# Original article

# School bullying behaviors and victimization in Thai children and adolescents with comorbid attention deficit hyperactivity disorder, anxiety disorders, and oppositional defiant disorder

Jirada Prasartpornsirichoke<sup>a</sup>, Nuttorn Pityaratstian b,\* Warunya Pongparadorn<sup>c</sup>

<sup>a</sup>Program in Mental Health, Department of Psychiatry, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

<sup>b</sup>Department of Psychiatry, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand. <sup>c</sup>Department of Psychiatry, King Chulalongkorn Memorial Hospital, Bangkok, Thailand.

**Background:** Bullying in school is a chronic social problem which has life-time impact. The prevalence of school bullying in Thai children and adolescents with attention deficit hyperactivity disorder (ADHD) is significantly higher than other groups. However, there is no research work has been done on the association and impact of the comorbidity of ADHD, anxiety disorder, and oppositional defiant disorder (ODD) on bullying in school.

**Objectives:** This study aimed to examine the prevalence of school bullying in Thai children and adolescents with comorbid ADHD, anxiety disorders, and ODD at King Chulalongkorn Memorial Hospital and to investigate associations and effects of the comorbidity of anxiety disorders and ODD on bullying in school.

*Methods:* Cross-sectional descriptive study is based on data collected from children and adolescents with ADHD who received the treatment at King Chulalongkorn Memorial Hospital from September 2018 to May 2019. The data were collected by questionnaires including questionnaire of demographic data, the Thai version of the revised Olweus bully/victim questionnaire (BVQ), the Thai version of Screen for Child Anxiety Related Disorders (SCARED), and the Thai version of the Swanson, Nolan, and Pelham Rating Scale (SNAP-IV) in short form.

**Results:** The prevalence of school bullying victimization in Thai children and adolescents with ADHD was 69.4%. Most children and adolescents with ADHD were in a role of victim (60.5%). The associated factors of victimization in school were patient's education level, type of private school, and the comorbidity of anxiety disorder. The associated factors of bullying behavior were male patients and the comorbidity of ODD with shown moderate to severe symptom.

**Conclusion:** The prevalence of school bullying victimization in Thai children and adolescents with ADHD is 69.4%. The comorbidities of anxiety disorder and ODD are associated with victimization and bully behaviors in school respectively.

Keywords: Anxiety disorders, ADHD, ODD, school bullying behaviors, victimization.

Bully in school is a chronic social problem in almost every country in the world, including Thailand. In 2017, United Nations Educational, Scientific and Cultural Organization (UNESCO) reported the number of children and teenagers who experienced school violence and bullying worldwide is 246 million people per year. The prevalence of school bullying in each country varies, ranged between 10.0% to 65.0% (2), depending on country's social context and different research methodology. In case of Thailand, according to a 2006 survey by Tapanya S, the prevalence of school bullying involvement is approximately 40.0%. (3)

DOI: 10.14456/clmj.2022.36

Attention Deficit Hyperactivity Disorder (ADHD) is one crucial factor that influences bullying in school either bullies or victims. The prevalence of bullying in school of children and adolescents with ADHD in Thailand is 52.9%<sup>(4)</sup>, which is higher than

\*Correspondence to: Nuttorn Pityaratstian, Department of Psychiatry, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand.

E-mail: drnuttorn@yahoo.com Received: April 20, 2020 Revised: July 8, 2020 Accepted: January 10, 2020 overall situation. The involvedness of bullying in school of children and adolescents with ADHD is explained by characteristics, expressive behaviors, and low self-control. (5-7) Moreover, previous studies mentioned that the comorbidity of ADHD and other mental health disorders; Autism spectrum disorder (ASD) and Oppositional defiant disorder (ODD), in children and adolescents significantly induced the higher prevalence of bullying in school. (8-10) However, there is no previous study about the impact of the comorbidity of ADHD, anxiety disorders, and ODD on the involvedness of bullying in school. Therefore, the objective of this study was to investigate the prevalence of bullying in school of children and adolescents with ADHD in Thailand.

# Materials and methods Sample collections

This is a cross-sectional descriptive study focuses on the school bullying behavior and victimization in Thai children and adolescents with comorbid ADHD, anxiety disorders, and ODD. This study was conducted at the Unit of Child and Adolescent Psychiatry, King Chulalongkorn Memorial Hospital. The sample size was calculated using the formula by Wayne W., D. (1995), as of "n =  $(Np(1-p)Z^2)/(E^2(N-1) + p(1-p)Z^2)$ " with a proportion of event in the outcome from the previous study (p) of 52.9%, resulting in a calculated sample size (n) of 156, which is the minimum of sample size required. To prevent errors of data collection, we collected 15.0% more of sample size. Therefore, the number of samples is equal to 180 parents and 180 children and adolescents.

Inclusion criteria were: 1) ADHD patients, aged between 10 - 18 years old, diagnosed by psychiatrist; 2) able to understand and communicate in Thai language; 3) studying in school, grade 4 to grade 12; and, 4) patients' parents consented to join this research project. The subjects were excluded if they have not been going to school for more than two weeks, and diagnosed with psychotic disorders.

Data collection was conducted from September 2018 to May 2019. This study has been approved by the institutional review board on human research of the Faculty of Medicine, Chulalongkorn University, IRB no. 405/61. All subjects and their parents were informed of the objectives and the research methods.

#### Measurements

All subjects, both patients and their parents, completed four questionnaires including: 1)

questionnaire on demographic data; 2) the Thai version of the revised Olweus bully/victim questionnaire (BVQ); 3) the Thai version of Screen for Child Anxiety Related Disorders (SCARED); and, 4) the Thai version of the Swanson, Nolan, and Pelham Rating Scale (SNAP-IV) in short form. (11)

Demographic data consisted of parents' personal data, income, parents' highest level of educational background, and marital status; and patients' personal data: sex, age, education level, types of school, latest school-record, and experience of grade repeating.

The Thai version of the revised Olweus bully/victim questionnaire (BVQ) is a self-rated questionnaire which identify the subjects' involvement of school bullying in the last 2 - 3 months. There are 37 questions which assess frequencies, roles, and forms of bullying in school. The cut-off points rely on the frequency of bullying involvement. If children and adolescents with ADHD have bullied or have been bullied more often 2 - 3 times per month, they are recorded as being involved in bullying in school. The Cronbach's Alpha Coefficient from testing the reliability of this questionnaire is 0.75.

The Thai version of the Screen for Child Anxiety Related Disorders (SCARED) is a self-rated questionnaire which assess the comorbidity of anxiety disorders and ADHD in children and adolescents. The 3-Likert scale questionnaire consists of 41 questions. The cut-off scores of this assessment is equal to 25 out of 82 points which indicates the anxiety disorders in children and adolescents.

The Thai version of the Swanson, Nolan, and Pelham Rating Scale (SNAP-IV) in short form is a parent-rated which contains of 26 questions with three subsets: 1) inattention subset (questions 1 - 9); 2) hyperactivity/impulsivity subset (questions 10 - 18); and, 3) Oppositional Defiant Disorder (ODD) subset (question 19 - 26). The questionnaire is calculated and assessed the cut-off points dividing from the symptom severity; symptoms not clinically significant, mild symptoms, moderate symptoms, and severe symptoms.

### Statistical analysis

The data were computed by the SPSS program for Windows version 22.0. This analysis has been based on descriptive statistics, frequency and percentage, to explain the demographic information, the symptom severity of ADHD and ODD, anxiety disorder, and the prevalence of school bullying. The associations between factors were analyzed by the

inferential statistics, namely Chi-square and Fisher's exact test. Last but not least, we employed the multiple logistic regression models for investigating the impact on bullying in school (Odds ratio: (OR) with 95% confidence interval (CI). P < 0.05 was considered as significant difference.

# Results

Table 1 shows demographic data of two sample groups: 180 children and adolescents with ADHD who received treatment at King Chulalongkorn Memorial Hospital, and 180 parents of children and adolescents. Most children and adolescents with ADHD were boy

(81.1%), studying in primary school level (grade 4 to grade 6) (43.3%), in a private school (47.8%), had a good school record. In addition, 37.2% of the subjects have the comorbidity with anxiety disorder only, and 26.7% of subjects have the comorbidity with ODD only.

Table 2 describes the prevalence of school bullying of children and adolescents with ADHD which is equal to 69.4%. Most subjects were victims of school bullying (60.5%). Most of them were bullied by getting bad or rude words from the bullies who attend to insult or mock them (38.3%).

**Table 1.** Characteristics of the samples (n = 180).

Variables	N (%)	Variables	N (%)	
Parent's gender	Patient's gender			
Male	24(13.3)	Male	146 (81.1)	
Female	156 (86.7)	Female	34(18.9)	
Marital status	` ,	Patient's age	. ,	
Single	10 (5.6)	10 years old	31 (17.2)	
Married	136 (75.6)	11 years old	33 (18.3)	
Widow	6(3.3)	12 years old	30 (16.7)	
Divorced	12(6.7)	13 years old	22 (12.2)	
Separated	16(8.9)	14 years old	23 (12.8)	
Highest educational level	• •	15 years old	12(6.7)	
Lower or equal to junior high school	19 (10.6)	16 years old	16(8.9)	
High school	11 (6.1)	17 years old	8 (4.4)	
Vocational school	9 (5.0)	18 years old	5 (2.8)	
Bachelor degree	102 (56.7)	Patient's present education level		
Master degree or higher	39 (21.7)	Elementary school	78 (43.3)	
Parent's income level		Junior high school	66 (36.7)	
0 - 10,000 Baht per month	25 (13.9)	High school	36 (20.0)	
10,001 - 20,000 Baht per month	23 (12.8)	Types of school		
20,001 – 30,000 Baht per month	34 (18.9)	Public school	79 (43.9)	
30,001 – 40,000 Baht per month	21 (11.7)	Private school	86 (47.8)	
40,001 – 50,000 Baht per month	31 (17.2)	International school	3(1.7)	
Over 50,000 Baht per month	46 (25.6)	Others	12 (6.7)	
Experience of grade repeating		School record		
Ever	6 (3.3)	GPA 3.00-4.00	92 (51.1)	
Never	174 (96.7)	GPA 2.00-2.99	57 (31.7)	
The symptom severity of ADHD and ODD		GPA lower than 2.00 31 (17		
Inattention subset		Anxiety disorder		
Symptoms not clinically significant	78 (43.3)	No	91 (50.6)	
Mild symptoms	64 (35.6)	Yes	89 (49.4)	
Moderate to severe symptoms	38 (21.1)	Comorbidities		
Hyperactivity/Impulsive subset		No comorbidity	43 (23.9)	
Symptoms not clinically significant	115 (63.9)	With anxiety disorder	67 (37.2)	
Mild symptoms	51 (28.3)	With ODD	48 (26.7)	
Moderate to severe symptoms	14 (7.8)	With anxiety disorder and ODD	22 (12.2)	
Oppositional defiant disorder subset				
Symptoms not clinically significant	79 (43.9)			
Mild symptoms	63 (35.0)			
Moderate to severe symptoms	38 (21.1)			

**Table 2.** Prevalence and roles of bullying in school.

N (%)
125 (69.4)
109 (60.5)
60 (33.3)
49 (27.2)
65 (36.1)
16(8.9)
49 (27.2)
55 (30.6)

When testing the association between sociodemographic variables, comorbidity variables, the victimization in school, and bully behaviors in school using Chi-square statistics and Fisher's exact test with the significant level at P > 0.05 (Table 3), it was found that latest level of patient's education, private school, and the comorbidity of anxiety disorder are significantly related to victimization in school (Table 4). While children and adolescent's gender, namely male, is associated with bully behaviors in school (Table 5) (P < 0.05).

Multiple logistic regressions analysis found three independent factors; namely studying in private school, high school level of education, and the comorbidity of anxiety disorders statistically significantly affected victimization in school (Table 6), whereas gender and the comorbidity of ODD statistically significantly affected bullying behavior in school (Table 6) (P < 0.05).

**Table 3.** Prevalence of bullying in school, classified by comorbidity.

Variables	N (%)
ADHD only	
Uninvolved	17 (39.5)
Involved	26 (60.5)
Comorbidity of ADHD and Anxiety disorder	
Uninvolved	14 (20.9)
Involved	53 (79.1)
Comorbidity of ADHD and ODD	
Uninvolved	19 (39.6)
Involved	29 (60.4)
Comorbidity of ADHD, Anxiety disorder, and ODD	
Uninvolved	5 (22.7)
Involved	17 (77.3)

**Table 4.** Association between socio-demographic variables, comorbidity variables and the victimization in school by using Chi-square and Fisher's exact test (n = 180).

Variables	Victimization in the school						
	No		Yes			P-value	
	Number	Percentage	Number	Percentage			
Socio-demographic factors							
Parent's gender							
Female	65	41.7	91	58.3	2.419	0.120	
Male	6	25.0	18	75.0			
Marital status							
Married	55	39.0	86	61.0	0.052	0.819	
Separated	16	41.0	23	59.0			
Highest educational level							
> Junior high school	67	41.6	94	58.4	2.899	0.089	
≤ Junior high school	2	16.7	10	83.3			
Income level							
> 15,000 baht per month	55	38.5	88	61.5	0.281	0.596	
$\leq 15,000$ baht per month	16	43.2	21	56.8			
Children's gender							
Female	17	50.0	17	50.0	1.955	0.162	
Male	54	37.0	92	63.0			
Latest level of education			-				
Grade 4 - 9	48	33.3	96	66.7	11.257	0.001*	
Grade 10 - 12	23	63.9	13	21.8			
Types of school			10				
Not private school	45	47.9	49	52.1	5.851	0.016*	
Private school	26	30.2	60	69.8	2.021	0.010	
Latest school score	20	30.2	00	07.0			
Good	23	40.4	34	59.6	0.029	0.865	
Not good	48	39.0	75	61.0	0.02)	0.002	
Experience of grade repeating	10	37.0	,5	01.0			
Never	69	39.7	105	60.3		1.000a	
Ever	2	33.3	4	66.7		1.000	
ADHD/ODD	2	33.3	•	00.7			
Inattention subset							
Symptoms not clinically significant	31	39.7	47	60.3	0.217	0.897	
Mild symptoms	24	37.5	40	62.5	0.217	0.077	
Moderate to severe symptoms	16	42.1	22	57.9			
Hyperactivity/Impulsive subset	10	72.1		31.9			
Symptoms not clinically significant	46	40.0	69	60.0	0.185	0.911	
Mild symptoms	19	37.3	32	62.7	0.105	0.911	
Moderate to severe symptoms	6	42.9	8	57.1			
Oppositional defiant disorder subset	U	42.3	o	37.1			
symptoms not clinically significant	33	41.8	46	58.2	0.832	0.660	
mild symptoms	33 22	34.9	40 41	58.2 65.1	0.032	0.000	
* *	16	42.1	22	57.9			
moderate to severe symptoms	10	<b>4</b> ∠.1	<u> </u>	31.3			
Anxiety disorder	40	52.0	42	46.2	15 001	0.000*	
No V	49	53.8	42	46.2	15.981	0.000*	
Yes	22	24.7	67	75.3			

<sup>\*</sup> P < 0.05, a = Fisher's exact test

**Table 5.** Association between socio-demographic variables, comorbidity variables and bullying behaviors by using Chi-square and Fisher's exact test (n = 180).

Variables	Bully behavior the school					
	No Yes				$X^2$	<i>P</i> -value
	Number	Percentage	Number	Percentage		
Socio-demographic factors						
Parent's gender						
Female	101	64.7	55	35.3	0.370	0.543
Male	14	58.3	10	41.7		
Marital status						
Married	90	63.8	51	36.2	0.001	0.975
Separated	25	64.1	14	35.9		
Highest educational level						
> Junior high school	102	63.4	59	36.6		0.541a
≤ Junior high school	9	75.0	3	25.0		
Income level						
> 15,000 baht per month	94	65.7	49	34.3	1.027	0.311
$\leq$ 15,000 baht per month	21	56.8	16	43.2		
Children's gender			-	-		
Female	30	88.2	4	11.8	10.770	0.001*
Male	85	58.2	61	41.8		
Latest level of education	-		-			
Grade 4 - 9	90	62.5	54	37.5	0.602	0.438
Grade 10 - 12	25	69.4	11	30.6	*****	
Types of school		0,,,		2010		
Not private school	66	70.2	28	29.8	3.410	0.065
Private school	49	57.0	37	43.0		0.000
Latest school score						
Good	36	63.2	21	36.8	0.019	0.889
Not good	79	64.2	44	35.8	*****	0.000
Experience of grade repeating				2210		
Never	111	63.8	63	36.2		$1.000^{a}$
Ever	4	66.7	2	33.3		1.000
ADHD/ODD		00.7	2	33.3		
Inattention subset						
Symptoms not clinically significant	54	69.2	24	30.8	4.226	0.121
Mild symptoms	42	65.6	22	34.4	0	0.121
Moderate to severe symptoms	19	50.0	19	50.0		
Hyperactivity / Impulsive subset	1)	20.0	1)	20.0		
Symptoms not clinically significant	74	64.3	41	35.7	1.352	0.509
Mild symptoms	34	66.7	17	33.3	1.552	0.509
Moderate to severe symptoms	7	50.0	7	50.0		
Oppositional defiant disorder subset	,	50.0	,	50.0		
Symptoms not clinically significant	58	73.4	21	26.6	5.923	0.052
Mild symptoms	37	58.7	26	41.3	2.723	0.032
Moderate to severe symptoms	20	52.6	18	47.4		
Anxiety disorder	20	52.0	10	77.7		
No No	57	62.6	34	37.4	0.125	0.724
Yes	58	65.2	31	34.8	0.123	U./∠ <del>1</del>
108	30	03.2	31	J+1.0		

<sup>\*</sup> P < 0.05, a = Fisher's exact test

**Table 6.** The impact of socio-demographic variables and comorbidity variables on victimization and bullying behaviors in school by using multiple logistic regression, forward stepwise (Likelihood Ratio) (n = 180).

Variables	В	S.E.	Wald	Sig.	OR	95% CL. for OR	
						Lower	Upper
Victimization							
Private school (= 1)	0.668	0.337	3.937	0.047*	1.951	1.008	3.776
High school (= 1)	-1.181	0.410	8.285	0.004*	0.307	0.137	0.686
Comorbid with anxiety disorder (= 1)	1.256	0.339	13.760	0.000*	3.510	1.808	6.816
Constant	-0.208	0.281	0.547	0.459	0.813		
Bullying behaviors							
Male (= 1)	1.679	0.563	8.894	0.003*	5.360	1.778	16.159
ODD, moderate to severe symptom	0.748	0.335	4.996	0.025*	2.113	1.096	4.070
Constant	-2.463	0.581	18.003	0.000*	0.085		

<sup>\*</sup> P < 0.05, Nagelkerke R Square = 0.207 and 0.126 consecutively and Cox & Snell R Square = 0.153 and 0.092 consecutively

#### **Discussion**

This study found that the prevalence of school bullying in children and adolescents with ADHD was 69.4% higher than previous study of children and adolescents with ADHD which was 52.9% and previous studies of children and adolescents without ADHD which was in the range of 23.4% - 40.0%. (12, 13) This implies that the attention-deficit/hyperactivity disorder (ADHD) is one of the important variables that can cause children and adolescents to be more involved in bullying in schools. Therefore, nowadays, the problem of school bullying still persists and tends to continuingly increase especially children and adolescents with ADHD. The most common forms of bullying in school is verbal bullying, consistent with the previous studies in Thailand. Moreover, children and adolescents with a ADHD who are studying in upper secondary school had been less involved compared with children and adolescents studying in the upper elementary level and the lower secondary level. This finding corresponds with a previous research which found that the prevalence of school bullying tended to decrease as the level of higher education. However, it was not found that the symptom severity of ADHD was associated with school bullying, neither bullies nor victims, because most of patients are under medical treatment.

The findings indicated that children and adolescents with comorbid ADHD and anxiety disorder was significantly associated with victimization in school but not related with bullying behavior in school. This corresponds with a previous study that children and adolescents with anxiety disorder have an unstable personality and are concerned about interaction with others. They would have sub-

assertive behavior which do not protect their rights. (14) This makes bullies easily invade rights.

On the other hand, this study found that the comorbidity of ODD with moderate to severe symptom and male children are factors affecting bullying behaviors in line with a previous research which can be explained by the low self-control of children and adolescents comorbid with ADHD and ODD. (5, 15)

Last but not least, private school is associated with the victimization in school. This conflicted from foreign previous researches that mentioned public school has higher prevalence of bullying in school.<sup>(16)</sup> This issue should be further studied in the future.

Limitations and future research: this descriptive study focuses on bullying in school but does not include cyberbullying. Moreover, we recruited the subjects from King Chulalongkorn Memorial Hospital. Therefore, they might not represent all of children and adolescents with ADHD. This study did not deeply explain how private school affects the victimization in school due to limited data and no corresponded previous study.

Further research should be a comparative study of bullying in school between Children with ADHD and without ADHD. Moreover, further study should include "cyberbullying" as one of bullying form.

## Conclusion

The prevalence of school bullying victimization in Thai children and adolescents with ADHD is 69.4%. The comorbidities of anxiety disorders and ODD are associated with victimization and bully behavior in school respectively.

# Acknowledgements

We would like to express our appreciation to Assistant Professor Sombat Tanya for advocating the use of the Thai version of the revised Olweus Bully/Victim Questionnaire, and Khun Sirirat Ularntinon for advocating the use of the Thai version of the SCARED.

#### Conflict of interest

The authors, hereby, declare no conflict of interest.

## References

- The United Nations Educational, Scientific and Cultural Organisation (UNESCO). School violence and bullying: Global status report. France: UNESCO; 2017.
- Modecki KL, Minchin J, Harbaugh AG, Guerra NG, Runions KC. Bullying prevalence across contexts: a meta-analysis measuring cyber and traditional bullying. J Adolesc Health 2014;55:602-11.
- 3. Tapanya S. A survey of bullying problem of students in Thailand. Chiang Mai: Faculty of Medicine Chiang-Mai University; 2006.
- Pruksapanachart B. The relationship between bullying behavior and self-esteem in attention-deficit / hyperactivity disorder patients. J Psychiatr Assoc Thai 2011;56:93-102.
- 5. Unnever JD, Cornell DG. Bullying, self-control, and ADHD. J Interpers Violence 2003;18:129-47.
- Sciberras E, Ohan J, Anderson V. Bullying and peer victimisation in adolescent girls with Attention-Deficit/Hyperactivity Disorder. Child Psychiatry Hum Dev 2012;43:254-70.
- Žic Ralić A, Cvitković D, Šifner Vukomanović E. The relation between school bullying and victimization in children with attention deficit / hyperactivity disorder (ADHD). J Spec Educ Rehabil 2016;17: 105-21.

- 8. Kowalski RM, Fedina C. Cyber bullying in ADHD and Asperger Syndrome populations. Res Autism Spectr Disord 2011;5:1201-8.
- 9. Zablotsky B, Bradshaw CP, Anderson CM, Law P. Risk factors for bullying among children with autism spectrum disorders. Autism 2014;18:419-27.
- van Roekel E, Scholte RH, Didden R. Bullying among adolescents with autism spectrum disorders: prevalence and perception. J Autism Dev Disord 2010; 40:63-73.
- Pityaratstian N, Booranasuksakul T, Juengsiragulwit D, Benyakorn S. ADHD screening properties of the Thai Version of Swanson, Nolan, and Pelham IV Scale (SNAP-IV) and Strength and Difficulties Questionnaire (SDQ). J Psychiatr Assoc Thai 2014; 59:97-110.
- 12. Anusornpornperm B, Kiatrungrit K. The association between emotional quotient and bully behaviors in scendary school in Bangkok. J Psychiatr Assoc Thai 2015;60:181-92.
- 13. Sakarinkul C, Wacharasindhu A. Prevalence of bullying and associated psychosocial factors among lower secondary school students in Muang, Chiangmai. J Psychiatr Assoc Thai 2014;59:221-30.
- Isolan L, Salum GA, Osowski AT, Zottis GH, Manfro GG. Victims and bully-victims but not bullies are groups associated with anxiety symptomatology among Brazilian children and adolescents. Eur Child Adolesc Psychiatry 2013;22:641-8.
- 15. Habashy Hussein M. The social and emotional skills of bullies, victims, and bully-victims of Egyptian primary school children. Int J Psychol 2013;48:910-21.
- Smith R. Bullying in school: public vs. private [Internet]. 2015 [cited 2020 Jul 10]. Available from: https://meganmeierfoundation.wordpress.com/2015/ 05/29/bullying-in-school-public-vs-private/.