International Journal of Pediatric Otorhinolaryngology 79 (2015) 1842–1850

Contents lists available at ScienceDirect

International Journal of Pediatric Otorhinolaryngology

journal homepage: www.elsevier.com/locate/ijporl

Impact of socio-economic status on ear health and behaviour in children: A cross-sectional study in the capital of India

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ARTICLE INFO

Article history:
Received 14 April 2015
Received in revised form 10 August 2015
Accepted 11 August 2015
Available online 19 August 2015

Keywords:
Ear health
Socio-economic status
Ear diseases
Hearing loss
Health seeking behaviour
Noise-induced hearing loss

ABSTRACT

Introduction: Socio-economic differences in the society have been a major cause for the discrepancy in disease and behavioural patterns in society. With 360 million people (32 million children) in the world suffering from disabling hearing losses, it is imperative to gain an insight into the impact of differences in socio-economic strata on children's ear health issues, their knowledge of ear ailments and attitude towards ear health so as to suggest policies addressing ear health issues.
Methods: The study was carried out in two different school types namely government schools and private schools which represent wide difference in the socio-economic status of the students studying there. A questionnaire was administered to students aged 10 to 13 years to assess the current ear care practices, knowledge regarding ear ailments, attitude towards hearing and their adaptability to reform.
Results: The children belonging to higher socio-economic status were found to have lesser incidence of ear diseases and ear abuse, more referrals for ear ailments, lesser indulgence in risky ear health behaviours, better knowledge pool, positive attitude towards ear health and hearing and were more adaptable to change for better hearing.
Conclusion: Structures of social disparity are essential determinants of ear health acting both independently and through their influence on behavioural determinants of health. Increasing awareness of ear health issues at the school level itself should be one of the goals of health care providers.

1. Introduction

There is a striking lack of understanding in the society about ear diseases and hearing loss despite 360 million people in the world being afflicted with disabling hearing loss. Out of these, 32 million are children and the greatest burden comes from South Asian region comprising India, Pakistan, Bangladesh, Nepal, Afghanistan, Sri Lanka, Bhutan, and Maldives [1].

Children between 11 and 15 years of age face many challenges including physical and emotional changes related to puberty, mounting educational expectations and societal equations with peers and family. Behaviours, including health related habits, and patterns developed during this transition may continue into adulthood [2]. It has been commonly observed in public health studies that the teens and adolescents from financially poor backgrounds often suffer a disadvantage in the formation of their health behaviours [3–5]. Low socio-economic status (SES) is often associated with an array of negative health results varying from higher incidence of vision and hearing problems to chronic morbid and sometimes mortal illnesses [6,7]. Also, people from low SES are more likely to indulge in dodgy health behaviours [8–10]. This underscores the importance of assessing the baseline knowledge of teens from different socio-economic backgrounds about health problems and related concerns.

In India, the type of school a child goes to reflects the SES of the parents as the fee charged and other expenses vary significantly between different school types. Private schools are autonomous, self-financed and sometimes profit earning bodies that levy a substantial fee. Though even among the private schools fees vary widely, these schools generally offer good infrastructure and are attended by the well-offs in the society. On the other hand, government schools are funded by the government and cater to the poor sections of the society. These schools hardly charge any fee and often offer meals, scholarships and financial aid to the students so as to ensure that lack of financial resources does not come in the way of their continued schooling [11].

Schools play a crucial role in the development of an outlook towards health and health issues in the young minds. It is crucial to

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http://dx.doi.org/10.1016/j.ijporl.2015.08.022
0165-5876/

inculcate healthier lifestyle habits at a formative stage rather than to treat or try changing unhealthy attitudes and behaviour later in life.

In this study, we shall compare the knowledge and awareness among the children studying in private and public schools regarding ear ailments, their current ear health issues and attitude towards ear health.

2. Material and methods

2.1. Study setting and survey procedure

A cross sectional study was conducted on students of sixth and seventh standards (aged 10 to 13 years) in government and private schools. A self-administered questionnaire containing 29 questions was formulated to assess the current ear care practices and knowledge, attitude, perceived notions and adaptability of young children. The survey was carried out in two different school types namely government schools and private schools. Government schools in Delhi are funded by the state and cater to its relatively poor population. Private schools included were autonomous, fully self-financed units with children from rich and elite strata of the society.

The study was performed in accordance with the Declaration of Helsinki. Informed consents were obtained from the parents in a parent teacher meeting scheduled a week before the execution of the survey where the project staff explained the objective and methodology of the study. Questionnaire was administered in English language to 323 students of sixth and seventh standards of reputed English-medium private schools. The same questionnaire was administered in Hindi language to 496 students of Hindi-medium government schools. A project representative was always present when the students filled in the questionnaires so as to resolve any doubts. The students took around 20–25 min to complete the questionnaires. The filled in questionnaires were scrutinised at the time of collection and if any information was found missing, students were advised to provide the same.

2.2. Study tool

A self-administered, structured questionnaire was used for data collection. The questionnaire was specifically designed for suitability and relevance in the context of an Indian metropolitan city. It contained 32 questions initially which were pretested on 25 students each in government and private schools. The number of questions was reduced to 29 (Annexure 1) after having found 3 questions redundant. The questionnaire covered demographic data related to households, namely number of rooms in the house and number of family members. It sought inputs on history of ear ailments in the last two years, ear health behaviour (Items 3, 4, 5, 7, 12), ear health status (Items 1, 2, 28, 29), physical ear abuse (Item 8), knowledge of ear ailments and risk factors (Items 9, 10, 13, 14–23), etc. Additional items were incorporated to understand the children's attitude towards hearing and hearing loss prevention (Items 11, 24–26) and intended health behaviour (Item 27).

2.3. Statistical analysis

Data was entered into a Microsoft Excel Sheet and analysed using SPSS version 22. Findings were presented as group proportions, and difference in proportions for a given factor was assessed by the Chi-square test. The cut off P value for statistical significance was set at 0.05. Odds Ratios (ORs) were calculated to study the relative odds of having a particular behaviour or risk factor in a particular group. Confidence Interval (CI) was described at 95%.

3. Results

3.1. Demographic profile of the students

A total of 323 students (151 boys and 172 girls) from private schools and 496 students (240 boys and 256 girls) from government schools completed the questionnaire. All children were in the age group of 10–13 years. Children attending private schools had an average of 6 rooms in their houses whereas the children studying in government schools had an average of only 2 rooms in their houses. This was, despite higher mean number of members, 6 in case of government schools as compared to 5 in case of private schools.

3.2. Knowledge regarding ear ailments

When quizzed about their knowledge of ear problems, a significantly high proportion of children from government schools knew about ear discharge, fluid, hearing loss, deafness and foreign body than their private school counterparts. An overview is provided in Table 1.

3.3. Ear health status

21.67% students in private schools admitted to having an ear problem in the last two years as compared to 43.1% in government schools. The difference was found to be significant ($\chi^2 = 38.88$, $P = <0.001$). The government school students were twice likely to have ear complaints in comparison to their counterparts in private schools (OR = 0.52; 95% Confidence Interval, CI = 0.42–0.65). Various ear ailments were assessed in relation to the types of schools. It was found that prevalence of discharge from the ear ($\chi^2 = 10.35$, $P = 0.001$) and difficulty in hearing ($\chi^2 = 3.52$, $P = 0.04$) was significantly higher in students from government schools whereas blockage in the ear ($\chi^2 = 30.54$, $P < 0.01$) was more prevalent in students from private schools. The prevalence of complaints of pain, bleeding, injury, foreign material, giddiness and ringing sensation in the ear was not significantly different in the two groups. 29.63% children in government schools complained about hurting of the ear on exposure to loud sounds while 3.4% said so in private schools. The difference was significant ($\chi^2 = 84.77$, $P < 0.01$).

3.4. Health-seeking behaviour

Only 7.1% students in private schools having ear problem did not seek treatment anywhere. Consulting an ENT doctor ($\chi^2 = 99.45$, $P = 0.00$) or taking homeopathic medicine ($\chi^2 = 32.55$, $P = 0.00$) was

Table 1
Awareness of ear ailments among private and government school students.

Ailment	Awareness			
	Private $n = 323$, n (%)	Government $n = 496$ n (%)	OR (95% CI)	χ^2, P value (dof = 1)
Ear wax	189 (58.51)	252 (50.8)	1.37(1.02–1.83)	4.37, **0.036**
Discharge	46 (14.24)	238 (47.98)	0.18(0.12–0.26)	96.84, **<0.001**
Fluid	60 (18.57)	266 (53.62)	0.20(0.14–0.28)	98.86, **<0.001**
Hearing loss	115 (35.60)	241 (48.58)	0.59(0.43–0.79)	12.90, **<0.001**
Deafness	106 (32.81)	209 (42.13)	0.67(0.50–0.91)	6.79, **0.009**
Foreign body	29 (8.90)	170 (34.27)	0.19(0.12–0.29)	66.68, **<0.001**
Fungus in ear	53 (16.40)	86 (17.33)	0.94(0.63–1.38)	0.06, 0.801
Age related hearing loss	97 (30.00)	135 (27.21)	1.15(0.83–1.58)	0.63, 0.427

P value less than <0.05 was considered significant and is depicted in bold.
dof = degree of freedom.