

Short Report

Aural hygiene practices among underprivileged children of Delhi

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ABSTRACT

Background. Though ear hygiene is important for proper hearing, it is usually neglected. Improper ear care practices may have serious consequences such as loss of hearing. In childhood, loss of hearing may affect learning and development. There is scarcity of information on ear care practices in the community in India. We aimed to ascertain the magnitude of problems related to aural hygiene and assess ear care practices among children of schoolgoing age in a resettlement colony of Delhi.

Methods. A cross-sectional community-based survey was done among 1398 children 5–14 years of age. The houses were selected by systematic random sampling and all eligible children in the selected house were interviewed and examined. The data were analysed using SPSS version 12 and chi-square test was used to ascertain significance between two variables.

Results. Almost two-thirds (60%; 834) of the children gave a history of themselves or an elder cleaning the ear using unhealthy methods. Earbuds were used by 21.7% (304) of children. Match and broomsticks were used for cleaning by 18.3% (256) and 3% (43) of children, respectively. One hundred and fifty-nine children (11.3%) were applying oil to clean the ear canal. Ear cleaning with unhealthy means was significantly higher (56% v. 44%, $p < 0.03$) among children belonging to low socioeconomic strata. There was a significant association between unhealthy ear cleaning practices and middle ear infection ($p < 0.001$).

Conclusion. A majority of children practised unhealthy/not recommended methods for cleaning their ear. There is a need to raise awareness about healthy ear cleaning practices in the community.

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INTRODUCTION

Ear-care is an important part of personal hygiene. Unsafe and unhygienic ear-care is prevalent across communities, particularly among the underprivileged ones.^{1–4} Children are the major sufferers of harmful practices, which may lead to long-term damage to the auditory system such as complicated middle ear infection, trauma to the ear drum and permanent deafness.

The precautions for safe cleaning of the ear to maintain ear

hygiene include (i) using clean hands to insert and remove earplugs; (ii) cleaning the outer ear (pinna) regularly with soap and water; (iii) removing safely the excess ear wax using wax removal solution or ear drops; and (iv) visiting an ear–nose–throat (ENT) physician for removal of wax for symptoms such as earache, fullness in the ear, partial hearing loss, tinnitus, ringing, or noises in the ear, itching, odour, or discharge, cough, etc.⁵

Cerumen, or ‘ear wax’, is a naturally occurring substance that cleans, protects and lubricates the external auditory canal and produces no symptoms unless it gets impacted. Hence, under normal circumstances, the ear canals do not need to be cleaned. Self-cleaning of the ear canal by using cotton buds, hair grips or any sharp object is strongly discouraged to avoid trauma or introduction of infection. This kind of cleaning may contribute to more impaction of wax in the ear canal.^{5,6}

Unfortunately, aural health (particularly among children) has not been adequately addressed in India. Though strategies have been designed from time to time, these have not been implemented on a priority basis at the primary healthcare level. Lack of adequate household data quantifying childhood ear problems and associated harmful practices prevalent among communities may be one of the reasons for aural health not getting enough attention at the national level. We aimed to assess the problem of aural hygiene and ear-care practices among school-age children in a resettlement colony in Delhi.

METHODS

A cross-sectional, community-based survey was conducted over 12 months in a resettlement colony of east Delhi. The population of the colony is characterized by illiteracy, poverty, poor health-seeking behaviour and unhealthy practices. The study population consisted of 5–14-year-old school-age children residing in the area. A house-to-house survey was done and 20%, i.e. 1419 children aged 5–14 years from all blocks of the area were enrolled in the study. However, due to non-response, 1398 children could be included. The houses were selected by the systematic random sampling method. If a selected house did not have any eligible child, the next house with an eligible child was chosen. In case more than one eligible child was present in any house all were included. Institutional ethical clearance was obtained. The informers in the study were children and their parents. In each case, an in-depth interview was conducted and clinical examination of the ear was done. A semi-structured proforma was designed and pre-tested to collect detailed information about individuals and their families. The modified Kuppaswamy scale was used to assess the socioeconomic status.

Descriptive measures such as frequency were used to summarize the sociodemographic data of the children. Data were compiled and analysed using SPSS version 12. Chi-square test was used to assess any significant difference between two variables.

RESULTS

Of the 1398 children studied, 489 (34.9%) were 12–14-year-old, 473 (33.8%) were 9–11-year-old and 436 (31.1%) were 5–8-year-old. Their mean (SD) age was 9.2 (2.8) years and 654 (46.8%) were girls. Almost 90% of them were enrolled in a school. Most belonged to the upper lower (62.9%) socioeconomic class in

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TABLE I. Unsafe ear canal practices according to socioeconomic status and educational status of the head of the family

Characteristic	Unsafe ear canal cleaning practices		Total n (%)
	Present n (%)	Absent n (%)	
<i>Socioeconomic status</i>			
Upper and upper middle	11 (44)	14 (56)	25 (100)
Lower middle, upper lower and lower	823 (59.9)	550 (40.1)	1373 (100)
			p<0.03
<i>Educational status of the head of family</i>			
Illiterate	272 (56)	214 (44)	486 (100)
Primary and middle	271 (61.6)	169 (38.4)	440 (100)
High school and post- high school/ intermediate diploma	249 (61.5)	156 (38.5)	405 (100)
Graduate/postgraduate and professional	42 (62.7)	25 (37.3)	67 (100)
Total	834 (59.7)	564 (40.3)	1398 (100)

TABLE II. Relation between ear cleaning practices and middle ear infection

Ear cleaning practice	Middle ear infection		p value
	Present n (%)	Absent n (%)	
Unsafe cleaning	71 (78)	763 (58.4)	<0.001
No cleaning (recommended)	20 (22)	544 (41.6)	
Total	91 (100)	1307 (100)	

TABLE III. Types of middle ear infection and ear cleaning practices

Middle ear infections	Ear cleaning practices	
	Unsafe cleaning n (%)	No cleaning n (%)
Acute suppurative otitis media	5 (50)	5 (50)
Chronic suppurative otitis media	43 (84.3)	8 (15.7)
Otitis media with effusion	23 (76.7)	7 (23.3)
Total	71 (78)	20 (22)

comparison to the lower (23.3%) and lower middle (11.8%) class. The head of the family was illiterate in the case of 486 children (34.8%), literate up to high school in the case of 740 children (52.9%) and intermediate pass in the case of 105 children (7.5%).

The majority of children (834, 59.7%) gave a history of ear cleaning from time-to-time using various methods and materials, themselves or by a family member, which cannot be termed as a healthy practice. Earbuds were used by 304 (21.7%) children. There was a history of using matchsticks and broomsticks among 256 (18.3%) and 43 (3%) children, respectively, to clean the ear canal, while 159 (11.3%) children gave a history of applying oil as a cleansing substance in the ear canal.

The practice of cleaning the ear canal by unhygienic and unsafe means was found to be significantly more (56% v. 44%, p<0.03) among those belonging to the low socioeconomic classes in comparison to upper and upper middle classes (Table I). However, parental literacy did not influence the practices of cleaning the ear canal (Table I).

Ninety-one children (6.5%) were suffering from various types

of middle ear infection. Of these, 71 were practising some unsafe ear cleaning method whereas 20 children were not using any cleaning method. The association between unsafe ear cleaning and middle ear infection was statistically significant (p<0.001; Table II). Of the 91 children, 10 had acute suppurative otitis media (ASOM), whereas 51 and 30 children had chronic suppurative otitis media (CSOM) and otitis media with effusion (OME), respectively. Except ASOM, CSOM and OME were found to be present in a higher proportion among children who were cleaning the ear canal than those who were not (Table III).

DISCUSSION

Unhygienic ear cleaning is common in many communities and is a major concern in ear-care. The production of wax is a natural process and is a mixture of oil secreted by ear cells and dead skin tissue shed in the external ear. Excess cleaning not only stimulates greater production of wax but also leads to a higher chance of trauma to the ear drum and middle ear infection particularly when unhygienic means are used.^{7,8}

Around 60% of children in our study were using unhygienic and unsafe methods for cleaning their ear canal. Similar trends were seen in studies by Adhikari¹ in Kathmandu and Verma *et al.*² in rural Haryana, where the proportion of children using unhygienic material for cleansing the ear canal were 65% and 72%, respectively. In a study in rural Bangladesh, Biswas *et al.*³ also found unhygienic ear cleaning practices in the majority of children.

We found a significant association (p<0.001) between unsafe ear-care practices and middle ear infection (CSOM and OME).

In our study, unhygienic ear cleaning practices among children were present across all levels of parental literacy. This indicates lack of knowledge about ear hygiene even among literate families. Other studies^{4,10,11} have also noted a lack of knowledge of ear care among different population groups. This suggests the need for a focused health education campaign on aural health and hygiene, which is a relatively neglected field in public health.

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