e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2026; 18(2); 1226-1232

Original Research Article

Prevalence and Attitude of Self-ear Cleaning Practices among Patients Attending Out-patient Department in Bardhaman, West Bengal: A Cross-Sectional Observational Study

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Received: 01-11-2025 / Revised: 15-12-2025 / Accepted: 21-01-2026
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Conflict of interest: Nil

Abstract

Background: Self-ear cleaning is a common but unnecessary practice that can interfere with the ear's natural self-cleansing mechanism. Cerumen plays a protective role within the external auditory canal, but many patients routinely insert foreign objects into the ear without properly understanding the risks. This study aimed to assess the prevalence and attitudes toward self-ear cleaning among patients attending an out-patient department in Bardhaman, West Bengal.

Methods: A cross-sectional observational study was conducted over eight weeks among patients attending the ENT OPD run by the researcher in Bardhaman, West Bengal. Convenience sampling was used. Critically ill patients, those requiring urgent hospitalisation, and those presenting with other ear problems were excluded. The calculated sample size was 62. Data were collected using a predesigned, pretested semi-structured proforma and analysed using SPSS. Categorical variables were expressed as frequencies and percentages. Fisher's exact test or Chi-square test was applied, with $p<0.05$ considered statistically significant.

Results: Among 62 participants, 61.3% were below 30 years; 71.0% were female and 71.0% Hindu. Urban residents constituted 53.2%, and 61.3% were married. Among 54 patients who practiced self-ear cleaning, 35 reported cleaning their ears at least once per week. Significant associations were found between frequent cleaning and perception ($p=0.044$), earache ($p=0.041$), itching ($p<0.001$), fullness ($p<0.001$), part cleaned ($p<0.001$), and perceived result ($p<0.001$). Cotton bud use was most common among study participants. Overall, 87% practiced self-ear cleaning.

Conclusion: Self-ear cleaning remains highly prevalent among adults and is associated with symptoms. Public health education should be strengthened to discourage unsafe practices.

Keywords: cerumen, cotton bud use, ear-injury, earwax, self-ear cleaning.

DOI: 10.25258/ijcpr.18.2.203

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Introduction

Self-ear cleaning is a widespread practice and it has potential to compromise ear's natural, self-cleansing mechanism. [1–3] The general consensus among the medical community is that self-ear cleaning is pervasive and unnecessary. [4] In developing countries, the morbidity and mortality associated with ear injuries remain a neglected public health problem. [5] Self-ear cleaning is described as the insertion of objects into the ear canal to clean it due to the belief that for ear hygiene it is necessary to remove the excess cerumen, [1,6] or that cerumen is perceived as a cosmetic nuisance, [7] its presence being an indication for removal. [8]

The External Auditory Canal has the ability to clean itself. Cerumen naturally cleans, protects and lubricates the external auditory canal. [1] Cleaning EAC impair normal functioning by increasing humidity and softening ear canal lining, which leads to infection and irritation of ear. [9,10] Cerumen has bactericidal action that plays a significant role in maintaining the local host defence mechanism in the ear. [11] It has acidic pH, which is unfavourable for organisms and helps reduce the risk of infection in EAC. [7] Jaw movement constantly pushes cerumen towards the outer part of the external auditory canal. Cerumen prevent foreign materials from plugging the ear or reaching tympanic membrane by adhering to them. [11]

Habitual wax removal is a potential risk for many symptoms and injuries, including pain, earache,

bleeding, and tympanic membrane perforations and weakening of the external auditory canal's local defence against infections. [2] The risk is even greater when foreign bodies in the ear, such as cotton buds and loose tip cotton swabs, feathers, sticks, pen and a variety of other objects are used as a blind procedure without direct inspection. [2,5]

Many person produce excessive amount of cerumen that may become impacted, thus obstructing the flow of sound to eardrum. This can result in itchiness, pain, irritation and hearing difficulty, thereby perpetuating the desire to clean ear. [4] The prevalence of cerumen impaction in the general population is about 6% [12] and in young adults (21-30 years) is estimated to be 17.6%. [5]

There is poor awareness about the risks associated with ear cleaning and function of wax within ear. Studies conducted in Nigeria indicated that 93.4% of young educated adults performed self-ear cleaning, which they regarded as dirt in ear.1 The other reasons were itchiness, to reduce pain, improve hearing, soothing and for cosmetic appeal. [5] Injuries and associated symptoms relating to ear-cleaning practices are largely preventable if the public is educated. However, many practitioners argue that cotton bud injuries are over stated. [13]

The aim of the study was to determine prevalence and attitude of self-ear cleaning practices among patients attending out-patient department in Bardhaman, West Bengal.

Materials and Methods

This cross-sectional observational study was conducted for a duration of eight weeks among the out-patients attending the ENT OPD run by the researcher in Bardhaman, West Bengal. Convenience sampling was used. Those critically ill, required urgent hospitalisation, presented with other ear problem were excluded from study. Informed written consent was taken from all the patients after explaining the purpose of the study.1Sample size was calculated based on study by Amutta et al., [14] where it was found that 80% of the respondents practice self-ear cleaning. Taking, Z=1.96 (at 95% confidence interval) and d=10% (Absolute precision or allowable error), calculated sample size was ≈ 62. Data were collected using a predesigned, pretested, semi-structured proforma. Participation was voluntary, and confidentiality and anonymity of patient information were strictly maintained throughout the study. If any subject found suffering from other acute illness, then he/she was referred to appropriate department for treatment. All the data were entered to Microsoft Excel 2010 and then the spreadsheets were used for statistical analysis in the SPSS. Data regarding categorical variables were expressed in frequency and percentage. Fisher's exact test or Chi-square test of association was applied as appropriate-value was considered significantly if less than 0.05.

Results

Table1: Baseline Characteristics of Study Participants (n = 62):

Variable	Category	Frequency (%)
Age	<30 years	38 (61.3)
	31–40 years	3 (4.8)
	41–50 years	10 (16.1)
	51–60 years	5 (8.1)
	>60 years	6 (9.7)
Sex	Male	18 (29.0)
	Female	44 (71.0)
Religion	Hindu	44 (71.0)
	Muslim	18 (29.0)
Residence	Rural	29 (46.8)
	Urban	33 (53.2)
Marital Status	Married	38 (61.3)
	Single	24 (38.7)
Influence of Family	Parent	21 (33.9)
	Additional source	17 (27.4)
	Friends	15 (24.2)
	Sibling	9 (14.5)

A total of 62 participants were included in the study.

The majority were aged <30 years (38; 61.3%), followed by 41–50 years (10; 16.1%), >60 years (6; 9.7%), 51–60 years (5; 8.1%), and 31–40 years (3; 4.8%).Females constituted 44 (71.0%) of the participants, while males accounted for 18 (29.0%).

Most participants were Hindu (44; 71.0%), and the remaining were Muslim (18; 29.0%).

Urban residents comprised 33 (53.2%) of the study population, whereas 29 (46.8%) were from rural areas. A higher proportion of participants were married (38; 61.3%) compared to single individuals (24; 38.7%).Regarding family influence on ear-cleaning practices, parents were the most common source (21; 33.9%), followed by additional sources (17; 27.4%), friends (15; 24.2%), and siblings (9; 14.5%).

Table 2: Association between Frequency of Ear Cleaning and Study Variables (n=54):

Variable	Category	<Once/week (N=19)	≥Once/week (N=35)	Total (n=54)	p value
Age category	<30 years	14 (40.0)	21 (60.0)	35 (100)	0.276
	31–40 years	0 (0.0)	2 (100.0)	2 (100)	
	41–50 years	4 (50.0)	4 (50.0)	8 (100)	
	51–60 years	0 (0.0)	5 (100.0)	5 (100)	
	>60 years	1 (25.0)	3 (75.0)	4 (100)	
Sex	Male	6 (42.9)	8 (57.1)	14 (100)	0.485
	Female	13 (32.5)	27 (67.5)	40 (100)	
Religion	Hindu	13 (35.1)	24 (64.9)	37 (100)	0.991
	Muslim	6 (35.3)	11 (64.7)	17 (100)	
Residence	Rural	11 (47.8)	12 (52.2)	23 (100)	0.094
	Urban	8 (25.8)	23 (74.2)	31 (100)	
Marital status	Married	8 (25.8)	23 (74.2)	31 (100)	0.094
	Single	11 (47.8)	12 (52.2)	23 (100)	
Perception	Beneficial	7 (21.9)	25 (78.1)	32 (100)	**0.044**
	Harmful	7 (58.3)	5 (41.7)	12 (100)	
	Non-beneficial	5 (50.0)	5 (50.0)	10 (100)	
Method category	Cotton bud	0 (0.0)	20 (100.0)	20 (100)	—
	Other	19 (55.9)	15 (44.1)	34 (100)	
Earache	Present	7 (23.3)	23 (76.7)	30 (100)	**0.041**
	Absent	12 (50.0)	12 (50.0)	24 (100)	
Itching	Present	3 (8.6)	32 (91.4)	35 (100)	**<0.001**
	Absent	16 (84.2)	3 (15.8)	19 (100)	
Ear discharge	Present	0 (0.0)	1 (100.0)	1 (100)	0.457
	Absent	19 (35.8)	34 (64.2)	53 (100)	
Fullness	Present	3 (11.1)	24 (88.9)	27 (100)	**<0.001**
	Absent	16 (59.3)	11 (40.7)	27 (100)	
Hearing difficulty	Present	3 (23.1)	10 (76.9)	13 (100)	0.294
	Absent	16 (39.0)	25 (61.0)	41 (100)	
Part of ear cleaned	Inside	0 (0.0)	24 (100.0)	24 (100)	**<0.001**
	Outside	11 (55.0)	9 (45.0)	20 (100)	
	Both	8 (80.0)	2 (20.0)	10 (100)	
Perceived result	Can damage ear	19 (52.8)	17 (47.2)	36 (100)	**<0.001**
	No damage	0 (0.0)	18 (100.0)	18 (100)	

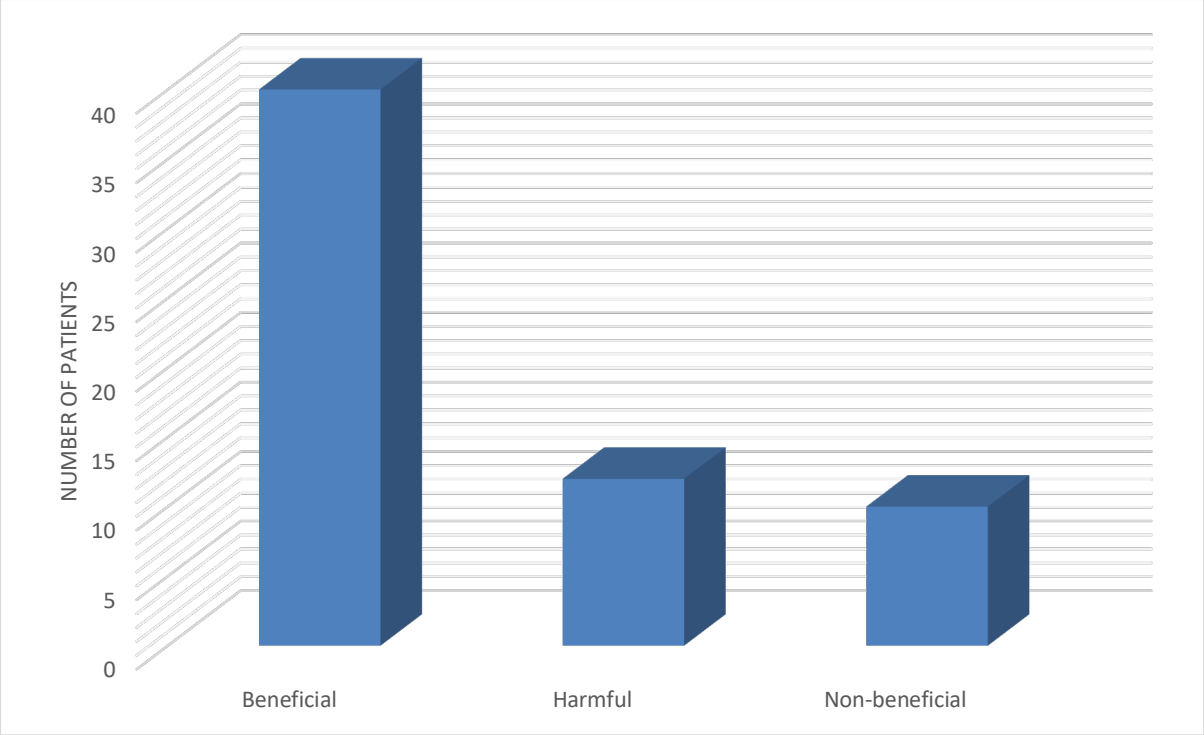

Figure 1: Bar diagram showing the distribution of perception regarding self-ear cleaning practices among study participants.

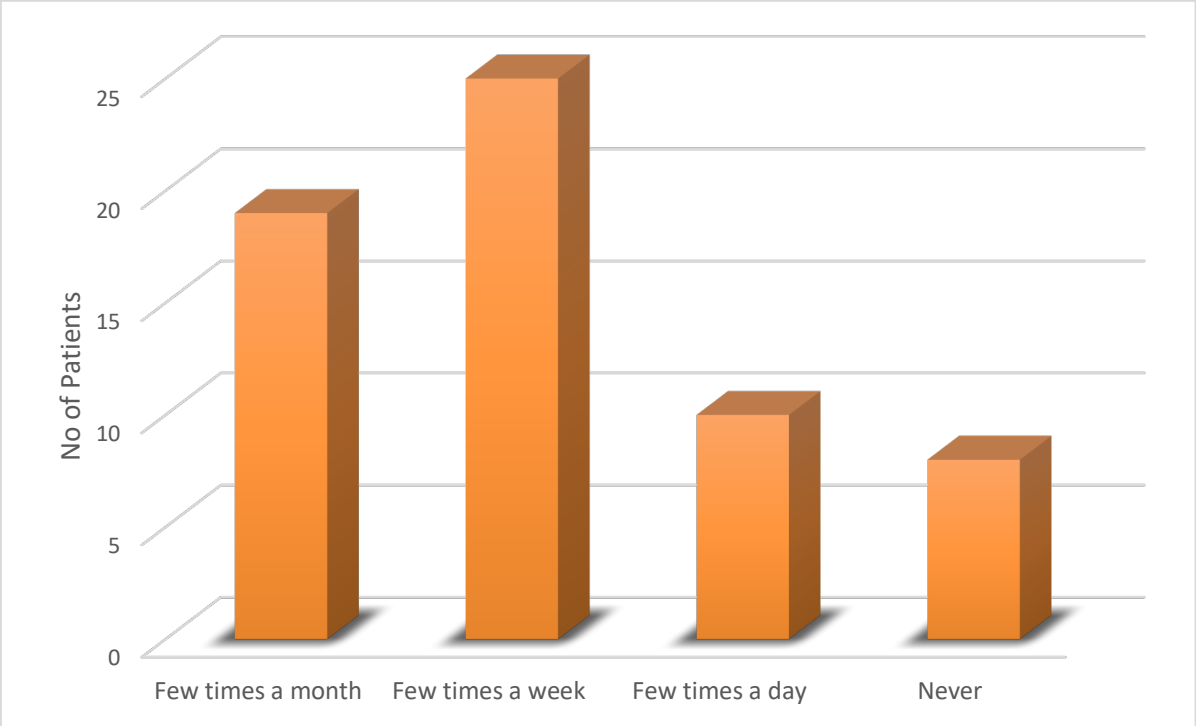

Figure 2: Bar diagram showing the frequency of self-ear cleaning practices among study participants.

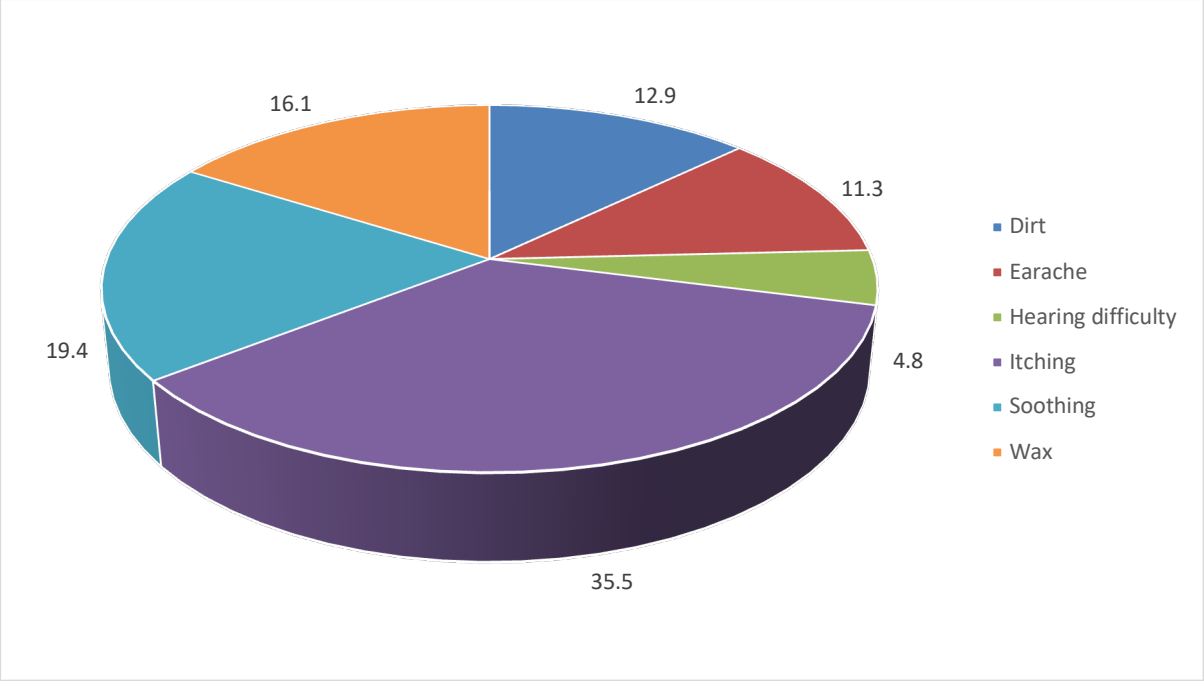

Figure 3: Piediagram showing the reason for self-ear cleaning practices among study participants.

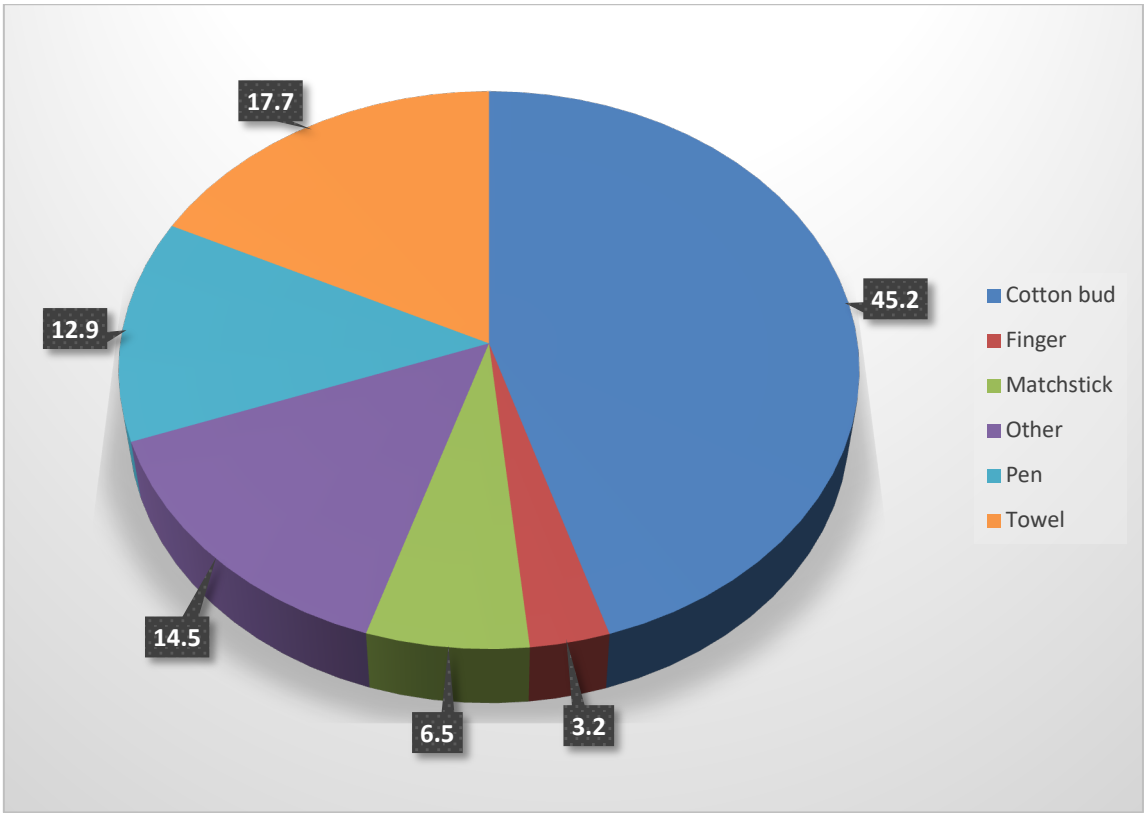

Figure 4: Piediagram showing the method of self-ear cleaning practices among study participants.

54 participants (87%) reported self-ear cleaning. Among them, 35 reported cleaning their ears ≥ once per week and 19 reported cleaning < once per week. No statistically significant association was observed between cleaning frequency and age category (p = 0.276), sex (p = 0.485), religion (p = 0.991), residence (p = 0.094), or marital status (p = 0.094). Perception was significantly associated with cleaning frequency (p = 0.044). Method category showed that all participants using cotton buds reported cleaning ≥ once per week (20; 100%), while those using other methods were distributed among < once per week (55.9%) and ≥ once per week (44.1%).Earache was significantly

associated with cleaning frequency (p = 0.041), with 23 (76.7%) participants having earache cleaning ≥ once per week. Itching demonstrated a strong association (p < 0.001), as 32 (91.4%) participants with itching cleaned ≥ once per week. Fullness was also significantly associated (p < 0.001), with 24 (88.9%) participants reporting ≥ once weekly cleaning. Part of ear cleaned showed a highly significant association (p < 0.001); all participants cleaning inside the ear reported ≥ once per week cleaning. Perceived result was significantly associated with frequency (p < 0.001). All participants who believed ear cleaning causes no damage reported ≥ once weekly cleaning, whereas those who believed it can damage the ear were distributed among < once per week (52.8%) and ≥ once per week (47.2%). Ear discharge (p = 0.457) and hearing difficulty (p = 0.294) were not significantly associated with cleaning frequency.

Discussion:

In the current study it was found that 87% patients use cotton bud and other methods as self-ear cleaning practices. Cotton bud was most commonly used method, it was followed by towel, pen, matchstick etc. A study conducted among physicians in Nigeria [6] showed that 76.3% of physicians practiced self-ear cleaning, mainly for reasons of hygiene. Amutta SB et al. [14] found that80% of the respondents practice self-ear cleaning.

In this study 29% were male and 71% were female. 61% were of aged less than 30 years, 16% were of 41-50 years old and rest all age groups were of less than 10%. In contrast, a study in

Sokoto Metropolis [14] included 200 participants, comprising of 46.5% male & 53.5% females. Their mean age was 30.29 years (±8.70). While, Gadanya M et al. [6] recorded mean age was 33.6 ± 5.4 years. Majority (68.0%) of the respondents were males whereas only 32.0% were females, giving a male: female ratio of 2.1:1.

In this study it was found that itching, soothing effect, dart war one of the reasons for self-ear cleaning practices. Afolabi et al. [7] conducted a survey on 372 individuals and found that majority of subjects used cotton buds to clean wax from ear.Similar reasons were found by many other studies. Self-ear cleaning was being done to remove wax, dirt and debris, itchiness and to soothe the ear. [1,15,16] In this study it was found that 66.7% respondents believe using self-ear cleaning could harm ear. Self-ear cleaning was higher in those who perceived the practice to being beneficial. [1,15,16] According to Olajide, Usman and Eletta [16] 74.1% of participants had poor knowledge about self-cleansing mechanism of the ear andwere unaware about the dangers of cotton bud usage. Hobson and Lavy [17] stated that 93% of participants in their study were ignorant of the harmful effects of cotton bud use.

In this study it was found that, 44.4% respondents cleaned only inside of the ear, 37% outside the ear and 18.6% both inside and outside the ear. It is in contrast with study be et al. [1] where 17.5% (n=36) indicated that they clean outside of the ear only, 7.3% (n=15) cleaned inside only, while 75.2% (n=155) cleaned both inside and outside their ear canal.

Most participants had cleaned their ears under influence of parents and siblings in developing the habit. Similar results reported by many studies. Initiatives to modify this practice should therefore also include caregivers and parents. [1,4,18]

A study in Sokoto Metropolis [14] recorded the frequency of cleaning per day in the subjects were as follows: those who cleaned once daily were 77 (48.1%), twice 25 (15.6%), thrice 7 (4.4%), four times 1 (0.6%), five times 2 (1.3%) and more than five times 48 (30%).In contrast, the present study observed a lower daily cleaning frequency, with most participants reporting cleaning only a few times per week (40.4%) or a few times per month (30.6%). Only 10 participants (16.1%) reported cleaning a few times per day, and eight (12.9%) reported never cleaning their ears.

Information and education about the risks should be disseminated as widely as possible among all age groups. Amutta et al. [14] indicated that while loose tip cotton bud would be better to dry out excess water after getting wet as it is more absorbent, while many preferred commonly available ones due to aesthetic appeal. Cerumen management must be conducted by general physician, ENT specialists and other trained health care personnel, who advise on treatment options. Many treatment options are available to remove cerumen which include use of a cerumen lytic, topical therapy, irrigation, suctioning, syringing and other manual removal techniques. [19]

Ahmed S. et al. [20] showed that a person with diseases of ear was 12 times more likely to have been exposed to risk factor (cotton bud) than a person without ear disease. Similarly in this study also found symptoms were much more common among exposed persons.

Conclusion

Young and adults do engage in self-ear cleaning, which can potentially increase risk of ear injury. There is a need for more public health education to discourage people from self-ear cleaning, and to inform them about how the ear naturally cleans itself, and how to address issues of itchiness and wax impaction. It is important that cerumen should

be managed only by qualified personnel. The medical advice against self-ear cleaning needs to be widely known.

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