

ADOLESCENTS' REPORTS OF PARENTAL SOCIO-ECONOMIC STATUS-ARE THEY REALLY VALID?

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Abstract

Objective:

To assess whether adolescents could be relied on as proxies to provide accurate information about their parental socio-economic status.

Methodology:

A descriptive cross-sectional study was conducted among 1225, 15-year-olds selected from 42 schools in the Colombo district using a stratified cluster sampling technique. Data were collected by means of self-administered questionnaires to both adolescents and their parents.

Results:

Response rates of adolescents regarding their parents' occupation status were very high. The strength of agreement between parental and adolescents reports was assessed using the Kappa statistic. The respective kappa statistics (95% CI) were 0.84 (0.82-0.86) for father's occupation and 0.85 (0.82- 0.88) for mother's occupation.

Conclusion: the results indicated that 15-year-old adolescents could be considered as proxies to provide accurate information about their parents' occupational status.

Key words: occupation, questionnaires, Kappa statistic, adolescents

Introduction

A person's position in the social hierarchy is determined by various socio-economic measures. The classic three core socio-economic variables are the occupation status, level of income and education (1). Traditionally children and adolescents are assigned to socio-economic groups based on parental socio-economic characteristics such as father's/mother's occupation and their levels of education. Some researchers are of the opinion that in surveys of children and adolescents, all possible socio-economic information should be obtained from parents (2). However obtaining information from parents to classify children/adolescents into socio-economic groups in health research is cumbersome and costly (3,4). It may be due to this reason that parents are not included as respondents in many surveys of children/adolescents and information pertaining to parental socio-economic status is therefore obtained from children/adolescents.

Evidence related to the accuracy of children's proxy reports of parents' socio-economic status is inconclusive. In a Scottish study, West *et al.* (3) have shown that children young as 11 years could be considered as good proxy reporters of parental occupation and economic activity. Also it has been reported that children aged 11-12 years are able to describe their parents' occupational activity in sufficient detail in a survey setting (4). However, other studies have shown that children and young people

are unreliable proxy reporters of their parents' occupation (5). This highlights the need for validation of data obtained from children/adolescents regarding parental occupation/education to assess their accuracy as proxy reporters.

In Sri Lanka the practice has been to classify children/adolescents into different socio-economic groups based on parental occupational status as has been done in similar surveys elsewhere in the world. This information is usually obtained from children/adolescents themselves (6). However, to date no study in Sri Lanka has validated adolescents' reports of parental socio-economic status against similar information provided by parents. Therefore the aim of the present study was to assess whether adolescents could be relied on as proxies to provide accurate information about their parental socio-economic status.

Methodology

The data for the present paper were obtained from a larger descriptive study that was conducted between May-December 2005 to assess socioeconomic inequalities in oral health.

The target population was 15-year-olds attending state, private and international schools in the Colombo district of Sri Lanka. As 15-year-olds constitute one of the index age groups stipulated by the WHO, it was considered appropriate to select this

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group for the study. Those students residing outside the Colombo district, not living with at least one parent and with learning difficulties were excluded from the sample. Hypothesis test for two population proportions was used to calculate the sample size. Using the caries prevalence rates of students whose fathers were professionals (41.93%) and non-professionals (68.54%) which were obtained from a pilot study, a level of significance of 5% and a power of 90%, a minimum of 72 students were needed per socioeconomic group. As there were six socioeconomic groups, the minimum sample size required was 432. A stratified cluster sampling method was used to select the sample. Thus it was necessary to make allowance for the design effect which was considered as 2. After making adjustments for the design effect and compensate for non-responses (30%) the sample size required was 1123. This was increased to 1225 for practical purposes.

As 15-year-olds are aggregated in the grade 10 class, this class was considered as the unit of cluster while the average size of a class (30) was considered as the cluster size. Thus 41 clusters were necessary to obtain the sample ($1225/30=41$). For practical purposes the number of clusters was increased to 42. Since there were considerable variations in the number of grade 10 classes (1-8) and the number of students in a class (20-40) in the three types of schools, the clusters were allocated disproportionately for better representation (7). Thus the number of clusters allocated to state, private and international schools were 30, 9 and 3 respectively. Selection of clusters was done in two stages. In the first stage 30, 9 and 3 state, private and international schools with grade 10 classes were randomly selected from the respective sampling frames. At the second stage, clusters were identified from the selected schools. Two clusters per school were randomly selected from state schools with ≥ 5 , private schools with ≥ 4 and international schools with ≥ 2 grade 10 classes while one cluster each was selected from all other schools. All students who satisfied the inclusion criteria were included in the sample.

The data were collected by means of self-administered questionnaires to both students and their parents. The questionnaire to students was intended to obtain information related to occupational status of father and mother as well as other information required for the main study. The parental questionnaire included various questions to assess their socio-economic status. An open ended question was used to obtain information about parental occupation and later classified according to the method used in the Census of Population and Housing of 2000 (8) and included 6 major groups namely professional/managerial/upper level business; clerical/technical/middle level business; skilled/unskilled labour; unemployed (father only); housewife (mother); deceased/divorced/separated and missing/cannot code.

Stata 6.0 statistical software was used for data analysis. Agreements between parental responses and adolescent

responses were assessed using the Kappa coefficient. Ethical approval for the study was obtained from the Ethics Committee of the Faculty of Medicine, University of Colombo. Informed written consent was obtained from all participating children and their parents. Permission to conduct the study was obtained from the Director of Education and the principals of the respective schools.

Result

For meaningful interpretation, the deceased/separated/divorced group was excluded limiting the analysis to 5 occupational groups.

Table 1 shows the distribution of parents' occupation status as reported by parents and adolescents. Response rates were very high; over 99% for parents and over 98% for adolescents. Overall, response rates were higher with respect to mother's occupation than father's occupation. Responses given by both parents and adolescents were almost similar with respect to all occupation categories.

Agreement between parents' and adolescents' responses about father's occupation is given in Table 2. The percentage of agreement between parents' and adolescents' responses was 90%. The strength of agreement as determined by the Kappa coefficient (95% CI) was 0.85 (0.83-0.88) and indicates almost perfect agreement.

The percentage of agreement between parents' and adolescents' responses with respect to mother's occupation was 92%. The Kappa coefficient (95% CI) indicated that the strength of agreement was 0.85 (0.82-0.88) and indicates almost perfect agreement (Table 3).

Discussion

In the present study parental occupation status was considered as a measure of socio-economic status. Information pertaining to parental occupation was obtained separately from both adolescents and parents from self-administered questionnaires.

Response rates of adolescents regarding their parents' occupation status were very high and as in the study by West *et al.* (3), the proportion of missing data was negligible. However, the method of data collection differed between the two studies with West *et al.* (3) having used a "mini interview" format to obtain information about parental economic and occupational activity. In the present study, paternal and maternal occupation data were missing in only 1.6% and 1.1% of adolescent reports respectively. However in self-administered questionnaires to adolescents very often there are high proportions of non responses with respect parental occupation status thus limiting the number of cases available for analysis. In a study where the validity of Norwegian adolescents' reports of parental socio-economic status was assessed, Lien *et al.* (9) re-

Table 1 Distribution of parents' occupation status according to parents and adolescents

Occupation code	Father's occupation				Mother's occupation			
	Parent		Adolescent		Parent		Adolescents	
	N	%	N	%	N	%	N	%
Code 1	325	28.1	329	28.5	143	11.7	139	11.4
Code 2	266	23.0	251	21.7	101	8.3	99	8.1
Code 3	526	45.5	521	45.1	161	13.2	157	12.8
Code 4	30	2.6	36	3.0				
Code 5					813	66.6	813	66.6
Code 6	10	0.9	20	1.6	3	0.2	13	1.1
Total	1157	100.0	1156	100.0	1221	100.0	1225	100.0

Code 1=professional/managerial/upper level business; code 2= clerical/technical/middle level business; code 3= skilled/unskilled labour; code 4=unemployed; code 5= housewife code 6=missing/cannot code

Table 2 Agreement between parents' and adolescents' responses about father's occupation status

Parents response	Code 1		Code 2		Code 3		Code 4		Code 6		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Code 1	297	90.5	13	5.2	9	1.7	1	3.2	5	25.0	325	28.3
Code 2	16	4.9	226	90.4	20	3.9	1	3.2	2	10.0	2665	23.1
Code 3	12	3.7	11	4.4	484	93.4	7	22.6	8	40.0	522	45.5
Code 4	0	0.0	0	0.0	3	0.6	22	71.0	0	0.0	25	2.2
Code 6	3	0.9	0	0.0	2	0.4	0	0.0	5	25.0	10	0.9
Total	328	100.0	250	100.0	518	100.0	31	100.0	20	100.0	1147	100.0

Measure of agreement: Kappa coefficient (95% CI) = 0.85(0.83-0.88); P=<0.001% agreement=90%
With perfect agreement in bold

Table 3 Agreement between parents' and adolescents' responses about mother's occupation status

Parents' response	Code 1		Code 2		Code 3		Code 5		Code 6		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Code 1	126	91.3	7	7.1	1	0.6	6	0.7	3	23.1	143	11.7
Code 2	8	5.8	83	83.8	4	2.6	3	0.4	3	23.1	101	8.3
Code 3	0	0.0	6	6.1	131	83.4	22	2.7	1	7.6	160	13.1
Code 5	4	2.9	3	3.0	21	13.4	781	96.2	3	23.1	812	66.6
Code 6	0	0.0	0	0.0	0	0.0		0.0	3	23.1	3	0.3
Total	138	100.0	99	100.0	157	100.0	812	100.0	13	100.0	1219	100.0

Measure of agreement: Kappa coefficient (95% CI) = 0.85 (0.82-0.88); P=<0.001 % agreement =92%
With perfect agreement in bold

ported that parental information was missing in 11-16% of adolescents' reports. In a similar study on Spanish adolescents Pueyo *et al.* (10) reported that paternal and maternal occupation information were missing in 24% and 46% of adolescents reports. In fact, the problems associated with low response rates led Wardle *et al.* (11) to develop and recommend the home affluence scale based on material markers as a useful alternative to parental occupation when assessing socio-economic status of adolescents. It is noteworthy that of the adolescents who did not respond, in nearly 25%, their parents' were also non-responders. This supports Looker's (12) assumptions that it is not only children but some parents may also have difficulties in indicating their occupational status. The very high response rate of adolescents regarding parental occupation status in the present study could be attributed to the selective nature and particular procedures adopted in the collection of data. The study participants included those adolescents living at least with one parent. Thus the adolescents' ability to provide valid information could have been obviously influenced by the frequent contact with parents. As response rates were very satisfactory no further analysis was deemed necessary with respect to non-respondents.

The strength of agreement between parental and adolescents reports was assessed using the Kappa statistic and it was evident that they were high with narrow and significant confidence intervals. The respective kappa statistics (95% CI) were 0.84 (0.82-0.86) for father's occupation and 0.85 (0.82- 0.88) for mother's occupation. According to the interpretation of Kappa values suggested by Landis and Koch (13), a value between 0.81-1.0 indicates an almost perfect agreement. Thus in the present study, the strength of agreement between adolescent and parent reports on both father's and mother's occupation could be considered as almost perfect. Looker (12) in an impressive review assessed the evidence from thirty two studies and concluded that adolescents' proxy reports of parents' socio economic status are most accurate if respondents are high school seniors living at home and reporting about parental characteristics that are near in time such as occupation. Thus it is plausible that the high level of agreement between parental and adolescents' reports observed in the present study is due to the fact that the subjects of the study were high school students who were living with at least one parent and reporting about a present characteristic such as occupational status. As there were very strong agreements between adolescent and parent reports, this study indicates that 15-year-old adolescents could be regarded as valid proxy reporters of parental socio-economic status assessed by parental occupation. This finding is consistent with other studies which assessed the validity of adolescents as proxy reporters of parental socio-economic status. According to Ensminger *et al.* (14), adolescents and their mothers had high agreement on socio-economic measures. In a Scottish study (3) it has been reported that 11-year-olds could provide reliable and very valid information with regards to parental socioeconomic characteristics. Lien

et al. (9) have reported that the strength of agreement between adolescents' and parents' reports on parental occupation at ages 11, 13 and 15 were moderate to very good and there were no significant improvements in agreement when 13-year-olds were compared with 15-year olds. Further more, it has also been reported that Spanish adolescents could be considered as acceptable informants of paternal occupation status (10).

Confirming with the findings of Lien *et al.* (9), it was evident that the strength of agreement between adolescent and parent reports was similar whether it was related to the occupation of father's or the mother. This indicates that both father's and mother's occupation are equally valid to obtain information about the socio-economic position of Sri Lankan adolescents and there is no necessity to prefer one indicator over the other. On the other hand Pueyo *et al.* (10) have reported that paternal occupation was the most valid indicator to obtain information about the socio-economic position in Spanish adolescents.

The occupation status in the present study was determined by the response given to a single open ended question in both questionnaires. It would have been possible to reduce the missing/unclassifiable answers by including more specific questions regarding occupation status particularly in the questionnaire to the students.

In conclusion, the present study provided evidence to suggest that 15-year-old adolescents in Sri Lanka could be relied on as proxies to provide accurate information about their parents' occupational status.

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