et al., (2016)	China	20,509	Cross Sectional	Verbal, Relational, Physical	✓	-
Ford et al., (2017)	Australia	3537	Cohort	Relational, Verbal, Physical	✓	-
AlBuhairan et al., (2017)	Saudi Arabia	9073	Cross Sectional	Verbal, Physical	✓	-
Naveed et al., (2019)	Pakistan	452	Cross Sectional	Physical, Verbal	✓	-
Duarte et al., (2018)	USA	1031	Cross Sectional	Cyberbullying	✓	-
Bar-Zomer and Brunstein Klomek, (2018)	Israel	319	Cross Sectional	Physical, Relational, Verbal	✓	-
Weng et al., (2017)	Macau	2407	Cross Sectional	Verbal, Relational	-	✓
Kasoema, (2020)	Indonesia	248	Cross Sectional	Physical, Verbal, Relational	✓	-

Age might mediate the association between exposure to bullying and depression in adolescents. Al Buhairan et al. (2017) mentioned that physical bullying was more common in boys and younger adolescents, and that they're significantly more likely to report experiencing depression (OR: 1.7; 95% CI 1.535-1.869).[15] Additionally, it stated that in older adolescents, depression is more likely for those who experienced verbal bullying. Weng et al. (2017) added that older adolescents had a higher tendency to be

involved in bullying compared to younger adolescents, either acting as bullies (OR=0.85) or victims (OR=0.88), but usually victims were significantly younger than the bullies.[14]

Three articles described how different types of bullying might cause depression. Ford et al. (2017) reported that as many as 15.6% of adolescents had experienced relational-verbal bullying, 4.7% physical bullying, and 9.7% experienced both types of bullying. Relational-verbal bullying was more common in females (67.1% vs 32.9%), while more men experienced physical bullying (79.2% vs 20.8%).[13] Ngo et al. (2021) endorsed this finding and stated that the three types of bullying were experienced by adolescents, with physically bullied adolescents being at higher risk for depression (OR 1.96, 95% CI: 0.94-4.08).[6] However, AlBuhairan et al. (2017) found a different result, stating that adolescents with relational bullying were more likely to suffer from depressive symptoms (OR: 2.66; 95% CI: 2.399–2.959) compared to students who did not experience it or other types of bullying.[15] The three articles agreed that relational bullying was the most common type in adolescents, followed by verbal, physical, and then cyberbullying.

DISCUSSION

Nine articles were systematically reviewed by going through various study selections based on PECO criteria, inclusion, and exclusion criteria. The studies analyzed showed that bullying can affect mental health, especially depression in adolescents. Al Buhairan et al. (2017), Ngo et al. (2021), and Ford et al. (2017) agreed that bullying acts were significantly correlated with depression.[6] Of note, bullying victims report significantly greater depressive symptoms than bullies.[8] Naveed et al. (2019) stated that distress in psychosocial functioning contributes to the greatest severity of depressive symptoms among both bullies and victims.[9] This notion was supported by Marela et al. (2017), who found that depression in adolescents was frequently associated with negative events with peers, lack of communication with friends, not having close relationships with friends or close friends, and peer rejection.[17] Adolescents themselves have a strong need to feel liked and accepted by peers or groups. So, adolescents will feel happy if accepted and will feel very depressed and anxious if excluded or belittled by peers. Negative influences such as rejection and neglect from peers can affect adolescent development and can cause mental health problems in adolescents.[11] In addition to peer bullying, sibling bullying could also cause depression. One possible explanation for this causation is the chronicity and the minimal possibility of avoiding or escaping the situation. In this state, adolescents might develop a sense of helplessness and lack of security, which increases the risk of depression.[16]

Four articles discussed the correlation between depression and bullying based on sex, and generally agreed that more women experienced depression than men. This discrepancy might be caused by different hormones and psychological pressures between the two sexes. Brain chemistry can be directly influenced by hormones, and this would affect the capacity for emotion regulation. Additionally, hormonal changes in adolescence, especially in girls, can increase their tendency towards depression. Girls might have feelings related to high self-image, especially concerning body image. The coping mechanism between the two genders might differ, too. Depressed women are more likely to think about negative feelings and magnify them, while men tend to avoid thinking about those feelings and focus on other things instead.[17]

Two articles discussed the distribution of exposure to bullying in adolescents based on age and noted that younger adolescents with a history of bullying were more likely to experience depression than the older ones. One possible reason is that senior students have had more physical and psychosocial

development than younger students, hence their better resistance to bullying.[14] A study by Mei also explained that as junior high school students were in a significant transitional period, individuals experience enormous physical and psychological changes during puberty. Consequently, the negative effects of bullying on junior high school students were usually more serious than those on other age groups.[18] Another explanation stated that during the transition from elementary (younger) to middle school, students may be more likely to seek social dominance to prove their power over their peers, which may put them at high risk for bullying, especially physical and sexual.[6] A study of high school students endorsed a correlation between one's grade and the incidence of depression, noting that adolescents who experience depression were more likely to be in tenth grade (younger) compared to eleventh and twelfth grade (older). Tenth-grade adolescents were 1.5 times more likely to experience depression than eleventh-grade adolescents. This happens because of the high level of stressors in tenth-grade adolescents, such as the process of adapting to a new environment when entering a higher level of school (middle school to high school). This adaptation includes adjusting to school, friends, and lessons. Changes in responsibility to become a more mature adolescent also occur during this period.[17]

Three articles discussed the types of bullying that often occur in adolescents, citing physical, verbal, and relational bullying as the most common types. Additionally, relational and verbal bullying had the highest prevalence and arguably the most significant damage among them.[6,13] An explanation for this finding may be that relational bullying can convey negative information that is more personal than physical bullying. This type of bullying may be harder to manage, too, as it attacks the victims by creating a bad reputation for them. Moreover, the victim may not be aware of the perpetrator's identity, hence the reduced chance for confrontation.[19] Adults and peers are more likely to help and recognize bullying that is carried out directly by the perpetrator. Therefore, direct bullying, such as physical violence, may be more preventable. However, non-physical violent behavior, such as verbal or relational violence, might be more difficult to recognize and prevent.[6]

The type of bullying also explains the differences in depression when correlated to gender and age, as stated in the studies by AlBuhairan et al. (2017), Ford et al. (2017), and Ramadhani and Retnowati (2013), where male adolescents experience physical bullying more often than female adolescents. Additionally, verbal bullying became more prevalent among older adolescents, replacing the physical bullying that was more common among younger adolescents.[20] This may be related to the ability of older adolescents to resolve conflicts in a more assertive manner due to more advanced social and developmental skills.[15]

Several limitations are evident in our study. First, not all included articles have the same level of detail, limiting our ability to obtain a more thorough conclusion. Second, many scientific articles were restricted and required access through institutions, preventing them from being included in the review.

CONCLUSION

Bullying is correlated with various symptoms of depression in adolescents. Female adolescents are more exposed to bullying and experience depression than males. Younger adolescents tend to experience more depression than older ones as they're more likely to experience bullying. Mild depression is the most common level of depression experienced by adolescents with a history of bullying. Relational bullying is the most common type of bullying encountered by adolescents. Furthermore, physical bullying is more common in male adolescents, while verbal and relational bullying are more common in females.

Further studies need to conduct a broader search for research articles to obtain more representative data. Improvement in the study design might include performing a meta-analysis of the evidence. Other variables related to bullying, such as anxiety disorders, should be studied as well.

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