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1 **ABSTRACT.**

2 **Background:** Women entering surgical residencies must determine which programs best fit their career and
3 family goals. The purpose of this study was to determine if breastfeeding policies are available on
4 otolaryngology residency program websites.

5 **Methods:** A total of 122 publicly available otolaryngology residency program websites were reviewed for the
6 presence of a breastfeeding policy and lactation information. The percentage of residents and faculty that are
7 women in each program as well as the program's region, size, and affiliation with a top 50 hospital for ear,
8 nose, and throat care were determined. Frequencies and nonparametric analyses were calculated when
9 appropriate.

10 **Results:** None of the otolaryngology residency programs had a breastfeeding policy posted directly on their
11 website. A link to a Graduate Medical Education (GME) website that contained a breastfeeding policy was
12 present on 20 (16.4%) program websites, and 31 websites (25.4%) had information about lactation facilities
13 on the GME website or another page that could be found through the search bar; 17 (23.0%) of the large
14 residency programs contained the link to the GME website, whereas only 3 (6.25%) of the small programs did
15 ($p = 0.015$). Residency programs that were affiliated with a top 50 hospital for ear, nose, and throat care were
16 more likely to have a link to the GME website with a breastfeeding policy than those not affiliated (13 [29.5%]
17 vs. 7 [8.9%], respectively; $p = 0.003$).

18 **Conclusion:** Otolaryngology residency programs do not provide breastfeeding policies directly on their
19 websites.

20
21 **Key Words:** Breastfeeding, residency, otolaryngology, policy, lactation, facility

22

1 **INTRODUCTION.**

2

3 The number of women choosing to have children during residency is on the rise as the timing of residency
4 overlaps prime childbearing years. Residency programs present unique challenges to these women as a
5 result of the established power dynamic rendering them unable to advocate for themselves and their family.

6 The Accreditation Council for Graduate Medical Education (ACGME) has mandated lactation facilities be
7 established in accredited training hospitals,¹ but there is concern regarding compliance with this mandate and
8 the accessibility of the lactation rooms created.

9 To assess the issues surrounding breastfeeding in residency, a national survey was conducted
10 among current and recently graduated residents. This study revealed many barriers to lactation. Although
11 nearly all training hospitals have lactation rooms according to residents, a majority of the lactation rooms are
12 not usable due to location or availability.² Overall, more than two-thirds of respondents reported that residency
13 work obligations limited their ability to lactate.²

14 Within surgical fields similar to otolaryngology, there is a lack of information and resources for
15 breastfeeding available to residents. A recent study found that only 2.8% of the websites for orthopedic
16 surgery residency programs had information about breastfeeding support, with only 1.7% mentioning
17 dedicated lactation facilities.³ A cross-sectional study of obstetrics and gynecology residents similarly found
18 that only 7% believed their program had a breastfeeding policy, even though it was important to 85% of this
19 population of residents.⁴ In addition, two-thirds of breastfeeding residents struggled with low milk supply and
20 stopped breastfeeding early.

21 Pregnant and postpartum women in surgical residencies continue to face a number of barriers,
22 including access to lactation facilities. Many prospective otolaryngology residents determine which programs
23 will best fit their career and family goals by investigating otolaryngology residency websites. The purpose of
24 this study was to determine if breastfeeding policies are available on otolaryngology residency program
25 websites and identify any associations between the presence or lack of policies based on program
26 characteristics.

27

1 **METHODS**

2 ***Subject selection***

3 A list of 125 otolaryngology residency programs in the United States was accessed through the American
4 Medical Association Fellowship and Residency Electronic Interactive Database. Three programs were
5 excluded because they did not have a website linked on the database or they had no information on their
6 webpage. Therefore, 122 publicly available otolaryngology residency program websites were reviewed for the
7 presence of a breastfeeding policy and lactation facility information. This study was considered non-human
8 subject research and exempt from University at Buffalo Institutional Review Board approval.

10 ***Data collection***

11 Five of the authors (AR, LD, MD, KP, and NF) searched for a total of seven different criteria on the websites:
12 presence of a written breastfeeding policy on the otolaryngology residency website, presence of a link to an
13 institutional Graduate Medical Education (GME) website which discussed the lactation policy, presence of
14 information on lactation facility availability, number of residents in the program that are women, total number
15 of residents in the program, number of surgeon faculty that are women, and total number of faculty. The
16 gender identity of the surgeon faculty and residents was ascertained based on appearance in posted photos.

17 Program size was determined based on the number of otolaryngology residents accepted into each
18 program per year. Programs were considered “large” if they accepted 3 or more residents and “small” if they
19 accepted 2 or fewer residents per year; those accepting two to three residents per year were classified as
20 small. The US News and World Report also aided in the classification of each program based on its
21 association, or lack of association, with one of the top 50 ranked hospitals for ear, nose, and throat (ENT)
22 care; only 2 of the 50 hospitals did not have an associated residency program. The location of each program
23 was categorized as Northeast, Midwest, West, or South according to the US Census Bureau classification.⁶

25 ***Data analysis***

26 Frequencies and nonparametric comparisons were calculated when appropriate with SPSS version 27 (IBM
27 Corporation, Armonk, NY). The methods of this study were based on a prior study that evaluated
28 breastfeeding criteria on orthopedic residency program websites.³ A p value of <0.05 was considered
29 statistically significant.

30

1 **RESULTS.**

2

3 Information on the residency program region, size, and affiliation with a top 50 otolaryngology hospital
4 (according to US News and World Report⁵) can be found in Table 1. The mean number of residents per year
5 was three. Table 2 shows the gender distribution of residents and surgeons at the residency programs
6 analyzed. Based on photos provided on the majority of the otolaryngology residency program websites, a
7 mean of 38.3% of the residents at each program were women and a mean of 25.2% of the otolaryngologist
8 faculty were women.

9 Information on breastfeeding policies was not directly available on any of the otolaryngology
10 residency program websites. A link to a GME website that contained a breastfeeding policy was present on 20
11 websites (16.4%), and 31 websites (25.4%) had information about lactation facilities on the GME website or
12 another page that could be found through the search bar on the residency program website. No statistically
13 significant relationship was found between the number of residents and otolaryngologists that were women
14 and the presence of breastfeeding or lactation policies on the otolaryngology residency program websites ($p >$
15 0.05).

16 The number of otolaryngology residency programs characterized by region, large or small program,
17 and affiliation with a top 50 hospital can be found in Table 3. Large residency programs were significantly
18 more likely to contain the link to a GME website with breastfeeding policy information ($p = 0.015$). There were
19 17 (23.0%) large programs that contained the link compared to 3 (6.25%) of the small programs. Residency
20 programs that were classified as a top 50 hospital for ENT care were also statistically more likely to have the
21 link to the GME website ($p = 0.003$). There were 13 (29.5%) top 50 hospitals that had the link compared to 7
22 (9.0%) of the programs that were not in the top 50. There was no significant relationship between the
23 residency program's region and the presence of a link to breastfeeding and lactation facility information ($p >$
24 0.05).

25

26

1 **DISCUSSION.**

2

3 Women in surgical residencies continue to face a number of barriers, including sufficient time for parental
4 leave, access to lactation facilities, and difficulty finding childcare.⁷ A 2020 survey of 312 female residents
5 found that only 21% reported access to usable lactation rooms and 73% indicated that residency activities
6 limited their ability to lactate.¹ Thus, to determine whether otolaryngology residency programs have addressed
7 this lack of support, this study sought to determine if breastfeeding policies are available on otolaryngology
8 residency program websites.

9 Not a single one of the 122 otolaryngology residency program websites that were analyzed in this
10 study contained a breastfeeding policy directly on their website. This suggests that applicants and residency
11 program directors do not believe that breastfeeding policies are relevant to the interview process. Kraus et al.⁸
12 recently highlighted the clear disconnect between what residency program directors believe applicants want to
13 see during the recruitment process and what applicants actually want: 37% of residency program directors
14 believed that parental leave policies were not relevant, whereas 92% of residency applicant respondents
15 reported that they would prefer parental leave policies to be formally addressed during their interview. Our
16 data suggest that this disconnect extends to the desire to see breastfeeding policies on residency websites.

17 It is important to note that the majority of the residency program directors included in the
18 aforementioned study were male, and the results may have differed if more residency program directors that
19 are women were surveyed. Wynn et al.³ found that the odds of having a written breastfeeding policy on
20 orthopedic surgery residency websites increased with the number of female attendings (odds ratio, 1.1, $p =$
21 0.01). However, our study found no statistically significant relationship between the presence of breastfeeding
22 policies and the number of otolaryngology residents and faculty members that were women. This may be due
23 to the fact that the number of otolaryngology and orthopedic surgery faculty and residents that are women still
24 does not match the number of residents and faculty that are men in both specialties.

25 Wynn et al.³ found an average of two female attendings per program (range 0–19). In this study,
26 women made up a mean of only 25.2% of otolaryngologist faculty members and a mean of 38.3% of
27 otolaryngology residents at each institution. A cross-sectional analysis of otolaryngology data in 2019
28 revealed that 34.7% of residents and 24.5% of faculty were female and only 5 (4.2%) department chairs and
29 31 (26.5%) residency program directors were female.⁹ Thus, the differences in outcomes between our study
30 and those of the study of orthopedic surgery residency websites by Wynn et al.³ may be attributed to the low
31 number of faculty and residents that are women in these programs that makes it difficult to find a precise and

1 accurate statistical relationship between breastfeeding information and number of attendings and residents
2 that are women.

3 Notably, the websites for larger otolaryngology residency programs as well as those affiliated with a
4 hospital listed among the top 50 for ENT care were more likely to have a link to a GME website with
5 breastfeeding policy information. This may reflect the extra resources and greater attention to educational
6 policies at larger and more well-known hospitals. Moreover, larger programs have more residents and thus a
7 greater likelihood for pregnant residents. A qualitative study of three female otolaryngology residents who had
8 given birth within the past 12 months at a single institution found that all residents reported mild dissatisfaction
9 regarding privacy and facilities for breastfeeding.¹⁰ Additionally, these residents reported that they did not
10 attempt to remedy the situation until after the postpartum period; however, once it was brought to the program
11 director's attention, a private, secure lactation room was provided.¹⁰ This suggests that advocacy plays a
12 critical role in policy changes. Therefore, the first step residency programs can take is to openly advertise
13 breastfeeding policies on a publicly available platform. Next, establishing a strong foundation of open
14 communication at the start of residency training can lead to a positive environment for trainees seeking
15 breastfeeding accommodations. Lastly, the findings of this study suggest that amplifying the concerns of
16 pregnant otolaryngology residents through the support of female otolaryngologist faculty could positively
17 impact the expansion and visibility of breastfeeding policies on otolaryngology residency program websites.

18 19 **Limitations**

20 The format of each otolaryngology residency program website varied, and this study only looked for criteria
21 available directly on the program website or through a search tab or GME website link. Thus, breastfeeding
22 policies may have been present elsewhere on the hospital website. The number of surgeons and residents
23 that were women was determined solely on the basis of their appearance, which can be biased and
24 inaccurate. Additionally, an individual's physical presentation as a woman does not always align with one's
25 ability or desire to breastfeed or carry a child. Thus, the authors acknowledge that this is a main limitation of
26 the study and the number of women in each program may be an overestimate of individuals interested in
27 breastfeeding their children. Future studies that assess gender as well as a desire to breastfeed a child in a
28 more accurate way, potentially through a cross-sectional survey, should be considered. This study also did
29 not look at residency program websites of specialties other than otolaryngology. While similar themes may
30 exist across surgical specialties, this can not be ascertained from the present study.

31

1 **Conclusion**

2 Otolaryngology residency programs do not provide breastfeeding policies directly on their websites. Program
3 support for breastfeeding and resident success in breastfeeding in otolaryngology programs is unknown.
4 Additional research is necessary to see if applicants desire to have these policies on program websites.
5

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1 **FIGURES AND TABLES.**

2 **Table 1.** Characteristics of the 122 Otolaryngology Residency Programs

Characteristic	N (%)
Region	
Northeast	32 (26.2)
South	36 (29.5)
West	33 (27.0)
Midwest	21 (17.2)
Program size	
Large (>3 residents/year)	74 (60.7)
Small (<3 residents/year)	48 (39.3)
Affiliated with a top 50 USNWR-ranked hospital for ENT care	
Yes	44 (36.1)
No	78 (63.9)

3 ^aENT, ear, nose, and throat; UNSWR, United States News & World Report

1 **Table 2.** Representation of Women at Residency Program Institutions

Category	Mean value
Otolaryngology residents per year at each institution (<i>n</i>)	3.0
Residents in the otolaryngology residency program that are women (<i>n</i> [%])	6.0 (38.3)
Attending otolaryngologists at the institution that are women (<i>n</i> [%])	5.5 (25.2)

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- 1 **Table 3.** Otolaryngology Residency Programs with Lactation Policies or a Link to a Graduate Medical Education
- 2 Website with Breastfeeding Policies

Characteristic	Lactation Policy Present	
	On website or by search tab <i>N (%)</i>	Via link to institutional GME website <i>N (%)</i>
Region		
Northeast	7 (21.9)	3 (9.4)
South	11 (30.6)	9 (25)
Midwest	6 (18.2)	5 (15.2)
West	7 (33.3)	3 (14.3)
Program size		
Small (<3 residents/year)	14 (31.82)	13 (29.5)
Large (≥3 residents/year)	17 (21.8)	7 (8.9)
Affiliated with a top 50 USNWR-ranked hospital for ENT care		
Yes	20 (27.0)	17 (23.0)
No	11 (22.9)	3 (6.3)

- 3 ^aENT, ear, nose, and throat; UNSWR, United States News & World Report