Association of common health symptoms with bullying in primary school children

Katrina Williams, Mike Chambers, Stuart Logan, Derek Robinson

Abstract

Objectives—To estimate the prevalence of bullying in primary school children and to examine its association with common symptoms in childhood.

Design—Semistructured health interview conducted by school nurses as part of a school medical.

Setting—Newham, east London.

Subjects—All children in year 4 of school during the academic year 1992-93.

Main outcome measures—Reported bullying and common health symptoms.

Results—2962 children (93.1% of those on the school roll) were interviewed (ages 7.6 to 10.0 years). Information about bullying was not recorded for 114 children. 22.4% (95% confidence interval 20.9 to 24.0) of children for whom information was available reported that they had been bullied. There was an association between children reporting being bullied sometimes or more often and reporting not sleeping well (odds ratio 3.6, 2.5 to 5.2), bed wetting (1.7, 1.3 to 2.4), feeling sad (3.6, 1.9 to 6.8), and experiencing more than occasional headaches (2.4, 1.8 to 3.4) and tummy aches (2.4, 1.8 to 3.3). A significant trend for increasing risk of symptoms with increased frequency of bullying was shown for all reported health symptoms ($P < 0.001$).

Conclusions—Health professionals seeing primary schoolchildren who present with headaches, tummy ache, feeling sad or very sad, bed wetting, and sleeping difficulties should consider bullying as a possible contributory factor.

Introduction

A large proportion of children report being bullied at school.¹⁻⁴ In a study in Sheffield of 2623 children aged 8-11, based on self-completion questionnaires, 27% reported being bullied, 10% once a week or more.³ The reported forms of bullying, in decreasing frequency, were being called names, being physically hurt, being threatened, having rumours spread about you, not being talked to, and having belongings taken.

It is generally accepted that bullying causes substantial distress and that both short and long term adverse effects may occur. Interventions to prevent bullying have been developed,¹⁻⁵ but they have not been fully evaluated.⁶

A semistructured health interview conducted by school nurses with children in year 4 in Newham, east London, provided an opportunity to examine the relation between reports of being bullied and common childhood symptoms.

Subjects and methods

Since 1988 all children in year 4 (age 8-9) attending mainstream schools in Newham have been invited to attend a health interview with the school nurse. This is intended to be both a therapeutic exercise and a way of collecting data. The child is seen either alone or in the presence of a parent or carer. Data reported here refer to the 1992-93 academic year.

The semistructured interviews were conducted by 18 school nurses, who completed the questionnaire. The

questions were asked in sequence (appendix), but the approach to the interview was not rigid. If children responded in a way that suggested a health problem this was further explored at the time. If the nurse decided that a reported problem was in fact "normal" then it was not recorded as a problem. Most questions had a range of responses (appendix), and each child was told of the response options.

Although no standard definition for bullying was used, the nurse asked if the child knew what bullying was. The nurse then offered an explanation of bullying, asked if the child understood this explanation, and then asked if he or she was bullied.

ANALYSIS

In the comparative analyses several options have been condensed. For the question "how do you usually feel?" answers of happy and very happy were condensed into a "happy" category, answers of sad and very sad into a "sad" category. Reports of being bullied "sometimes" or more often were classified as being bullied. Headache and tummy ache were reported a problem only if experienced once a week or more often. The prevalence and 95% confidence interval (exact binomial) of reported bullying and other health symptoms were calculated with SPSS/PC. Odds ratios with 95% confidence interval (Cornfield)⁷ and χ^2 analyses of linear trend were calculated with the packages Confidence Interval Analysis⁸ and Epi Info.⁹ Denominators in the tables vary slightly because of missing data.

Results

Questionnaires were completed for 2962 (93.1%) of the 3180 eligible children. Of 218 not interviewed, 42 attended a school without a school nurse and 176 failed to attend.

Age at interview was known for 2953 children. The mean age was 9.0, range 7.6-10.0 (98.7% were between the expected ages at interview of 8 years, 3 months and 9 years, 9 months). A parent was present for 1644 (55.5%) of interviews.

Table 1—Reported frequency of bullying

	No (%) of children (n = 2848)
Nearly every day	40 (1.4)
Often	48 (1.7)
Sometimes	453 (15.9)
Hardly ever	97 (3.4)
Not bullied	2210 (77.6)

Table 2—Frequency of different types of bullying

Type of bullying	No (%) of children
Bad words	137 (29.9)
Being hurt	166 (36.2)
Threatened	36 (7.9)
"Frozen out" or isolated	16 (3.5)
Being hurt and bad words	83 (18.1)
Other combinations	20 (4.4)
Total who reported type of bullying	458

Department of Epidemiology and Medical Statistics, St Bartholomew's and Royal London School of Medicine and Dentistry, Queen Mary and Westfield College, London E1 4NS
Katrina Williams, lecturer
Mike Chambers, lecturer

Department of Epidemiology, Institute of Child Health, London WC1N 1EH
Stuart Logan, senior lecturer

Newham Health Care, Beacontree House, London E15 4EE
Derek Robinson, consultant community paediatrician

Correspondence to: Dr Logan.

BMJ 1996;313:17-9

Appendix

Relevant questions from questionnaire in order of asking, with possible responses

Question	Response
Do you get headaches?	Yes; no
If "yes" how often?	Occasionally; about once a week; 2-4 times a week; most days
Do you have tummy ache?	Yes; no
If "yes" how often?	Occasionally; about once a week; 2-4 times a week; most days
Do you sleep well?	Yes; no
Do you sometimes wet the bed?	Yes; no
If "yes" how often?	Occasionally; about once a week; 2-4 times a week; most days
How do you usually feel?	Very happy; happy; fairly happy; fairly sad; sad; very sad
Do you get bullied?	No; hardly ever; sometimes; often; nearly every day
If "sometimes" or more:	
Where does the bullying take place?	At school; elsewhere (please specify)
What sort of bullying is this?	Being hurt; bad words; threats; isolation ("frozen out"); other

Table 3—Frequency of health symptoms reported

Reported symptom	No of children	% (95% Confidence interval)
Not sleeping well	124/2936	4.2 (3.5 to 5.0)
Bed wetting	224/2903	7.7 (6.8 to 8.8)
Feeling sad	44/2848	1.5 (1.1 to 2.1)
Headache once a week	189/2921	6.5 (5.6 to 7.4)
Tummy ache once a week	224/2877	7.8 (6.8 to 8.8)

Information on bullying was not available for 114 children. Forty children (1.4%) said they were bullied nearly every day and 638 (22.4%) bullied at some time (table 1). A higher proportion of boys reported bullying (347/1428 (24.3%), 95% confidence interval 22.1% to 35.0%) than girls (290/1419 (20.9%), 23.1% to 28.3%). Most bullying occurred at school, although 22 children reported bullying in the home. Table 2 gives the frequency of different types of bullying, and table 3 shows the number of children reporting common symptoms.

Table 4—Association between reported bullying and other health symptoms

Reported symptom	Bullied*		Not bullied		Odds ratio (95% confidence interval)
	Odds	No of children	Odds	No of children	
Not sleeping well	0.109	53/486	0.031	68/2228	3.57 (2.46 to 5.18)
Bed wetting	0.129	61/473	0.074	157/2119	1.74 (1.27 to 2.38)
Feeling sad	0.045	17/382	0.012	23/1869	3.62 (1.91 to 6.83)
Headache $\geq$ once a week	0.129	61/472	0.053	116/2170	2.42 (1.75 to 3.35)
Tummy ache $\geq$ once a week	0.161	72/448	0.067	141/2116	2.41 (1.78 to 3.26)

*Bullying reported sometimes or more.

Table 5—Percentage (number) of children with reported tummy ache, headache, and not sleeping well according to frequency of bullying

Bullying frequency	Tummy ache $\geq$ once a week	Headache $\geq$ once a week	Not sleeping well
Nearly every day	26 (10/39)	23 (9/39)	15 (6/40)
Often	11 (5/46)	7 (3/45)	19 (9/48)
Sometimes	13 (57/435)	11 (49/449)	8 (38/451)
Hardly ever	7 (7/96)	10 (10/97)	6 (6/96)
Not bullied	6 (134/2161)	5 (106/2189)	3 (62/2200)

ASSOCIATION WITH OTHER SYMPTOMS

Reporting being bullied was associated with an increased risk of reporting not sleeping well (odds ratio 3.6, 95% confidence interval 2.5 to 5.2), bed wetting (1.7, 1.3 to 2.4), feeling sad (3.6, 1.9 to 6.8), and experiencing more than occasional headaches (2.4, 1.8 to 3.4) and tummy aches (2.4, 1.8 to 3.3) (table 4).

Table 5 shows children reporting not sleeping well, headache, and tummy ache by frequency of bullying. Linear analysis of trend for different frequencies of reported bullying was significant for all symptoms: not sleeping well ($\chi^2 = 61.8$; $P < 0.0001$), bed wetting ($\chi^2 = 13.5$; $P = 0.0002$), feeling sad ($\chi^2 = 26.2$; $P < 0.0001$), headaches ($\chi^2 = 38.0$; $P < 0.0001$), and tummy aches ($\chi^2 = 38.6$; $P < 0.0001$).

Analyses stratified for parental presence at interview, sex, ethnicity, and reporting of multiple symptoms made little difference to the estimated odds ratios.

Discussion

Our results suggest a strong association between reported bullying and common symptoms. Most of the problems with the design of this study, including random misclassification due to lack of standardisation of practice, are likely to weaken these associations. If, however, the likelihood of recording reported bullying was increased by the presence of other symptoms, the relative risk would be biased upwards. Although this potential bias cannot be excluded, any symptom was discussed as it was raised during the interview. This meant that the interviewer felt that problems had been sufficiently explored and explained before proceeding.

It has been suggested that the prevalence of bullying is best assessed through self completion questionnaires.¹⁰ The prevalence reported here is, as expected for an interview, slightly lower than reported for this age group in other studies using self completed questionnaires in Britain and Ireland,^{2,4} although the difference between the sexes is similar.

The linear association found between risk of health symptoms and increasing frequency of bullying suggests a "dose effect," strengthening the argument that this is a causal relation. We cannot, however, exclude the possibility that the risk of reporting being bullied and of reporting other symptoms are both manifestations of some other underlying problem.

Health professionals seeing children with these common symptoms should ask whether the child is being

Key messages

- Bullying is widespread among primary school children and causes much distress
- Many children report having frequent headaches or tummy aches, that they sleep poorly, wet the bed, or feel sad
- Children who report these symptoms also report being bullied substantially more often than do their peers
- Although it is not clear whether the association is causal, health professionals seeing such children should ask about bullying

bullied. If bullying is reported, whether or not it is causally related to the presenting complaint, it should be taken seriously.

We thank the founding members and steering group of the Newham 8-plus health survey, Margaret Baker and the school

nurses for their enthusiasm, and Rumana Omar and Sandra Eldridge for statistical advice.

Funding: Newham Health Authority (now East London and the City Health Authority) and Newham Community Health Services (now NHS Trust).

Conflict of interest: None.

- 1 Olweus D. *Bullying at school. What we know and what we can do*. Oxford: Blackwell, 1993.
- 2 O'Moore AM, Hillery B. Bullying in Dublin schools. *Irish Journal of Psychology* 1989;10:426-41.
- 3 Whitney I, Smith PK. A survey of the nature and extent of bullying in junior/middle and secondary schools. *Educational Research* 1993;35:3-25.
- 4 Boulton MJ, Underwood K. Bully/victim problems among middle school children. *Br J Educ Psychol* 1992;62:73-87.
- 5 Sharp S, Smith PK. Bullying in UK schools: The DES Sheffield bullying project. *Early Child Development and Care* 1992;77:47-55.
- 6 Erling R. Bullying: the Scandinavian research tradition. In: Delwyn TP, Lane DA, eds. *Bullying in schools*. Stoke on Trent: Trentham Books, 1994:21-32.
- 7 Cornfield J. A statistical problem arising from retrospective studies. In: Neyman J, ed. *Proceedings of the third Berkeley symposium, IV, Berkeley*. Berkeley: University of California Press, 1956:133-48.1
- 8 Gardner SB, Winter PD, Gardner MJ. *CIA Confidence Interval Analysis*. London: BMJ Publishing, 1991.
- 9 Dean AG, Dean JA, Coulombier D, Brendal KA, Smith DC, Burton AH, et al. *Epi Info, version 6: a word processing, database, and statistics program for epidemiology on microcomputers*. Atlanta, Georgia: Centers for Disease Control and Prevention, 1994.
- 10 Ahmad YS, Smith PK. Behavioural measures review. No 1. Bullying in schools. *Newsletter of the Association of Child Psychology and Psychiatry* 1990; 15:26-7.

(Accepted 12 April 1996)

Career preferences of doctors who qualified in the United Kingdom in 1993 compared with those of doctors qualifying in 1974, 1977, 1980, and 1983

Trevor W Lambert, Michael J Goldacre, Carol Edwards, James Parkhouse

Abstract

Objective—To report the career preferences of doctors who qualified in the United Kingdom in 1993 and to compare their choices with those of earlier cohorts of qualifiers.

Design—Postal questionnaires with structured questions, including questions about choice of future long term career, were sent to doctors a year after qualification.

Setting—United Kingdom.

Subjects—All medical qualifiers of 1993, comparing their replies with those from earlier studies of the qualifiers of 1974, 1977, 1980, and 1983.

Main outcome measures—Choice of future long term career and certainty of choice expressed at the end of the first year after qualification.

Results—Questionnaires were sent to 3657 doctors. 2621 (71.7%) replied. Of the 2621 respondents, 70.5% (1849) stated that their first preference was for a career in hospital practice, 25.8% (677) specified general practice, 1.0% (25) specified public health medicine or community health, 1.4% (36) specified careers outside medicine, and 1.3% (34) did not state a choice. By contrast, 44.7% (1416/3168) of the doctors in the 1983 cohort had specified that their first preference was general practice. Among the 1993 qualifiers, general practice was the first career choice of 17.5% of men (227/1297) and 34.0% of women (450/1324). Only 7.4% of men (96/1297) stated that they definitely wanted to enter general practice. Only 7.8% (103/1324) of women qualifiers in 1993 expressed a career preference for surgical specialties. Within hospital practice, comparing 1993 with 1983, choices for the medical specialties and for accident and emergency medicine rose and those for pathology fell. Women were less definite than men about their choice of future long term career.

Conclusions—If the 1993 cohort is typical of the current generation of young doctors, there has been a substantial shift away from general practice as a career choice expressed at the end of the preregistration year. General practice was much more popular among women than men. Few women opted for surgery. The sex imbalance in the percentage of doctors who choose different mainstreams of medical practice seems set to continue.

Introduction

Doctors' career plans after qualification are a fundamental issue for all those concerned with medical education and providing medical services. Since our last national survey of doctors' career choices in the United Kingdom, in 1983,¹ the NHS has undergone important changes. These include the introduction of the new contract in general practice and the organisational reforms of *Working for Patients*.^{2,3} Other changes since 1983 include an increase in time spent by medical students in general practice and an increase in the percentage of newly qualified doctors who are women and may not make the same career choices as men. A major current change, which may influence career choices in the future, is the implementation of shorter, more structured training programmes in hospital practice in the United Kingdom.⁴

We studied the career preferences of doctors qualifying from United Kingdom medical schools in 1993 at the end of their preregistration year and compared their career choices with those of qualifiers of earlier years.

Subjects and methods

The study population comprised all subjects qualifying in medicine in the United Kingdom in 1993 who were identified from listings compiled by the General

Medical Careers Research Group, Unit of Health Care Epidemiology, Department of Public Health and Primary Care, University of Oxford, Oxford OX3 7LF
Trevor W Lambert, statistician
Michael J Goldacre, director
Carol Edwards, research officer
James Parkhouse, study consultant

Correspondence to: Dr Goldacre.

BMJ 1996;313:19-24