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Completing questionnaires by proxy

Sir,

In a study of the relationship between respiratory morbidity in early childhood and asthma in adolescence and young adulthood¹ we found that, in a self-administered questionnaire,² the older age group (16–23 years) reported a much higher prevalence of most respiratory symptoms than did parents of the younger age group (10–15 years), even after correction for smoking behaviour. This difference could be partly caused by completion of the questionnaire by parents instead of the children themselves: the proxy effect.

The proxy effect in health surveys has been investigated where spouses (usually women) have completed questionnaires for their partners (usually men), and both underreporting³ and overreporting⁴ have been found.

As far as we know, the proxy effect of parents completing a questionnaire about respiratory symptoms in adolescents has not been explored. Therefore we studied this effect further by inviting the subjects themselves to complete the questionnaire for a second time one year later. The proxy effect of completion by parents was studied for each question separately by assessing the extent of agreement between the parents' answers to the first questionnaire and the children's answers to the second questionnaire for those aged under 16 years. The extent of agreement between the answers to both questionnaires for those aged 16 years and over served as a reference. Cohen's kappa was used as a measure of agreement,⁵ and Z-statistics for kappa were used to determine the significance of the differences between the kappa values.⁶

The prevalence and kappa values of the respiratory symptoms for both questionnaires and for both age groups are shown in Table 1. For most questions the agreement between the answers given in the first and the second survey was higher for those aged 16 years and over. This difference strongly suggests a proxy effect of parents completing the questionnaire for their children, but it is difficult to separate this from the effect of long-term variations in respiratory symptoms.

Parents appear to interpret the questions differently and/or to notice fewer respiratory symptoms in their children than the children themselves. Whether this finding reflects underreporting by parents or overreporting by adolescents and depends on a critical age should be the object of further research. When administering a questionnaire on respiratory symptoms to a population of adolescents, the proxy effect of completion by parents should be taken into account.

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Medical students in general practice

Sir,

Medical students in the United Kingdom are spending increasing amounts of their clinical training in general practice attachments and this trend is likely to contin-

Table 1. Patients' responses to the first and second questionnaires on respiratory symptoms and extent of agreement between these answers (Cohen's kappa) for both age groups.

Question*	% of patients responding positively (kappa)					
	Aged <16 years			Aged 16+ years		
	1st study	2nd study	(0.11)	1st study	2nd study	(0.32) **
Cough (n = 313/246)	5.8	15.0	(0.11)	10.6	15.5	(0.32) **
Chronic cough (n = 314/246)	1.6	4.8	(0.18)	4.1	5.3	(0.41) **
Phlegm (n = 310/244)	2.6	9.4	(0.24)	10.7	9.8	(0.42) *
Chronic phlegm (n = 313/246)	0.6	3.2	(0.33)	4.1	4.9	(0.62) ***
Cough with phlegm (n = 311/244)	17.7	32.8	(0.21)	32.8	34.8	(0.42) **
Chronic cough with phlegm (n = 314/246)	2.6	6.4	(0.11)	7.7	6.9	(0.46) ***
Wheezing (n = 310/243)	12.6	19.0	(0.56)	15.2	18.5	(0.52)
Chest tightness with wheezing (n = 306/239)	3.6	11.4	(0.20)	4.2	8.4	(0.34)
Breathlessness (n = 313/246)	13.4	27.8	(0.38)	26.0	33.3	(0.48)
Breathlessness more quickly than friends (n = 314/246)	8.0	11.8	(0.57)	9.4	14.2	(0.42)
Breathlessness going upstairs (n = 310/245)	7.7	25.5	(0.20)	20.8	29.0	(0.55) ***
Breathlessness on flat ground (n = 314/246)	1.6	3.5	(0.11)	1.6	5.3	(0.22)
Rhinitis (n = 314/244)	32.5	61.5	(0.19)	45.1	52.1	(0.37) *
Chronic rhinitis (n = 314/246)	8.3	10.2	(0.45)	10.6	9.8	(0.33)

*See reference 2 for a description of the questions. n = number of respondents aged <16 years/16+ years. *P<0.05, **P<0.01, ***P<0.001.