



# Women's representation at Turkish endodontic society meetings

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**Purpose:** This observational study aimed to evaluate the percentage of women invited to speak or present oral presentations at the Turkish Endodontic Society's scientific meetings over a 10-year period (2014–2024).

**Methods:** The number of male and female keynote or oral presentation speakers from the society's scientific meetings was recorded. Gender distribution and yearly ratios were analyzed using SPSS 25 with Binomial test, Chi-square, and Fisher's Exact test ( $p < 0.05$ ).

**Results:** A total of 136 speakers from the Turkish Endodontic Society's scientific meetings between 2014 and 2024 were analyzed. Of these, 103 (75.7%) were men, and 33 (24.3%) were women, highlighting a significant gender disparity ( $p < 0.001$ ). No significant change was observed in the proportion of women speakers over the analyzed timeframe ( $p = 0.134$ ).

**Conclusion:** Regardless of the timeframe, the number of women speakers at scientific meetings organized by the Turkish Endodontic Society remains consistently lower than that of men. While the proportion of women presenting oral sessions was relatively higher, their representation as keynote speakers on the main stage consistently remained low throughout the analyzed period.

**Keywords:** Endodontics; gender disparity; presenter; speaker; women representation.

## Introduction

Gender equity is not only a fundamental human right (1) but also a key determinant of health and economic development (2). However, societal norms influenced by gender inequality continue to pose challenges to the healthcare sector worldwide (3). These disparities often arise from ingrained social values, biases within healthcare and education systems, and implicit or explicit gender-related influences in scientific research. This issue remains prevalent, particularly in fields such as health and medical sciences (2). These inequalities are also clearly evident in dentistry and dental research (4). The World Health Organization

(WHO) defines gender as the socially constructed roles, behaviors, and norms associated with women, men, girls, and boys, which vary across cultures and over time (5).

Despite the increasing participation of women in dental education globally, only 30% to 40% of registered dentists in Europe, Oceania, Asia, and Africa are women (6). Similarly, although the representation of women in academia has improved, full gender equality has not yet been achieved in dental research or professional career pathways (7). Systemic barriers, such as the lack of mentorship, limited peer support, and biases in leadership selection hinder women's advancement. These challenges are compounded

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by stereotypes and implicit biases, reflecting the struggles faced by other underrepresented groups (8,9).

Particularly in academic leadership positions and among recipients of competitive research grants, the proportion of women remains significantly low (10). Individuals who serve as role models for underrepresented groups in science contribute substantially to their fields by holding influential positions such as key opinion leaders, deans, or department chairs (11-13).

Women's leadership is crucial for organizational success and societal progress, especially in dentistry, where they introduce innovation and inclusive leadership styles (8). Despite these contributions, gender disparities persist, limiting women's access to senior academic roles and reducing their visibility as role models (14,15). Moreover, restricted speaking opportunities reinforce stereotypes of male dominance and discourage women from pursuing leadership (16,17).

In dentistry, leadership frequently involves engagement in professional organizations through committee work, authoritative roles, and speaking engagements (16). Public

speaking, particularly at conferences hosted by global organizations, serves as a critical avenue for building credibility, fostering collaboration, and inspiring individuals from similar backgrounds (18,19).

Given the significance of role models in advancing women and underrepresented minorities, this study examines the representation of women as oral presenters and invited speakers on the main stage at Turkish Endodontic Society meetings. It further investigates whether their representation has changed significantly over the past decade. The null hypothesis posits no significant differences in the number of male and female speakers, either as oral presenters or as invited speakers, over time.

## Materials and Methods

### Study Design

This study followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines to maintain methodological clarity and transparency (20,21) (Fig. 1).



Fig. 1. Study methodology flowchart.

Selection Criteria

This study focused on the Turkish Endodontic Society’s congresses and symposiums held over the past 10 years. These events were selected based on their relevance to the study objectives, their inclusion of diverse endodontic topics, and their role in bringing together national and international speakers.

Data Collection

A total of eight events organized by the Turkish Endodontic Society were reviewed, comprising four congresses and four symposiums held between 2014 and 2024. These events alternated annually, with congresses held in one year and symposiums in the next. The analysis included two categories: oral presentations and main-stage invited keynote speeches. Oral presentations, which encompass short conferences, were evaluated separately as they were submitted through individual applications. In contrast, main-stage invited keynote speeches were analyzed independently. Moderators, panelists, country representatives, and speakers participating in poster presentations, award acceptance speeches, opening/closing ceremonies, and competitions were excluded from the analysis.

Gender Identification

Speaker gender was identified using details from the scientific programs of each event. Gender was determined primarily through photographs, and when these were unavailable or unclear, biographical information was sourced through Google searches for confirmation.

Statistical Analysis

Data analysis was performed using IBM SPSS Version 25. One sample Binominal test was applied to compare the ra-

tios of male to female speakers, and presenters. Chi-square and Monte Carlo corrected Fisher’s Exact tests were used to analyse gender distribution by years. Statistical significance was set at  $p < 0.05$ .

Results

Between 2014 and 2024, 136 speakers on main stage meeting the inclusion criteria were analyzed from the Turkish Endodontic Society organization. A significant gender disparity was observed over this 10-year period ( $p < 0.001$ ). Of the 136 speakers on main stage, 103 (75.7%) were men, while 33 (24.3%) were women (Table 1).

Between 2014 and 2024, 591 presenters meeting the inclusion criteria were analyzed from the Turkish Endodontic Society organization. A significant gender disparity was observed over this 11-year period ( $p < 0.001$ ). Of the 591 presenters, 380 (64.3%) were women, while 211 (35.7%) were men (Table 2).

No significant difference in gender distribution for speakers was observed across the years ( $p = 0.134$ ). The proportion of male and female speakers are listed in the Table 3.

A significant difference in gender distribution for oral presenters was observed across the years ( $p < 0.001$ ). The proportion of male and female presenters are listed in the Table 4.

Discussion

The null hypothesis, which proposed no significant difference in the number of male and female speakers over time at Turkish Endodontic Society events, was partially rejected. Statistical analysis revealed that oral presentations favored women, while main-stage invited speeches displayed a male-dominated trend. Also over the ten-year

Table 1. Comparison of male and female speakers on main stage ratios over a 10-year period

Gender	Frequency (n)	Percentage (%)	Test Statistic	p*
Male	103	75.7	33.000	< 0.001
Female	33	24.3		
Total	136	100		

\*One sample Binominal Test.

Table 2. Comparison of Male and Female Presenters Ratios Over a 11-Year Period

Gender	Frequency (n)	Percentage (%)	Test Statistic	p*
Male	211	35.7	380.000	< 0.001
Female	380	64.3		
Total	591	100		

\*One sample Binominal Test.

**Table 3.** Gender distribution by year for speakers on main stage

Year	Meeting Type	Male	Female	Test Statistic	p
2014	Congress	7 (50%)	7 (50%)	11.655	0.134
2015	Symposium	8 (88.9%)	1 (11.1%)		
2016	Congress	6 (54.5%)	5 (45.5%)		
2017	Symposium	10 (90.9%)	1 (9.1%)		
2018	Symposium	15 (88.2%)	2 (11.8%)		
2019	Congress	32 (78%)	9 (22%)		
2022	Symposium	7 (87.5%)	1 (12.5%)		
2023	Congress	11 (78.6%)	3 (21.4%)		
2024	Symposium	7 (63.6%)	4 (36.4%)		
Total		103 (75.7%)	33 (24.3%)		

\* Monte Carlo Corrected Fisher's Exact Test, Frequency (Percentage)

**Table 4.** Gender distribution by year for presenters

Year	Meeting Type	Male	Female	Test Statistic	p
2014	Congress	32 (54.2%)	27 (45.8%)	52.176	<0.001
2015	Symposium	9 (64.3%)	5 (35.7%)		
2016	Congress	41 (56.9%)	31 (43.1%)		
2017	Symposium	13 (36.1%)	23 (63.9%)		
2018	Symposium	29 (37.7%)	48 (62.3%)		
2019	Congress	43 (37.1%)	73 (62.9%)		
2022	Symposium	13 (17.3%)	62 (82.7%)		
2023	Congress	18 (26.1%)	51 (73.9%)		
2024	Symposium	13 (17.8%)	60 (82.2%)		
Total		211 (35.7%)	380 (64.3%)		

\* Monte Carlo Corrected Fisher's Exact Test, Frequency (Percentage).

period, no significant change was observed for main-stage invited speeches, while an increasing trend was found for female speakers in oral presentations. Although the Turkish Endodontic Society has 313 male and 538 female registered members, which provides valuable demographic insight, it is important to note that not all endodontists in Turkey are necessarily registered with the society, presenting a potential limitation.

This study analyzed the scientific meetings organized by the Turkish Endodontic Society between 2014 and 2024, including both congresses and symposiums. No distinction was made between these event types, as both are considered key scientific gatherings of the society. Due to the COVID-19 pandemic, no congresses or symposiums were held in 2020 and 2021 in Turkey. Despite this interruption, trends in female representation were evaluated across the available years within the study period. Table 3 and Table 4 outlines the years in which these events took place. The average female representation among main stage

speakers during the evaluated years was 24.3%, reflecting a significant gender imbalance. Similar trends have been observed in other academic (22), medical (23) and dental fields (14,24) such as prosthodontics (25), orthodontics (26). A study analyzing 14 conferences found that female representation was generally low, with only three events classified as gender-balanced, including endodontics (14). However, our study did not confirm a balanced representation in endodontic conferences. Consistent with this pattern, a study in orthodontics also confirmed a significant gender disparity among invited speakers at annual conferences, while no significant gender differences were observed in oral presentations (26). These findings align with the results of our study.

Our analysis revealed significant gender differences in representation during the study period. Women were more frequently represented in oral presentations, while men predominated in main-stage invited speeches. This disparity highlights the contrasting dynamics between individually driven submissions for oral presentations and com-

mittee-selected main-stage speakers. Oral presentations, being based on personal initiative, tend to show greater gender diversity. In contrast, the selection of main-stage speakers, managed by scientific program committees predominantly led by men, perpetuates male dominance in key speaking roles (25). It has been previously reported that an increased representation of women on medical conference organising committees may have a positive impact on the gender balance of invited speakers (27).

The persistent underrepresentation of women in dentistry reinforces gender inequities in leadership (15). Achieving gender equality requires balanced representation in scientific organizations and decision-making processes. This begins with recognizing existing disparities and implementing targeted policies to promote inclusivity. Clear guidelines for speaker selection and leadership appointments, along with efforts to raise awareness of diversity's value, can enhance equitable participation.

Incentives are also essential. Offering benefits such as prestige, financial support, and professional growth opportunities can encourage organizations to prioritize gender diversity (13). Enforcing accountability measures, such as reputational consequences for failing to meet diversity standards, is crucial for driving meaningful change. The lack of structured incentives and accountability has significantly slowed progress in addressing gender imbalances.

By implementing targeted strategies, dental organizations can expand career opportunities for women while strengthening the field through a more diverse workforce, improved research outcomes, and enhanced education. A key step toward gender equity is ensuring that the proportion of female speakers reflects their representation in the field. This approach not only addresses immediate disparities but also paves the way for long-term leadership opportunities, fostering an inclusive and balanced scientific community.

## Conclusion

This study revealed a persistent gender imbalance in speaker representation at Turkish Endodontic Society meetings, with women favorably represented in oral presentations but underrepresented on the main stage. While no significant changes were observed in the representation of invited speakers over the selected time frame, an increasing trend in female participation was noted in oral presentations. These findings highlight the need for targeted efforts to further promote gender equity in conference representation.

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