

ORIGINAL ARTICLE

**THE ASSOCIATION BETWEEN THE ATTENTION DEFICIT
HYPERACTIVITY DISORDER(ADHD) SYMPTOMS AND
BULLY/VICTIM PROBLEM AMONG MALAYSIAN SIXTH-GRADERS**

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Abstract

Objective: School bullying in Malaysia is on the rise. While efforts are put together to combat the problem, the psychiatric aspect has been neglected. This is a cross-sectional study aimed to determine the association between the symptoms of ADHD and bully/victim problems among Malaysian sixth-graders attending primary schools in Kuala Lumpur. ***Methods:*** A total of 410 sixth-graders from seven randomly selected schools were assessed with regards to bully/victim problems and ADHD symptoms using self-reported questionnaires. Malaysian Bullying Questionnaire was used to rate bully/victim problems while ADHD symptoms were assessed using Conners-Wells' Adolescent Self-report Scale (CASS). Teachers and parents also assessed students' ADHD symptoms using Conner's Teachers Rating Scale (CTRS) and Conner's Parents Rating Scale (CPRS), respectively. ***Results:*** Self-reported questionnaires showed that 61.2% of the children were involved in bully/victim problems. The ADHD symptoms were found significant in relation to bully/victim problems as tested by multiple logistic regression. Only students and parents reported significant ADHD symptoms among the bully/victim groups. The ADHD symptoms reported by students were significant among bullies(OR=0.59,CI=0.42-0.83, p<0.01) and bully-victims(OR=0.55 CI=0.37-0.81,p<0.00). Parents reported significant ADHD symptoms only in victims(OR=1.260,CI=1.02-1.56,p=0.03). ***Conclusion:*** The ADHD symptoms were significantly present among bullies, victims and bully-victims. These findings open a new perspective of managing bully/victim problems since effective treatment is available for ADHD. *ASEAN Journal of Psychiatry, Vol.11 (1): January – June 2010: XX XX.*

Key words: ADHD symptoms, bully/victim problems, sixth-graders, Malaysia

Introduction

Bully/victim problems are a common phenomenon among school children and prevalent worldwide [1-3]. The main players in this increasing social phenomenon are bullies, victims and bully-victims. Bullies refer to children who bullied others, victims are children who were being bullied or victimized, whereas bully-victims refer to children who were initially being bullied, but to which they retaliated and became bullies themselves.

The psychiatric aspect of the problem has not been given much emphasis. Research concerning the problem in the field of child psychiatry is scanty [4] despite the increasing numbers of psychiatric disorders related to bully/victim problems. For instance, ADHD, depression, anxiety, conduct disorder and oppositional defiant disorder are common psychiatric disorders found among children involved in the bully/victim problems [5]. Another study found bullying and victimization as potential risk factors for adolescent depression and suicidality [6]. Among girls, frequent victimization has been associated with suicide attempts and completed suicides in later years [7]. Among rural middle school students in China, school bullying had also been identified as risk factor for attempted suicide [8]. The long term implication of bullying on mental health had also been documented. A longitudinal study of 614 participants found that bullying significantly increased risk of later depression among children from less affluent socioeconomic background [9].

Children with bully/victim problems were vulnerable to have psychiatric disorders. ADHD in particular, has been found to be

the commonest psychiatric disorder among bullies (29.2%), as well as being common among victims (14.4%) and bully-victims (17.7%) [5]. Children with bully/victim problems were psychologically disturbed, with externalizing behaviour and hyperactivity being especially related to bully-victims [10]. A study involving 577 fourth-graders found ADHD to be significantly associated with bullying (OR=3.8, CI= 0.1-3.1) and being bullied (OR=10.8, CI=4.0-29) [11]. Another study had concluded that ADHD has a direct relation to bullying behavior in males and to victimization in females [12]. All these studies suggest important connection between ADHD and bully/victim problems.

In Malaysia, the prevalence of bully/victim problems are rapidly increasing [13-14] and the seriousness of the problems could not be underestimated with the increasing trend of reported fatal cases. Previously, the problem had been largely perceived from the social aspect. Recent evidence has highlighted that the problem is psychiatric-related [5, 11]. Given the above, there is a need to examine the extent of the problem in the local context. The objective of this study is to determine the association between ADHD symptoms and bully/victim problems.

Methods

This is a cross-sectional study of sixth-graders, aged 12 years old from seven randomly sampled schools in Kuala Lumpur, Malaysia. Of the 826 students who were approached, only 445 students were given consent by their parents to participate in the study. Of these, 27 students were absent during the study period and 8 were excluded because they were known to have mental retardation. A total of 410 students

were finally recruited into the study proper. The study was approved by the Ethics Committee of the National University of Malaysia and Ministry of Education Malaysia.

Information was obtained from multiple informants namely; the parents, the teachers, and the students using various self-reported questionnaires. For the students, two different types of questionnaires were used, namely the Malaysian Bullying Questionnaire and Conners-Wells Adolescent Self-report: Short Form (CASS:S).

The Malaysian Bullying Questionnaire was developed by Noran Fauziah Yaakob [14]. It was a self-reported questionnaire in Malay language which is used to measure bully/victim problems. It consists of 20 questions which measure bullying behavior, being bullied and bully-victim. Students were asked to rate themselves with regards to the above in the past one month using a likert scale of 0 (never), 1 (once or twice), 2 (three or four times) and 3 (more than five times). Bullies were defined as children who bullied others three or more times in a month. Being bullied referred to children who were bullied three or more times in a month. Bully/victims were defined as children who bullied others and being bullied, three or more times in a month.

Conners-Wells Adolescent Self-report: Short Form (CASS:S) was used to assess the ADHD symptoms in the students. It consists of 27 items measuring the ADHD symptoms, which are reported by the students themselves. There are four subscales namely conduct problems (6 items), cognitive problem/inattention (6 items), hyperactive-impulsive (6 items) and ADHD index (12 items) [15].

The parents were invited to assess the ADHD symptoms in their children using Conners' Parents Rating Scale: Short Form (CPRS:S). It consists of 27 items measuring the ADHD symptoms in children in the past one month. There are four subscales including oppositional (6 items), cognitive problem/inattention (6 items), hyperactivity (6 items) and ADHD index (12 items)) [15].

Conners Teachers Rating Scale: Short Form (CTRS:S) was used by the teachers to assess the ADHD symptoms in the students. The teacher's version consists of 28 items comprising four subscales: oppositional (5 items), cognitive problem/inattention (5 items), hyperactivity (7 items) and ADHD index (12 items) [15].

All the questionnaires were translated and back-translated into Malay language but not validated locally. Students were gathered in the school hall and asked to complete the questionnaires during the given time. Teachers were then asked to complete the relevant questionnaires for the students under their care. A total of 37 teachers were involved with teacher: student ratio of 1:11. Teachers were given two weeks to complete the questionnaires before being collected by hands. Questionnaires for parents were distributed through their children. Parents were also given two weeks to complete the questionnaires. The completed questionnaires were also collected by hands through their children.

Statistical analysis

The Statistical Package for Social Studies (SPSS) Software version 13.0 was used for data analysis. Q-Q plot and KS were used to check for normality of the data. Chi-square tests were used to examine for association between the different bully/victim groups

and prevalence and socio-demographic features. Kruskal-Wallis test was used to measure the relationship between ADHD symptoms reported by the different informants, and the different bully/victim groups. Multiple logistic regression analysis was subsequently used to examine the relationship between the various socio-demographic variables and ADHD symptoms (reported by the various informants), among the bully/victim groups.

Results

Of the 410 students participating in this study, 2.4% were involved in bullying others, 41.2% were bullied and 17.6% were bully-victims. The details of the prevalence and the socio-demographic characteristics in relation to the bully/victim problems were reported in previous article [16].

Table 1. Kruskal-Wallis test comparing median ADHD symptoms score reported by students, teachers and parents between the different bully/victim groups

ADHD symptoms reported by different informants Median(25 th – 75 th percentiles)			
	Bullies	Victims	Bully-victims
Students	18(4.75-24.5) p<0.01*	18(4.75-24.5) p<0.01*	11.5(8.25-17) p<0.01*
Teachers	3.5(0-16.25) p=0.31	3.5(0-16.25) p =0.31	2(0-9.5) p=0.31
Parents	11.5(3-21) p<0.03*	11.5(3-21) p<0.03*	9.5(5-13.75) p<0.03*

p<0.05*

Table 1 presents Kruskal-Wallis test analysis of ADHD symptoms reported by different informants with bullies, victims and bully-victims. Findings showed statistically significant difference between ADHD symptoms reported by students and

parents, with bullies, victims and bully-victims. ADHD symptoms reported by teachers were not significant. Only combined symptoms of ADHD were reported in this article.

Table 2. Logistic regression examining ADHD symptoms reported by students, teachers and parents, and bully/victim groups

	ADHD symptoms reported by different informants		
	Bullies	Victims	Bully-victims
	OR(95%CI)	OR(95%CI)	OR(95%CI)
Students	0.59 (0.42-0.83) p<0.01*	0.93(0.80-1.08) p=0.33	0.55 (0.37-0.81) p<0.00*
Teachers	1.03 (0.68-1.60) p=0.88	1.234(0.98-1.55) p=0.07	1.109 (0.72-1.71) p=0.640
Parents	0.80 (0.52-1.23) p=0.31	1.260 (1.02-1.56) p=0.03*	0.897 (0.56-1.45) p=0.656

(OR = Odds Ratio; p<0.05*)

The multivariate analysis of the ADHD symptoms among bullies, victims and bully-victims are displayed in Table 2. The ADHD symptoms rated by multiple informants were significant in association with bullies, victims and bully-victims. ADHD symptoms were risk factor for victims but protective against bullies and bully-victims.

Discussion

For a comprehensive assessment of ADHD symptoms in the adolescents, the symptoms were reported by three informants namely the students, teachers and parents. There were statistically significant difference in ADHD symptoms reported by students and

parents, between bullies, victims and bully-victims. Interestingly, symptoms reported by teachers showed no statistical significant between the various bully/victim groups. Teachers reporting of ADHD symptoms in the students may not be reliable given that one teacher had to report for 11 students. Teachers may need to know their students fairly well in order to pick up ADHD symptoms. This will be more difficult when they had to report on 11 different students.

In this study, ADHD symptoms reported by students were significant protective factor for bullies (OR=0.59, CI=0.42-0.83, $p<0.01$) and bully-victims (OR=0.55, CI=0.37-0.81, $p<0.00$). On the other hand, ADHD symptoms reported by parents was a significant risk factor for victims (OR=1.260, CI=1.02-1.56, $p=0.03$). This was not surprising since ADHD was found the commonest psychiatric disorders among bullies, and fairly common among victims and bully-victims [5].

It is expected that ADHD symptoms would lead to bullying which have been related to low self-control [17] and poor impulsivity [18]. On the contrary, these children who reported ADHD symptoms in themselves were found not at risk but protected from becoming bullies and bully-victims.

Depression and anxiety are common comorbid conditions of ADHD. Similarly, poor social skills and lack of supportive peers are common correlates of ADHD [19]. Given the above, children who were depressed, anxious, had poor social skills and support were less capable to bully others or to retaliate which might explain why they were protected from becoming bullies and bully-victims. Therefore, it is possible that other factor related to ADHD rather than the ADHD symptoms that protect these children

from bullying others or retaliating when being bullied.

The above explanation may also be applied to those children reported by their parents to have ADHD symptoms, and found to be at risk of being victimized. Their peers might notice the ADHD symptoms in them which may be perceived as 'weird' thus making them target of bullies. These children might belong to the 'provocative victim' group who had the combination of both anxious and aggressive traits [18], and usually provoked others into bullying them but never retaliated.

The nature of the relationship between ADHD symptoms and the bully/victim groups could not be further established given the cross-sectional nature of the study. A recent prospective study found that children who were bullied showed more internalizing and school adjustment problems despite preexisting behavioural and school difficulties at entrance to school [20]. Therefore, internalizing problem as a consequence of being bullied becomes a vicious cycle promoting further victimization. Internalizing problems were found in these children who became bully-victims when they first entered school suggesting possibility that it may also be a causal factor [20].

This study has several limitations. Firstly, the cross-sectional nature of the study does not allow interpretation of causal relationship between variables. Secondly, information on bully/victim problems were gathered from adolescents only and not from parents and teachers. Reliance on self-reported questionnaires also has its own limitation. Thirdly, although information on ADHD symptoms were obtained from three different informants, the low teacher:

student ratio might have impaired the quality of reporting by the teachers. Fourthly, it may not be a representative of Malaysian sixth-graders since the sample were recruited from schools in the urban area of Kuala Lumpur only.

These findings provide further evidence linking ADHD symptoms to bully/victims and the complex interaction between them. Although findings need cautious interpretation given the limitations, contribution of ADHD symptoms to bully/victim problems should not be underestimated. Consequently, this has significant impact in the management of the problem, whereby screening and appropriate management of ADHD may need to be considered in the bully prevention program in the schools in Malaysia.

Acknowledgements

We would like to acknowledge Universiti Kebangsaan Malaysia and Ministry of Education Malaysia for supporting this study. We would also like to extend our appreciation to Prof. Rahimah for her contribution to this article. This study was supported financially by Universiti Kebangsaan Malaysia.

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Received: 11 January 2010

Accepted: 15 February 2010