

Cotton bud: usage, presentation, complications, and management among otorhinolaryngology patients

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ABSTRACT

AIMS AND OBJECTIVES: Cotton bud usage is a common bad health practice among many patients despite associated complications. This study aimed at determining the cotton bud: usage, presentation, complications, and management among otorhinolaryngology patients in developing country.

MATERIALS AND METHODS: This is a prospective hospital-based study of cotton bud usage. The study was carried out over a period 6 months between June and November 2017. Verbal consent was obtained from consented patients. Interview-assisted questionnaire was administered to obtain data. Data obtained were collated and statistically analyzed by using SPSS version 16.

RESULTS: Prevalence of cotton bud usage was 83.4%. There were 45.7% male respondents and male to female ratio of 1:1. Common reasons for cotton bud usage were personal hygiene in 25.5%, itching in 23.9%, water in ear in 11.7%, and dirty/earwax in 11.3%. Cotton bud usage for ear cleaning was by self in 54.6%, parent in 32.8%, friend in 6.7%, and spouse in 5.8%. Bilateral ears were most commonly cleaned by cotton bud in 57.1%. The right ear in 25.2% was more common than left ear in 17.8%. No complications were in 37.7%. There were 28.2% injury to external ear, 23.9% impacted cotton bud, and 10.1% traumatic perforated tympanic membrane. On patients' understanding on danger of cotton bud usage, dangerous, not dangerous, and not sure were 28.5, 60.4, and 11.1%, respectively. Common clinical features were earache, itching, hearing loss, and dirty/earwax 33.7, 19.6, 19.0, and 18.7%, respectively. Long-time (chronic) cotton bud usage accounted for 63.8% while short-time (acute) ear cleaning accounted for 36.2%. Frequency of cotton bud usage in these patients was daily in 54.9%, weekly in 20.9%, monthly in 4.9%, and occasionally in 19.3%. The most common diagnosis of cotton bud usage was personal hygiene in 25.5%. Other diagnosis of cotton bud usage was allergy in 18.7%, otitis externa in 18.1%, earwax impaction in 13.2% foreign body impaction in 11.3%, and hearing impairment in 8.3%. No information, information from family, and information from neighborhood were 31.6, 43.6, and 24.8%, respectively. Treatments offered were health education in all the patients, conservative/medical treatment in 88.7%, and cotton bud removal in 11.3%.

KEYWORDS

external ear canal, cotton bud, Ekiti, otology

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Publisher Name: MedText Publications

Manuscript compiled: Tuesday 10th April, 2018

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CONCLUSIONS: Cotton bud is one of the most common objects used to clean the ear canal. The reason to clean the ear canal was personal hygiene, itching, and remove earwax from the ear canal. The majority of the patients believes that the ear canal required regular cleaning using cotton bud.

INTRODUCTION

Cotton bud is a simple device consisting of a small wad of cotton wool wrapped around one or both ends of a short rod, usually made of wood, rolled paper, or plastic.¹ Historically, cotton bud was invented in 1923 by Leo Gersternzang who observed his wife to have attached wads of cotton wool on toothpicks to clean his baby's ear.²

Cleaning of ears either by self or other, such as parents and caregivers, is very common worldwide.³ Various objects were used in ear cleaning, and one of the commonly used objects is cotton bud. Hazards effect of cotton bud usage is a common reason for otorhinolaryngology—head and neck surgeon visit.^{4,5}

Cotton bud is used in parents because of its neatness, cheap, and readily available from market, patent medicine stores, and super markets. Common reasons given for using cotton bud in ear cleaning were earwax, itching, foreign body, irritation, ear blockage, hearing impairment, ear pain, and ear discharge.^{6,7} Others people see this habit as part of personal hygiene and mandatory or normal.¹

Usage of cotton buds inside ears is unnecessary and potentially dangerous. Cotton bud usage has been condemned worldwide by otorhinolaryngologists and other health-care providers. This is because of widely documented complications, which include ear canal trauma, traumatic perforated tympanic membrane, hearing impairment, impacted ear wax, infection, and retention of the cotton bud.⁸⁻¹²

Little research work has been conducted on the usage of cotton bud in developing country. This study aimed at determining the cotton bud: usage, presentation, complications, and management among otorhinolaryngology patients in developing country.

MATERIALS AND METHODS

This was a prospective hospital-based study of patients with history of cotton bud usage. The study was carried out at Ekiti State University Teaching Hospital, Ado Ekiti, Nigeria. The study was conducted in ear, nose, and throat department. The study was carried out over a period 6 months between June and November 2017.

Aims and objective of the study were explained to the patients and confidentiality assured. Informed consent was obtained. Consented patients were enrolled into the student. Data were collected with a self-administered pretested semi-structured questionnaire.

The questionnaires contained information on sociodemographic features, such as age, sex, religion, and occupation. Data on pattern of cotton bud used in ear cleaning were taken. Data taken also included frequency of ear cleaning, type of side effect, and reasons for cotton bud usage in ear cleaning. Data were obtained on complications and benefit of ear cleaning.

Detailed ear examination was carried out including otoscopy. Findings were documented.

Ethical clearance was sought for and obtained from ethical committee of the institution.

The data obtained were collated and analyzed using SPSS version 16.0. The data were expressed by frequency table, percentage, pie charts, and bar charts.

RESULTS

A total of 391 patients consented for the study, out of which 326 had used cotton bud. Prevalence of cotton bud usage was 83.4%. All groups were represented. The peaked age group was 21–30 years representing 116 (35.6%) of the studied patients. Table 1 shows age group distribution of the patients.

There were 149 (45.7%) male respondents and 177 (54.3%) female respondents, which gave a male to female ratio of 1:1. There were 294 (90.2%) Christian and 32 (9.8%) Muslim in the studied patients. Urban dwellers accounted for 18 (57.4%) while rural dwellers accounted for 139 (42.6%). Based on education, nil formal education, primary, secondary, and postsecondary were 87 (26.7%), 49 (15.0%), 64 (19.6%), and 126 (38.7%), respectively. Occupationally, 56 (17.2%) were business, 52 (16.0%) were artisans, 48 (14.7%) were industrial workers, and 47 (14.3%) were applicants. Others were 43 (13.2%) farming and 42 (12.9%) students/apprentice. Table 2 illustrates sociodemographic features of patients.

Common reasons for cotton bud usage were personal hygiene in 83 (25.5%), itching in 78 (23.9%), water in ear in 38 (11.7%), and dirty/earwax in 37 (11.3%). Other reasons for cotton bud usage were 32 (9.8%) irritation, 28 (8.6%) hearing impairment, and 17 (5.2%) ear blockage. Cotton bud usage for ear cleaning was by self in 178 (54.6%), parent in 107 (32.8%), friend in 22 (6.7%), and spouse in 19 (5.8%). Table 3 demonstrates indications for the cotton bud usage.

Bilateral ears were most commonly cleaned by cotton bud among the patients in 186 (57.1%). The right ear in 82 (25.2%) was more common than left ear in 58 (17.8%). Figure 1 shows the lateralization for cotton bud usage among the patients.

In this study, no complications were in 123 (37.7%). There were 92 (28.2%) injury to external ear, 78 (23.9%) impacted cotton bud, and 33 (10.1%) traumatic perforated tympanic membrane. On patients' understanding on danger of cotton bud usage, dangerous, not dangerous, and not sure were 93 (28.5%), 197 (60.4%), and 36 (11.1%), respectively, outcome. Figure 2 reveals common complications among the patients.

Table 1 Age group distribution of the patients

Age group (years)	Number	%
1–10	24	7.4
11–20	16	4.9
21–30	116	35.6
31–40	82	25.2
41–50	51	15.6
51–60	23	7.1
≥61	14	4.3
	326	

Table 2 Sociodemographic features of patients

Sociodemographic features	Number	%
Sex		
Male	149	45.7
Female	177	54.3
Religion		
Christian	294	90.2
Muslim	32	9.8
Residential		
Urban	187	57.4
Rural	139	42.6
Education level		
Nil	87	26.7
Primary	49	15.0
Secondary	64	19.6
Postsecondary	126	38.7
Patients occupation		
Student/apprentice	42	12.9
Applicant	47	14.3
Business	56	17.2
Driver	38	11.7
Industrial worker	48	14.7
Farming	43	13.2
Artisans	52	16.0

Table 3 Indications for cotton bud usage

Indications	Number	%
Personal hygiene	83	25.5
Itching	78	23.9
Dirty/earwax	37	11.3
Hearing impairment	28	8.6
Blockage	17	5.2
Irritation	32	9.8
Water	38	11.7
Ear discharge	13	4.0

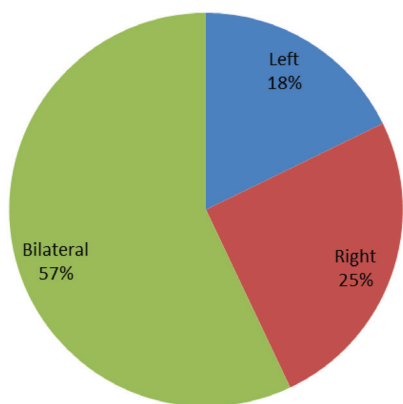


Figure 1 Lateralization for cotton bud usage among the patients.

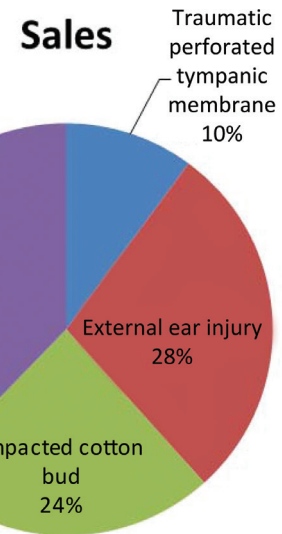


Figure 2 Common complications among the patients.

Table 4 Clinical features among the patients

Clinical features	Number	%
Hearing loss	62	19.0
Earache	110	33.7
Tinnitus	38	11.7
Dirty/earwax	61	18.7
Ear discharge	21	6.4
Blockage	38	11.7
Itching	64	19.6
Object in the ear	37	11.3
Nil complaints	41	12.6

Common clinical features were earache, itching, hearing loss, and dirty/earwax 110 (33.7%), 64 (19.6%), 62 (19.0%), and 61 (18.7%), respectively. Other clinical features included 38 (11.7%) ear blockage, 38 (11.7%) tinnitus, and 21 (6.4%) ear discharge. Table 4 shows clinical features among the patients

Long-time (chronic) cotton bud usage was the most common and accounted for 208 (63.8%) while short-time (acute) ear cleaning accounted for 118 (36.2%). Common short-time duration was 9–12 weeks in 59 (18.1%) and 5–8 weeks in 35 (10.7%). Frequency of cotton bud usage in these patients was daily ear cleaning in 179 (54.9%), weekly ear cleaning in 68 (20.9%), monthly ear cleaning in 16 (4.9%), and occasional ear cleaning in 63 (19.3%). Figure 3 illustrates the duration of cotton bud usage at presentation.

The most common diagnosis of cotton bud usage was personal hygiene in 83 (25.5%). Other diagnosis of cotton bud usage was allergy in 61 (18.7%), otitis externa in 59 (18.1%), earwax impaction in 43 (13.2%), foreign body impaction in 37 (11.3%), and hearing impairment in 27 (8.3%). Table 5 illustrates diagnosis among the patients.

Based on information on cotton bud usage, no information, information from family, and information from neighborhood were 103 (31.6%), 142 (43.6%), and 81 (24.8%), respectively. Treatment offered were health education in all the patients, conservative/medical treatment in 289 (88.7%), and cotton bud removal in 37 (11.3%). Table 6 shows management among the patients

Duration (week)	Number	Percentage (%)
1–4	24	7.4
5–8	35	10.7
9–12	59	18.1
≥13	208	63.8

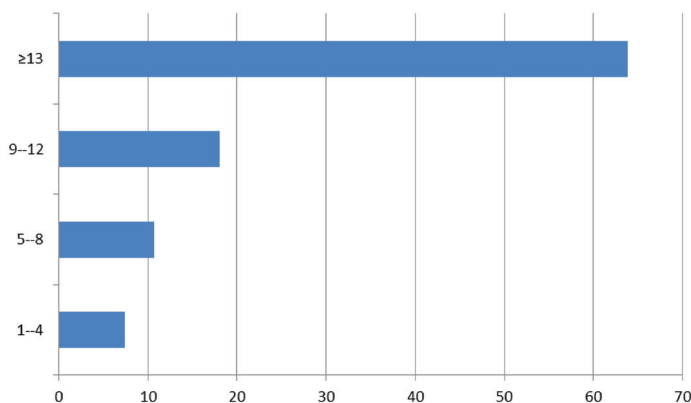


Figure 3 Duration of cotton bud usage (bar charts).

Table 5 Diagnosis among the patients

Diagnosis	Number	%
Personal hygiene	83	25.5
Earwax impaction	43	13.2
Otitis media	16	4.9
Otitis externa	59	18.1
Hearing impairment	27	8.3
Allergy	61	18.7
Cotton bud impaction	37	11.3

Table 6 Management among the patients

Management	Number	%
Information on cotton bud usage		
No information	103	31.6
Family	142	43.6
Neighbor	81	24.8
Health education	326	100
Conservative/medical treatment	289	88.7
Cotton bud removal	37	11.3

DISCUSSION

This was a study on cotton bud usage, presentation, and management among patients in otorhinolaryngology practice. Prevalence rate of cotton bud usage was very high. This is in agreement with findings in previous studies.^{13,14} The sources of motivation are not known. There is urgent need to educate patients against cotton bud usage. All age groups were involved in this act. The peaked age group was at third decades representing about one-third of the study population. Similar findings were recorded in other study.¹⁵

In this study, sociodemographic features of the studied patients revealed female preponderance over male. This shows that females are more active ear canal cleaner than male. This is demonstrated in other study.¹ Contrary observation was reported in other studies.^{3,5} There was urban dwellers' preponderance over rural dwellers in this study. This may be attributed to availability of the center in the city and less barriers to access the institution.^{16,17} Patients without formal education and postsecondary were the common user of cotton bud. Patients were poorly knowledgeable about danger of ear cleaning with cotton bud. This is contrary to other study.¹ In this study, there is no significant different occupation and cotton bud usage.

There are many possible otological uses of cotton bud otorhinolaryngology practice. Cotton buds are used in ear canal cleaning as part of personal hygiene. Other reasons included itching ear, water in the ear after bath, and dirty/earwax. Usage of cotton bud was not recommended by doctors or other health workers. Previous studies revealed similar findings.^{18,19}

Bilateral ear cleaning with cotton bud was major finding in this study. This is similar to result from previous study.³ Bearing in mind, the major reasons for using cotton bud, such as personal hygiene, itching, earwax impaction, and water in the ear commonly, occurred in both ear. Furthermore, bilateral otological conditions responsible for bilateral ear cleaning may be reasons while many patients view this practice to be beneficial.

This study revealed absence of complication in less than half of the patients. This may be because they are chronic cotton bud user and abusers of the ear. Apart from destroying ear canal integrity, common complications of cotton bud in the patients were external auditory canal injury, impacted foreign body, and traumatic perforated tympanic membrane. Similar reports were documented in previous studies.^{20,21}

Otalgia resulted from bruises sustained and otitis externa from cotton bud. Itchy ear from allergy, earwax, infections, and object in the ear commonly initiate ear cleaning with cotton bud. Earwax impaction prevented sound wave conduction to the tympanic membrane, which may lead to hearing impairment and tinnitus in the patients.

The majority of the patients used cotton bud for more than 2 months before the study and had become habitual or chronic user. Hence, it has become a regular activity in the studied patients just like regular bathing and brushing teeth. On the frequency of cotton bud usage, more than half of the patients use everyday while very few use weekly, monthly, and occasionally. This is concomitant to findings in other study.¹³

Common diagnosis of cotton bud usage was personal hygiene, allergy, earwax impaction, and hearing loss. Treatments of these diagnoses are mandatory otherwise it may be difficult to stop self ear cleaning with cotton bud. Other diagnosis included various forms of otitis externa and media. These findings were reported in previous studies.^{9,10,20}

Some patients had no previous information on cotton bud usage while the majority had information from family and neighborhood. This concurred with findings in other studies.^{3,21} Adequate management of this bad health habit requires health education by health workers and otorhinolaryngologist—head and neck surgeon. ENT out patients health education to give health talk to patients on danger of cotton bud usage. Individual patients were treated on the causes and associated complications by medical and conservative treatment. Other treatment included cotton bud removal.

CONCLUSION

Cotton bud is one of the most common objects used to clean the ear canal. Most common reason to clean the ear canal was personal

hygiene, itching, and remove earwax from the ear canal. The majority of the patients believes that the ear canal required regular cleaning using cotton bud. The patients need to be educated that cotton bud is not an appropriate object for aural hygiene.

FUNDING

There was no financial support. It is a self-sponsored research study.

COMPETING INTERESTS

All the authors declare that there were no competing interests.

ACKNOWLEDGMENTS

The authors are most grateful to Ekiti State University Teaching Hospital and all the patients who participated in this study.

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