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What Is the Early Adulthood Outcome of Boys Who Bully or Are Bullied in Childhood? The Finnish “From a Boy to a Man” Study

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ABSTRACT

OBJECTIVE. Our goal was to study predictive associations between bullying and victimization at age 8 years and psychiatric disorders in early adulthood.

METHODS. The sample comprised 2540 boys born in 1981. Information about bullying and victimization was gathered in 1989 when the boys were 8 years old from parents, teachers, and children. Information about psychiatric disorders was based on military call-up examination and army registry when the subjects were 18 to 23 years old.

RESULTS. In univariate logistic regression analysis, frequent bullying-only status predicted antisocial personality, substance abuse, and depressive and anxiety disorders; frequent victimization-only status predicted anxiety disorder, whereas frequent bully-victim status predicted antisocial personality and anxiety disorder. When controlled against the effects of parental education level and parent and teacher reports of emotional and behavioral symptoms by using Rutter scales, frequent victimization-only status predicted anxiety disorders, and frequent bullying-only predicted antisocial personality disorder, whereas frequent bully-victimization predicted both anxiety and antisocial personality disorder. Information about frequent bullying and victimization as primary screening for children at risk identified ~28% of those with a psychiatric disorder 10 to 15 years later.

CONCLUSIONS. Both bullying and victimization during early school years are public health signs that identify boys who are at risk of suffering psychiatric disorders in early adulthood. The school health and educational system has a central role to play in detecting these boys at risk.

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Key Words

bullying, child psychiatry, epidemiology, follow-up, victimization

Abbreviations

ICD-10 — *International Classification of Diseases, Tenth Revision*

OR — odds ratio

CI — confidence interval

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BULLYING AND VICTIMIZATION are extremely important psychosocial issues that affect schoolchildren's daily life. Usually, bullying is defined as an aggressive act, where there is an imbalance of power; that is, the victim cannot defend him/herself, and there is always some element of repetition. Bullying can be direct, physical (hitting, kicking), verbal (threatening, saying nasty and unpleasant things), or indirect (sending nasty notes, isolating someone so that no one talks to them).^{1,2} In the US survey by Nansel et al³ including >15 000 students in grades 6 through 10, 17% reported being bullied sometimes or more frequently, and 19% reported bullying others sometimes or more often. Six percent reported that they had both bullied others and had been bullied themselves. In a cross-national study of ~113 000 students between the ages of 11 and 15 from 25 countries, involvement in bullying varied from 9% to 54%.⁴

Bullying and victimization are associated with poorer family functioning,⁵ interparental violence,⁶ and parental maltreatment.⁷ Bullies have been found to be aggressive, hostile, and domineering toward peers; to score higher on conduct and hyperactivity symptoms; and to show little anxiety or insecurity. Victims tend to be more depressed, withdrawn, anxious, and insecure; to score higher on internalizing and psychosomatic scales; to show lower levels of self-esteem; and to be more cautious, sensitive, and quieter than other students.⁸⁻¹⁰

Some studies have suggested that bully-victims are the most troubled in terms of outcomes.¹¹⁻¹³ Like bullies, they display high levels of physical and verbal aggression.⁸ They score high on measures of both externalizing and hyperactive behavior but also on measures of depressivity, self-worth, academic competence, and social acceptance.^{9,14,15}

However, most of our empirical knowledge of the effects of bullying is based on cross-sectional studies. Usually only symptom questionnaires were used, frequently using only 1 informant. Only a very few population-based studies have examined the effects of bullying prospectively. Bond et al¹⁶ showed that victimization at age 13 predicted the onset of self-reported symptoms of anxiety and depression 1 year later. Arsenault et al¹⁷ found that victims and bully-victims showed more behavior and school adjustment problems at 7 years of age, even after controlling for preexisting adjustment problems at the age of 5, in a nationally representative cohort study. In a Korean study, Kim et al¹² followed seventh- and eighth-grade students for 10 months and showed that problem behavior was a consequence rather than a cause of bullying experience. Kumpulainen et al¹¹ found that bullying at 8 years of age is associated with later psychiatric symptoms in preadolescence. Bullying and being bullied are found to be rather stable between the ages of 8 and 16 years. In a Finnish cohort, almost all boys who were bullied at the age of 16 had been bullied already at age 8.¹⁸ Half of the boys who bullied at 16 had

already been bullying when they were 8. Furthermore, bullying at age 8 strongly predicted criminality in adolescence.¹³

There have been no longitudinal cohort studies that examined the psychiatric outcomes in late adolescence or early adulthood of children who bully or are victimized in childhood. Generally, our knowledge of the continuities and discontinuities of childhood problems to early adulthood was based on a limited number of study cohorts. However, information about the long-term effects of bullying has considerable public health significance that would justify universal or targeted preventive interventions and research directed at school bullying.

Our study aimed to examine the associations between bullying and victimization at the age of 8 and psychiatric diagnoses 10 to 15 years later. We studied the different outcomes of those children who frequently only bully, those who are only victimized, and those who are bully-victims. We investigated whether information about bullying and victimization could make it possible to screen children at risk of psychiatric disorders.

SUBJECTS AND METHODS

Subjects

This investigation is a part of a nationwide study entitled "From a Boy to a Man"; a follow-up study included in the Epidemiologic Multicenter Child Psychiatric Study in Finland.¹⁹⁻²¹ The original study sample was drawn from the total population of Finnish children born in 1981 ($N = 60\,007$). The original, representative sample consisted of 6017 children, which was 10% of the age cohort. Of these 6017 children, 5813 (97%) took part in the study in 1989. Of the 5813 children, 2946 were boys. Complete information about bullying and victimization from all 3 informant groups (parents, teachers, and children) and follow-up data were available for 2540 subjects (86% of the original sample of boys). The research plan was approved by the Turku University and Turku University Central Hospital Joint Committee on Ethics. Participation in the study was voluntary. Informed consent was obtained from the children's parents at baseline. The combined information from the questionnaires and the military registry was analyzed in such a way that the subjects could not be identified.

Methods

Assessment of Bullying and Victimization at 8 Years of Age

Data collection at baseline was organized through teachers. The teacher sent parent questionnaires via the child to the parents, and the parents returned it in a sealed envelope to the teacher. The children filled in a questionnaire in the classroom. The teacher sent the parent questionnaires in sealed envelopes, the parents' written consent sheet, the teacher questionnaires, and the child self-reports to the researcher. Each class also had a fol-

low-up sheet, in which the teacher marked how many pupils, born in which years, and how many parents had returned the consent paper and questionnaires, and how many had and had not given their consent for participation in the study. At the end of the study, follow-up sheets, study questionnaires and consent forms were returned to the researcher.¹⁹⁻²¹

Bullying was assessed by giving the child 3 alternatives from which to choose: (1) "I bully other children almost every day," (2) "I bully sometimes," and (3) "Usually I do not bully." Victimization was assessed by the alternatives: "Other children (1) bully me almost every day," (2) "bully me sometimes," and (3) "usually do not bully me." Similar questions focusing on bullying and victimization were included in parent and teacher questionnaires, with the probe and response items worded as follows: the child bullies other children: (1) doesn't apply, (2) applies somewhat, and (3) certainly applies. An additional item about the child being a victim of bullying was also included in the parental and teacher questionnaires, with the 3 alternatives (doesn't apply, somewhat applies, and certainly applies). For the purposes of the present study, alternatives 0 and 1 were regarded to indicate no or only sometimes bully or victim status, whereas alternative 2 indicated frequent bully or victim status.

We classified the sample into the following groups: (1) those who never or only sometimes bully and are not victimized according to parental, teacher, and self-reports; (2) those who frequently bully (but are not victimized) according to ≥ 1 informant; (3) those who are frequently only victimized according to ≥ 1 informant; and (4) those who frequently both bully and are victimized using pooled information from all 3 informants. For example, if a boy frequently bullied according to teachers and was frequently victimized according to self-reports, he was classified into the bully-victim group. Only subjects with complete information about bullying and victimization from all 3 informants were included in the analysis. Combining the parent, teacher, and child reports of information about bullying/victimization by using the "either-or" rule is justified by the finding that the interrater agreement was low (weighted κ in range 0.11–0.22).

Measures on Psychiatric Symptoms, Parental Education Level, and Help-Seeking at 8 Years of Age

In this study, we analyzed parental and teacher reports of the child's psychiatric symptoms as possible confounding variables (by using the either-or rule). Parents and teachers completed a Rutter scale^{22,23} that comprised 3 subscales (conduct, hyperactivity, and emotional scores). The Rutter questionnaires for screening children's emotional and behavioral problems are long-established and well-studied behavioral screening instruments that have proved valid and reliable in many

contexts.²⁴ In the present study, cutoff points corresponding to ~85th percentile (total score cutoff point of 13 on the parental scale and 9 on the teacher scale) were used as indicators of possible psychiatric disturbance. These cutoff points were previously widely used in child psychiatric epidemiology, both internationally and in Finland.^{19,24} As reported previously, screen-positive status on the parental and teacher scales at 8 years predicted psychiatric disorders in early adulthood.²¹

To control for socioeconomic status, a variable concerning parents' education was extracted from the 1989 data, when the subjects were 8 years old. Low parental education level was indicated if neither of the parents had completed upper secondary school after comprehensive school (together making up 12 years of schooling). In Finland, basic education consists of a 9-year comprehensive school, after which education can be continued either in a vocational school or in upper secondary school. As reported previously, low parental education level at 8 years of age predicted psychiatric disorders in early adulthood.²¹

Information about the child's need for help at age 8 was obtained from parents ("Have you considered seeking or have you sought help or treatment for your child's emotional or behavioral problems?"; scale: 1, no; 2, have considered it; 3, have sought help).

Registry Information on Psychiatric Disorders at Ages 18 to 23

The Finnish national military call-up registry contains information about every male Finnish citizen. Finnish men born in 1981 received their obligatory call-up in 1999, which provided an opportunity to reach nearly all the boys in the age group. Military service lasting from 6 to 12 months is obligatory for Finnish men, and they have a medical examination during the spring of the year in which they turn 18. The cumulative information on *International Classification of Diseases, Tenth Revision* (ICD-10) psychiatric diagnoses in the present study was based on the military registry information, including all psychiatric diagnoses from the call-up health examination in the fall of 1999, and from the military registry information at 2 points in time, in October 2002 and March 2004.²¹

The ICD-10 diagnoses were made for all subjects at the mental health examination at call-up. Those who displayed emergent problems during their military service were also subjected to health examinations to evaluate their fitness for military duty or to otherwise treat them. The more severe and chronic psychiatric diagnoses are usually based on consultation with the specialized psychiatric services, whereas usually a less severe diagnosis may be based on an assessment made by a general practitioner.²¹ However, because the general practitioner has access to the entire health record and obtains his information from the school and health care

system, the accuracy of these diagnoses can be regarded as rather good. According to the registry information about ICD-10 diagnosis pooled from 3 different points in time (military call-up 1999, registry information 2002 and 2004), subjects were classified into five groups of disorders: anxiety disorder, depressive disorder, antisocial personality disorder, substance abuse disorder, and psychotic disorder (including, eg, schizophrenia and schizophreniform psychoses). If the subject had a psychotic disorder at any of these 3 times, he was not classified into any other group. The number of subjects with psychotic disorders was very low, and it was considered to be a distinctively different diagnostic group (eg, regarding long-term outcome) compared with other psychiatric groups. Otherwise, the subject could belong to >1 disorder group, on the basis of whether he had been given different diagnoses at different times.

Statistical Analysis

The statistical significance and the univariate associations between childhood bullying variables at the age of 8 and belonging to psychiatric groups at ages 18 to 23 was studied by means of logistic regression analysis. These associations were quantified by calculating odds ratios (OR) with 95% confidence intervals (CIs). The multivariate analyses of the associations were conducted by applying multivariate logistic regression analysis. *P* values of <.05 were considered statistically significant. Statistical computations were performed by using SAS for Windows 9.1.3 (SAS Institute, Inc, Cary, NC).

RESULTS

Altogether, 6% of 8-year-old boys were frequently bullies but not victims according to ≥ 1 informant, whereas 6% of boys were frequently victims but not bullies. Furthermore, 3% of boys were frequently both bullies and victims.

Long-term Outcome

As shown in Table 1, 30% of the bully-victim group had a psychiatric disorder at follow-up, whereas the respective figure for the frequent bully-only group was 18%, for the frequent victim-only group 17%, and for the reference group 9%. Table 2 shows how bully-victim group status predicted antisocial personality and anxiety

and psychotic disorders, whereas frequent bully-only group status predicted antisocial personality, substance use, and depressive and anxiety disorders, and frequent victim-only group status predicted anxiety disorders in univariate analysis. When cases of anxiety or depressive disorders with comorbid substance use or antisocial personality disorders were excluded, the results remained similar.

When the analyses were adjusted for the effect of parental education level, and being "screen-positive" in parent/teacher reports of the child's total symptoms at the age of 8, bully-victims were at risk of anxiety (OR: 5.2; 95% CI: 1.7–15.3) and antisocial personality disorders (OR: 3.9; 95% CI: 1.4–10.9), and bullies were at risk of antisocial personality disorders (OR: 2.9; 95% CI: 1.2–6.9), whereas victims were at risk of anxiety disorders (OR: 2.6; 95% CI: 1.1–6.1)

Co-occurrence of Frequent Bullying/Victimization and Psychiatric Symptoms

To identify the outcomes of bullying associated with psychiatric symptoms at baseline, the frequent bully, frequent victim, and bully-victim groups were further classified into screen positives (above clinical cutoff point either on the Rutter teacher or parental scales) and screen negatives (below clinical cutoff point on both teacher and parental scales). As Table 3 shows, almost all frequent bully-victims (97%), 80% of frequent only bullies, and 50% of frequent only victims were screen-positive on the parent and/or teacher Rutter's scale at baseline. Bully-victims who were also screen-positive had fivefold odds of having a psychiatric disorder at 18 to 23 years old. Frequent bullies who screened positive had threefold odds of having a psychiatric disorder in early adulthood. Those who screened positive but were not involved in bullying were twice as likely to have psychiatric disorders in early adulthood. The reference group was screen-negative children who were not involved in frequent bullying behavior. If the child was a frequent bully or victim but screen-negative, he was not at increased risk of a psychiatric disorder. In paired comparisons, screen-positive bully-victims (OR: 2.5; 95% CI: 1.4–4.4) were at higher risk of a psychiatric disorder than screen-positive children who were not involved in frequent bullying behavior.

TABLE 1 Frequent Bullying, Victimization, and Bully-Victimization at 8 Years of Age and Prevalence of Psychiatric Disorders in Early Adulthood (N = 2540)

	Total N	Any Psychiatric Disorder (N = 264)		Antisocial Personality (N = 68)		Substance Abuse (N = 44)		Anxiety (N = 56)		Depressive (N = 44)		Psychotic (N = 13)	
		n	%	n	%	n	%	n	%	n	%	n	%
Not frequently bully or victim	2154	189	8.8	47	2.2	33	1.5	35	1.6	31	1.4	9	0.4
Frequently only bully	153	27	17.6	9	5.9	6	3.9	8	5.2	6	3.9	1	0.7
Frequently only victim	163	27	16.6	4	2.5	4	2.5	7	4.3	5	3.1	1	0.6
Frequently both bully and victim	70	21	30.0	8	11.4	1	1.4	6	8.6	2	2.9	2	2.9

TABLE 2 Predictive Associations of Frequent Bullying, Victimization, and Bully-Victimization at 8 Years of Age and Psychiatric Disorders in Early Adulthood: Results of Univariate Logistic Regression Analysis

	Any Psychiatric Disorder		Antisocial Personality		Substance Use		Depressive		Anxiety		Psychotic	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Frequently only bully	2.2	1.4–3.5 ^a	3.0	1.4–6.2 ^b	2.8	1.2–6.9 ^c	3.0	1.2–7.4 ^c	3.6	1.6–7.8 ^b	1.7	0.2–13.8
Frequently only victim	2.1	1.3–3.2 ^b	1.2	0.4–3.5	1.8	0.6–15.0	2.3	0.9–6.1	2.9	1.3–6.6 ^c	1.6	0.2–12.8
Frequently both bully and victim	4.5	2.6–7.6 ^a	6.8	3.1–15.2 ^a	1.2	0.2–19.1	2.6	0.6–11.1	6.9	2.8–17.1 ^a	8.9	1.9–42.3 ^b

The reference group was “not frequently bully or victim.”

^a $P < .001$.

^b $P < .01$.

^c $P < .05$.

TABLE 3 Predictive Associations of Screen-Positive and Screen-Negative Frequent Victims, Bullies, and Bully-Victims at the Age of 8 and Psychiatric Disorder in Early Adulthood: Results of Univariate Logistic Regression Analysis

	Total Sample (<i>N</i> = 2540)	Any Psychiatric Disorder (<i>n</i> = 264)	%	OR	95% CI
Not frequently bully or victim, and screen-negative	1702	124	7.3		
Not frequently bully or victim, and screen-positive	452	65	14.4	2.1	1.5–2.9
Frequently only victim, and screen-negative	82	9	11.0	1.6	0.8–3.2
Frequently only victim, and screen-positive	81	18	22.0	3.6	2.1–6.3
Frequently only bully, and screen-negative	31	1	3.2	0.4	0.1–3.1
Frequently only bully, and screen-positive	122	26	21.3	3.4	2.1–5.5
Frequently both bully and victim, and screen-negative	2	1	50.0	12.7	0.8–204
Frequently both bully and victim, and screen-positive	68	20	29.4	5.3	3.0–9.2

The reference group was “not frequently bully or victim, and screen-negative.”

Screen-positive children with frequent bullying or victimization (11% of the sample) accounted for 28% of all adult psychiatric diagnoses. Remarkably, when we examined the prevalence of contacts with child mental health services at the age of 8 years, most of the children had had no contacts. According to parents, only 29% of bully-victims, 15% of frequent bullies, 6% of frequent victims, 9% of “screen-positives” without bullying behavior, and 1% of the screen-negative boys without bullying behavior had had some contact with these services.

Information About Frequent Bullying and Victimization as a Screening Method

On the basis of our results, Figure 1 shows different models for screening schoolchildren at risk of later psychiatric disorders. In model 1, using parent and teacher symptom checklists as a primary screening method, 28% would be in need of additional assessment. Of the 723 children who would have been referred, 18% were recognized as suffering from a psychiatric disorder in early adulthood. In this model, 129 of 264 (49%) with a psychiatric diagnosis at follow-up would have been re-

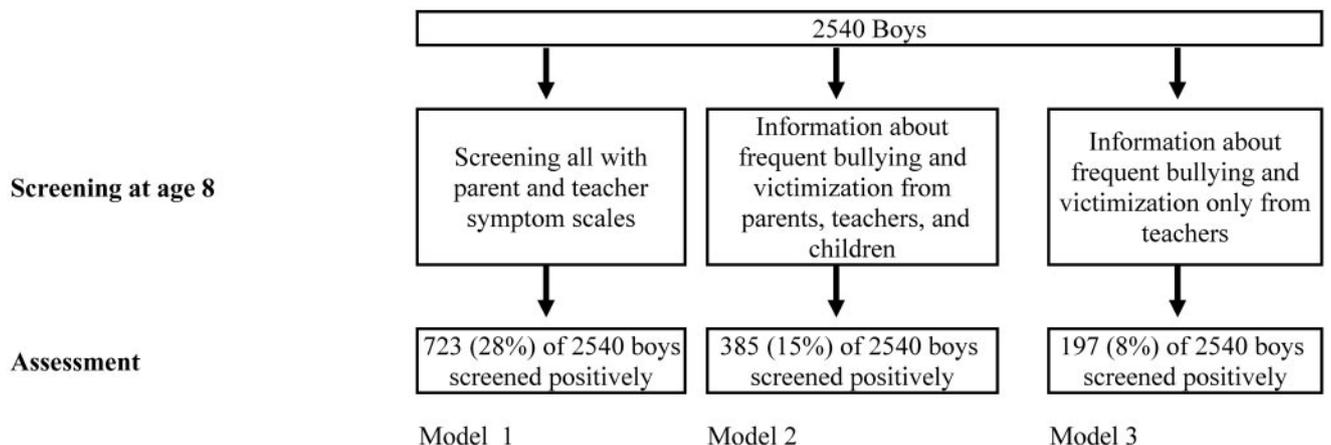


FIGURE 1 Three different models for screening schoolchildren at risk of later psychiatric disorders.

ferred. In model 2, using information about bullying and victimization, 15% would be in need of additional assessment. If these children had been screened with parental and teacher symptom checklists, the remaining 11% screen-positives would be referred for additional assessment. Of those 273 children, 24% were recognized as having a psychiatric diagnosis at follow-up. In this model, 65 (25%) of 264 with a psychiatric diagnosis at follow-up were referred. In the final, least expensive model, only teacher reports of frequent bullying and victimization were used as a screening method for additional assessment. In this model, 8% would be referred additional. Of those 197 children, 22% were recognized as having a psychiatric disorder at follow-up. However, only 44 (17%) of 264 of subjects with a psychiatric diagnosis at follow-up were referred.

DISCUSSION

To the best of our knowledge, this is the first population-based prospective study about bullying in early school years using psychiatric diagnoses in early adulthood as the outcome. When controlled for the effect of parental education level and general emotional and behavioral symptomatology, frequent victimization independently predicted anxiety disorders and frequent bullying predicted antisocial personality disorder, whereas frequent bully-victimization predicted both of these disorders. Our findings suggest that both bullying and victimization during early school years are public health signs that can identify boys who are at risk of suffering psychiatric disorders in early adulthood.

Outcome of Bullies, Victims, and Bully-Victims

Bullying is a type of antisocial behavior that is associated with antisocial personality disorder in early adulthood. Both bullies and bully-victims were found to behave generally more aggressively than their peers.²⁵ In a recent brain-imaging study, Sterzer et al²⁶ suggested that childhood aggressive behavior in boys with conduct disorder originates from impairments in both the recognition of emotional stimuli and the cognitive control of emotional behavior.

Frequent bully-victims were at particular risk of adverse long-term outcomes. This finding is in accordance with the results of a follow-up study by Kim et al,¹² showing that the bully-victim group was the most vulnerable group for developing multiple psychopathological deviance, compared with other types of bullying behaviors. Furthermore, this finding is in accordance with previous cross-sectional studies that showed that bully/victims function more poorly than either bullies or victims.^{9,27,28}

Frick et al²⁹ found that children with conduct disorder who also showed callous-unemotional traits had a high rate of delinquency and police contacts throughout the 4 years of their study. The callous-unemotional trait refers

to a specific affective (eg, absence of guilt, limited display of emotion) and interpersonal (eg, failure to show empathy, use of others for one's own gain) style that is characteristic of a subgroup of children with severe conduct disorder^{29,30} and may be associated with psychopathy in adult life. It can be hypothesized that frequent only bullies more often belong to the callous-unemotional antisocial group. Furthermore, it can be hypothesized that bully-victims may frequently belong to those who have conduct problems associated with emotional dysregulation, as reflected in impulsivity and hyperactivity related to high levels of emotional reactivity. Emotional dysregulation may also lead to a higher susceptibility to anger because of perceived provocations from peers, leading to violent and aggressive acts within the context of high emotional arousal. These possibilities should be examined in future longitudinal research studies.

Frequent victimization predicted anxiety disorders even after controlling for the effects of parental education level and general childhood symptom level. The association between frequent victimization and later anxiety is in line with a previous findings showing association between victimization and anxiety in adolescence.^{8,16,18}

Bullying Behavior and Early Identification of Psychiatric Problems

Bullying and victimization are common and affect the school environment and children's daily well-being and learning.^{3,31} This provides a rationale for implementing school-based interventions aimed at addressing bullying. Frequent bullying and victimization often co-occur with psychiatric problems. Furthermore, the long-term outcome of children who bully or are victimized is significantly worse than that of children who have a high level of psychiatric symptoms but do not bully and are not victimized. The need for early recognition is also motivated by the finding that the majority of frequent bullies and victims had no contact with the child mental health services.

Our findings have implications for the early identification of children with long-standing psychiatric difficulties. An important finding is that bullies and victims with psychiatric symptoms rather than all bullies or victims per se are those who are at elevated risk of later psychiatric disorders. If a child is a frequent bully, victim, or bully-victim (15% of the present sample), additional assessment of psychiatric problems is indicated. However, if the frequent bully or victim does not have a high level of symptoms, our data suggest that the primary intervention focus should be on regulating the child's behavior at school and enhancing peer relationships. An approach to screening that relies first on identifying frequent bullies, victims, or bully-victims, and then conducts a psychiatric screening could be a cost-effective

alternative to universal screening of all children for psychiatric problems, especially when child mental health resources are scarce. However, the screening approach requires second-stage clinical evaluations, effectively functioning child mental health services, and efforts to assist families in obtaining help.

Strengths and Limitations of the Study

Our community-based sample was representative of the target population, and the study design was a prospective follow-up study. Unfortunately, the study included only boys, and the results cannot be generalized to girls. The attrition rate was low, considering the duration of the follow-up and the sample size. The diagnoses were collected by the Finnish national military registry for both military and clinical purposes. The ICD-10 psychiatric diagnoses were based on health examinations performed by general physicians or senior psychiatrists. It should be noted that the psychiatric diagnoses were not determined through a structured diagnostic interview, and this may affect the findings. For instance, the effect of psychiatric comorbidity in adulthood could not be thoroughly assessed. However, the information regarding psychiatric diagnoses is updated weekly, and the registry is well maintained. Including registry information from 3 points in time increases the reliability of the results. Given the restrictions on the use of registry data in general, information based on the Finnish national military registry offers comprehensive and unique information not available in most countries.

The strength of the study is that 3 different informants (teacher, parent, and self) were involved in each case. However, it might be argued that our classification of bully and victim groups should have been made in some other way. This issue is related to the problem of how to categorize children into meaningful groups. Even a fairly sizable sample such as this has limitations, given the many possible combinations of bully and victim status and the limited number of subjects. Furthermore, we chose to use dichotomized psychopathology variables for 2 reasons: First, from the clinical perspective, it is easier to think about cases because these are the children the clinician should do something about. When children have all kinds of gradations of symptoms, it is unclear whether the clinician should or will act. Second, we generally view emotional and behavioral symptoms as a continuum. However, children at the high end of the continuum are qualitatively different from children at the low end of the continuum.

Clinical Implications

The findings have considerable significance for the early recognition of psychiatric problems. Children who display frequent bullying behavior should be evaluated for possible psychiatric problems, because bullying and being bullied may be early markers of risk of psychiatric

disorders. Proponents of preventing or stopping bullying in schools should consider the provision of individual psychiatric assessments for those involved, and subsequently offering them mental health treatment for their problems. However, to achieve this, it is imperative that mental health services become an integrated part of the school system. Within such a system, routine screening for mental health problems would be of fundamental importance and would have to involve all 3 parties: teachers, parents, and children. This would set the stage for additional cooperation on the enhancement of the well-being of the children and their families. It is essential that various models of "school mental health" should be tested in the real world for their effectiveness.

CONCLUSIONS

Particular attention should be paid to boys who display frequent bullying behavior, and especially to frequent bully-victims because they are at risk of developing psychiatric disorders in early adulthood. Additional studies that address resilience factors (eg, parental and social support systems and the child's cognitive and social skills in dealing with bullying behavior) are warranted. Because childhood bullying is a complex behavior with potentially serious consequences, the early identification of children at risk should be a priority for society.

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DEBATE OVER VACCINES' ROLE IN AUTISM HEADS TO A COURT

“A special court that will pit scientists against activists in the debate over whether vaccines have caused autism in many children begins hearings today with the first test case, involving a 12-year-old Arizona girl. Although science has weighed in heavily on the question—with strong evidence that vaccines aren't linked to the disorder—a very vocal group of people remains unconvinced. More than 4800 cases are pending, filed by parents who believe their children have autism that was caused by vaccines. . . . Two Institute of Medicine reports, in 2001 and 2004, reviewed the evidence and determined there was no link between vaccines and autism. ‘From my standpoint, this question has been asked and answered,’ Dr Paul Offit of Philadelphia Children's Hospital, who helped invent a rotavirus vaccine, told reporters in a telephone briefing. ‘You know, it's a scientific question. It's best answered in a scientific venue. It's been done. I mean, the court is not a place to determine scientific truths. The court is a place to settle disputes.’”

Reuters News Service. *New York Times.* June 11, 2007

Noted by JFL, MD

What Is the Early Adulthood Outcome of Boys Who Bully or Are Bullied in Childhood? The Finnish "From a Boy to a Man" Study

Andre Sourander, Peter Jensen, John A. Rönning, Solja Niemelä, Hans Helenius, Lauri Sillanmäki, Kirsti Kumpulainen, Jorma Piha, Tuula Tamminen, Irma Moilanen and Fredrik Almqvist

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