

# Otoplasty in Saudi Arabia: Is There a Change in Demographic Trend?

Sari M. Rabah, MBBS, FRCSC\*

Ebtesam Almajed, MBBS†

Razan Albrahim, MBBS†

Alya AlZabin, MBBS†

Rand Alshabnan, MBBS†

Lara Alyahiwi, MBBS†

Reema Aldawish, MBBS†

**Background:** Prominent ears are a recognized ear deformity. Surgical correction of prominent ears aims to improve quality of life, particularly in children before school entry. This study examines patient demographics and surgical practices in otoplasty in Saudi Arabia, comparing findings with international trends.

**Methods:** An online cross-sectional survey of plastic surgeons and otolaryngologists in Saudi Arabia was conducted. The questionnaire comprised sociodemographic data, otoplasty practice questions, and questions about the demographics of patients presenting with otoplasty from the surgeon's perspective.

**Results:** A total of 155 respondents participated in the study, of whom 60.6% were plastic and reconstructive surgeons, and 49.7% of surgeons reported 5–6 years of age as the optimum timing for otoplasty. The Mustardé technique was the most chosen technique (35.3%). Additionally, 43.2% of surgeons stated that patients in the 6- to 12-year age group were the typical age group that presented with prominent ears seeking treatment. Aesthetic complaints were the most common reason (64.5%) for referral to the clinic. Moreover, the optimum timing of otoplasty was significantly associated with age of patients undergoing otoplasty ( $P = 0.043$ ).

**Conclusions:** The study's findings offered significant insights into the existing practices of otoplasty in Saudi Arabia and emphasized prospective areas that warrant future exploration. (*Plast Reconstr Surg Glob Open* 2025;13:e6639; doi: 10.1097/GOX.0000000000006639; Published online 20 March 2025.)

## INTRODUCTION

Prominent ears affect the aesthetic and psychosocial aspects of patients. According to the American Society of Plastic Surgeons 2020 annual statistics report, otoplasty ranked as the second most performed cosmetic surgical procedure among the age group of 13–19 years (17,340 procedures), with a total of 53,095 procedures performed, in all age groups.<sup>1</sup> A hypertrophied concha, lack of a natural fold along the antihelix, or a combination of both can lead to this deformity.<sup>2</sup> Plastic surgeons and otolaryngologists use various techniques to correct prominent

ears in pediatric and adult patients in private and public clinics.<sup>3</sup> Undoubtedly, otoplasty's significance is evident in the postoperative improvement of psychological aspects, namely satisfaction with appearance, confidence, and self-esteem.<sup>4,5</sup>

Prominent ears are generally repaired surgically in children of 4 and 5 years of age.<sup>3,6</sup> Although it is expected to schedule the surgery before school entry to prevent bullying incidents, a substantial proportion of operations are also performed in adulthood.<sup>3</sup> A retrospective study conducted at an academic tertiary referral center to assess the preoperative and postoperative quality of life of grade I ear dysplasia patients concluded a significant improvement in the quality of life and patient satisfaction following surgery, regardless of the patient's sex, age, or surgeon's experience.<sup>7</sup>

Another retrospective study compared demographic details in prominent ears during 2007–2011 in Finland with international data. The study included 180 patients. The average age at operation was 9.2 years, the median was 7 years, and ages ranged from 3 to 36 years. Surgical treatment was most often requested for aesthetic complaints and bullying. This study involved a review of 20 publications reporting 4433 patients operated on for

From the \*Plastic and Reconstructive Surgery Division, Department of Surgery, King Abdullah bin Abdulaziz University Hospital, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia; and †College of Medicine, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia.

Received for publication August 24, 2024; accepted February 3, 2025.

Data from this study are available for sharing on request.

Copyright © 2025 The Authors. Published by Wolters Kluwer Health, Inc. on behalf of The American Society of Plastic Surgeons. This is an open-access article distributed under the terms of the [Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 \(CCBY-NC-ND\)](#), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

DOI: 10.1097/GOX.0000000000006639

Disclosure statements are at the end of this article, following the correspondence information.

prominent ears. Although the mean age at operation ranged from 7 to 38 years, the overall mean was 15 years of age. As for gender distribution, the percentage of female patients in patient samples ranged from 38% to 71% (overall 52%). Although no statistically significant correlation exists between demographic variables, female patients are more likely to undergo this procedure at an older age.<sup>3</sup>

From 1993 to 2017, a prospective study was conducted in Switzerland on all prominent ear otoplasties. The sociodemographic analysis revealed 705 otoplasties, of which 62.2% were girls. Age ranged between 5.3 and 27 years, with  $10.4 \pm 2.8$  years average.<sup>8</sup>

In Saudi Arabia, a cross-sectional study conducted in 2021 found that the general population is unaware of prominent ears and their management.<sup>9</sup> A thorough review of the medical literature to evaluate sociodemographic trends of otoplasty revealed a limited number of studies. Considering the unique characteristics of each country's social and cultural environment, information regarding Saudi Arabia's sociodemographic trends for otoplasty is scarce. Therefore, this study analyzes the demographic characteristics of patients undergoing prominent ear surgery. Understanding these demographics and the timing rationale from both plastic surgeons' and otolaryngologists' perspectives is crucial for tailoring interventions, improving patient outcomes, and identifying cultural or regional trends that may influence the decision for surgery. This study addresses this knowledge gap by analyzing and comparing these trends within Saudi Arabia and against global data.

## METHODS

### Study Population

Between December 2022 and December 2023, we conducted a cross-sectional survey on plastic and reconstructive and otorhinolaryngology surgeons who resided in Saudi Arabia. We recruited potential participants via WhatsApp Messenger (Facebook Inc., CA) using convenience sampling. No gender restrictions were applied.

The representative sample size required was 100, determined using G-power software, based on a power of 90% and a confidence level of 95%, with  $\pm 5\%$  as the margin of error. Additional responses were accepted to overcome any missing data or falsely filled forms. Based on the Ministry of Health Annual Statistical Yearbook of 2022, the total number of consultants in the specialty of plastic and reconstructive surgery is 149 Saudi consultants and registrars of plastic and reconstructive surgeons and 199 Saudi otorhinolaryngology consultants, covering 63% and 30%, respectively, of the 4 geographical regions of Saudi Arabia (north, south, west, and east).

### Ethics Statement and Informed Consent

The institutional review board of Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia, approved the study protocol (IRB log No. 22-1168) by the Declaration of Helsinki. The participants voluntarily

## Takeaways

**Question:** Is there a change in the sociodemographics of otoplasty in Saudi Arabia?

**Findings:** This cross-sectional study revealed that otoplasty is commonly performed on patients within the 6- to 12-year age range (56.8%), with male patients being significantly more prevalent than female patients (61.9%). Parental refusal was identified as the primary factor influencing the timing of surgery in a considerable number of cases (34.2%).

**Meaning:** Our findings underscore the critical role of timing in otoplasty, emphasizing its significance in optimizing both aesthetic and psychological results. We explore factors influencing the decision-making process from the perspective of parents and physicians highlighting the importance of a well-considered approach.

agreed to participate after reading the study description and objectives.

### Study Survey

Based on the study objectives, the authors developed an 18-item survey incorporating some questions from previous research.<sup>10</sup> Four sections were included in the study instrument: sociodemographic data; questions related to otoplasty timing, technique, and evaluation after surgery; patient demographics from the surgeon's perspective; and questions related to the patient's background. An initial pilot study was conducted with a small group of 5 plastic and reconstructive surgeons (personal contacts of the authors) to determine whether the survey questions were understandable and acceptable.

### Statistical Analysis and Data Management

The statistical analysis was conducted using SPSS (IBM version 26). The categorical data were presented as frequencies and percentages. Furthermore, the chi-square test was used to compare sociodemographic data and nationality. Binary logistic regression was constructed to predict the relationship between the patient's nationality and the statistically significant sociodemographic data. The regression results were presented as odds ratios (ORs) and 95% confidence intervals (CIs). A *P* value of less than 0.05 was an indication of statistical significance.

## RESULTS

### Sociodemographic Data

A total of 155 respondents participated in this study. Based on Table 1, most respondents specialized in plastic and reconstructive surgery (61%). Regarding the region of practice, the highest number of practitioners were in the central region (47%). Regarding training in pediatrics, 59.4% of the practitioners indicated having such training. In the practice sector, the highest proportion of practitioners worked in the governmental sector (77%). The study investigated the practitioners'

**Table 1. Descriptive Analysis of the Participants' Sociodemographic Characteristics (N = 155)**

Parameter	Category	n	%
Specialty	Plastic and reconstruction surgery	94	60.6
	Otorhinolaryngology	61	39.4
Region of practice	Northern region	13	8.4
	Southern region	10	6.5
	Central region	73	47.1
	Eastern region	14	9
	Western region	45	29
Any interest or training in pediatrics	No	63	40.6
	Yes	92	59.4
Practice sector	Governmental	62	40
	Private	35	22.6
	Both	58	37.4
Optimum timing otoplasty in your perspective (in terms of the patient's age), y	1–2	7	4.5
	3–4	36	23.2
	5–6	77	49.7
	7–8	19	12.3
	9 and above	16	10.3
Technique used*	Mustardé technique	54	35.3
	The combined Mustardé-Furnas technique	37	24.2
	Suturing and scoring techniques	44	28.8
	Millard technique	8	5.2
	Other	10	6.5
Subjective evaluation of result	Poor	1	0.6
	Fair	9	5.8
	Good	67	43.2
	Excellent	78	50.3
Average long-term follow-up postsurgery	1 wk	1	0.6
	1–6 mo	64	41.3
	1–5 y	90	58.1
Common age of patients with prominent ear presentation to your clinic in Saudi Arabia	Younger than 6 y	48	31
	6–12 y	67	43.2
	12–18 y	17	11
	Older than 18 y	23	14.8
Common age of patients undergoing otoplasty in Saudi Arabia	Younger than 6 y	27	17.4
	6–12 y	88	56.8
	12–18 y	16	10.3
	Older than 18 y	24	15.5
Common effected ear at presentation	Right	24	15.5
	Left	22	14.2
	Bilateral	109	70.3
Common patient gender	Male	96	61.9
	Female	59	38.1
Common patient nationality	Non-Saudi	8	5.2
	Saudi	147	94.8
Common patient residency	Northern region	11	7.1
	Southern region	17	11
	Central region	68	43.9
	Eastern region	17	11
	Western region	42	27.1
Estimated number of otoplasties you perform annually	1–20	135	87.1
	21–40	12	7.7
	41 or more	8	5.2

\*Missing values.

perspectives on the optimum timing for otoplasty in terms of the patient's age. Most respondents (49.7%) suggested that the best timing for otoplasty was between 5 and 6 years of age. The Mustardé technique was the preferred technique for otoplasty (35%). The subjective evaluation of surgical outcomes indicated positive

results overall. Most respondents rated the results as “excellent” (50%). Regarding long-term follow-up postsurgery, the most common follow-up period reported was 1–5 years (58.1%).

Additionally, the study examined the standard age at which patients presented with prominent ears to clinics in

Saudi Arabia (Fig. 1). Most patients seeking treatment were in the 6- to 12-year-old age group (43%). Regarding the standard age of patients undergoing otoplasty, more patients fell into the 6- to 12-year age group (57%).

The data revealed that bilateral presentation of prominent ears was the most common (70%). Regarding patient gender, male patients were more common among those seeking otoplasty, constituting (62%) of the cases. In terms of the patients' nationality, most patients were Saudi (95%). The distribution of patients by region of residency showed that most patients seeking otoplasty resided in the central region (44%). Most surgeons perform between 1 and 20 otoplasty procedures annually (87%). Furthermore, in Figure 2, more than half of the participants do not report patients having any associated underlying diseases/congenital anomalies (76%).

In Figure 3, aesthetic complaints were the most common reason (65%) for referral to the clinic. Finally, parent refusal is considered the highest percentage (34%) among the factors affecting the timing of otoplasty from the patient and/or parents' perspective (Fig. 4).

In Table 2, regarding the practice sector ( $P = 0.046$ ), most Saudi otoplasty patients (94%) followed up in the governmental sector. Regarding associated underlying diseases or congenital anomalies ( $P = 0.010$ ), 97% of Saudi patients had no other associated conditions. Differences noted in specialty, the typical age of a patient with prominent ear presentation, patients' ages undergoing otoplasty, the commonly affected ear, and patient residency were not statistically significant.

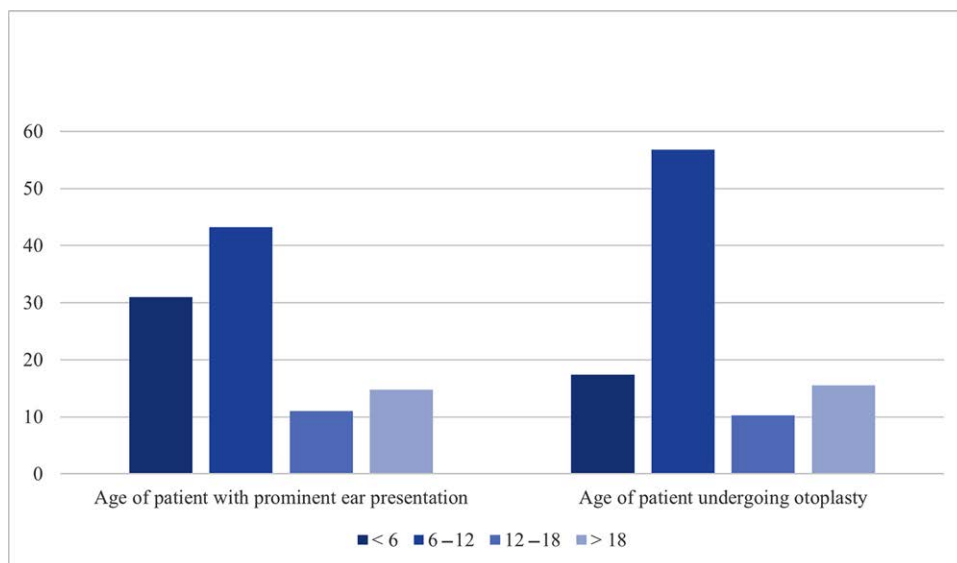
Based on Table 3, female patients were less likely to have a change in demographic trend compared with male patients (OR = 0.127; 95% CI, 0.020–0.815;  $P = 0.030$ ). Patients with associated underlying diseases or congenital anomalies were less likely to change in demographic trend than those without such conditions (OR = 0.108; 95% CI, 0.019–0.626;  $P = 0.013$ ).

No significant association existed between the age of patients undergoing otoplasty and the estimated number of otoplasties performed ( $P = 0.523$ ). However, the optimum timing of otoplasty was significantly associated with the age of patients undergoing otoplasty ( $P = 0.043$ , Table 4).

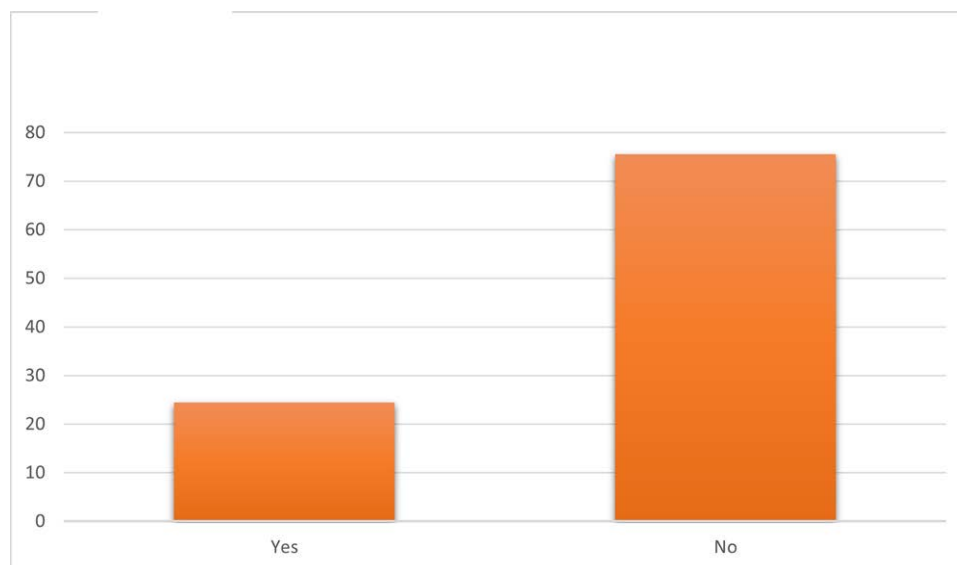
## DISCUSSION

Prominent ear, or prominauris, is the most common congenital ear abnormality, accounting for around 5% of the population.<sup>11</sup> It is widely acknowledged that this condition constitutes considerable psychological, social, and educational issues.<sup>5</sup> From the first documentation of otoplasty for prominent ears performed by Dieneffebach in 1845, various advancements in techniques have been described over the years to create a more natural-looking and aesthetically pleasing appearance.<sup>12</sup> Otoplasty can be performed by both plastic surgeons and otolaryngologists in various healthcare settings, including private and public facilities, on patients of all ages.<sup>3</sup> Therefore, this study aimed to evaluate the sociodemographic characteristics of patients undergoing otoplasty, surgical timing, and techniques used from the perspective of plastic and reconstructive surgeons and otolaryngologists and eventually provide a comprehensive reference on otoplasty demographics and practice in Saudi Arabia.

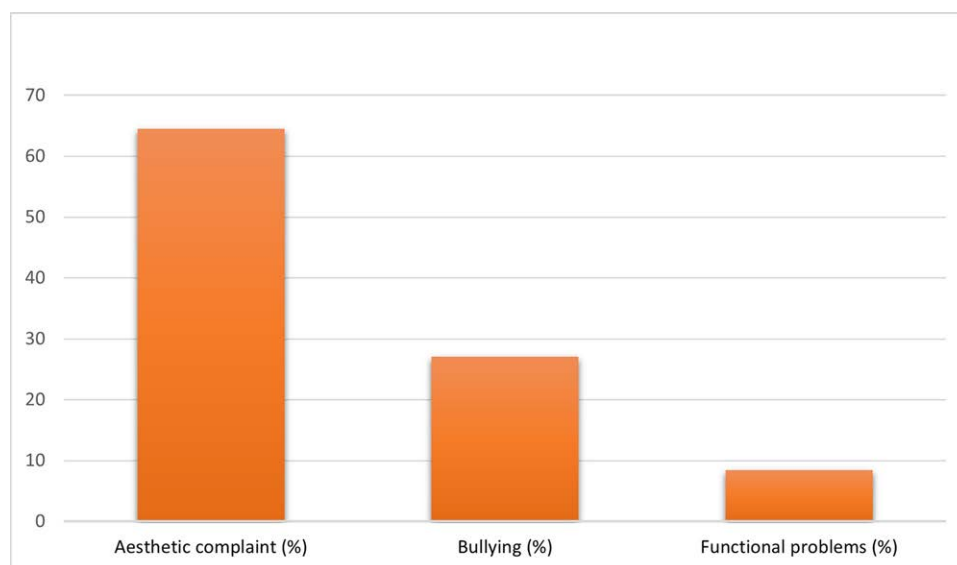
Early techniques focused on skin excision and cartilage fixation. Over time, surgeons developed various methods to reshape the ear cartilage, including incision-scoring techniques and suture-based approaches.<sup>13</sup> One of the most used methods, described by Mustardé, involves creating a new fold in the ear cartilage using sutures placed in the cartilage of the scapha. Additionally, Furnas has introduced the idea of reducing the conchomastoid angle by strategically placing sutures in that



**Fig. 1.** Common age of patients with prominent ear presentation and undergoing otoplasty in Saudi Arabia.



**Fig. 2.** The proportions of the other associated underlying diseases/congenital anomaly.



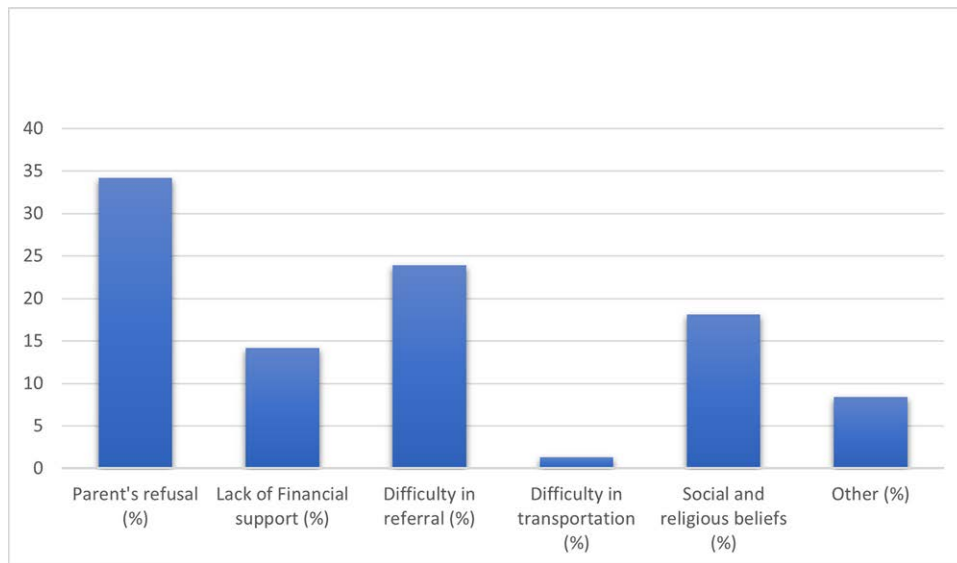
**Fig. 3.** Most common reasons for referral to your clinic.

area.<sup>14</sup> The technique surgeons preferred the most in our study was the Mustardé technique. Multiple studies in the literature have been described using this technique.<sup>12,14,15</sup> It is highly effective in correcting prominent ears with low revision rates and high satisfaction between the patient and the surgeon. The primary investigator in this study also favors the Mustardé technique alone or in combination with other techniques. An advantage of this technique is that it is predictable and can be tailored case by case, which yields more natural results, avoiding the sharpness of the antihelix and excessive backward rotation.

Our study found that the optimum timing of otoplasty was significantly associated with the age of patients undergoing otoplasty, typically around 5–6 years of age. The timing of otoplasty is crucial for maximizing both aesthetic

and psychological outcomes. According to the literature, most surgeons recommend performing otoplasty before school entry, typically around the age of 4, when children are more socially aware and vulnerable to peer judgment.<sup>10,16</sup> Furthermore, the ideal timing probably signifies a balance between these advantages and ear cartilage's superior plasticity and biomechanical characteristics in the younger demographic.<sup>17</sup>

Most surgeons evaluated their results with their chosen procedure as good to excellent. This corresponds with patient and family satisfaction with the procedure, as most reported being remarkably or entirely happy with the results.<sup>15,16,18,19</sup> Long-term studies have demonstrated that the results of otoplasty are typically stable, with most patients experiencing minimal recurrence of the corrected ear,<sup>20</sup> although follow-up periods for different



**Fig. 4.** The factors affecting the timing of otoplasty, from patient and/or parent perspective.

**Table 2. Association Between Demographic Data and Patient's Nationality**

Parameter	Category	Non-Saudi		Saudi		P
		n	%	n	%	
Specialty	Plastic and reconstruction surgery	5	5.30	89	94.70	0.912
	Otorhinolaryngology	3	4.90	58	95.10	
Practice sector	Governmental	4	6.50	58	93.50	0.046
	Private	4	11.40	31	88.60	
	Both	0	0.00	58	100.00	
Common age of patients with prominent ear presentation to your clinic in Saudi Arabia	Younger than 6 y	4	8.30	44	91.70	0.571
	6–12 y	3	4.50	64	95.50	
	12–18 y	0	0.00	17	100.00	
	Older than 18 y	1	4.30	22	95.70	
Common age of patients undergoing otoplasty in Saudi Arabia	Younger than 6 y	1	3.70	26	96.30	0.675
	6–12 y	5	5.70	83	94.30	
	12–18 y	0	0.00	16	100.00	
	Older than 18 y	2	8.30	22	91.70	
Common effected ear at presentation	Right	3	12.5	21	87.50	0.207
	Left	1	4.50	21	95.50	
	Bilateral	4	3.70	105	96.30	
Common patient gender	Male	2	2.10	94	97.90	0.027
	Female	6	10.2	53	89.80	
Common patient residency	Northern region	2	18.2	9	81.80	0.332
	Southern region	1	5.90	16	94.10	
	Central region	3	4.40	65	95.60	
	Eastern region	1	5.90	16	94.10	
	Western region	1	2.40	41	97.60	
Was there another associated underlying diseases/congenital anomaly?	No	3	2.60	114	97.40	0.010
	Yes	5	13.2	33	86.80	
Estimated number of otoplasties you perform annually	1–20	8	5.90	127	94.10	0.535
	21–40	0	0.00	12	100.00	
	41 or more	0	0.00	8	100.00	

studies ranged from 6 months reaching up to 9 years.<sup>10,15,18</sup> In our study, the average follow-up period noticed for patients ranged mainly from 1 to 5 years.

Regarding patient gender, in our study, the highest percentage of patients were reported to be male patients

(62%). According to a study by Kajosaari et al,<sup>3</sup> the patient population was mainly female. However, their literature review yielded 38% to 72% of female patients.<sup>3</sup> Another study performed by Papadopoulos et al<sup>4</sup> found that the patients partaking in the questionnaire consisted mainly



**Table 3. Logistic Regression Analysis of the Relationship Between Statistically Significant Demographic Data and the Patient's Nationality**

Parameter	Category	OR	95% CI		P
			LB	UB	
Practice sector	Governmental	Ref.	Ref.	Ref.	Ref.
	Private	0.377	0.072	1.957	0.245
	Both	NA	NA	NA	0.997
Common patient gender	Male	Ref.	Ref.	Ref.	Ref.
	Female	0.127	0.020	0.815	0.030
Was there another associated underlying diseases/congenital anomaly?	No	Ref.	Ref.	Ref.	Ref.
	Yes	0.108	0.019	0.626	0.013

LB, lower bound; NA, not applicable; UB, upper bound.

**Table 4. The Association Between Patients' Ages at the Time of Surgery, the Estimated Number of Otoplasties Performed, and the Optimum Timing**

Parameter	Category	Age of Patient Undergoing Otoplasty, y				P
		<6, N = 27	6–12, N = 88	12–18, N = 16	>18, N = 24	
Estimated number of otoplasties you perform annually	20 or less	26 (96.3%)	77 (87.5%)	13 (81.3%)	19 (79.2%)	0.523
	21–40	1 (3.7%)	6 (6.8%)	2 (12.5%)	3 (12.5%)	
	41 or more	0 (0.0%)	5 (5.7%)	1 (6.3%)	2 (8.3%)	
Optimum timing of otoplasty from the doctors' perspective, y	1–2	1 (3.7%)	4 (4.5%)	1 (6.3%)	1 (4.2%)	0.043
	3–4	9 (33.3%)	19 (21.6%)	2 (12.5%)	6 (25.0%)	
	5–6	16 (59.3%)	46 (52.3%)	7 (43.8%)	8 (33.3%)	
	7–8	0 (0.0%)	14 (15.9%)	2 (12.5%)	3 (12.5%)	
	9 and above	1 (3.7%)	5 (5.7%)	4 (25.0%)	6 (25.0%)	

of female patients (65%), which corresponded to their patient gender demographics. Based on possible cultural reasons, in Saudi Arabia, where women often wear head coverings or grow long hair, there is less public visibility of their ears, potentially reducing social pressure for otoplasty. With their ears more prominently displayed, men may feel more significant pressure to conform to societal aesthetic standards. This is 1 possible reason, but more detailed research is necessary to determine its impact on Saudi Arabia's otoplasty rates. Cultural beliefs and practices can be intricate and diverse, and individual experiences may differ significantly.

In our study 96% of patients presented to the clinic between 6 and 12 years of age; in contrast, a study performed by Papadopoulos et al<sup>4</sup> found that the age range was 7–68 years. The observed discrepancy in age range can be attributed to disparities in healthcare access and insurance coverage, which may influence the timing of presentation. In countries with limited access or restrictive insurance policies, patients may experience delays in receiving necessary procedures. A significant proportion of patients (33%) encountered delays of nearly a year, with the maximum waiting period extending to 40 years.

### LIMITATIONS

Limitations of this study include that it is a cross-sectional study with convenience sampling, which depends on the expertise and current practice of physicians. Moreover, the survey was self-administered; therefore, there is a possibility of self-selection bias, wherein only interested individuals filled out the questionnaire. Multiple

reminders were sent to minimize this. Furthermore, as the study focused on surgeons, the inability to capture patient perspectives may present an element of bias as compared with qualitative patient reviews.

### CONCLUSIONS

Our study contributes to patient management by identifying key demographic trends and surgical preferences in Saudi Arabia. This can help guide national protocols, especially around early surgical intervention to prevent psychosocial impacts. On an international level, our findings offer a comparative framework that can inform global best practices. Future research should focus on analyzing surgical outcomes in more depth, including longitudinal studies to assess the long-term psychosocial and aesthetic benefits of early intervention, as well as further comparative analysis with global data. As demographics differ from nation to nation, similar studies may be performed worldwide to compare findings.

*Sari M. Rabah, MBBS, FRCSC*

Plastic and Reconstructive Surgery Division

Department of Surgery

King Abdullah bin Abdulaziz University Hospital

Princess Nourah bint Abdulrahman University

Riyadh, Saudi Arabia

E-mail: [Srabah@kaauh.edu.sa](mailto:Srabah@kaauh.edu.sa)

X: @DrSariRabah11

Instagram: @DrSariRabah

### DISCLOSURE

*The authors have no financial interest to declare in relation to the content of this article.*

# ACKNOWLEDGMENT

The authors express their gratitude to all the physicians who dedicated their time and expertise to contribute to this study.

# REFERENCES

1. Plastic surgery statistics report 2020. Available at <https://www.plasticsurgery.org/documents/news/statistics/2020/plastic-surgery-statistics-full-report-2020.pdf>. Accessed June 15, 2024.
2. Sainz Arregui J, Gaviria R, San Sebastian R, et al. Aesthetic otoplasty: the key point. *Eur J Plast Surg*. 1990;13:258–262.
3. Kajosaari L, Pennanen J, Klockars T. Otoplasty for prominent ears—demographics and surgical timing in different populations. *Int J Pediatr Otorhinolaryngol*. 2017;100:52–56.
4. Papadopoulos NA, Niehaus R, Keller E, et al. The psychological and psychosocial impact of otoplasty on children and adults. *J Craniofac Surg*. 2015;26:2309–2314.
5. Jones ES, Gibson JAG, Dobbs TD, et al. The psychological, social and educational impact of prominent ears: a systematic review. *J Plast Reconstr Aesthet Surg*. 2020;73:2111–2120.
6. Songu M, Kutlu A. Health-related quality of life outcome of children with prominent ears after otoplasty. *Eur Arch Otorhinolaryngol*. 2014;271:1829–1832.
7. Bermueller C, Kirsche H, Seibert A, et al. Quality of life and patients' satisfaction after otoplasty. *Eur Arch Otorhinolaryngol*. 2012;269:2423–2431.
8. Binet A, El Ezzi O, De Buys Roessingh A. A retrospective analysis of complications and surgical outcome of 1380 ears: experience review of paediatric otoplasty. *Int J Pediatr Otorhinolaryngol*. 2020;138:110302.
9. Aldosari B, Khan M, Alkarzae M, et al. The public awareness of protruding ears and its management in Saudi Arabia. *Saudi J Otorhinolaryngol Head Neck Surg*. 2022;24:22–26.
10. Gosain AK, Kumar A, Huang G. Prominent ears in children younger than 4 years of age: what is the appropriate timing for otoplasty? *Plast Reconstr Surg*. 2004;114:1042–1054.
11. Ali K, Meaie JD, Maricevich RS, et al. The protruding ear: cosmetic and reconstruction. *Semin Plast Surg*. 2017;31:152–160.
12. Olgun A, Dilber M. Benefits of combined surgical techniques in otoplasty. *Eurasian J Med*. 2022;54:281–284.
13. Naumann A. Otoplasty—techniques, characteristics and risks. *GMS Curr Top Otorhinolaryngol Head Neck Surg*. 2007;6:Doc04.
14. Alencar EC, Lucena JRSD, Carvalho Filho RASD, et al. Surgical correction of prominent ears: association of the Furnas and Mustardé techniques. *Rev Bras Cir Plást*. 2023;30:439–445.
15. Boroditsky ML, Van Slyke AC, Arneja JS. Outcomes and complications of the Mustardé otoplasty: a “good-fast-cheap” technique for the prominent ear deformity. *Plast Reconstr Surg Glob Open*. 2020;8:e3103.
16. Songu M, Adibelli H. Otoplasty in children younger than 5 years of age. *Int J Pediatr Otorhinolaryngol*. 2010;74:292–296.
17. Chen L, Li C, He A, et al. Changes of age-related auricular cartilage plasticity and biomechanical property in a rabbit model. *Laryngoscope*. 2023;133:88–94.
18. Mogl AG, Palackic A, Cambiaso-Daniel J, et al. Conchal excision techniques in otoplasty: a literature review. *Plast Reconstr Surg Glob Open*. 2022;10:e4381.
19. García-Purriños F, Raposo A, Guillén A, et al. Otoplasty using the combined Mustardé-Furnas technique: satisfaction and objective results. *Aesthet Surg J*. 2019;39:NP411–NP415.
20. McGarry KM, Khadim MF, McBride M, et al. Otoplasty: the Belfast experience. A 10-year review of 2333 ear outcomes. *Plast Reconstr Surg*. 2023;151:388e–397e.