MedCrave
Step into the World of Research
Forensic Research & Criminology International Journal

Research Article

Open Access
CrossMark

Suicidal ideation among high school students: How gender, bullying victimization, being threatened/injured, hopelessness/sadness, and sleep disturbance help us to predict

Abstract

Background: Suicidal behavior among adolescents is a serious problem. A successful suicide prevention policy requires better detection strategies and early warning systems. This study aims to examine the association between suicidal ideation and gender, in-person and electronic bullying victimization, being threatened/injured by a weapon at school, hopelessness/sadness, and sleep disturbance.

Methods: Data from the Youth Risk Behavior Survey in 2015 were used for this study. Logistic regression analysis was conducted to examine the association between suicidal ideation and gender, in-person and electronic bullying victimization, being threatened/injured by a weapon at school, hopelessness/sadness, sleep disturbance on a sample of 14152 adolescents aged 12–18 years (50.4% females, 49.6% males).

Results: Almost 1 out of 5 high school students considered suicide during the last 12 months before they joined the survey. The odds of having suicidal thoughts are higher among female adolescents compare to males. The statistical analysis showed that bullying victimization at school (in person and/or electronic), being threatened/injured at school property, helplessness/sadness, and sleep disturbance are strong predictors of suicidal ideation. However, reading the numbers related to hopelessness/sadness (10.18 times higher likelihood) and being threatened at school 10 or 11 times (7.27 times higher likelihood) provided quite a high likelihood compared to the other factors examined.

Keywords: adolescents' suicidal ideation, risk behaviors, public health

Volume 9 Issue 3 - 2021

Yasemin Onder,[1] Seref G Onder[2]
[1]Northern Illinois University, USA
[2]Department of Criminal Justice, Virginia State University, USA

Correspondence: Yasemin Onder, Northern Illinois University, USA, Tel 7036242826, Email yonder1@niu.edu

Received: August 10, 2021 | **Published:** November 01, 2021

Introduction

Suicidal ideation among adolescents is a serious problem. According to the Centers for Disease Control and Prevention, statistics between 2009 and 2019 showed that suicide is the third leading cause of death among the age group of 10–14 years old, the second leading cause of death among age groups of 15–24 and 25–34 years old.[1] An estimated 1 in 5 high school students have made a suicide plan, and approximately 1,000 students die of suicide on college campuses each year.[2,3] Committing suicide is the final stage that may occur after several suicidal behaviors like suicidal ideation (or suicidal thought) which is thinking, considering, planning, or attempting suicide. Each of these phases is difficult to detect and complex in nature (Centers for Disease Control and Prevention, 2015). According to recent data from the Centers for Disease Control and Prevention,[2] suicidal thoughts and suicide plans among high school students noticeably increased by 3% between 2007 and 2017. Many studies in the literature attempted to examine reasons and leading factors that cause suicidal ideation and recommended several prevention strategies.[4–7]

An adolescent who considers committing suicide would send various intentional or unintentional signals to their environment or some behavioral indicators can warn others regarding their plans.[8,9] Thus, studying these indicators and signals and creating better detection tools would help authorities to develop better prevention strategies. Among several activities, one significant effort is done by CDC by providing data, Youth Risk Behavior Surveillance Survey (YRBSS), to study suicidality and related indicators. A series of studies have examined the youth risk behavior, in particular, warning signs and risk factors of suicide from different perspectives using the YRBSS datasets in different years.[3,10] The goal of this study is to contribute to literature providing empirical evidence to develop better prevention strategies. More specifically, the purpose of this study to examine the effect of gender, bullying victimization at school (in person and/or electronic), being threatened/injured at school property, hopelessness/sadness, and sleep disturbance on suicidal ideation among adolescents. The research questions of this study are:

i. Does gender predict suicidal ideation?
ii. Does being victimized in-person/electronic bullying at school property predict suicidal ideation?
iii. Does being threatened/injured by a weapon at school property predict suicidal ideation?
iv. Does hopelessness/sadness predict suicidal ideation?
v. Does sleep disturbance predict suicidal ideation?
vi. Are there any patterns in terms of combined indicators among the adolescents who consider committing suicide?

Literature review

Many studies attempted to examine the predictors of suicidal ideation. Creating better preventive strategies requires better detection and prediction methods.[8] One line of literature has focused on the suicidality among adolescents' drawing more attention to the

vulnerabilities or indicators of students during school years and the possibilities of implementing preventive strategies considering those indicators. Among various factors, some of the indicators that scholars checked were gender,[6] bullying victimization,[11,12] being threatened/injured,[13] sleep disturbance,[5,14,15] and hopelessness/sadness.[16,17]

Studies that examined gender differences in suicidal ideation or suicide attempts presented mixed results. Some studies found no significant difference between boys and girls,[18,19] while some others presented significantly fewer suicidal thoughts and attempts among female students.[3,6] conducted a systematic review and meta-analysis on longitudinal population-based studies from five different databases until January 2017. Their random effect meta-analyses included sixty-seven studies that examined adolescents between 12–26 years old. Results showed that females have a higher risk of suicide attempt (OR 1.96, 95% CI 1.54–2.50) than males (HR 2.50, 95% CI 1.8–3.6).[6]

Bullying has been accepted as another indicator of suicidal ideation during school years which frequently occurs in school properties and on social media which is seen recently.[20] According to the American Psychiatric Association (2018), bullying is one of the important risk factors for suicidal ideation. In particular, witnessing an enormous change in communication among youngsters and excessive use of social media, bullying is getting a different shape and form as named cyber-bullying or electronic bullying.[20,21] Eventually, both forms of bullying have drawn researchers' attention and required more studies from different angles like law, public health, and education, psychiatry, etc. for a better understanding of the problem.[22,23] Examined international big data that consist of 48 countries predominantly LMIC (low-middle income countries, non-western countries). Their data included 134,229 adolescents aged between 12-15 and provided evidence to examine the association between bullying victimization and suicide attempts among adolescents. They reported that in the 47 out of 48 LMIC countries, suicide attempt was significantly associated with bullying victimization. According to Koyanagi[23] students who experienced victimization of bullying in the last thirty days are more likely to have suicide attempts than others. They reported that "the past-year prevalence of suicide attempts ranged from 5.9% for the 'no bullying' group up to 32.7% for the 'being bullied for 20-30 days/month' group [OR=5.51 (95%CI=4.56-6.65)]"(p.915).

An extreme type of violence that students can face in school is being threatened or injured by a weapon, which could also be accepted as a severe form of simple bullying. Like the effects of bullying, experiencing these types of violence could be related to suicide ideation.[13] conducted a study to explore the relationship between being threatened or injured with a weapon in school and suicidal ideation. Surveying 23,543 students (7–12 years old) from 442 schools in China, their multivariable logistic regression revealed that student who reported being threatened or injured with a weapon in schools have higher [(1.46 (1.31–1.61) and 1.68 (1.31–2.13) respectively] likelihood of suicidal ideation than who did not report.[13] Several studies presented that there is a consistent and strong association between sleep disturbance and suicidal behavior among adolescents.[14,15,24,25] for example, researched1362 high school students (mean age 14.6 years, 60% males) to examine sleeping disturbance and suicidal behavior in relation to suicidal behavior. Results of the study showed that over 19% of participants have considered suicide and 10.5% have made suicide attempts in the past 6 months. Regarding the sleep problem, the researcher found that almost 17 % of participants were having insomnia symptoms and 49% were having experience nightmares in the past month. The result of logistic regression analyses showed that sleeping less than 8 hours at night (OR = 2.89, 95% confidence interval [CI] =1.07-7.81) and frequent nightmares (OR = 2.43, 95% CI = 1.76-3.35) were significantly associated with increased risk for suicide attempts.[25] Thus concluded that there is an association between short sleep duration and nightmares and suicidal behavior.

Another factor that scholars studied is hopelessness and sadness. Adolescents who attempted or considered suicide often suffer from feelings of sadness and hopelessness.[16,26,27] surveyed 2,074 undergraduate students and their results revealed that hopelessness one of the strongest predictors of suicidality.[16]

As briefly summarized, possible indicators and predictors of suicidal ideation have been examined individually by many scholars. The goal of this article is to investigate all given indicators in the YRBS context. Thus the purpose of this study is to examine suicidal ideation, specifically serious consideration of committing suicide among adolescents, and test its relationship with gender, bullying victimization (electronic or in-person), being threatened at school property, sleep disturbance, and hopelessness/sadness in a national sample of adolescents.

Method

The study used the Youth Risk Behavior Survey (YRBS), a nationally represented secondary data, collected by the CDC in 2015. The total sample was 14152 adolescents aged 12–18 years (50.4% females, 49.6% males) from public and private school students. The data were collected from nationwide (50 states and District of Colombia) from students from 9-12 graders. All information regarding sampling, objectives, all questions in the data set YRBSS are available at the CDC web site (Appendix).

Outcome variable

Outcome variable of this study is the question about suicidal considiration, question # 27; "During the past 12 months, did you ever seriously consider attempting suicide?" The question provided two answers as "Yes"(coded as 1) and "No" (coded as 0). The later one, "No, haven't considered suicide", is assigned the reference category.

Explanatory variable

Among the explanatory variables (predictors) gender, in-person, and electronic bullying victimization, hopelessness/sadness variables were measured as binary variables. Sleep patterns and being threatened at school variables were measured as ordinal variables at the data set.

Question #2 "*What is your sex?*" was used as an explanatory variable to describe participants' gender. It was a binary variable and "*male*" was used as a reference category for this study. Question # 24 "*During the past 12 months, have you ever been bullied on school property*?" was selected as another explanatory variable. It was also a binary variable and "*No! I have not been bullied on school property*" was assigned as a reference category for this study. Question # 25 "*During the past 12 months, have you ever been electronically bullied? (Count being bullied through e-mail, chat rooms, instant messaging, websites, or texting.)*" was expressed as electronic bullying, and answers were recorded as binary variables. "*No"* was assigned as a reference category for this study. As the last binary variable, Question #26 "*During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?*" was selected as the explanatory variable with "No" used as a reference category.

Question #17 "*During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife,*

or club on school property?" measured victimization of students as being threatened at school property. It was an ordinal variable and "0 times" was assigned as a reference category ("0 times", "1 time", "2 or 3 times", "4 or 5 times", "6 or 7 times", "8 or 9 times", "10 or 11 times", "12 or more").The other question collected data regarding students' sleep patterns;"*On an average school night, how many hours of sleep do you get?*" (*ordinal variables; 4 or less hours, 5 hours, 6 hours, 7 hours, 8 hours, 9 hours,10 or more hours*). For this study "*10 or more hours*" was assigned as a reference category.

Results

Sample characteristics

This large data set has missing values. Thus, the analysis started with exploring the scope and nature of missing data by using Little's test for Missing Completely at Random (MCAR). Table 1 shares the demographics of the sample. Based on the preliminary results of Little's test, the missing values appear to be MCAR. As we failed to reject the null hypothesis that the missing values are missing completely at random (MCAR). Thus, missing ness is handled with listwise deletion before performing the logistic regression analysis. The final sample size ended up providing data from 14,152 participants after the deletion (original participants were 15,558) According to data, almost 1 out of 5 high school students have experience seriously suicidal thoughts last 12 months in the year 2015.Demographic data presented almost equal distribution between the female (50.4%) and male (49.6%) population. According to the self-report responses, 19.2 % of the participants reported that they experienced bullying victimization at the school property while 14.5 % of the participant expressed that they were bullied electronically. 6% of all participants reported that they were being threatened or injured one or more times with a weapon such as a gun, knife, or club on school property. 20% of participants also reported that they were sleeping 5 hours or less on an average school night. As the last item, the data showed that around 30% of participants reported they felt hopeless or experienced sadness over the last 12 months (Table 1).

Table 1 Demographics of the sample

Variables (N=14152)	Frequency	Percentage %
OUTCOME VARIABLE		
Suicidal thoughts		
Yes	2544	18.00%
No	11608	82.00%
Exploratory variables		
Gender		
Female	7126	50.40%
Male	7026	49.60%
Bullying at school property		
Yes	2714	19.20%
No	11438	80.80%
Bullying electronically		
Yes	2057	14.50%
No	12095	85.50%
Being threatened at school property		
0 times	13311	94.10%
1 time	391	2.80%
2 or 3 times	214	1.50%
4 or 5 times	61	0.40%
6 or 7 times	36	0.30%
8 or 9 times	28	0.20%
10 or 11 times	15	0.10%
12 or more times	96	0.70%

Citation: Onder Y, Onder SG. Suicidal ideation among high school students: How gender, bullying victimization, being threatened/injured, hopelessness/sadness, and sleep disturbance help us to predict. *Forensic Res Criminol Int J.* 2021;9(3):102–108. DOI: 10.15406/frcij.2021.09.00346

Table Continued...

Variables (N=14152)	Frequency	Percentage %
Sleep pattern		
4 or less Hours	1110	7.80%
5 hours	1726	12.20%
6 hours	3244	22.90%
7 hours	4087	28.90%
8 hours	2994	21.20%
9 hours	744	5.30%
10 hours or more	247	1.70%
Hopelessness		
Yes	4337	30.60%
No	9815	69.40%

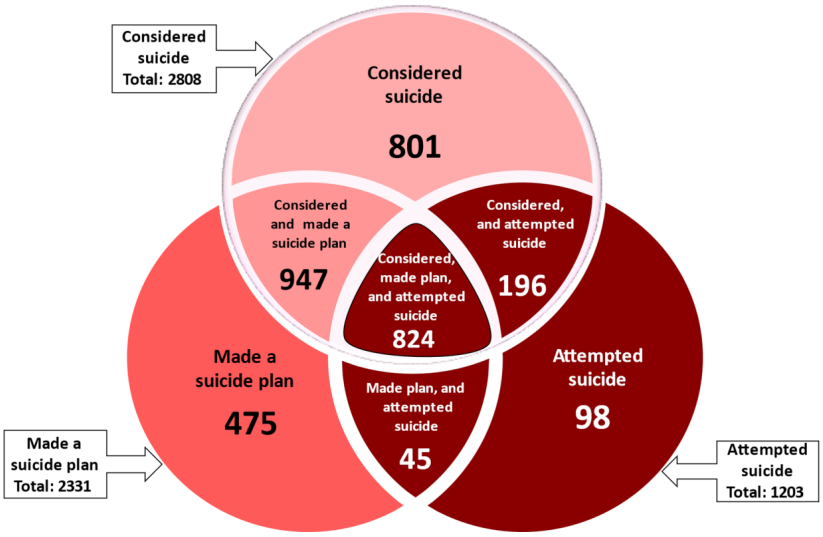

Figure 1 Suicidality declaration of participants.

Binary logistic regression results

A direct logistic regression analysis was conducted to determine whether suicidal ideation could be predicted by gender, in-person and electronic bullying victimization, being threatened at school, sleep disturbance, and feeling hopeless/sadness.14,152 participants were included in this analysis: 2544of the participants reported they considered attempting suicide seriously last 12 months while 11608were not. Multi co-llinearity between variables was not present in the dataset. Good model fit was evidenced by non-statistically significant results on the Hosmer–Let me show test, $x^2(10) = 3728, p = .05$, and small effect size indices when interpreted using Cohen (1988) (Cox and Snell $R^2 = .23$ Nagelkerke $R^2 = .38$). These results suggest that the predictors, as a set, reliably distinguished among adolescents who have suicidal ideation vs. not having suicidal ideation. Overall, the logistic regression model accurately predicted 84.7% of the high school students who are having suicidal ideation seriously last 12 months slightly more likely to be classified correctly. Of the predictors in the model, all predictors are statistically significant predictors of having suicidal thoughts.

Compared to adolescents who were male, adolescents who were female had1.43 times higher suicidal ideation (95% CI=1.28, 1.59). Compared to adolescences who were not victimized by bullying at school properties, adolescences who were victimized by bullying had 1.43 times higher suicidal ideation (95% CI=1.28, 2.18). Compared to adolescences who were not victimized by electronic bullying, adolescences who were victimized by electronic bullying had 1.80 times higher suicidal ideation (95% CI=1.57, 2.07). Compared to adolescences who did not experience hopelessness/sadness, adolescences who experience hopelessness/sadness had 10.18 times higher suicidal ideation (95% CI=9.10, 11.36). Compared to adolescences who sleep more than 10 hours, adolescences who sleep 4 or less hours had 2.02 times higher suicidal ideation (95% CI=1.33, 3.13). Compared to adolescences who did not threaten at school, adolescences who threatened at school one time had1.50 times higher suicidal ideation (95% CI=1.15,1.95).Compared to adolescences who did not threaten at school, adolescences who threatened at school 2 or 3 times had 1.43times higher suicidal ideation (95% CI=1.01,2.03). Compared to adolescences who did not threaten

at school, adolescences who threatened at school 4 or 5 times had 2.43times higher suicidal ideation (95% CI=1.25, 4.64). Compared to adolescences who did not threaten at school, adolescences who threatened at school 8 or 9 times had 7.13 times higher suicidal ideation (95% CI=2.77, 18.68). Compared to adolescences who did not threaten at school, adolescences who threatened at school 10 or 11 times had 7.27 times higher suicidal ideation (95% CI=1.92, 25.84). Compared to adolescences who did not threaten at school, adolescences who threatened at school 12 or more times had 3.08 times higher suicidal ideation (95% CI=1.81, 5.25).

Relationship between suicidility declarations and indicator patterns

This part of the analysis focused on the responses of the participants, possible patterns, and relationships among the selected indicators. The first examination is to check the consistency and/or disparity among the responses of a participant replying the survey questions when they report their suicidal ideation and behavior. The second examination attempted to reveal if there were any significant patterns regarding the risk factors among participants who reported they considered attempting suicide.

Suicidality declaration

Suidice attempt is the last stage of suicidal behavior. In a typical case, it is expected a person, first, consider and think about committing suicide followed by a type of plan to commit suicide. When a plan is added to the suicide consideration, it makes the case more serious. The last stage, of course, is to make an effort to complete the action; attempting suicide. Considering this possible logic, CDC collects data by using four different questions that represent these gradual change regarding the suicide;

Q#27-During the past 12 months, did you ever ***seriously consider attempting suicide****?*

Q#28-During the past 12 months, did you ***make a plan about how you would attempt suicide****?*

Q#29-During the past 12 months, how many times ***did you actually attempt suicide****?*

Q#30-If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse.

For this study, Q#27*"considered suicide"* question is selected to design this research and create research questions as it was the first stage and most common variable compared to others. Interestingly enough, the dataset showed cases that participants who made a plan about suicide or attempted to commit suicide but they did not consider about it. This may sound absurd as planning or attempting requires a type of consideration but when it comes to reporting, participants either -intentionally or unintentionally- did not pick "yes" for the "*consideration*" question . The number of these cases (made plan/ attempted suicide but not considered) should be examined to project the whole picture of suicidality. Thus, participants' responses to the other questions about suicidality were examined. The Q#29 was transformed to "Yes/No" as the number of attempts was not under the scope of the study, Q#30 was excluded for the same reason. The following figure shows the responses fall into each category.

As it is seen on the vein diagram, among the responders 2808 participants reported that they considered suicide 2331 of them made a suicide plan and 1203 participants stated they attempted suicide. The figure also present individuals who selected multiple answers regarding the suicide behaviors. The following table presents responders who considered attempting suicide. As it is seen in Table 2, 28.5 % (801) of the participants reported that they only considered suicide, 33.7% (947) of them stated they both considered and made a plan, 7% (196) of them considered and attempted suicide, and 30.8% (864) of them considered, made a plan, and attempted suicide. This group and their responses for other indicators were included to the study. However, the other group -participants who did not select the consideration question- should be examined and highlighted here.

Results showed that among participants who reported suicidal ideation or behavior, 618 participants reported that they made a suicide plan and/or attempted suicide but they did not consider suicide. 475 of them stated they only made a suicide plan while 98 of them stated they only attempted suicide. Finally, 45 of them expressed that they both made a plan and attempted suicide but they did not consider suicide. These results showed that by selecting the variable of considering attempting suicides, 2808 participants were included in the analysis but the 618 participants (Table 3) were not included.

Table 2 Suiciadility responses who considered suicide

Among the participants who considered attempting suicide	**N**	**%**
Considered suicide (only)	801	28.5
Considered and made a suicide plan	947	33.7
Considered and attempted suicide	196	7
Considered, madea plan, and attempted suicide	864	30.8
Total	2808	100

Table 3 Participants who did not consider attempting suicide but made a suicide plan and/or attempted suicide

No suicide consideration	**N**
Made a suicide plan (only)	475
Attempted suicide (only)	98
Made plan and attempted suicide	45
Total	**618**

Table 4 Indicators patterns and relationship

Indicators/Predictors	**N**	**%**
sadness and sleep deprivation	526	20.68
Sadness only	337	13.25
Bullying, E-Bullying, Sadness, and Sleep deprivation	265	10.42
Bullying, E-Bullying, and Sadness	176	6.92
0 indicator (the selected variables)	159	6.25
Bullying, Sadness and Sleep deprivation	147	5.78
Sleep deprevention	145	5.7
E-Bullying, Sadness, and Sleep deprivation	110	4.32
Bullying and sadness	108	4.25
All indicators	106	4.17
Bullying, E-Bullying, Sadness, Sleep deprivation, and being threatened and injured		

Indicator patterns

The following analysis focused on the frequency and combinations of the selected indicators/predictors of the participants who have considered suicide. Among the participants who reported they considered comminting suicide (N:2808), a further analysis was conducted on the frequency of the variables; Bullying, E-Bullying, Sadness, Sleep deprivation, and being threatened and injured. It is expected that some of the indicators would occur more than others and provide a pattern for policy makers. Results showed that the participants who reported they considered suicide reported they were also suffering from sadness and sleep de prevention (20.68%); sleep de prevention only (13.25%); bullying, e-bullying, sadness, and sleep deprivation (10,42%); and bullying, e-bullying, and sadness (6.92%). One interesting finding of the analysis was that 159 participants did not selected any of the listed indicators which means those adolescent who reported they have considered suicide reported that they have not suffered from bullying, e-bullying, sadness, sleep deprivation, and being threatened and injured history.

Discussion and conclusion

By considering all selected variables, the logistic regression findings of this study showed that in-person and electronic bullying victimization, hopelessness, sleep disturbance, threaten at school associated with suicidal ideation as found in other studies in the literature. Especially adolescences who experience hopelessness/sadness presented the highest level of concern regarding the suicidal ideation according to the results. Being threatened at school and sleep disturbance, bullying victimization also could be considered alarming behavior for suicidal ideation among adolescents. These findings are incorporated with the existing literature.

This study found an association between being female has more likelihood of experiencing serious suicidal ideation than males. Like other studies, the findings of this study also supported that victimization of bullying associate with having serious suicidal ideation among adolescents. Based on the findings of this study adolescents who experiencing sadness/hopelessness may have strong suicidal ideation among the adolescents' group.

Further analysis revealed that there are some cases that even though some students did not report they considered attempting suicide, they made a suicide plan and/or attempted suicide as 3426 participants reported they have at least one of the suicidal ideation, (either consideration, plan, or attempt) however 18% of them (n: 618) were not included to the assessment when consideration (Q#27) was defined as the dependent variable.

Results showed that some of the indicator may be seen more than other as single or combined indicators. From participants responses it is seen that the most frequent indicator of suicidal consideration was the combination of sadness and sleep de prevention (20.68%) followed by sleep de prevention only (13.25%). On the other hand, it is also seen that a group of participants 6.25% of the responders who considers suicide did not suffer from any of the listed indicator (bullying, e-bullying, sadness, sleep deprivation, and being threatened and injured history). This result is also informative when compared with other results. Results of this study provided empirical evidence to contribute to the academic discussion regarding the detection, prediction, and prevention of suicide among adolescents. The complex statistical analysis revealed that bullying victimization at school (in person and/or electronic), being threatened/injured at school property, helplessness/sadness, and sleep disturbance are strong predictors of suicidal ideation. Findings are consistent with the existing literature. However, reading the numbers related to hopelessness/sadness (10.18 times higher likelihood) and being threatened at school 10 or 11 times (7.27 times higher likelihood) provided quite a high likelihood compared to the other factors examined. This situation could help practitioners and policymakers to prioritize the prevention efforts to effectively implement programs and policies.

In this study measurement model is not enough to explain the complex suicidal thought among adolescents. We might need a more complex or diverse model to understand the predictors of suicidal ideation. For the next survey might include some data from teachers or parents in order to gain a deeper understanding of the complex structure of suicidal ideation among adolescents. It would be great to analyze the longitudinal data set to examine stability and change over time about suicidal ideation among adolescents. In order to understand adolescent's suicidal ideation, we may consider adding more variables into our model.

Limitations

For this study, Youth Risk Behavior Surveillance 2015 cross-sectional data set was analyzed. This data set collected from the participants at a one-time point. Thus, it did not allow us to examine the stability or change over time. This data set also did not include any confirmatory resources like teachers, or parents' reports. Or variables of suicidality were not controlled by comparing them with official data (i.e. police reports, hospital data) Thus the only source for data was students' self-report. Some questions in the data set ask their last year, some questions ask only last week. Thus, it might be better to include time consistency in the data set would give us better pictures regarding the topics.

Acknowledgments

None.

Conflicts of interest

The author declares there is no conflict of interest.

References

1. CDC. Web–based injury statistics query and reporting system (WISQARS). Centers for Disease Control and Prevention. 2021.
2. Centers for Disease Control and Prevention. Youth Risk Behavior Survey: Data Summary and Trends Report: (2007–2017). 2018.
3. Lowry R, Crosby AE, Brener ND, et al. Suicidal thoughts and attempts among US high school students: Trends and associated health–risk behaviors 1991–2011. *Journal of Adolescent Health.* 2014;54(1):100–108.
4. Chiu HY, Lee HC, Chen PY, et al. Associations between sleep duration and suicidality in adolescents: A systematic review and dose response meta–analysis. *Sleep Medicine Reviews*. 2018;42:119–126.
5. Liu JW, Huang HC, Chen YT, et al. Associations between sleep disturbances and suicidal ideation, plans, and attempts in adolescents: A systematic review and meta–analysis. *Sleep*. 2019;42(6):zsz054.
6. Miranda–Mendizabal A, Castellví P, Parés–Badell O, et al. Gender differences in suicidal behavior in adolescents and young adults: Systematic review and meta–analysis of longitudinal studies. *International Journal of Public Health*, 2019;64(2);265–283.
7. Moore SE, Norman RE, Suetani S, et al. Consequences of bullying victimization in childhood and adolescence: A systematic review and meta–analysis. *World Journal of Psychiatry*. 2017;7(1):60.

8. Franklin JC, Ribeiro JD, Fox KR, et al. Risk factors for suicidal thoughts and behaviors: A meta–analysis of 50 years of research. *Psychological Bulletin*. 2017;143(2):187.
9. Furr SR, Westefeld JS, Mc Connell GN, et al. Suicide and depression among college students: A decade later. *Professional Psychology Research and Practice*. 2001;32(1):97.
10. Baiden P, Mengo C, Boateng GO, et al. Investigating the association between age at first alcohol use and suicidal ideation among high school students: Evidence from the youth risk behavior surveillance system. *Journal of Affective Disorders*.2019;242:60–67.
11. Brock SE, Reeves MAL. School suicide risk assessment. Contemporary School Psychology. 2018;22(2):174–185.
12. Hertz MF, Everett Jones S, Barrios L, et al. Association between bullying victimization and health risk behaviors among high school students in the United States. *Journal of School Health*. 2015;85(12):833–842.
13. Wang H, Du H, Bragg F, et al. Relationship of being threatened or injured with a weapon in school with suicidal ideation and attempt among school students: A school–based study in Zhejiang Province, *China. BMC Public Health*. 2018;18(1):1405.
14. Bailly D, Bailly Lambin I, Querleu D, et al. Sleep in adolescents and its disorders. A survey in schools. *Encephale*. 2004;30(4):352–359.
15. Liu X, Buysse DJ. Sleep and youth suicidal behavior: A neglected field. *Current Opinion in Psychiatry*. 2006;19(3):288–293.
16. Lew B, Huen J, Yu P, et al. Associations between depression, anxiety, stress, hopelessness, subjective well–being, coping styles and suicide in Chinese university students. *PloS One*. 2019;14(7):e0217372.
17. Wolfe KL, Nakonezny PA, Owen VJ, et al. Hopelessness as a predictor of suicide ideation in depressed male and female adolescent youth. *Suicide and Life–Threatening Behavior*. 2019;49(1):253–263.
18. Mueller AS, James W, Abrutyn S, et al. Suicide Ideation and Bullying Among US Adolescents: Examining the Intersections of Sexual Orientation, Gender, and Race/Ethnicity. *American Journal of Public Health.* 2015;105(5):980–985.
19. Swahn MH, Bossarte RM. Gender, early alcohol use, and suicide ideation and attempts: Findings from the 2005 Youth Risk Behavior Survey. *Journal of Adolescent Health*. 2007;41(2);175–181.
20. Stewart JG, Valeri L, Esposito EC, et al. Peer Victimization and Suicidal Thoughts and Behaviors in Depressed Adolescents. *Journal of Abnormal Child Psychology.* 2018;46(3):581–596.
21. psychiatry.org. 2018. Suicide Prevention.
22. Ruedy MC. Repercussions of a myspace teen suicide: Should anti–cyberbullying laws be created. *NCJL& Tech*. 2007;9(2):323.
23. Koyanagi A, Oh H, Carvalho AF, et al. Bullying Victimization and Suicide Attempt Among Adolescents Aged 12–15 Years From 48 Countries. *Journal of the American Academy of Child & Adolescent Psychiatry.* 2019;58(9):907–918.
24. Chellappa SL, Araújo JF. Sleep disorders and suicidal ideation in patients with depressive disorder. Psychiatry Research. 2007;153(2):131–136.
25. Liu X. Sleep and adolescent suicidal behavior. *Sleep.* 2004;27(7):1351–1358.
26. Kovacs M, Beck AT, Weissman A. Hopelessness: An indicator of suicidal risk. Suicide and Life–Threatening Behavior. *Summer.* 1975;5(2):98–103.
27. Katsaras GN, Vouloumanou EK, Kourlaba G, et al. Bullying and suicidality in children and adolescents without predisposing factors: A systematic review and meta–analysis. *Adolescent Research Review.* 2018;3(2):193–217.

Citation: Onder Y, Onder SG. Suicidal ideation among high school students: How gender, bullying victimization, being threatened/injured, hopelessness/sadness, and sleep disturbance help us to predict. *Forensic Res Criminol Int J.* 2021;9(3):102–108. DOI: 10.15406/frcij.2021.09.00346