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A Survey of the Perception of Female Surgical Residents of Their Training in the Examination of Male Genitalia in Makkah Hospitals, KSA

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Abstract

The basic aims of medical schools are to graduate doctors to be competent in eliciting physical signs across all body systems. Deficiency in the clinical examination skills of female surgical residents of the male groin hernia and genitalia has not been explored and not enough investigated in the Arab and Muslim communities, despite obvious cultural restrictions and religious traditions. The cultural background of the students also has had an impact on their future training and skills. Certain systems' examination for patients is considered very sensitive to perform by students and doctors of both sexes due to their sensitive nature. This might be due to cultural issues which affect the skills on these areas. Aim of this survey was to explore the different reasons and the influence of gender on clinical examination skills of female surgical trainees to male patient intimate. Methods: A cross-sectional design based on a self-administered questionnaire which was distributed to 80 female surgical resident trainees across five Hospitals in Makkah, Holy city, Saudi Arabia. The study was carried out between the period of September 2020 to July 2021 and involved all the female surgical residents from level 1 - 5 (R1 to R5). Result: Our study showed that overall perception of most of female residents on their performance on clinical examinations is less than expected. This study revealed that the main factor affecting the female resident's clinical examination of the opposite sex intimate is the gender difference. 56 (81.2%) participants stated that their gender impacted their confidence and skills in examination of intimate of opposite sex, while 13 (18.8%) stated that gender has no effect. Conclusion: In conservative community, there are numerous areas where gender influences medical student clinical learning, including clinical exposure, supervisor support and patient willingness and consents, as well as some of the undergraduate methods of learning clinical skills not aligned with the post graduates needs.

Keywords

Perception, Confidence, Female Surgical Resident Trainees, Intimate Examination, Hernia

1. Introduction

Clinical examination skills are a core component of clinical care. A graduating medical doctor is expected to be competent in physical examinations across all systems [1], and so understanding the limitations of student exposure to conducting examinations is important. Due to the conservative nature of society in KSA, training opportunities in the examination of the hernia perineum and external genitalia can be limited [2]. The sensitive nature of these examinations for patients as well as the cultures of some students, opportunities to gain skills in this area may not be readily available [3] [4].

Deficiency in the clinical examination skills of female surgical residents of the male groin, genitalia and rectum has not been explored in the Arab and Muslim context, despite obvious cultural restrictions and religious traditions. The lack of training opportunities to gain skills in examining the intimate areas of patients resulted in a declined skill of both undergraduate and postgraduate students' performance in hospital practice.

An increase in the numbers of female medical graduates in the last two decades in Saudi Arabia, has consequently led to an increase in the number of female surgical trainees. Currently, the proportion of female surgical trainees in KSA is estimated to be approximately 27% [5].

In our society, there may be considerable anxiety and embarrassment of female students and junior doctors regarding the examination of the male inguinal hernia and scrotum. Female students may be embarrassed or concerned about male patient discomfort and thus they may perform the examinations in an incomplete or rushed manner [6]. However, whether this translates to a significant difference between male and female student exposure to clinical examinations is not explored enough.

2. Aim & Objectives

Our study, aims to assess the perception and confidence of female surgical residents in clinical examination of inguinal hernia and intimate of opposite sex in five hospitals, Makkah holy city. We also sought to shed light on the barriers and the impact of different teaching modalities that are currently used in undergraduate education.

3. Methods

The study is an observational cross-sectional design based on a self-administered close and open ended questionnaire. The questionnaire designed by the au-

thors after focus group exercise were used to explore themes that trainees face related to gender bias and self-confidence on intimate examination of opposite sex. Eleven female surgical trainees of different level R1 - R5 (*i.e.*, junior (R1, R2 and R3) and senior R4 and R5), participated in the focus groups, in addition to two female surgeons and the authors, then it was distributed to all the available female residents who fulfilled the inclusion criteria at the time of the study. The questionnaire (see the appendix) was distributed to all 80 female surgical resident trainees across the five Hospitals in Makkah, Holy city, Saudi Arabia. The study was carried out between the periods of September 2020 to July 2021 and involved all the available female surgical residents from level 1 - 5 (R1 to R5) who were enrolled in the Saudi Surgical board training programme. The selection criteria of the study used all the female members of the Saudi Board general surgical programme who were working in Makkah five hospitals training centers. All female residents (R1 - R5) who fulfilled the inclusion criteria were participated in this study. The questionnaire, included questions regarding the confidence and skills of the female residents in inguinal hernia and intimate examination of adult male, female residents' perceptions regarding factors that may impact the development of clinical skills related to gender, the method of training in the undergraduate curriculum, the frequent of examinations performed during their undergraduate training and the educational environment. The questionnaire was also looking at attitudes to patient centered care, and learning experiences on hernia and intimate examination of opposite sex.

We analyzed the data with SPSS statistical software version 16.0 for Mac. Microsoft Excel 2004 version 11.5.5.

4. Results

A total of sixty-nine 69 (86.25%) female surgical residents completed the survey out of 80 distributed questionnaires (Table 1). This study revealed that overall female residents were feeling not confident on examining the intimate of opposite sex and feel less than expected, 22 (31.9%) were not confident at all, 34 (49.28%) some time while 13 (18.84%) feel confident enough. 56 (81.2%) feel gender affect their intimate examination skills, while 13 (18.8%) never feel the gender effect on their skill (Table 3). Regarding the male patient refusal to give consent for examination, 36 (52.17%) of the participants said patient refused to be examined by the female residents, while 33 (47.83%) never have this experience. In this study 24 (34.8%) of participants mentioned they were less exposed to the hernia and intimate examination of male patient, while 30 (43.5%) participants were frequently exposed and 15 (21.7%) more frequently exposed. Among those who completed the survey 5 (7.2%) had never performed intimate clinical examinations before.

Related to the barriers which impacted the intimate and hernia examination, out of the 69 responded, 21 (30%) were relating it to Shyness/embarrassment,

Table 1. Female surgical residents and hospitals. Female Surgical Residents' distribution across Training Centers in five hospitals in Makkah Holy city.

Hospitals Levels	KFH	AL-NOOR	KAH (ALZAHIR)	KAMC	SECURITY FORCES	TOTAL
R1	4	6	4	1	3	18 (26%)
R2	3	3	2	2	5	15 (21.7%)
R3	4	5	3	3	2	17 (24.6%)
R4	2	4	2	3	1	12 (17.4%)
R5	0	3	1	1	2	7 (10.14%)
Total	13 (18.8%)	21 (30.4%)	12 (17.4%)	10 (14.5%)	13 (18.8%)	69 (100%)

As appeared in this table, almost three quarters of female residents in our study reported to be junior residents in the first (R1) or second year (R2) and (R3) of their training programme.

Table 2. Surgical experiences of female surgical residents before joining the Training programme.

level	No	Year of joining the programme	Experience in surgery before joining the programme	
R1	18 (26%)	2019/2020	Average of 3 - 9 months.	Mean 6
R2	15 (21%)	2018/2019	Average of 6 - 12 months	Mean 9
R3	17 (24.6%)	2017/2018	Average of 9 - 11 months	Mean 10
R4	12917.4%)	2016/2017	Average of 8 - 12 months	Mean 10
R5	7 (10.14%)	2015/2016	Average of 8/12 months	Mean 10
Total	69 9100%)		Overall mean. 9 Months	

*The table showing the less time of all residents spend in surgical fields Before joining the training Board. The Red Color Rs: junior resedents; The Green Color Rs: Senior Resident.

while 27 (39.13%) to Cultural/religious and 17 (24.6%) due to lack of training and 3 (4.34%) to misunderstanding. The majority (55%) of the female residents who responded to our questionnaire acknowledged the reality of the strong support of their supervisors and mentors in their workplace (**Table 3**).

5. Discussion

Medical school would seem the logical place to learn the art of the physical examination. In the last decade the intake of female to medical schools has increased greatly and averaged approximately 51%. Despite this, a disproportionate number of women continue to choose non-surgical over surgical specialties [7].

To our knowledge, this survey is the first of its kind in the conservative setting of Makkah holy city. We have shed light on the gender, tradition, religious and environmental barriers that continue to limit the training of female surgeons.

Table 3. Factors affecting clinical examination as perceived by female residents (regarding the self-confidence, gender effect, professional level, competence, and patient attitude).

LEVEL Qs.	R1 (No 18)	R2 (No 15)	R3 (No 17)	R4 (No 12)	R5 (No 7)
Has a patient refused ever to give you a consent for doing an intimate clinical examination?	Yes	14 Yes	9 Yes	8 Yes	4 Yes 1
	No	4 No	6 No	9 No	8 No 6
How frequent have you examined the male patient with inguinal hernia in your undergraduate training?	Less frequent	11 6	5	2	0
	Frequent	7 7	9	**7**	0
	More frequent.	0 2	3	3	7
How does your gender affect your clinical examination of male intimate experience?	Slightly	6 Slightly	5 Slightly	9 Slightly	6 Slightly 2
	Moderately	8 Moderately	6 Moderately	4 Moderately.	1 Moderately 1
	Severely.	3 Severe	2 Severely	2 Severely.	1 Severely 0
	Never	1 Never	2 Never	2 Never	4 Never 4
Do you feel supported by your supervisor to conduct intimate clinical examination?	Most of the time,	10 Most of the time	8 Most of the time,	10 Most of the time.	6 Most of the time. 4
	some time,	7 some time,	6 some time.	5 some time,	6 some time, 3
	Never.	0 Never.	1 Never.	2 Never.	0 Never. 0
Do you feel not confident to conduct intimate clinical examinations?	Yes, not confident	7 Yes, not confident	6 Yes, not confident	5 Yes, not confident	3 Yes,not confident 1
	Some time.	9 Some time	8 Some time.	8 Some time.	6 Some time. 3
	Never.	2 Never.	1 Never.	4 Never.	3 Never. 3
Which of the following have impacted your clinical examination of the other sex	Misunderstanding = 0	Misunderstanding = 1	Misunderstanding = 2	Misunderstanding = 0	Misunderstanding. = 0
	Shyness/embarrassment	5 Shyness/embarrassment	4 Shyness/embarrassment	5 Shyness/embarrassment	5 Shyness/embarrassment 2
	Cultural and religious	8 Cultural and religious	6 Cultural and religious	7 Cultural and religious	4 Cultural and religious 3
	Lack of training	5 Lack of training	4 Lack of training	3 Lack of training	3 Lack of training- 2

Our results showed that, still the sensitive examination is a uniquely challenging part of the undergraduate curriculum and female surgical trainees. Most residency programs have a duration of about 3 to 4 years, with residencies such as surgical residencies being the longest, this is possibly not attractive for the females.

Dahlke AR *et al.* (2018) reported that female surgeons and trainees recounted their experiences of being perceived to be less competent or inferior to male counterparts by hospital staff and colleagues alike [8] [9] [10], our survey revealed similar results 56 (81.2%). Bernardi K *et al.*, (2020), found that the main source of harassment against female trainees was the faculty members and supervisor residents [10] [11], while in our study, it is quite clear, that the supervisors are strongly supporting and encouraging to the trainees (**Table 3**). In our study 48 (69.6%) of trainees have examined the male patient with inguinal hernia in their undergraduate training while 14 (20.3%) have never performed certain intimate examinations or inguinal hernia of opposite sex (**Table 3**).This can also be attributed to general overall decline in clinical examinations skills [12].

In spite of the variety of teaching methods for clinical examination, however, the bedside teaching is seen as one of the most important modalities in acquiring clinical skills for the medical profession, but its use is declining. Impediments to bedside teaching need to be overcome if this teaching modality is to remain a valuable educational method for durable clinical skills. 49 (71%) residents thought that their undergraduate training in this area was insufficient and that no training modality was superior to the other. In our study all participants reported they spend short period before they joined the training programme and may be cause for their deline in examination skill (**Table 2**).

In our study the gender is an issue factor for self-confidence and limitation of the clinical examination of intimate (**Table 3**), this is not similar to the study of Brown *et al.* 2013 who expressed that gender did not impact their careers. Instead, they believed that gender-based difficulties were sometimes results of individual choices. Others perceived that male surgeons struggled with the same expectations as women [13] [14].

Our study showed, that most of the participants 28 (40.5%) reported impacted clinical examination of the other sex to cultural/religious, while 21 (30%) related to Shyness/embarrassment and 20 (29%) were due to lack of training and misunderstanding. The cultural, tradition and religious background of the female residents had an impact on female residents coping styles. Female residents from cultures with even stronger taboos against interpersonal physical contact than are present in our conservative Makkah holy city culture were felt by the female surgical resident themselves to be more likely to avoid practicing all their physical examination skills as well as intimate physical examination skills [15] [16]. In our study 36 (52.2%) of the spondees out of 69 participants reported refusal of the patients give the consent **Table 3**. While it can be argued that the medical student should take the consent as an important part of their training, we feel

our system maximizes the learning opportunities while avoiding patients being examined against their wishes as may have happened in the Broadmore *et al.* study [16]. Limitation of the study: The small sample size was due to that:

1) The study was carried out during the era of COVID19 period which restricted the number of patients attending the hospitals.

2) Only the female surgical residents enrolled in the Saudi Surgical Board from level 1 - 5 (R1 to R5) were included, and exclusion of all service surgical program which restricted the number.

6. Conclusion

Our study revealed the declined of female surgical trainees on opposite sex intimate examination. Also the study showed the clear effects of conservative cultures community traditions and religious believes in Makkah community. This study serves as a call-to-action to increase collective effort towards gender inclusivity which will significantly improve future health outcomes. Suggestion for future studies is: A larger sample size study is needed to explore this issue more. Other Saudi hospitals in the western region of Saudi Arabia should be involved.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Questionnaire to Female Surgical Residents in General Surgery

Personal characteristics

Name: …… Hosp: ……..Graduate Ys:…… University ……

What year of training are you in?

R1	R2	R3	R4	R5

- How many year/s have you worked in surgery prior to Saudi Board programme?

Less than 6 Mon	6 - 12 Mon	More than 12 Mon

- Which of the following undergraduate training do you feel relaxed on intimate and hernia examination?
  - Bed side teaching
  - Simulation
  - Manikins'
- Do you think you are getting enough clinical teaching/training on hernia and intimate examination?

Yes	No

IF NO:

- What do you think are the main barriers for you to gain hernia and intimate exam. Experience
  - Short staying in hospital.
  - Shortage of cases in hospital.
  - Gender bias
  - Patient refusal
  - Lack of interest
- What do you think the good for undergraduate hernia training :
  - More Time
  - Female surgeons to teach.
  - Substitute corporals to skill lab.
  - Undergraduate more Training and self confidence
- How would you best describe your area of experience?

Good	satisfactory	unsatisfactory

- How would you rate yourself in intimate hernia training?

Good	satisfactory	unsatisfactory

Are there any other comments you would like to make about hernia / intimate training in undergraduate

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- Has a patient ever refused to give you a consent for doing an intimate clinical examination?

Yes	No

- How frequent have you examined the male patient with inguinal hernia in your undergraduate training?

Less frequent	frequent	More frequent

- How does gender affect your clinical examination of male intimate experience?

Slightly	Moderate	Sever	Never

- Do you feel supported by your supervisor to conduct intimate clinical examination?

Most of the time	Some time	Never

- Do you feel not confident to conduct intimate clinical examinations?

Yes	Some time	Never

- Which of the following have impacted your clinical examination of the opposite sex,

Misunderstanding	Shyness/embarrassment	Culture & religious