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Gender Difference in Self-Reported Preparedness for Clinical Practice among House Officer Junior Doctors of Al Azhar University in Cairo, Egypt

Thoraya Abd El-fatah
Professor, Department of Public Health, Community and Preventive Medicine, Al-Azhar University, Cairo, Egypt
Dr. Monira Gad
Professor, Department of Gynaecology & Obstetric, Faculty of Medicine (Girls), Al-Azhar University, Cairo, Egypt
Coordinator of House Officer, Training Program, Al-Azhar Hospital for Girls', Cairo, Egypt
Zeinab Hammour
Assistant Professor, Department of Public Health, Community and Preventive Medicine, Al-Azhar University, Cairo, Egypt
Hanaa Abouelyazid
Lecturer, Department of Public Health, Community and Preventive Medicine, Al-Azhar University, Cairo, Egypt
Heba Abd-elgalil
Lecturer, Department of Public Health, Community and Preventive Medicine, Al-Azhar University, Cairo, Egypt

Abstract:
The successful completion of medical school education should provide students with a level of knowledge and skills necessary to fulfill a junior doctor's daily duties at hospital. As regard gender some researchers concluded that women outperform men in academic and clinical assessment at medical schools. There are no reasons to suppose that female students leave medical school less prepared than men for work. So this study aimed to clarify whether there are gender difference in house officers' view for preparedness for work or not and to demonstrate strength and weakness points regarding their undergraduate medical education. Subjects and Methods: The current study is a cross sectional comparative one. It was conducted on 51 HOs females from Al zahraa university hospital compared to 100 male HOs recruited from Al Hussien and Sayed Galal university hospitals about how much they feel prepared to medical practice. All the questionarable items are arranged in 8 domains of educational goals adopted according to NARS (2009) requirements and from "preparedness for Hospital Practice" survey (Sprung et al 2009). Results: The results showed that 96.1% of females felt sufficient preparedness for clinical work compared to 79.0% of males, 72.5% and 35.3% of females felt somewhat adequate preparedness in understanding the disease process and carrying out arterial blood gases respectively versus 40.0% and 28.0% of males while males felt adequate preparedness in all elements of interpersonal skills than females. In addition, it was found that understanding the interaction of social factors with disease, approach confidently senior staff for help in interpreting investigations, manage time effectively; score of patient management and prevention were significant predictor of preparedness for clinical work; while gender was not significant in the regression model. Conclusion: Female house officers felt more sufficient well prepared than male ones. However, gender was not a significant predictor of performance. More emphasis on weakness points recorded by the two groups as defect in some medical skills as write prescription, gap between knowledge and practice, bad communication with the teaching staff and dealing with patient to improve feeling of preparedness.

Keywords: *medical education, gender, preparedness for work, Al Azhar*

1. Introduction

Medical education is an education related to the practice of being a medical practitioner. [1]An important task for medical schools is to ensure that graduating doctors feel prepared, as best they realistically can, for their first medical job.[2]

The successful completion of a medical school education should provide students with a level of knowledge and skills necessary to fulfill a junior doctor's daily duties at hospital.[3] The importance of adequately preparing medical students to cope with the tasks and roles they have as junior doctors is apparent to all medical schools.[4] Reporting junior doctors' views about the extent to which their medical school prepared them for their work in clinical practice is important.[2]Numerous studies however have shown that medical graduate often feel ill- prepared for their demands of their new jobs.[5] Moreover some researchers concluded that women outperform men in academic and clinical assessments at medical school. There are no reasons to suppose that female students leave medical school less prepared for work than men.[6]

1.1. Aim of the Work

- → To clarify whether there are gender differences in house officers' view for preparedness for work or not.
- → To demonstrate strength and weakness points regarding their views in undergraduate medical education.
- → To determine their views for improvement in undergraduate medical education.

1.2. Subject and Methods

The current research is a cross sectional study to compare the view of house officers' (HOs) females and males for preparedness in medical practices. It was conducted (from November2015 to March 2016). The sample included 51 HOs females from Al zahraa university hospital compared to 100 HOs males recruited from Al Hussien and Sayed Galal university hospitals. According to Mostafa and El-Shourbagy[7], with 95%confidence level and with percent in the population assumed to be 50%, the required sample from HOs of Alzahraa university hospital (who were about 100) with a reliability of ±5% was 50 and the actual participants in the study were 51; and there were 100 out of 200 HOs of Al-Hussien and Sayed Galal university hospitals. Systematic random sample technique (one out of two) was adopted from house officers of both hospitals and the starting point for selection was drawn with simple random method.

Verbal approval was obtained from the participants of the study after clarifying the aim of the study and those who agreed to participate were included in the study.

1.3. Tools of the Study

Eligible house officers were being subjected to fulfill a specially designed, semi-structured, self- administered questionnaire which includes:

1-Closed ended questions concerning to personal data: as age, sex, marital status.etc, work related data as hospital of working, duration of training, previous training program(s).

View of the preparedness of the house officers for medical practice: questions are arranged in 8 domains of educational goals adopted according to *NARS (2009)*[8] requirements and from "preparedness for Hospital Practice survey" [8] that include questions about: - Understanding science, practical skills and patient management, holistic care, prevention, interpersonal skills, confidence /coping skills, collaboration, and self-directed learning.

Each item related to the domains in the questionnaires has a response scale according to the answers rated from: - (1 to 4). Very inadequately= (1). -Somewhat inadequately= (2). Somewhat adequately= (3). Very adequately= (4).

Validity for the questionnaire was carried out and it was excellent as measured by Cronbach's Alpha for all scores except it is good for understanding science score (it ranged from 0.88 to 1.0). Moreover, test retest reliability was done for every part of the study questionnaire and was found to be strong according to Mostafa and El-Shourbagy[7] for all scores as measured by the correlation coefficient (r) (it ranged from 0.81 to 1.0).[9]

2-Open ended questions related to strength and weakness points and suggestions for improvements in the undergraduate curriculum that the house 'officers see and affect their preparedness to medical practices.

Statistical analysis: Data collected were reviewed, coded, and statistical analysis was done by using SPSS program version 18. Chi-square-test (χ^2) was used for comparison of qualitative data. Student's T test was used to compare between two means. Logistic regression analysis was done to assess factors affecting preparedness for medical practice. The level of significance was taken at p-value≤ *0.05* and the results were represented in tables and figures.

2. Results

2.1. Concerning Demographic Data and Educational Achieved Grades

The results showed that the mean age of both gender is the same (24.8 years±0.7 for females &24.9 years ±0.8 for males) **($p > 0.05$)**. The ratio between married HOs females was three folds than that of males (17.6% & 6.0% respectively); also, 64.7% of females were residing the hospital as they are rural residents comparing to 47.0% of males. Females achieved higher percentage of excellent grade of undergraduate result (45.1%) compared to (14.0%) of males HOs while less percentage of very good grade than males (47.1% versus56.0% respectively). Only 23.5% of (HOs) of females participated in some voluntary medical work/community activities compared to 40.0% of (HOs) males. (p <0.05). Table 1

Groups / Items	HOs of Al- Zhraa hospital		HOs of Al Hussin and Sayed Galal		Test of significance
	No=51	*100%*	*No=100*	*100%*	
Age (years) Mean (years±SD)	24.8±0.7		24.9±0.8		T=0.7 & *p.* value= 0.5
Marital status -Single	42	82.4	94	94.0	$\chi2$=5
-Married	9	17.6	6	6.0	*p.* value= 0.02*
Residence -Urban	18	35.3	53	53.0	$\chi2$=4.3
-Rural	33	64.7	47	47.0	*p.* value= 0.04*
Degree of graduation					
-Excellent	23	45.1	14	14.0	$\chi2$=21
-Very good	24	47.1	56	56.0	*p.* value= 0.000*
-Good	4	7.8	28	28.0	
-Acceptable	0	0.0	2	2.0	
participation in any voluntary medical work/community activities before					$\chi2$=4 *p.* value= 0.04*
-Yes	12	23.5	40	40.0	
-No	39	76.5	60	60.0	

Table 1: Demographic data and educational grades

2.2. House Officers' View about Their Preparedness for Different Areas of Work

For understanding science, female HOs showed higher percentage of preparedness in understanding the disease process versus males (72.5%, 40.0% respectively) and less preparedness in justifying drug uses on the basis of their mechanisms of action, risks and benefit (70.6%, 50.0% respectively) (p <0.05). The most reported items in which both HOs viewed deficiency were: applying principles of basic science to clinical conditions (62.7% for females and 64.0% for males), being aware of legal and ethical issues (56.9% and 71.0% for females and males respectively), and interpretation of X-ray (52.9% for females and 50.0% for males) (p > 0.05). **Table 2**

Groups / Items	Female HOs		Male HOs		Test of significance
	No=51	*100%*	*No=100*	*100%*	
Understanding the disease process.					$\chi2$=16.5
- Inadequate	9	17.6	52	52.0	*p.* value= 0.000*
- Adequate	42	82.4	48	48.0	
Being aware of Egyptian health problems					$\chi2$=0.7
-Inadequate	12	23.5	30	30.0	*p.* value= 0.4
- Adequate	6	76.5	70	70.0	
Applying principles of basic science to clinical conditions.					$\chi2$=0.02
- Inadequate	32	62.7	64	64.0	*p.* value= 0.8
- Adequate	19	37.3	36	36.0	
Justifying drug uses on the basis of their mechanisms of action, risks and benefit					
-Inadequate	36	70.6	50	50.0	$\chi2$=5.8
- Adequate	15	29.4	50	50.0	*p.* value= 0.02*
Being aware of legal and ethical issues. - Inadequate	29	56.9	71	71.0	$\chi2$=3
- Adequate	22	43.1	29	29.0	*p.* value= 0.08
Considering differential diagnosis according to possible symptom					$\chi2$=2.6
- Inadequate	24	47.1	61	61.0	*p.* value= 0.1
- Adequate	27	52.9	29	29.0	
Interpretation of X-ray.					$\chi2$=0.7
- Inadequate	27	52.9	50	50.0	*p.* value= 0.1
- Adequate	24	47.1	50	50.0	
Score of understanding Science Mean ±SD	17±3.5		16.3±4.5		t.test ***p.* value** =0.3

Table 2: Comparison between female and male house officers' view about their preparedness for understanding science

For practical procedure female HOs showed adequate preparedness in carrying out arterial blood gases (ABG), with higher percentage than males (54.9% versus 31.0%) (p <0.05). Also, females showed better preparedness in other elements compared to males (p >0.05). As regard area of patient management there is adequate preparedness concerning taking complete and systematic medical history, recording clinical data and performing a full physical examination systematically with statistical significant higher percentage of

preparedness for females (82.3% & 74.4% and 80.4% respectively) in comparison to males (55.0% &31.0% and 64.0% respectively). The response of females to other elements showed better performance than males (p >0.05). Tables 3&4

Groups **Practical procedure**	**Female HOs**		**Male HOs**		**Test of significance**
	No=51	***100%***	***No=100***	***100%***	
Carrying out arterial blood sampling - Inadequate - Adequate	23 28	45.1 54.9	69 31	69.0 31.0	$\chi2$=8 *p.* value= 0.004*
Simple practical procedures (e.g. taking blood, IV access). - Inadequate - Adequate	22 29	43.1 66.9	49 30	49.0 51.0	$\chi2$=0.5 *p.* value= 0.5
Complex practical procedures (e.g. bladder catheterization-CPR). - Inadequate - Adequate	31 20	60.8 39.2	66 34	66.0 34.0	$\chi2$=0.4 *p.* value= 0.4
Basic surgical procedures (e.g. suturing). - Inadequate - Adequate	19 32	37.3 62.7	40 60	40.0 60.0	$\chi2$=0.1 *p.* value= 0.7
Medical emergencies (e.g., burning, epistaxis, epilepsy status...). - Inadequate - Adequate	28 23	54.9 45.1	52 48	52.0 48.0	$\chi2$=0.7 *p.* value= 0.1
Infection control measures (e.g. Gowning, handling surgical instruments, hand washing). - Inadequate - Adequate	20 31	39.2 60.8	50 50	50.0 50.0	$\chi2$=1.5 *p.* value= 0.2
Score of Practical procedure **Mean+ SD**	15.2±3.8		14±4.1		t.test p. **value** =0.08

Table 3: Comparison between female and male house officers' view about their preparedness for practical procedure

Groups **Patient management:**	**Female HOs**		**Male HOs**		**Test of significance**
	No=51	***100%***	***No=100***	***100%***	
Record clinical data systematically. - Inadequate - Adequate	13 38	25.5 74.5	69 31	69.0 31.0	$\chi2$=25 *p.* value= 0.000*
Taking complete medical history. - Inadequate - Adequate	9 42	17.6 82.4	45 55	45.0 55.0	$\chi2$=11 *p.* value= 0.001*
Performing a full physical examination. - Inadequate - Adequate	10 41	19.6 80.4	36 64	36.0 64.0	$\chi2$=4 *p.* value= 0.04*
Write prescription. - Inadequate - Adequate	22 29	43.1 56.9	51 49	51.0 49.0	$\chi2$=0.8 *p.* value= 0.4
Write a referral letter if needed. - Inadequate - Adequate	23 11	45.1 54.9	53 47	53.0 47.0	$\chi2$=0.8 *p.* value= 0.4
Manage the patient from admission to discharge. - Inadequate - Adequate	29 22	56.9 43.1	68 32	68.0 32.0	$\chi2$=1.7 *p.* value= 0.2
Manage the maternal health (antenatal-natal-post natal care) and child health - Inadequate - Adequate	34 17	66.7 33.3	69 31	69.0 31.0	$\chi2$=0.08 *p.* value= 0.8
Provide a care for people of different cultures. - Inadequate - Adequate	19 32	37.3 62.7	49 51	49.0 51.0	$\chi2$=1.8 *p.* value= 0.2
Score of patient Management **Mean +SD**	21.1±3.6		18.6±4.6		t.test ***p.* value** =0.001*

Table 4: Comparison between female and male house officers' view about their preparedness for patient management

Female HOs were significant more sufficiently prepared in all elements of holistic care of the patients and all elements of prevention in comparison to males ($p<0.05$) except for applying hospital hygiene and infection control and applying the principles of health promotion and disease prevention. Tables 5

Groups Holistic care	Female HOs *No=51*	 *100%*	Male HOs *No=100*	 *100%*	Test of significance
Consider the impact of family factors on illness. - Inadequate - Adequate	 13 38	 25.5 74.5	 67 33	 67.0 33.0	$\chi2=23$ *p.* value= 0.000*
Provide medical counseling to individual questions: - Inadequate - Adequate	 13 38	 25.5 74.5	 48 52	 48.0 52.0	$\chi2=7$ *p.* value= 0.008*
Understand the interaction of social factors with disease (e.g., poverty, unemployment). -Inadequate - Adequate	 11 40	 21.6 78.4	 44 56	 44.0 56.0	$\chi2=7.3$ *p.* value= 0.007*
Appreciate the importance of a patient's cultural/ethnical and religious background. - Inadequate - Adequate	 17 34	 33.3 66.7	 49 51	 49.0 51.0	$\chi2=9$ *p.* value= 0.03*
Score of Holistic Care Mean±SD	11.1±2.9		9.5±3.1		t.test ***p.*** =0.003*
Prevention					
Take a drug history. - Inadequate - Adequate	 3 48	 5.9 94.1	 48 52	 48.0 52.0	$\chi2=26$ p.= 0.000*
Encourage patients to improve their health habits. - Inadequate - Adequate	 7 44	 13.7 86.3	 41 59	 41.0 59.0	$\chi2=11.5$ *p.* = 0.001*
Provide education to patients and families about prevention of disease. - Inadequate - Adequate	 16 35	 31.4 68.6	 54 46	 54.0 46.0	$\chi2=6.5$ *p.* = 0.008*
Apply hospital hygiene and infection control. - Inadequate -Adequate	 30 21	 58.8 41.2	 55 45	 55.0 45.0	$\chi2=0.6$ *p.* = 0.7
Apply the principles of health promotion and disease prevention. - Inadequate - Adequate	 26 25	 51.0 49.0	 63 37	 63.0 37.0	$\chi2=2$ *p.* value= 0.2
Score of Prevention Mean ±SD	14.3±2.9		11.8±3.8		P=0.000*

Table 5: Comparison between female and male house officers' view about their preparedness for holistic care &prevention

As regard preparedness for interpersonal skills, male HOs showed higher percentages of adequate preparedness in all elements than females with statistical significant only in dealing with difficult, violent, mental and dying patients and their families. **Table 6**

Groups Interpersonal Skills	Female HOs *No=51*	 *100%*	Male HOs *No=100*	 *100%*	Test of significance
In case of diseased patient -Feel competent to tell a patient that they have a terminal illness. - Inadequate -Adequate	 32 19	 62.7 37.3	 63 73	 63.0 37.0	$\chi2=.02$ *p.* = 0.9
-Deal with difficult, violent, mental and dying patients and their families - Inadequate - Adequate	 40 11	 78.4 21.6	 58 42	 58.0 42.0	$\chi2=6$ *p.*=0.01*
. -Feel competent to counsel a distraught patient. - Inadequate - Adequate	 30 21	 58.8 41.2	 49 51	 49.0 51.0	$\chi2=1.5$ *p.* = 0.3
Participate in community health activities. - Inadequate - Adequate	 36 15	 70.6 29.4	 61 39	 61.0 39.0	$\chi2=1.3$ *p.* = 0.2
Score of Interpersonal Skills Mean±SD	8.5±2.6		9.1±3.1		*P*=0.2

Table 6: Comparison between female and male house officers' view about their preparedness for interpersonal skills

Concerning preparedness for confidence/coping skills, regarding to approach confidently with senior staff for help in interpreting investigations, female HOs have higher percentage than males (66.7% &44.0% respectively) ($p<0.05$). It was found that females and males HOs showed inadequate preparedness in coping with stress caused by their profession (58.8% and 61.0% respectively), balancing between their work and personal life (54.9% and 55.0% respectively) while, 94.0% of males showed more adequate preparedness in remaining calm in difficult situations compared to 56.9% of females ($p >0.05$). **Table 7**

Groups **Confidence/coping Skills.**	**Female HOs**		**Male HOs**		**Test of significance**
	No=51	***100%***	***No=100***	***100%***	
Coping with work stress caused by profession. - Inadequate - Adequate	 30 21	 58.8 41.2	 61 39	 61.0 39.0	$\chi2=0.06$ p. = 0.7
Balancing between work and personal life. - Inadequate - Adequate	 28 23	 54.9 45.1	 55 45	 55.0 45.0	$\chi2=1$ *p.* = 0.9
Remain calm in difficult situations. - Inadequate - Adequate	 22 29	 43.1 56.9	 51 49	 51.0 94.0	$\chi2=0.8$ *p.* = 0.4
Approach confidently with senior staff for help in interpreting investigations. - Inadequate - Adequate	 17 34	 33.3 66.7	 56 44	 56.0 44.0	$\chi2=6$ p.= 0.008*
Be aware of own limitations. - Inadequate - Adequate	 19 32	 37.3 62.7	 44 56	 44.0 56.0	$\chi2=0.6$ p. = 0.4
Score of confidence/coping Skills Mean +SD	12.8±3		11.9±4		*P* =0.13

Table 7: Comparison between female and male house officers' view about their preparedness for confidence/coping skills.

As regard preparedness for collaboration skills, only working with colleagues with different lifestyles backgrounds or religions, being honest with patients, colleagues and supervisors the HOs females have higher percentage of adequate preparedness than males (84.3%, 88.3% versus 50.0%,65.0% respectively) ($P <0.05$). **Table 8**

Groups **Self-Direction**	**Female HOs**		**Male HOs**		**Test of significance**
	No=51	***100%***	***No=100***	***100%***	
Invest time in developing my knowledge and skills. - Inadequate - Adequate	 29 22	 56.9 43.1	 53 47	 53.0 47.0	$\chi2=0.7$ p.= 0.2
Keep up to date with medicine - Inadequate - Adequate	 27 24	 52.9 47.1	 55 45	 55.0 45.0	$\chi2=0.06$ *p.*= 0.8
Manage my own time effectively. - Inadequate - Adequate	 28 23	 54.9 45.1	 55 45	 55.0 45.0	$\chi2=0.1$ p.= 0.9
Prioritize tasks effectively. – Inadequate - Adequate	 25 26	 49.0 51.0	 59 41	 59.0 41.0	$\chi2=2$ *p.*= 0.6
Identify my own learning needs. - Inadequate - Adequate	 22 29	 43.1 56.9	 54 46	 54.0 46.0	$\chi2=1.6$ p.= 0.2
Develop my own learning plan. - Inadequate - Adequate	 26 25	 51.0 49.0	 52 48	 52.0 48.0	$\chi2=0.01$ *p.*= 0.9
Score of Self-Direction Mean+SD	14.9±3.8		14.2±4.7		*P* =0.3

Table 8: Comparison between female and male house officers' view about their preparedness for self-direction

Concerning, preparedness for self-direction, both HOs groups have inadequate preparedness in all elements ($p >0.05$). **Table 9**

Groups Collaboration Skills	Female HOs		Male HOs		Test of significance
	No=51	*100%*	*No=100*	*100%*	
Manage the needs of nursing staff. - Inadequate - Adequate	 24 27	 47.1 52.9	 57 43	 57.0 43.0	**χ2**=1.3 ***p.*** = 0.2
Coordinate a comprehensive patient management plan with other specialists and allied health professionals. - Inadequate - Adequate	 29 22	 56.9 43.1	 57 43	 57.0 43.0	**χ2**=0.7 ***p.***= 0.9
Communicate effectively with colleagues from a variety of health and social care professions. - Inadequate - Adequate	 23 28	 45.1 54.9	 52 48	 52.0 48.0	**χ2**=0.6 ***p.*** = 0.4
Work with colleagues with different lifestyles, backgrounds or religions. - Inadequate - Adequate	 8 43	 15.7 84.3	 50 50	 50.0 50.0	**χ2**=16 **p.**= 0.000*
Take action if colleagues' health and performance puts patients at risk. - Inadequate - Adequate	 19 32	 37.3 62.7	 52 48	 52.0 48.0	**χ2**=2.9 ***p.***= 0.09
Be honest with patients, colleagues and supervisors. - Inadequate - Adequate	 6 45	 11.8 88.2	 35 65	 35.0 65.0	**χ2**=9 ***p.***= 0.002*
Work as part of a team with other healthcare professions. - Inadequate - Adequate	 19 32	 37.3 62.7	 44 56	 44.0 56.0	**χ2**=0.6 ***p.***= 0.4
Score of Collaboration Mean±SD	19.3±4.32		19±4.5		*P.*=0.9

Table 9: Comparison between female and male house officers' view about their preparedness for collaboration skills

Also, the current research showed that the mean score of each domain was higher among female HOs than males except for that of interpersonal skills with (P <0.05) for score of patient management, score of prevention, score of holistic care of the patients and total score for all domains. Fig. 1

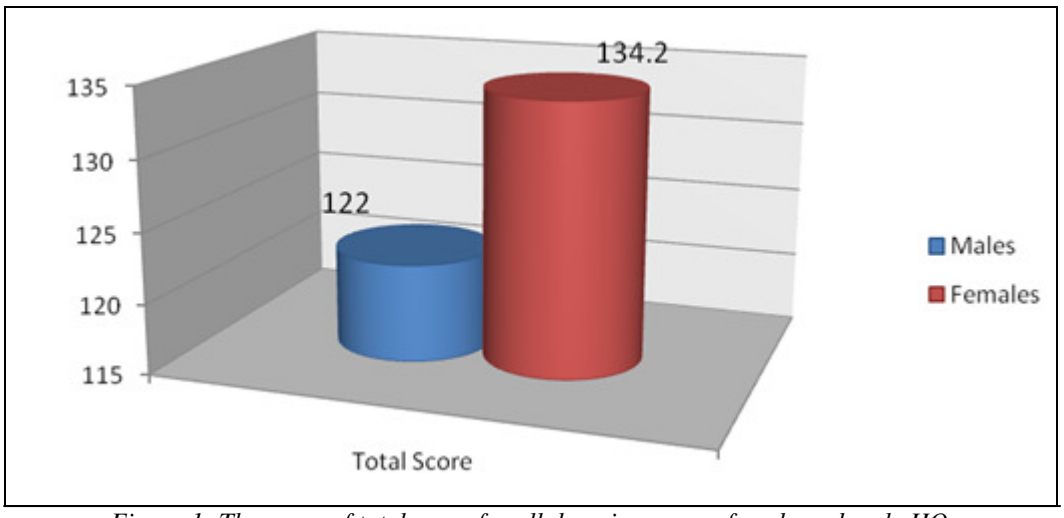

Figure 1: The mean of total score for all domains among female and male HOs

According to the mean of total score mean 96.1% of females felt sufficient preparedness for clinical work compared with 79.0% of males (p<0.05). In addition, nearly two thirds of females HOs agreed that their medical schools prepared them well for the clinical work versus 51.0% of males (p >0.05). Fig. 2

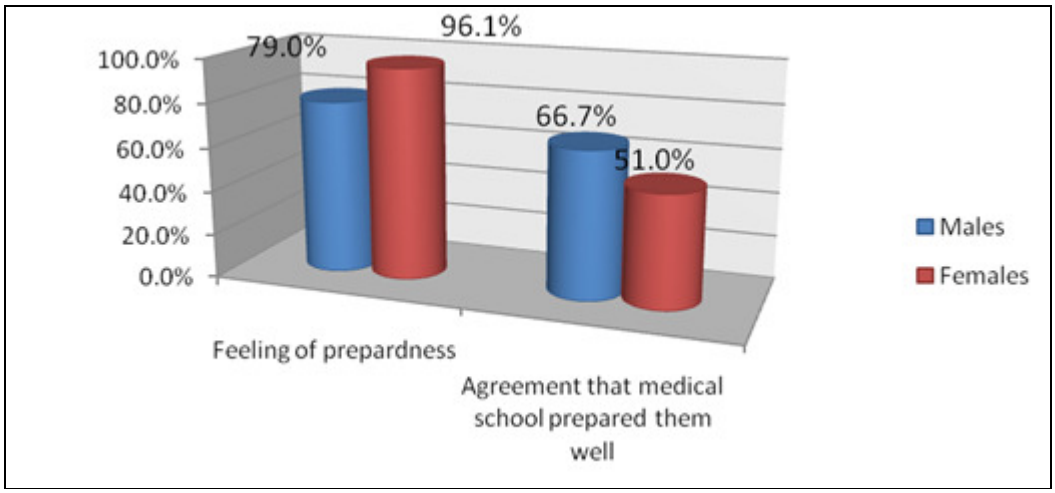

Figure 2: Comparison between female and male HOs' opinion about effectiveness of undergraduate medical education

Logistic regression analysis was performed for factors related to house officers' preparedness for clinical work. It was found that gender was not significant however, understanding the interaction of social factors with disease (e.g., poverty, unemployment), approach confidently with senior staff for help in interpreting investigations, manage time effectively, and score of patient management and prevention were significant predictor of preparedness for clinical work **Table 10**

Factors	B	Wald	p.
Understand the interaction of social factors with disease (e.g., poverty, unemployment).	1.5	5	0.03*
Approach confidently senior staff for help in interpreting investigations.	1.2	4.5	0.04*
Manage my own time effectively.	1.5	7	0.008*
Score of patient management	1.2	5.5	0.02*
Score of Prevention	0.3	9.5	0.002*

Table 10: Logistic Regression Results of factors affected HOs preparedness for clinical work

2.3. Strength and Weakness Points from House Officers' View and Their Suggestion for Improvement in Undergraduate Medical Education

The two comparative groups recorded the same strength points by chance as 60.8% of females and 78.0% of males viewed that their medical school courses had placed too much emphasis on medical knowledge, the second point is medical skills as history taking and physical examination (54.9% of females and 55.0% of males), the third point is coping them with heavy work and stress.**Fig.3**

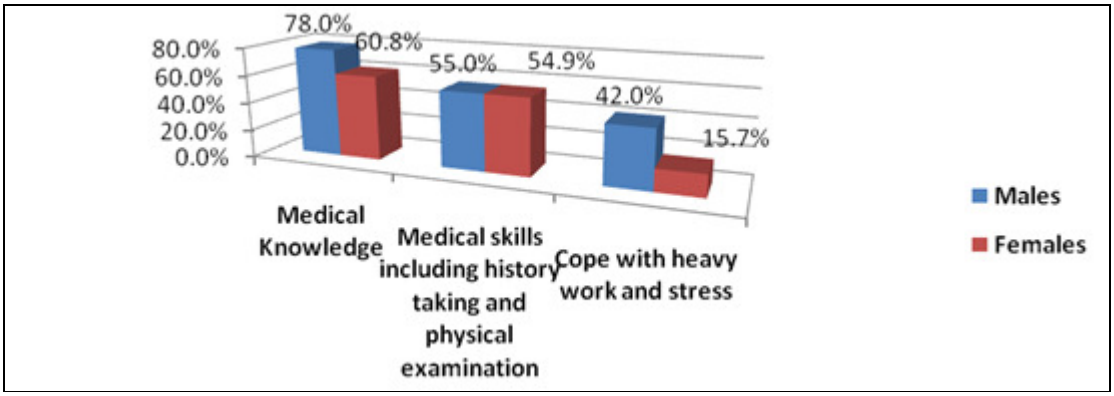

Figure 3: The most frequent recorded strength points in undergraduate medical education among female and male HOs

While the weakness points recorded by the two groups were as follows: defects in some medical skills as write prescription, CPR, gap between knowledge and practice, bad communication with the teaching staff, and dealing with patient.Fig.4

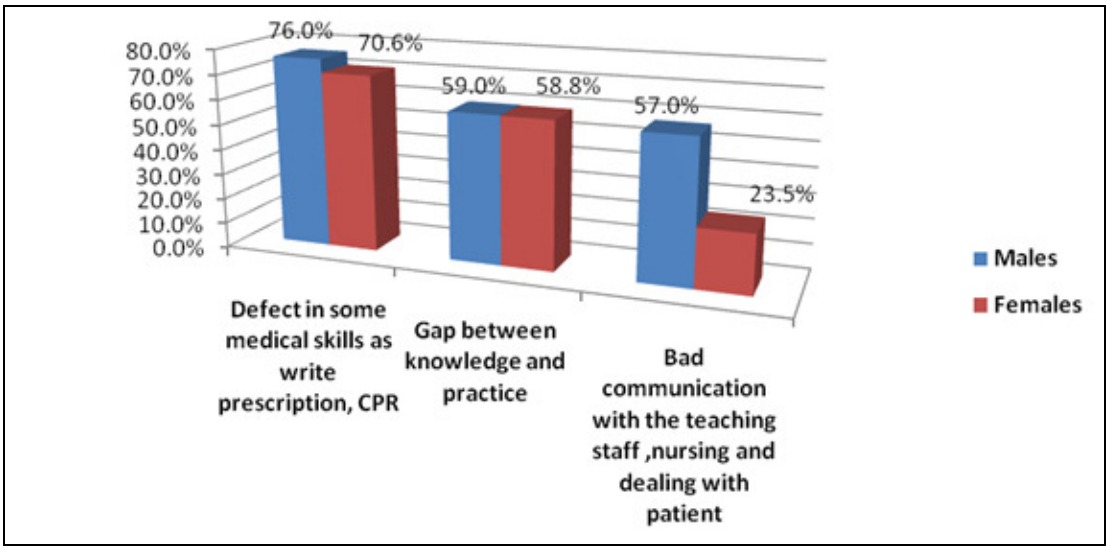

Figure 4: The most frequent recorded weakness points in undergraduate medical education among female and male (HOs)

Most of the house officers suggest initiating the early exposure to basic clinical skill, close the gap between knowledge and practice, with regular monitoring and evaluation, and improve supervision. Also, improve communication with teaching staff and patient and for males only clear job description format for house officer required tasks. Fig.5

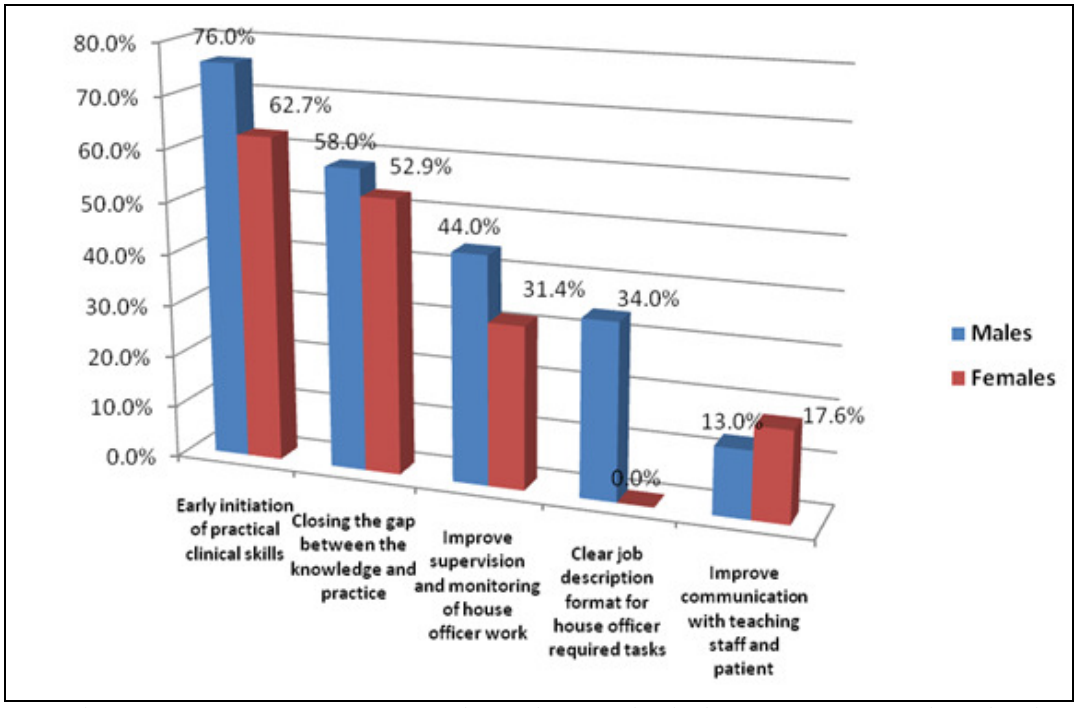

Figure 5: The suggestions for improvement undergraduate medical education among female and male (HOs)

3. Discussion

"Most people starting a new professional job, probably will, and probably should, feel unprepared to some extent"[2]. Nevertheless, this shouldn't stop researchers and medical teachers from trying to provide the best preparation and education possible. This is especially important in the health care sector where experience can lead to mistakes which affect patients' health.[10, 11]

The current study clarified that the included HOs married females were three folds than males (17.6% & 6.0% respectively); also, the former achieved excellent grade in undergraduate courses with higher figure (45.1%) than males (14.0%); however only 23.5% of females participated in some voluntary medical work/community activities compared to 40.0% of males. (p <0.05) this denotes how much females struggle for presenting themselves considering their engagement and responsibilities in home duties in our culture. There is a question about rural environment on preparation of girl to face impact of challenges.

This study representing the views of the house officers about how well the undergraduate medical program had prepared them for the foundation year.

For understanding science, practical procedure and area of patient management females felt more well prepared in understanding the disease process carrying out arterial blood gases (ABG), taking complete and systematic medical history, recording clinical data systematically than males ($p < 0.05$).

On the contrary, *Svirko et al.*[13] found a significantly higher percentage of females than males felt unprepared in respect of clinical procedures.

The most reported items in which HOs of both groups saw they had defects were in applying principles of basic science to clinical conditions, being aware of legal and ethical issues, interpretation of X-ray, complex practical procedures (e.g. bladder catheterization-CPR), medical emergencies (e.g., burning, epistaxis, ...) and in providing a care for people of different cultures ($p > 0.05$). However, females felt less preparedness in justifying drug uses on the basis of their mechanisms of action, risks and benefit (70.6% for females, 50.0% for males) ($p < 0.05$).

The current study revealed that females were more sufficient prepared in all elements of holistic care of the patients and also of prevention with higher total score mean in comparison to males, ($p < 0.05$).

These results are in agreement with *Dean* et al.[14] who reported that graduates of the University of Sydney felt more prepared at holistic care.

Male HOs showed higher percentages of adequate preparedness in all elements of interpersonal skills than females without statistical significant difference except for dealing with difficult, violent, mental and dying patients and their families. For collaboration skills, only working with colleagues with different lifestyles backgrounds or religions, being honest with patients, colleagues and supervisors the females HOs felt more sufficient preparedness than males (84.3%, 88.3% versus 50.0%,65.0% respectively) ($P < 0.05$).

In agreement, *Svirko et al.*[13] reported that females tend to score higher than males on neuroticism and anxiety, and tend to score lower than men on measures of self-esteem.

Furthermore, *Chou Huang et al.*[15] reported that the interactive abilities of males and females differ, with females tending to disclose more information about themselves in conversation and using a warmer and more engaged style of nonverbal communication. Male and female physicians may also show differences in the level of interpersonal skills relevant to medical practice.

On the contrary, *Laidlaw et al.* [16] research on communication and interpersonal skills in medical students shows that females excel in measures of communication performance.

Another study conducted by *McDonough et al.*[17] at an Irish medical school found that females performed better than their male counterparts.

Concerning to preparedness for confidence/coping skills, females (HOs) found themselves more well prepared to approach confidently with senior staff for help in interpreting investigations 66.7% versus 44.0% for males ($p<0.05$). Both HOs felt inadequate preparedness in coping with stress caused by their profession, balancing between their work and personal life. However, 94.0% of males showed more adequate preparedness in remaining calm in difficult situations compared to 56.9% of females ($p > 0.05$).

On the contrary, *Mattew and Garrison*[18] stated that in general female medical students report higher level of anxiety than male students. Although the effect is small in some cases or no gender difference is observed.

Also, *Blanch et al.*[19] mentioned that there is evidence that some female medical students tend to be more anxious and less self-confident than their male colleagues. These confidences related behaviors and beliefs can have a significant impact on both internal and external perception of ability and can undermine ability and performance.

As regard self-direction, both HOs have inadequate preparedness in all elements ($p > 0.05$).

In agreement to some extent, *Svirko et al.*[13] found a significantly higher percentage of females than males felt unprepared in respect of and physical/ emotional/mental demands; and a significantly higher percentage of men than women felt unprepared in respect of administrative tasks.

Feelings of preparedness are important in the successful transition from being a student to a practicing doctor.[3] However, when junior doctors say they feel prepared; they may not mean they think they are competent. [20]

It was significant higher total score mean among females than males, and accordingly almost all females (96.1%) felt sufficient preparedness for clinical work compared with 79.0% of males ($p<0.05$). In addition, nearly two thirds of females HOs agreed that their medical schools prepared them well for the clinical work versus 51.0% of males ($p > 0.05$).

This significant gender difference could be explained by some women trainee doctors overestimating their preparedness. Also, smaller numbers in teaching classes give better chances for acquiring female students more preparedness. In addition, there is a new trend at Al Zahraa hospital for application of obligatory training course for two weeks before assignment to work.

This study has reported that new doctor' preparedness varied with medical school attended and indicated that the factors that need to be present to support preparedness for practice are understanding the interaction of social factors with disease (e.g., poverty, unemployment), approach confidently senior staff for help in interpreting investigations, manage own time effectively, total score of patient management and prevention were significant predictor of preparedness for clinical work. While gender and other factors were not significant

In agreement to some extent, *Haist et al.*[21] found females performed better than males on the University of Kentucky CPX; but they found being a female was a positive and independent predictor of performance

On the other hand, *Lachish et al.* [22] found that perceptions of preparedness did not differ statistically between females and males in 2011/2012 cohorts.

Furthermore, *Svirko et al.*[13] found that females were slightly less likely than males to feel well prepared for work (50.0% of females agreed or strongly agreed versus 54.0% of males) independently of medical school. In addition, they stated that there are well-documented gender differences in personality, which could result in gender differences in self-evaluation.

An important purpose of assessment is to help people to discover their strengths and weakness so that they can make the most of their strengths and correct or minimize their weakness.[23]

On giving a chance of the house officers to arrange their opinions on points of strength and weakness in undergraduate medical curriculum, they recorded the same points in both groups. They rated that the strong points were medical knowledge, some skills as history taking and physical examination and how to cope with stress and heavy work, while the most frequent recorded points of weakness are rated as following: defect in certain practical procedures as prescription, gap between the medical knowledge and practice and bad communication.

Concerning the medical education, *WHO*[24]demonstrated their findings of 2013 work to identify challenges, priorities and develop action framework for reforming medical education in Eastern Mediterranean Region (EMRO). These findings concluded that there is an underscores of the reform of undergraduate and continuous education and the key challenges on institutional level are irregular revision and updating of the curriculum in large number of schools, inadequate educational resources exists to support student-centered education and clinical skills, faculty recruitment doesn't emphasize educational skills, management experience and community service. Many medical schools lack separate academic teaching hospital and advanced methods of clinical teaching and assessment are not available. Also revision and update of curricula is irregular in large number of medical schools.

Most of the house officers suggest initiating the early exposure to basic clinical skill, close the gap between knowledge and practice, with regular monitoring and evaluation, and improve supervision. Also, improve communication with teaching staff and patient and for males only clear job description format for house officer required tasks.

In agreement *Godefrooij et al.*[25] stated that to overcome work anxieties and perceived short-comings, students should experience a gradual transition from preclinical to clinical education with more exposure to patients' settings. In addition, *Brennan et al.*[26] clarified that medical schools need to ensure that students are provided with early exposure to clinical environments which allow for continuing 'meaningful' contact with patients and increasing opportunities to 'act up' to the role of junior doctor, even as students.

4. Conclusion

Female house officers yielded higher mean figures than males in all domains except in interpersonal skills. However, the results point out a number of areas which should be explored further in both groups particularly certain practical procedures as prescription, gap between the medical knowledge and practice and bad communication.

5. Recommendations

More training courses are important to close the gap between knowledge and practice. Appraising and assessing the trainee's work against accepted standards is important. Effort should be made to recognize the difference in how male and female medical students are perceived. Psychiatrist and occupational medical researchers should invest time in programs and practical sessions to improve confidence and how cope with work stress particularly for females. Medical educators should focus on training student how to acquire interpersonal skills also may be particularly relevant for female medical students.

6. References

i. http://en.wikipedia.org/wiki/Medical_education
ii. Goldacre M.J., Taylor K. and Lambert T.W., (2010): Views of junior doctors about whether their medical school prepared them well for work: questionnaire surveys/BMC Medical Education; 1472-6920:10-78.
iii. Ochsmann E. B., Zier U., Drexler H. and Schmid K.,(2011):-Well prepared for work? Junior doctors' self-assessment after medical education. BMC Medical Education http: //www. biomed central.com/1472-6920; 11:99.
iv. Mørcke A.M., Nielsen D.G., Kjeldsen I.T. &Eika B., (2011):-Medical graduates feel well-prepared for clinical work.Dan Med Bul 2011; 58(11):A4330.
v. FrambachJM,ManuelBAF,Fumo AMT, et al.,(2015): students' and junior doctors' preparedness for the reality of practice in Sub- Saharan Africa. Med Teach 2015; 37"64-73.
vi. Woolf K., Haq I., McManus I.C., Higham J. and Dacre J., (2008): Exploring the underperformance of male and minority ethnic medical students in first year clinical examinations. Adv Health Sci. Educ. Theory Pract. ; (13): 607–16.
vii. Mostafa S and El-Shourbagy O; (2012): Omar's Applied and Medical Statistics. Egyptian National Library Catalog NO.2002-14314; (5TH Edition): p (49,151).
viii. Sprung J., Bojanić K., Schears G.J, Schroeder D.R, Jenkins S.M, and Warner D O., (2009): Survey of self-assessed preparedness for clinical practice in one Croatian medical school. BMC Research Notes, 2:152.
ix. Abo Elela A.M., Abdel Fattah T.A., AboulFotouh A.M., and Gad M.M.(2015): assessment of Preparedness for medical practice among house officers of faculty of medicine for girls of Al Azhar University and Ain Shams University. Thesis submitted in partial fulfillment for master degree in community medicine. Community medicine department. Faculty of medicine for girls Al Azhar University 2015.
x. Heffner JE,EllisR,Zeno B (2005) :Safety in training and learning in the intensive care unit.Crit care Clin,21: 129-148.

xi. Posner KL, Freund PR (2004): Resident training level and quality of anesthesia care in a university hospital. Anesth Analg.98:437-442.

xii. Reda A, (2015): statement of International Federation of Medical Students' Associations on: review of medical education in Eastern Mediterranean Region. World Health Organization, Kuwait City/ Kuwait .Available from rdemr@ifmsa.org/www.ifmsa.org.

xiii. Svirko E., Lambert T. and Goldacre M.J., (2014): Gender, ethnicity and graduate status, and junior doctors' self-reported preparedness for clinical practice: national questionnaire surveys. Journal of the Royal Society of Medicine, Vol. 107(2): 66–74.

xiv. Dean S.J., Barratt A.L., Hendry G.D., Lyon P.M., (2003):- Preparedness for hospital practice among graduates of a problem-based, graduate-entry medical program. Medical Journal of Australia; (178):163-167.

xv. Chou Huang C, Chang Huang C, Ying Yang Y, Wen Chen J(2015): The influence of gender on the communication skills assessment of medical students European Journal of Internal Medicine 26(9)

xvi. Laidlaw TS,Kaufman DM,Macleod H, Van ZantenS, Simpson D,Wrixon W(2006): Relationship of residents characteristics, attitudes, prior training and clinical knowledge to communication skills performance. MedEdu ;40:18-25.

xvii. McDonough CM, Horgan A, Codd MB, Casey PR. (2000): Gender differences in the results of the final medical examination at University College Dublin. Med Educ .34:30–4.

xviii. Mattew D, Garrison G (2007): Future medical school applicants. Part II, Gender diversity. AAMC.AnalAAMC.AnalBreif; 7:1-2.; 7:1-2.

xix. Blanch D.C., Hall J.A., Roter D.L. and Frankel R.M., (2008): Medical student gender and issues of confidence .Patient. Educ. Couns; (72): 374–81.

xx. Cave J., Woolf K., Jones A. &Dacre J., (2009): Easing the transition from student to doctor: How can medical schools help their graduates for starting work. Medical Teacher ;(31):403-408.

xxi. Haist, S.A., Witzke, D.B., Quinlivan, S. et al. (2003): Clinical Skills as Demonstrated by a Comprehensive Clinical Performance Examination: Who Performs Better – Men or Women? Advance in Health Science Education Theory Pract.; 8(3): 189–199.

xxii. Lachish S, Goldacre MJ, Lambert TW (2016): Self- reported preparedness for clinical work has increased among recent cohorts of UK –trained first year doctors. Postgrade Med J; 0:1-6.

xxiii. McMahon R, Barton E, Piot M, Gelina N and Ross F; (1980): On being in charge, a guide for middle-level management in primary health care; World Health Organization, Geneva. P: (114,117) ISBN 9241541482.reprinted 1984,1985,1986,1988.

xxiv. World Health Organization Regional Committee (62) for Eastern Mediterranean (EMRO), (2015):- challenges facing medical education in the region. Bulletin, issue 2, 7 October (3) available on www.emro.who.int.

xxv. Godefrooij M., Diemers A. & Scherpbier A; (2010): Students perceptions about the transition to the clinical phase of a medical curriculum with preclinical patient contacts; a focus group study. BMC Med. Educ. (10): 28-28.

xxvi. Brennan N., Corrigan O., Allard J., Archer J., Barnes R., Bleakley A., Collett T.& Regan de Bere S; (2010):- The transition from medical student to junior doctor: today's experiences of Tomorrow's Doctors. Medical Education; (44): 449–458.