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Social factors as career obstacles for female oral and maxillofacial surgeons in three Middle Eastern countries

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Abstract. Despite the feminization of dentistry in many areas of the world, female representation in the field of oral and maxillofacial surgery (OMFS) is poor. The purpose of this study was to identify factors perceived by female oral and maxillofacial surgeons in Egypt, Jordan, and Saudi Arabia as being obstacles to their career progression and to compare them to factors identified by their male colleagues. This was a cross-sectional questionnaire-based study. A Google Forms questionnaire was designed to collect data on socio-demographics and perceived career obstacles in OMFS. This was distributed to oral and maxillofacial surgeons in Egypt, Jordan, and Saudi Arabia. Statistically significant differences between the genders were evident in terms of marital status ($P = 0.001$), spouse's education ($P = 0.005$), and spouse's occupation ($P < 0.001$). When compared to male surgeons, female surgeons more often considered that their spouse's occupation hindered their career progression ($P < 0.001$). Female surgeons, but not male surgeons, perceived sexism and social factors such as marriage, children, and the attitudes of society to be major career obstacles ($P < 0.005$). In conclusion, female maxillofacial surgeons in some Middle Eastern countries were found to have different socio-demographic characteristics compared to their male colleagues and they considered sexism, marriage, children, and the attitudes of society to be major career obstacles.

Key words: career; gender; female; obstacles; oral and maxillofacial surgery; social.

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Oral and maxillofacial surgery (OMFS) is an attractive career that is considered to be intellectually interesting and that has an impact on patient lives[1]. Consequently, it is cited as the leading career choice among undergraduate dental students, particularly for male students[2,3]. These observations, however, have to be set against the emergence of a large representation of females within the profession[4], the so-called feminization of dentistry. Within the Arabic region, this trend is considered to be advantageous, not least to meet the growing oral healthcare needs of women who are encouraged by cultural norms to receive healthcare from female clinicians[5,6]. Furthermore, there is a high prevalence of poor oral health among women in certain parts of the Arabic world[7,8], and this is compounded by increased oral health risk behaviours like the use of

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tobacco products. Qualified healthcare professionals in tobacco cessation and the management of tobacco-induced oral lesions are, therefore, essential[9].

In recent years, the political turbulence in the region has resulted in an increased demand for the surgical specialties, primarily to manage trauma and war-related morbidities. Whilst females have joined all of the dental specialties, OMFS is the least popular compared to other non-surgical specialties such as restorative and paediatric dentistry. This is reflected in the OMFS workforce. For example, according to the records of the Jordanian Dental Association, Jordanian women constitute 14% of the total OMFS workforce. The factors that contribute to this phenomenon warrant further investigation and the career obstacles perceived by female OMFS surgeons need to be identified.

The purpose of this study was to investigate the perceived career obstacles of female OMFS surgeons and to examine whether they differ from those of their male counterparts. The long-term aim was to provide an understanding of factors contributing to weak participation of females in the OMFS workforce and to establish a baseline for future work on the growth and advancement of this career in Arabic-speaking countries.

Materials and methods

A study tool in the form of a pre-tested survey questionnaire was developed to explore career-related factors. A pilot test was performed to ensure clarity and reproducibility. The questionnaire consisted of two sections composed of closed-ended questions related to socio-demographic factors (with an emphasis on spouse aspects) and self-perceived career obstacles. The questionnaire was written in English using Google Forms and was distributed to OMFS surgeons in Egypt, Jordan, and Saudi Arabia. Two rounds of data collection were undertaken in June and December 2017, with the completion of this process in March 2018.

Ethics

The study was conducted in accordance with the World Medical Association Declaration of Helsinki. Ethical approval was obtained from the Faculty of Dental Medicine, Al-Azhar University, Egypt.

Statistical analysis

The data analysis was conducted using IBM SPSS for Windows software, version 21 (IBM Corp., Armonk, NY, USA). Cross-tabulation with Fisher's exact test was used to calculate the significance of associations between gender and socio-professional characteristics, marital attributes, and factors perceived as career obstacles. $P \leq 0.05$ was viewed as statistically significant.

Table 1. Socio-professional characteristics of the study sample and statistical significance of differences between the genders.

Socio-professional characteristics	Male	Female	*P*-value[a]
Age group (years)			0.070
<30–39	37 (52.9%)	30 (75%)	
40–49	20 (28.6%)	5 (12.5%)	
50–60	13 (18.5%)	5 (12.5%)	
Professional experience (years)			0.346
<5	31 (44.3%)	16 (40.0%)	
5–10	12 (17.1%)	7 (17.5%)	
>10	27 (38.6%)	17 (42.5%)	
Country of employment			<0.001*
Jordan	21 (30%)	5 (12.5%)	
Saudi Arabia	36 (51.4%)	13 (32.5%)	
Egypt	13 (18.6%)	22 (55%)	
Country of OMFS specialization			<0.001*
Jordan	15 (21.4%)	6 (15%)	
Saudi Arabia	8 (11.4%)	7 (17.5%)	
Egypt	20 (28.6%)	25 (62.5%)	
Western Europe	19 (27.2%)	2 (5%)	
Eastern Asia	8 (11.4%)	0 (0%)	

OMFS, oral and maxillofacial surgery.
[a] A *P*-value of <0.05 indicates statistical significance (*).

Results

One hundred and ten of a total) 588 (18.7%) surgeons in the three countries responded; 70 (63.6%) were male and 40 (36.4%) were female. The mean age of the participants was 39.2 ± 9.0 years (range 25–60 years). Their average number of years of professional experience was 9.36 ± 9.1 years (range 0–35 years).

The participants are described by age, years of experience, country of employment, and country of specialization in Table 1.

The genders were compared according to their age, years of experience, country of employment, and country of specialization. There was a statistically significant difference between the genders with regard to the country where they obtained their specialization ($P = 0.001$); only a minority of female surgeons obtained specialization in Western Europe compared to a substantial proportion of male surgeons. Further, there was a statistically significant difference between the genders regarding the country of employment ($P < 0.001$), with most female surgeons practicing in Egypt and most male surgeons working in Saudi Arabia (Table 1).

Gender differences were evident with respect to the marital status of the participants, the education and occupation of the participants' spouses, and the perception as to whether the spouse's occupation had influenced the surgical career of the participants (Table 2).

A substantial proportion of female surgeons were either single or divorced compared to a minority of male surgeons. Most female surgeons were married to men with a postgraduate level of education; by contrast, male surgeons were most often married to women with a university degree. Fifty percent of male surgeons had an unemployed spouse compared to only 4% of female surgeons. Compared to the male participants, most female participants appeared to be rather equivocal as to their perception of whether the spouse's occupation would hinder their surgical career. Nonetheless, a statistically significant proportion of female surgeons thought this to be the case ($P < 0.001$) (Table 2).

Nine career obstacles were identified by all of the participants, including long hours, physical exertion, lack of mentors, hostile work environment, personal illness, marriage, children, society, and sexism. Statistically significant differences existed between the genders; in particular, female participants cited problems with marriage, children, society, and sexism (Table 3).

Discussion

This study was part of a larger study that aimed to examine career perspectives of female Arab OMFS surgeons and it was also concerned with investigating the obstacles that hinder career progression.

Table 2. Marital status and spouse's education and occupation.

Marital attributes	Male	Female	*P*-value[a]
Marital status			0.001*
Married	61 (87.1%)	23 (57.5%)	
Single	9 (12.9%)	14 (35%)	
Divorced	0	3 (7.5%)	
Spouse's education	(*n* = 61)	(*n* = 23)	<0.001*
School	1 (1.6%)	0 (0%)	
University	44 (72.1%)	9 (39.1%)	
Postgraduate	16 (26.3%)	14 (60.9%)	
Spouse's occupation	(*n* = 61)	(*n* = 23)	<0.001*
Unemployed	30 (49.2%)	1 (4.4%)	
Pharmacist	3 (4.9%)	1 (4.4%)	
Dentist	12 (19.7%)	3 (13.0%)	
Physician	5 (8.2%)	7 (30.4%)	
Accountant, teacher, manager	11 (18.0%)	11 (47.8%)	
Does the spouse's education level hinder surgical career?			<0.001*
Yes	11 (15.7%)	8 (20%)	
No	51 (72.9%)	15 (37.5%)	
Not sure	8 (11.4%)	17 (42.5%)	

[a] A *P*-value of <0.05 indicates statistical significance (*).

The period of data collection lasted approximately 9 months and resulted in replies from a total of 110 surgeons in three countries. The relatively low response rate (19%) is consistent with those reported from other studies that have examined the views of physicians[10]. It is entirely conceivable that the questionnaire was of low priority for busy professional people and it is acknowledged that there is 'limited respect' for survey-based studies among surgeons when compared to practical or clinical duties[11].

There are no accurate statistics concerning the actual gender distributions of OMFS surgeons in Egypt and Saudi Arabia, although we think that the distributions are similar to that of Jordan where female surgeons are in the minority. Careful examination of demographic data showed that female surgeons were of comparable age and had comparable years of experience when compared to their male counterparts; however, most of the female surgeons worked in Egypt, whereas most of the male surgeons worked in Saudi Arabia. Considering the total target population of male and female surgeons, the largest workforce was registered in Egypt (*n* = 274), followed by Saudi Arabia (*n* = 174) and then Jordan (*n* = 140).

Many Egyptian and Jordanian surgeons actually work in Saudi Arabia for the relatively higher salaries. Travelling for work among Arab communities is considered more feasible for males than females, because females are more likely to have family commitments and cultural obligations in their home countries. Males, on the other hand, feel that their main responsibility is to support the family financially. The alternative to regular travel is immigration and this is commonly undertaken in the pursuit of better working conditions and enhanced remuneration. One further point with respect to the demographic characteristics of the study population is that a substantial proportion of male surgeons compared to female surgeons had gained their specialty abroad in Western Europe or Eastern Asia. This finding confirms previous observations and indicates that travel for Arab women in a professional context is particularly difficult unless they are escorted by a male family member. This has a significant impact on employment because postgraduate education in Western Europe is considered superior to local education and is, therefore, appreciated more highly in the job market. This is particularly relevant to academic positions where competition between candidates is at its most fierce[1,12–14].

It was interesting to find that a substantial proportion of female surgeons were not married, but were either single or divorced. By contrast, most male surgeons were married. This trend has been documented in other surgical disciplines such as plastic surgery, where 35.3% of women surgeons were found to be unmarried[15]. Cultural and religious norms in Arabic communities encourage marriage as the only recognizable means for romantic relationships and establishing families. It seems that this outcome may be difficult to achieve in OMFS, a career that is characterized by a long training course and that is demanding and stressful. The results of this study support those of previous studies, in that female physicians who wished to follow a career in OMFS were predominantly single[12]. The trend is the same in other clinical disciplines; indeed, one female cardiothoracic surgeon has commented that, ''A huge advantage to being single is that you control your own destiny''[16]. By being single, females have the opportunity to pursue their challenging

Table 3. Career obstacles cited by both genders.

Obstacles	Male	Female	*P*-value[a]
Marriage			0.001*
No	61 (87.1%)	24 (60%)	
Yes	9 (12.9%)	16 (40%)	
Long hours			0.493
No	38 (54.3%)	21 (52.5%)	
Yes	32 (45.7%)	19 (47.5%)	
Lack of mentors			0.347
No	45 (64.3%)	27 (67.5%)	
Yes	25 (35.7%)	13 (32.5%)	
Children			0.006*
No	59 (84.3%)	24 (60%)	
Yes	11 (15.7%)	16 (40%)	
Society			0.021*
No	64 (91.4%)	29 (72.5%)	
Yes	6 (8.6%)	11 (27.5%)	
Hostile work environment			0.183
No	54 (77.1%)	34 (85%)	
Yes	16 (22.9%)	6 (15%)	
Sexism			0.009*
No	69 (98.6%)	34 (85%)	
Yes	1 (1.4%)	6 (15%)	
Physical exertion			0.435
No	44 (62.9%)	26 (65%)	
Yes	26 (37.1%)	14 (35%)	
Personal illness			0.576
No	64 (91.4%)	37 (92.5%)	
Yes	6 (8.6%)	3 (7.5%)	

[a] A *P*-value of <0.05 indicates statistical significance (*).

aspirations without worries about other distractions.

Interestingly, the results of this study showed that male OMFS surgeons were married to university educated women. Similarly, most female surgeons were married to a highly educated spouse (one in two were married to a healthcare professional such as a physician, dentist, or pharmacist). Inter-marriage within OMFS was found to be common. For a single woman, entry into this 'closed' social environment would likely be extremely difficult, a fact that would further potentiate a trend to remain single in their professional career.

In this study, most female surgeons were equivocal as to whether the spouse's occupation would hinder their surgical career. This factor was seen differently by male surgeons, because most felt that their wife's occupation did not hinder their career. Fifty percent of male OMFS surgeons in the present study had unemployed wives, no doubt with family commitments. Thus, the dominant male had a successful career and appropriate care for his family. Female surgeons, however, had a successful family but remained frustrated with regard to their professional careers. A previous study has tried to rationalize these anomalies and suggested that career tensions could be ameliorated by having a fixed time for harmonizing schedules, frequent verbal support, and shared decision-making[17].

Among the perceived career obstacles that were identified in this study, 'long hours' was the most commonly cited obstacle by both genders. Other obstacles documented by both genders included a lack of mentors, hostile work environment, physical exertion, and personal illness. Unfortunately, long hours and physical exertion are inherent to surgical careers. Musculoskeletal complaints are common among OMFS practitioners and it is recommended that surgeons work in the sitting or standing positions alternately and follow intermittent working patterns in order to alleviate such problems[18]. With respect to 'lack of mentors', caution should be exercised because this may either reflect a deficiency in the number of available mentors or an undesirable attitude of certain mentors, leading to a gap in the relationship between mentors and trainees. Whilst a lack of mentors was cited as a major career obstacle by both genders, for female surgeons in particular, a lack of female mentorship may impact on their enthusiasm to pursue a surgical career in the first place. For example, a previous work showed that female students training in centres that had more female surgeons were significantly more inclined to show an interest in surgery[19]. On the other hand, it has been argued that the quality of mentoring is more important than gender-specific mentoring[20]. This applies classically in cases where some female mentors become more sexist than their male colleagues and convey the message that they are anti-female for their female mentees[21].

By contrast to male surgeons, female OMFS surgeons cited social factors of marriage, children, and society as an impediment to career progression. The work–family balance has been investigated extensively in the field of medicine, but there are also parallels with dentistry[22]. Having a flexible work schedule was a top priority for physicians when choosing a specialty, because working shorter hours allows increased time for parenting[23].

Culture also has a significant role to play in the work–life balance. A married female professional in the Arabic culture, for example, is expected by both her husband and society to fulfil the needs of the family first, even if this means compromising the duties and responsibilities of a career. The specialty of OMFS is probably the only specialty in dentistry that is based on onerous hospital duties including on-call, night shifts, and dealing with critical clinical cases of trauma and oncology. To fulfil these duties, married surgeons of either sex need a stable home environment, a supportive partner, and a trustworthy care-giver for their children. Failure in this context leads to the development of feelings of guilt towards the family when sufficient time is not available[24]. In a similar way, emotional support for one another's career has been reported as the most important factor to influence the quality of a marriage[25]. Studies have also shown that social support in the workplace is significantly related to work–family balance, with the contribution of supportive colleagues and supervisors[26]. On the other hand, financial support for women to pay for childcare and family-related expenses is necessary, particularly for young and early career surgeons[27]. A family-friendly model has also been proposed and has been applied in a number of countries, in the form of adequate childcare facilities such as kindergarten or day-care[28].

Finally, the results of this study demonstrated that female OMFS surgeons were significantly different from male surgeons in their perception of 'sexism' as a career obstacle. Sexism is a worldwide problem and, indeed, it has been reported that senior female dental students[29] and female OMFS residents and surgeons[30] in the USA were conscious of bias against women during their training. This problem could probably be minimized if more female leaders were in charge, as suggested by the World Economic Forum (WEF) recommendations[31]. According to The Global Gender Gap Report (2018) published by the WEF, the global gender gap scores in Egypt, Jordan, and Saudi Arabia need improvement, particularly in certain aspects like managerial opportunities, which show a gap of 90% in Egypt and Saudi Arabia[32]. This is an issue that should be addressed by leaders in the profession, possibly through an international consensus on changing outdated attitudes to women in society.

In conclusion, this study showed that female Arab OMFS surgeons are not only a minority in this specialty, but also perceive some important social factors as career obstacles. It is suggested that female physicians should be provided with more opportunities for postgraduate education abroad, advanced mentorship (particularly by senior female colleagues), and appropriate family social support as a starting point to address these urgent issues. Whilst some of the problems can be addressed at the government level, surgical colleges and individual family members also have roles to play.

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