



Provided by the author(s) and University of Galway in accordance with publisher policies. Please cite the published version when available.

Title	Assessing the use of the Family Affluence scale among Irish school children
Author(s)	Molcho, Michal; Nic Gabhainn, Saoirse; Kelleher, Cecily C.
Publication Date	2007-09
Publication Information	Molcho, M., Nic Gabhainn, S., & Kelleher, C. (2007). Assessing the use of the Family Affluence scale among Irish School Children. Irish Medical Journal, 100(8), 37-39
Publisher	Irish Medical Organisation
Link to publisher's version	http://www.imj.ie/IMJPage_0_1.aspx?issueid=329
Item record	http://hdl.handle.net/10379/2631

Downloaded 2024-03-20T08:25:49Z

Some rights reserved. For more information, please see the item record link above.



Assessing the use of the Family Affluence Scale (FAS) among Irish Schoolchildren

M Molcho¹, S Nic Gabhainn^{1,2}, CC Kelleher^{2,3}

¹Health Promotion Research Centre, Department of Health Promotion, National University of Ireland, Galway

²Health Research Board, Unit for Health Status and Health Gain

³UCD School Public Health and Population Science, Woodview House, Belfield, Dublin 4

Abstract

The objective of this analysis was to examine the answering rates, internal reliability and external validity of the Family Affluence Scale (FAS) employing data from the 2002 Irish Health Behaviour in School-aged Children study HBSC; a cross-sectional survey of 8,424 Irish schoolchildren aged 10-18. Father's occupation was reported by 80.6% of the schoolchildren and 60.6% reported on mother's occupation, while over 96% reported on the FAS items. Lower answering rates on parental occupation were found among younger schoolchildren and among those with poorer material circumstances. Analysis of the FAS revealed a moderate internal reliability and FAS scores were significantly associated with reported parental occupation. The traditional SES measures suffer from poor answering rates that pose a serious methodological threat. The FAS has moderate internal reliability and does not capture the SES status in full, but it has high completion rates, and can be used as an additional measure of SES in late childhood and adolescence.

Introduction

The associations between socioeconomic (SES) status and health are well established among adults¹ and children², but not among adolescents^{3,4}. SES is most commonly determined by three measures: occupation, education and income⁵, measures that do not easily apply to adolescents. Studies tend to classify adolescents' SES according to the head of the household's status⁶, but the appropriateness of this is unclear. Whereas some studies suggest that adolescents are able to provide valid data on their parents' occupational status^{6,7,8}, others suggest otherwise^{9,10}.

One way of overcoming these difficulties is measuring the material affluence of the family. The Family Affluence Scale (FAS) is a composite of four self-report questions: family car ownership, number of holidays, number of computers and having one's own bedroom^{9,11,12}, based on Townsend's work on material deprivation¹³. The FAS was found to be a good predictor of poor self-rated health in 22 European and North American countries¹⁴.

Some aspects of the FAS were previously validated internationally¹⁵, but not in the Irish context. The current study aims to assess the internal and the external validity of the FAS in Ireland, based on data collected in 2002 HBSC survey.

Methods

Sample

This study employs data from the 2002 Irish Health Behaviours in School-aged Children study, a part of the WHO collaborative study (WHO-HBSC)¹⁶. Schools were randomly selected from Department

of Education and Science lists and individual classrooms within these schools were randomly selected for inclusion. Data were collected using a self-completion questionnaire in April-June, and September-October 2002, from 8,424 10-18 year old schoolchildren. The response rate in this study was 51% of schools and 83% of schoolchildren. A full description of the methods employed can be found elsewhere^{17,18}.

Measurement

Participants were asked to report where their father and mother work, and what exactly their job was. These open-ended questions were coded into a 7 category SES scale: 1 - professional; 2 - managerial/technical; 3 - skilled non-manual; 4 - skilled manual; 5 - partly skilled; 6 - unskilled; 7 - unknown or unclassifiable. The latter category was re-coded as missing.

The Family Affluence Scale was calculated as a sum score of the following: Does your family own a car, van or truck? 0 - no; 1 - yes, one; 2 - yes, two or more; Do you have your own bedroom? 0 - no; 1 - yes; During the past 12 months, how many times did you travel away on holiday with your family? 0 - not at all; 1 - once; 3 - more than twice; and How many computers does your family own? 0 - none; 1 - one; 2 - two; 3 - more than two. The sum score created an 8-point scale that was later collapsed into low FAS (FAS 0,1,2,3); medium FAS (FAS 4,5); and high FAS (FAS 6,7).

Statistical Analyses

The internal and external reliability characteristics of the FAS as

Table 1 Answering rates for parental occupation and FAS items by gender and age group

	Total	Boys	Girls	10-11yrs	12-13yrs	15-17yrs
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Father	80.6 (6791)	79.5 (2872)	81.7 (3917)	78.8 (1029)	81.2 (3193)	81.6 (2436)
Mother	60.8 (5126)	59.9 (2164)	61.7 (2958)	57.6 (752)	61.0 (2396)	62.6 (1869)
Own bedroom	99.4 (8370)	99.2 (3585)	99.5 (4774)	99.5 (1299)	99.2 (3901)	99.6 (2973)
Family vacations	99.2 (8354)	98.9 (3573)	99.4 (4770)	98.9 (1292)	98.9 (3889)	99.7 (2975)
No. of computers	99.4 (8373)	99.2 (3585)	99.6 (4777)	99.5 (1299)	99.3 (3903)	99.6 (2973)

Table 2 Spearman correlations: FAS items

	Family car	Own Bedroom	Family vacations
Own Bedroom n	0.102** 8111		
Family vacations n	0.200** 8113	0.129** 8360	
No. of computers n	0.131** 8093	0.0869** 8339	0.178** 8344

Table 3 Percentages of adolescents reporting on parental occupation, by FAS categories

	Professional	Managerial/ technical	Skilled non- manual	Skilled manual	Partly skilled	Unskilled
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Father's occupation						
Total	7.2 (486)	31.0 (2106)	10.9 (739)	33.4 (2269)	13.0 (882)	4.6 (309)
FAS low	1.8 (22)	27.3 (329)	7.0 (84)	40.2 (484)	16.6 (200)	7.1 (86)
FAS medium	5.1 (160)	28.6 (893)	11.2 (350)	36.0 (1121)	14.1 (441)	4.9 (153)
FAS high	12.3 (274)	35.5 (792)	12.4 (276)	27.3 (610)	9.6 (214)	3.0 (66)
Mother's occupation						
Total	3.2 (164)	34.3 (1756)	29.2 (1495)	6.0 (307)	18.9 (967)	8.5 (437)
FAS low	1.9 (18)	26.3 (247)	24.9 (234)	6.9 (65)	24.3 (228)	15.7 (147)
FAS medium	2.9 (68)	33.8 (793)	29.8 (699)	6.4 (151)	19.3 (452)	7.7 (180)
FAS high	4.4 (75)	39.6 (674)	30.2 (515)	4.8 (81)	15.5 (264)	5.5 (94)

Table 4 Answering rates for parental occupation by FAS categories, gender and age group

	Total	Boys	Girls	10-11yrs	12-13yrs	15-17yrs
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Father's occupation						
FAS low	70.8 (1205)	71.5 (542)	70.2 (663)	69.9 (179)	72.4 (534)	69.9 (463)
FAS medium	81.6 (3118)	80.6 (1331)	82.6 (1786)	78.2 (494)	81.3 (1446)	84.6 (1111)
FAS high	87.4 (2232)	85.2 (916)	89.2 (1316)	85.1 (338)	88.2 (1091)	88.0 (767)
Mother's occupation						
FAS low	55.1 (939)	56.1 (425)	54.4 (514)	59.8 (153)	53.0 (391)	55.4 (367)
FAS medium	61.4 (2343)	59.7 (985)	62.8 (1357)	56.3 (356)	60.8 (1082)	65.5 (861)
FAS high	66.7 (1703)	65.2 (701)	67.8 (1000)	58.2 (231)	68.1 (843)	68.5 (597)

proposed by Wardle et al¹⁸ were examined using SPSS, version 12.0.

Results

Out of the 8,424 schoolchildren sampled, 80.6% reported father's occupation and 60.8% reported mother's occupation. In contrast, 96.4% reported on having a family car, 99.4% own bedroom; 99.4% computers; and 99.2% holidays. No gender differences were found in likelihood of reporting on any of the measures, however, younger children were less likely to report parental occupations. This trend was not found with regard to the material affluence items (Table 1).

Prior to computing the FAS, intercorrelations between the four items used to compose the scale were examined and revealed modest but statistically significant associations (Table 2). The Cronbach's alpha of the final scale was moderate ($\alpha=0.401$).

To assess external validity, associations between parental occupation and FAS were examined. Data presented in Table 3 suggest that those with lower FAS scores were more likely to report partly skilled or unskilled parental occupations whereas those from the highest FAS group were more likely to report that their parents were in professional and managerial/technical occupations (Chi-square: 310.24, $p<0.001$ for father's occupation and Chi-square: 159.40, $p<0.001$ for mother's occupation).

Finally, we examined the percentages answering the parental occupation questions by FAS categories, gender and age group (Table 4). The percentages of respondents reporting on parental occupation from the low FAS groups were lower than that those from the higher FAS groups. In addition, within the higher FAS categories, girls and older schoolchildren were more likely than boys to report parental occupation (all statistically significant at $p<0.001$).

Discussion

The aim of this paper was to examine the internal reliability and the external validity of the Family Affluence Scale developed by Currie et al⁹ in the Irish context. The approach undertaken here follows the work of Wardle et al¹⁸ validating the Home Affluence Scale (HASC). Previous studies have highlighted the difficulty of obtaining valid information on parental occupation from children and adolescents using self-reports. Currie et al⁹, for instance, reported a 20% non-response to these questions. The first step of our analysis was, therefore, to determine the non-response rate in this Irish sample. Approximately 20% of the schoolchildren did not report on father's occupation and approximately 40% did not report on mother's occupation. Whether this was due to questions unanswered or a reported occupation that was unclassifiable, the result is the same: SES information for a large proportion of the sample was not available, posing a potential bias to analyses using this measure. Examining the answering rates to the individual FAS items revealed that in excess of 96% of participants responded to each of the items. The intercorrelations between the FAS items were low but statistically significant and the Cronbach's alpha was moderate. The low associations may be explained by the small number of items composing the scale and by the fact that they represent different aspects of material affluence¹⁸.

The external validity of the FAS was examined by associations with parental occupation. The results suggest that statistically significant associations exist between FAS and parental occupation, with more schoolchildren from high FAS categories reporting on high parental occupation status and vice versa, however deviations from this trend do exist suggesting that the FAS and parental occupation do not overlap and should not be used as alternates.

Finally, we examined whether differences in response rate on parental occupation exist across the three FAS categories. This analysis revealed differential answering on parental occupation; those reporting lower FAS scores and younger children were less likely to provide sufficient information for classification. These findings coincide with previous studies^{8,9} and they suggest a bias toward higher SES and that low SES is under represented in data collected from adolescents in a self-report manner.

The Family Affluence Scale is not perfect in the sense that it does not capture the same concept as parental occupational status or socio-economic status. Neither does it assess the totality of the concept of material affluence and thus it cannot replace the classic SES measures; indeed the scale is continuously subject to examination and refinement^{11,12}. Nevertheless, the FAS represents a simple, short and reliable measure, comprised of questions that can easily be answered by schoolchildren in these age groups and that is associated with national level measures of wealth¹⁵, and, that has demonstrated relationships various health outcomes¹⁴.

In the Irish context FAS has moderate internal reliability, suggesting that it should not be used as the only measure for material status or as an alternative for the more traditional SES measures such as parental occupation. However the high answering rates achieved by the FAS items and the association between FAS and parental occupations suggest that the FAS should be used as a complimentary measure of material affluence.

Acknowledgement

HBSC Ireland 2002 was funded by the Health Promotion Unit of the Department of Health and Children. We also acknowledge specific grant-aid from the Health Research Board that supported these analyses. The International WHO-HBSC is co-ordinated by Professor Candace Currie of the University of Edinburgh and the data bank manager is Dr. Oddrun Samdal of the University of Bergen.

References

1. Marmot MG. Social determinants of health inequalities. *Lancet* 2005; 365:1099-1104.
2. DiLiberti JH. The relationship between social stratification and ill-cause mortality among children in the United States: 1968-1992. *Pediatrics* 2000; 105(1), art. no. -e2.
3. Macintyre S, West P. Lack of class variation in health in adolescence: An artifact of an occupational measure of social class? *Soc Sci Med* 1991; 32(4):395-402.
4. West P. Health Inequalities in the early years: Is there equalization in youth? *Soc Sci Med* 1997; 44(6): 833-858.
5. Liberatos P, Link BG, Kelsey JL. The measurement of social class in epidemiology. *Epidemiol Rev* 1988; 10:87-121.
6. Vereecken C, Vandegehuchte A. Measurement of parental occupation: Agreement between parents and their children. *Arch of Pub Health* 2003; 61:141-149.
7. West P, Sweeting H, Speed H. We really do know what you do: A comparison of reports from 11 year olds and their parents in respect of parental economic activity and occupation. *Sociology* 2001; 35(2):539-559.
8. Lien N, Friestad C, Klepp KI. Adolescents' proxy reports of parents' socioeconomic status: How valid are they? *J Epidemiol Community Health* 2001; 55(10): 731-737.
9. Currie CE, Elton RA, Todd J, Platt S. Indicators of socioeconomic status for adolescents: The WHO Health Behaviour in School-Aged Children Survey. *Health Edu Res* 1997; 12(3):385-397.
10. Goodman E, Amick BC, Rezendence MO, Levine S, Kagan J, Rogers WH, Tralov AR. Adolescent's understanding of social class: a comparison of white upper middle class and working class youth. *J Adolesc Health* 2002; 27(2):80-83.
11. Currie C. Health behaviour in school-aged children. A WHO cross-national survey (HBSC). Research protocol for the 1997-1998 study. Edinburgh: University of Edinburgh; 1998.
12. Currie C. Socioeconomic circumstances among school-aged children in Europe and North America. In: K Vlemickx, T Smeeding (Eds) *Child well-being, child poverty and child policy in Modern Nations: What do we know?* Bristol: The Policy Press; 2001. Pp. 347-346.
13. Townsend P, Phillimore P, Beattie A. Health and deprivation: inequality and the North. Kent: Croom Helm; 1988.
14. Torsheim T, Currie C, Boyce W, Kalnins I, Overpeck M, Haugland S. Material deprivation and self-rated health: A multilevel study of adolescents from 22 European and North American countries. *Soc Sci Med* 2004; 59:1-12.
15. Boyce W, Torsheim T, Currie C, Zambon A. The Family Affluence Scale as a measure of national wealth: Validation of an adolescent self-report measure. *Soc Indicators Res* 2006; 78(3):473-487.
16. Currie C, Samdal O, Boyce W, Smith R. Health Behaviour in School Aged Children: a World Health Organisation cross national study: Research protocol for the 2001/2002 study. Edinburgh: Child and Adolescent Health Research Unit, University of Edinburgh; 2002.
17. Kelleher C, Nic Gabhainn S, Friel S, Corrigan H, Nolan G, Sixsmith J, Walsh O, Cooke M. The National Health and Lifestyle Surveys (II) Survey of Lifestyle, Attitudes and Nutrition (SLÁN) and the Irish Health Behaviour in School-Aged children survey (HBSC). Dublin: Department of Health and Children; 2002.
18. Wardle J, Robb K, Johnson F. Assessing socioeconomic status in adolescents: The validity of a home affluence scale. *J of Epidemiol Community Health* 2002; 56:595-599.