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ORIGINAL RESEARCH

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Comparing women senior leadership positions in gynaecologic oncology in Israel and the United States, a cross-sectional study

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Abstract

In Israel, despite increasing numbers of women in medical training, there remains a scarcity of female representation in leadership positions within academic medicine. This cross-sectional study investigates the proportion of women holding departmental chair positions in Gynecologic Oncology in Israel and conducts a comparative analysis with the United States (USA) in 2022. Data was gathered from Internet websites regarding personnel staff and chair positions in Gynecologic Oncology departments in Israel and from USA medical centers with Gynecologic Oncology Fellowship programs reported by the Society for Gynecologic Oncology (SGO). The representation of women in chair positions in Israel was lower compared to the USA, 4 (19.0%) *vs.* 28 (45.9%), Odds Ratio 95% Confidence Interval 0.27 (0.08–0.92), $p = 0.038$. The findings highlight a significant gender disparity in senior Gynecologic Oncology positions in Israel compared to the USA, necessitating a thorough investigation of the underlying reasons and the implementation of efforts to address this gender bias and promote gender equality in Gynecologic Oncology and across all fields of medicine.

Keywords

Women; Adequate representation; Leadership; Equality

1. Introduction

It is established that representation of women in medical department chair roles is lower than that of men [1–3]. Although there are nearly equal proportion of women and men among medical school students and residents, women are only approximately 15% of the department chairs [4].

Previous studies have noted gender disparities in advancements of practitioners to leadership positions in Obstetrics and Gyneacology [5, 6], concluding that women remained underrepresented in the departmental roles of chair, vice chair, division director and fellowship director. Furthermore, it was previously shown that Obstetrics and Gynecology is behind other specialties in progression of women to departmental leadership roles [4].

Therefore, it is interesting to note that women outnumber men in academic Obstetrics and Gyneacology, which has the highest proportion of female faculty members among all clinical specialties [7].

In Gyneacologic Oncology (GO), it was recently shown that the number of female first authors in published manuscripts increased markedly however, male last authors still outnumber female last authors [7]. Nevertheless, data regarding the chair roles of women in GO departments is scarce.

In Israel, previous reports have evaluated the feminization of the medical profession [8, 9]. Furthermore, female gender was found to be negatively associated with the number of study publications, while leadership role was positively associated with the number of publications [10]. Although a recent study has evaluated the gender leadership in professional societies of GO [11], the leadership at the level of the clinical and academic units is less clear.

Considering the above mentioned, we aim to study the proportion of women in chair roles in GO in Israel and to compare it to other places of practice. We chose to compare the real-life women representation in Israel to the United States, as the later leads the GO worldwide [12]. We hypothesize that Israel will have more gender disparity when compared to the United States.

2. Materials and methods

2.1 Data collection

This is a cross sectional study. Leadership position was defined as department chair at academic institutions. To construct a representative sample, we included all the departments registered within the Israeli Society of Gynecologic Oncology (ISGO) and the departments with a formal Fellowship in GO registered at the Society of Gynecologic Oncology (SGO) in the United States. Publicly available data were accessed—

academic departments, professional society websites—to determine the name and gender of the individuals holding the chair position. All searches were conducted between 01 March and 31 May 2022.

The primary outcome measure was the percentage of women in department chair position out of whole GO units examined (the denominator was the total number of departments examined and the numerator was the number of women in chair positions).

The proportion of department chair positions that would be expected to be occupied by women based purely on sex distribution was determined using a publicly available database from the National Residency Matching Program, which lists the number of men compared with women entering Obstetrics and Gyneacology residency and the publicly available data of residency program in Israel. Expected female department managers was determined by calculating the percentage of Obstetrics and Gyneacology residents (females) by total number of departments. The actual proportion of department chair positions held by women was then calculated. Actual proportions were then compared with expected proportions of chair positions held by women.

2.2 Statistical analysis

The data were analyzed using Software Package for Statistics and Simulation (IBM SPSS version 28, IBM Corp, Armonk, NY, USA).

The Chi square and Fischer exact tests were performed to determine statistical significance which was defined as $p < 0.05$. We assumed that a time of 23 years is sufficient for advancement to the department chair position [4, 13].

3. Results

Overall, we included twenty-one medical centers in Israel and sixty-one Gyneacologic Oncology departments in the USA. The representation of women in chair positions in Israel was lower compared to the USA, 4/21 (19.0%) *vs.* 28/61 (45.9%), Odds Ratio 95% Confidence Interval 0.27 (0.08–0.92), $p = 0.038$ (Fig. 1). Examining expected women's representation versus observed (Table 1) women's representation in department chair position in GO is significantly higher than expected in the United States. In Israel, the representation of women is similar to what is expected.

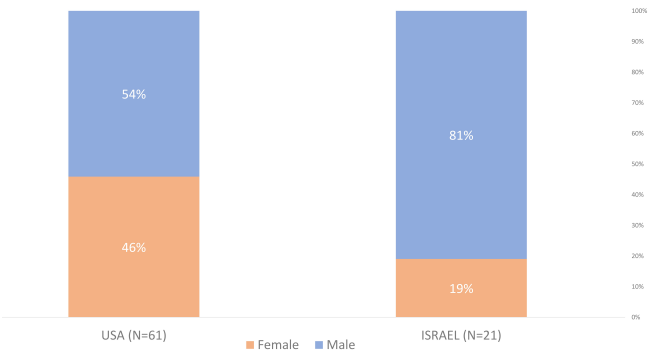

FIGURE 1. The representation of women in leadership positions in Israel compared to the USA.

4. Discussion

Gender diversity in healthcare is crucial for creating inclusive and equitable environments. Recent studies have shown that diverse teams outperform homogenous ones, bringing varied perspectives and better decision-making. [14]. Furthermore, there is a discussion regarding the equitable target percentage for women in management positions [15]. Across medical specialties, the proportion of women in academic department leadership is lower than those of male [3, 5, 6]. Nowadays, women comprise nearly half of medical school students and residents [6], however this trend is different from that couple of decades ago [16, 17], therefore, when examining leadership roles, a care should be noted for the proportion of women in medicine at the proper time for reference, *e.g.*, two decades ago. In Israel of 2000, women composed 41.9% of doctors in Israel, and they accounted for 16% of obstetricians and gynecologists [18]. Data from the Unites Stated demonstrated that female GO in 2000 were 22% of GO. Therefore, from a similar proportion of females in gynecology/GO two decades ago, we can see that the current female chair positions in GO are significantly higher while in Israel the female chair department proportion is similar to the proportion of females 22 years ago, in the United States, the leadership proportion of women is double their proportion 22 years ago.

It is evident that while in the United States the percentage of female department chairs in GO is much higher than expected, in Israel—the representation is quite as expected. This should highlight the there is much to be done in terms of gender equality in GO in Israel and learning from the progress made in the United States should be performed. It is suggested that many factors may contribute to this stagnation in Israel in Comparison to the progress made in the United States. The cultural differences, heterogeneity of populations and Israel being a young country are just some of the multifactorial explanations for this stagnation. Culturally wise, it is possible that the society in Israel is more patriarchal and there are more basic issues with inequity, posing challenges on women to achieve leadership positions.

The proportion of women who advance leadership positions remains lower than that of men [19]. Assuming women and men should progress equally to leadership positions, female representation in leadership positions should be proportional to their historical ratio at residency. Assuming equal progression opportunities for women and men to leadership positions, the representation of females in such roles should align with their historical ratio at residency. Considering a standard advancement period of two decades to department chair positions, based on the data presented for Israel and the United States, we would anticipate female representation in chair positions in Israel to be similar to that in the United States. Regrettably, the actual situation diverges significantly from this expectation.

Our study provides a clear depiction of the proportion of women in department chair roles in GO. Consistent with our hypothesis and expectations, the findings demonstrate that women in Israel are underrepresented in these positions. Interestingly, Israel is ranked 33rd out of 162 countries on the Gender Inequality Index, while the United States is ranked 46th. It could be suggested that this disparity between the advancement

TABLE 1. Comparison of observed and expected female department managers in Gyneacologic Oncology.

State	No. of departments	Female department managers expected*	Female department managers observed	*p*-value
Israel	21	3 (16%)	4 (19.0%)	0.333
United States	61	13 (22.0%)	28 (45.9%)	<0.001

**Expected female department managers determined by calculating the percentage of Obstetrics and Gyneacology residents (females) by total number of departments.*

in the United States and the dis-advancement in Israel is a lack of role models during the past decades in the field of GO of female gender, but possibly, as Israel population is composed of heterogeneous cultural and religious population, it is possible that personal expectations and choices regarding work and family life balance in Israel are different than in the United States. We chose to compare the gender leadership in GO in Israel to the United States as the last represents one of the most advanced places with GO care and host the National Comprehensive Cancer Network (NCCN) and other major research group as the Gynecologic Oncology Group (GOG) and also is a model for advancement and progress made in gender equality [20]. Since 2012, the first year in which women comprised more than half of practicing fellows in the American College of Obstetrics and Gynecology, much have progressed and today 83% of residents in Obstetrics and Gyneacology in the United States are female [21]. Nevertheless, a recent study has found that women continue to be underrepresented in administrative leadership positions and that compared with 2012, there has only been a 9% increase in proportion of women chairing obstetrical and gynecological departments [5].

Gender barriers are limitations that individuals face due to their gender, particularly access opportunities. These barriers arise from social norms and biases that perpetuate unequal opportunities or treatment based on gender identity. In the context of employment, gender-based discrimination manifests as limiting career progression, pay gaps and can hinder individuals from realizing their full potential in the workplace. Prejudicial conceptions can restrict individual choices. For example, the belief that certain jobs are more suitable for one gender than another can prevent individuals from pursuing their desired careers. These barriers can also result in restricted educational access and limited access to health services [22]. Addressing gender barriers becomes a serious matter of equity, and every effort should be made in order to create a gender-equal environment.

Our study has limitations. First, it focuses on a subspecialty of Gyneacology, which demands high surgical skills and oncological mental aspects. It is possible that the situation in other fields of Obstetrics and Gyneacology could be different. Second, we have compared only two nations. Comparing two heterogeneous populations is a great limitation. It is possible that comparison of Israel to a more similar nation geographically and socio-economically and possibly culturally—would have led to different results. We did not analyze data in a historical prism, rather represent a current analysis of data. Moreover, it is possible that a range of factors, which are unaccounted for in this paper could explain the variation as there are many issues that influence the promotion of women to leadership positions. Further research guided at identifying the differences between the populations and identifying sources for disparity should take place.

It should be noted that clinical research and academic scientific publications in GO are more advanced in the United States, which could also influence the results.

5. Conclusions

In summary, this study highlights a significant underrepresentation of women in department chair roles in Gyneacologic Oncology in Israel. Embracing gender diversity in healthcare organizations can unlock diverse talents, enhance patient care, and foster innovation. Creating a supportive culture that values and empowers all genders in healthcare settings is essential to achieve gender equality, as the current situation is unacceptable. Acknowledging the gender disparity is the initial step towards attaining proportionate representation of women as senior leaders, and regulatory measures such as legislation may be necessary to promote gender equality in the healthcare sector.

ABBREVIATIONS

GO, Gyneacologic Oncology.

AVAILABILITY OF DATA AND MATERIALS

All Open source and public.

AUTHOR CONTRIBUTIONS

RA—project development, data collection and analysis, manuscript writing, infographics; TP—project conceptualization, manuscript writing review, and editing, final approval; BB—investigation, manuscript writing, review, and editing, final approval; RM—investigation, manuscript writing and editing, review, final approval; LK—investigation, manuscript writing and editing, final approval; PAG—data collection, manuscript writing and editing, final approval; GL—project development, study design, data collection and statistical analysis, manuscript drafting and writing, final approval.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study involves publicly available data and there was no need for an approval from an Institutional Review Board.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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