THE SEQUENTIAL FEEDBACK OF IRAQI MEDICAL GRADUATES PERFORMANCE

التغذية الاسترجاعية لأداء خريجي كليات الطب العراقية

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Abstract

Background; Iraqi medical graduates qualify (MB. Ch. B.) then assigned as intern resident doctors to commit uniform twelve months training in various clinical disciplines as apprentices in health care. Ministry of health has no formal apprenticeship program to ensure competency and quality of juniors.

The objectives of medical colleges are to ensure eligible safe health providers qualified to acquire and refine clinical skills in medical disciplines. Outcomes feedbacks are recommended to promote faculty curriculum and to ensure graduates competence. This current appraisal of Karbala is the second whereas the first was at 2010.

Aims; To promote curricula of medical colleges and establish a genuine apprenticeship legislation for resident doctors.

Design; cross sectional self evaluation.

Date; December 2012.

Setting; CME Center, General directorate of Holy Kerbala, Kerbala, Iraq.

Subjects and Methods; Recently assigned 45 medical graduates of academic year 2011-2012. Questionnaire consists of 50 items including clinical skill performance, curricular affairs, and graduates comments and opinions. The scoring levels assigned (+) if competent, (±) if equivocal, and (-) if non competent.

Results; Response rate; 98%. Females**;** 71.1%. Kerbala graduates; 71.1%.

Upgrade performance; 19 clinical skills. Downgrade performance; 25. Females are better in communications and clerkship skills, males are better in interventional and emergency management skills. Graduates recommend skill lab and asked for more practical and professional curriculum.

Conclusions; Most of the upgrade skills are learned through skill lab. The low 25 skills are of clinical methods. Gender has strong impact on skill performance**.**

Faculties curricula need renewal and health authority should apprentice graduates better to achieve an eligible national health services.

Keywords; Iraqi health services, Medical graduate's evaluation. medical education,clinical skill lab.

الخلاصة

الخلفية: تهدف كليات الطب إكساب خريجيها المعلومات الطبية المعاصرة و المهارات السريرية الكافية لتمكينهم من تقديم الخدمات المهنية الآمنة. توظف وزارة الصحة العراقية خريجي كليات الطب بعنوان أطباء مقيمين دوريين تحت التدريب. لا يوجد في وزارة الصحة برنامج تدريبي واضح لتأهيل الأطباء المقيمين مهنيا يضمن الكفاءة السريرية وتطورها. هذا التقييم الدوري لخريجي كليات الطب في كربلاء هو الثاني حيث أجري التقييم الأول في عام 2010.

التاريخ: كانون الأول 2012 .

المكان: مركز التعليم الطبي المستمر، في دائرة صحة كربلاء المقدسة، كربلاء، عراق.

الهدف:تطوير مناهج كليات الطب وانجاز نظام معتمد لتأهيل الأطباء المقيمين الدوريين

التصميم: دراسة مقطعية تعتمد التقييم الذاتي.

الخريجون والطريقة: 45 من خريجي كليات الطب العراقية في الفرات الأوسط للعام 2011 – 2012 والذين عينوا حديثا بعنوان أطباء مقيمين دوريين قي مستشفيات دائرة صحة كربلاء المقدسة. تكونت قائمة الاستبيان من 50 بندا اشتملت على أداء

المهارات السريرية, وشؤون المناهج الدراسية، وأراء وتعقيبات الخريجين.
النتائج: معدل الاستجابة: 98٪. نسبة الإناث 71.1٪، خريجي كلية طب كربلاء : 71.1٪.
ظهر تحسن في أداء (44/19) مهارة سريريه شملت المهارات التي درب عليها الخريجون في مختبر المهارات السريرية.
ظهر انحدار في أداء (44/25) مهارة سريريه ومهنية يتم تدربها سريريا.
نتائج الإناث أفضل في المهارات التوثيقية و المتابعة السريرية, ونتائج الذكور أفضل في خبرات التعامل مع الحالات الطارئة.
أشاد الخريجون في تدريب مختبر المهارات السريرية .
الاستنتاجات؛ الانحدار يفوق التحسن في أداء الخبرات السريرية. التدريب في مختبر المهارات السريرية يدعم اكتساب الثقة بالنفس ويسهل التدريب ألسريري في حالات متعددة. جنس الخريج عامل مؤثر في خبراته السريرية .
نقترح تحديث المناهج الدراسية في كليات الطب مع اعتبار آراء الطلبة والخريجون وتشريع وزارة الصحة لقانون ناجز لتأهيل الخريجين مهنيا من اجل ضمان خدمات صحية أفضل للمواطنين.

Introduction

Skillful performance in the act of medical care is fundamental to the delivery of quality professional service to those who seek the care of physicians *(1).*

The resource of Iraqi physicians usually is the national medical colleges. Iraqi medical colleges` alumni are annually increasing, last year they were over two thousands. Medical Colleges qualify (MB. Ch. B.) certificate after passing the final exam graduates are recognized as members of Iraqi Medical Association and officially assigned as intern resident doctors serve in the general hospitals, so far they are regarded as the lowest grade in the medical hierarchy of qualified doctor and commit a uniform twelve months rotational training system in various clinical disciplines as apprentices who assist in the secondary health care *(2)*.

The objectives of medical education are to ensure that each student should develop basic clinical skills during undergraduate course. Disciplines of medical core knowledge, medical ethics, and basic clinical skills of life saving procedures as well as other essential professions like communications, diagnostic and emergency interventional experiences are elemental objectives of the medical faculty curricula in Iraq as in other countries. These competencies are required for eligible and safe health care services before both juniors and patients confront troubles through a possible mismanagement. The continuum of education process is required to provide contemporary competent care and physicians should acquire and refine competencies for life *(1,2,3)* **.**

Actually Ministry of Higher Education appreciates these facts and has released many sensible instructions to achieve these objectives, even though some graduates unfortunately apparently fail acquiring some essential basic skills during undergraduate course *(3,4,8)*. This problem of under competency is not limited to Iraqi medical graduates but also appears in some graduates of credited universities and medical schools of the developed countries*(6,7,8,10).*

Until now Ministry of health has no official juniors apprenticeship program to ensure competency and quality, instead Ministry issued many instruction rules of tasks and duties to control internship administration. Although novices might learn skills with variable competencies through "on the job" tasks, theses skills remain of unreliable levels without the appliance of controlled explicit training program executed by concerned competent supervisors and trainers followed by objective evaluation*(2,3)*.

The outcomes feedback have got consensus acceptance and is recommended by the medical educators, it is an important factor of curriculum design and promotion*(8).*

This current feedback evaluation of Karbala Iraqi residents is the second after that of 2010. In fact the results of the previous appraisal had alerted Kerbala Medical College educators to propose solutions such as relevant workshops and conferences, access to teaching experts, emphasis on teaching modernization, and the implementation of preclinical skill lab *(1,3,6)* .

Objectives

To promote the curricula of medical colleges and to establish a genuine apprenticeship legislation for resident doctors.

Subjects And Methods

This study was performed at CME center during December 2012 and involved Forty five newly graduated resident doctors who were recently assigned as resident doctors under training in Kerbala Teaching Hospitals.

All the graduates are of Iraqi medical colleges of academic year (2011-2012).

The questionnaire is anonymous consists of (50) categories, (44) are essential clinical skills mandatory for health providers include most of medical disciplines which were also included in the first feedback carried out at 2010. These skills are credited by the Iraqi Quality Assurance and Accreditation Department and also are recommended by the Association of American Medical Colleges 2005. The last six statements of the list related to the graduates confidence and faculty teaching methods. There is a separate zone for graduate`s relevant opinions and comments.

The design of the study is cross sectional voluntary feedback which depends self perception of graduates on their views about clinical skills and curriculum. The graduates asked to tick honestly against the appropriate level of competency of the particular skill or the learning affair.

The competency scores were scaled into three levels as follow; (+); when graduate masters or acquires the skill and has independently done the skill perfectly on manikin or living patient, or a learning method was successful and useful.

(±); graduate did the procedure under supervision on a living patient or on a manikin, or a learning method was of equivocal help, and (-); when he does not know the skill, or just knows the principle through the instructional learning, or the particular teaching method was useless.

The responses then ranked into five categories:

1. Upgrade competencies compared to 2010 questionnaire
2. Downgrade competencies compared to 2010 questionnaire
3. Kerbala graduates compared to other colleges performance
4. Gender related performance.
5. Graduates comments and recommendations

The statistical analysis was processed through the statistical package for social sciences (SPSS) version 16.0 software

Results

The graduates: total number (45), mean ages; (24) years.

Female; (32,71.1%), males; (13, 28.9%).

Thirty two (71.1%) are graduated from Kerbala college of medicine;(9, 20%)from Babel, and (4, 9.8%) from Al Kuffa Universities.

The response rate was (98%); (27) respondents ignored (42, 2%) of items (range; 1-4 items/list), none of graduates ignored the whole list.

1. Upgrade performance; table (1), there is improvement in (19) skills (range; 37.4%- 0.7%) some are essential life saving procedures like endotracheal intubation, respiratory assistance, venous cut down, and venous cannulation. Others are general professions e.g. urinary catheterization, breast examination and abdominal examination.

Table (1);Upgrade skills performance in descending sequence

no	skill	Upgrade
1	Endotracheal intubation.	37.4%
2	Respiratory assistance, oropharyngeal airway, emergency tracheostomy / cricothyroidotomy.	25.4%
3	Venous cut-down.	15.9%
4	Communication with senior doctors	13%
5	Intravenous injection, cannulation, venous blood sampling.	12.4%
6	Appropriate Male and Female urinary catheterization.	12.2%
7	Examination of the female and male breast and regional lymph N	6.4%
8	Diagnoses of common infectious skin lesions.	5.8%

9	Principles and practice of proper wound care.	4.1%
10	Central venous pressure (CVP) measurement and central vein cannulation.	4%
11	Communication with patient and proper history taking	4%
12	The basic science knowledge is consistent with the present job	4%
13	Taking swabs for bacterial examination from lesion or blood (aerobic and anaerobic).	3.1%
14	Examination of liver, spleen, kidneys, hernias and masses.	3%
15	Taking an arterial blood sample (radial and femoral).	2.8%
16	Nasogastric tube insertion and management.	2.2%
17	Assessment of the peripheral sensory examination and reflexes	1.4**%**
18	Splints application.	1.3%
19	Full respiratory examination.	0.7**%**
Median; +4.0, Std. Deviation; 9.46, Minimum; +0.7, Maximum; +37.4, Mean; +8.37, Percentiles; +2.80%. The upgrade numbers are the sum of both 2012 {(+) and(±)} minus2010{(+) and(±)} responses.		

2- Downgrade performance; as shown in table (2) there is decline in (25) skills (range; 42%-1.8%) some of these skills are of general professions like suturing, Pap smear, and investigations request. others are emergency procedures like assessment of traumatic vascularity, joint immobilization and fetal assessment.

Table (2); Downgrade skills performance in ascending sequence.		
No	Skill	Downgrade
1	Assessment of the vascular supply to a limb after trauma or surgery	42.6%
2	Performing simple suturing	32.7**%**
3	Cervical Pap smear	29.6%
4	Prescription, setting up, and operating a nebulizer correctly.	29.2%
5	Examination of the external genitalia of (♂& ♀).	27.5%
6	Drug dose and recording outcome accurately	24.5%
7	Requesting and filling investigations format accurately	22.2%
8	The indications and application of different % of oxygen therapy.	20.7%
9	Surface markings of the abdominal contents.	18.2%
10	Normal / abnormal pulses; radial, femoral, popliteal…act	16.6%
11	Practicing joint immobilization.	15.5%
12	Plaster of Paris application.	12%
13	Assessment of visual acuity, color vision and pupillary reflexes	11%
14	Proper application of Glasgow Coma Score.	10%
15	Pregnant and fetal assessment.	9.8%
16	Proper shock management.	9.7%
17	Communication with staff	9.6**%**
18	Communication with patient and family	8.1%
19	Standard dipsticks to analyze samples of urine.	7%
20	Examination of the cranial nerves	6.7**%**
21	Recognizing drugs involved with common medical conditions	6.6%
22	Methods of parenteral fluid, nutrition, &medication administration.	6.6%
23	No difficulties in communication with sub staff	6%
24	Writing concise, accurate and legible follow-up case notes.	4.6%
25	Auscultation of abdomen	1.8%
Median;-11.0, Minimum;-1.8, Maximum;-42.60,, Mean;-15.5, Percentile; 6.8%. The downgrade numbers are the difference between both 2010{(+) and(±)} minus 2012 {(+) and(±)} responses.		

3- Kerbala graduates compared to other colleges performance; as in (appendix1), in general Kerbala graduates apparently of lower performance score in emergency interventions like suturing, vascular assessment, venous cut down, and splint application, as well as in some general professions like dipstick urine analysis, and cervical Pap smear skills.

4- Gender and performance; table (3) represents the gender related performance of all graduating colleges, female graduates appeared having higher scores in communication and clerkship competencies, but males are more confident and better in psychomotor general and emergency management procedures .

Table (3); Gender related competencies

no	Groups of competencies	Females	Males
1	Communication skills group	more	less
2	Physical examination and tests.	equal	equal
3	Medications and prescription skills	less	more
4	Investigations	less	more
5	Clerkship and follow up	more	less
6	Emergency assessment skills	less	more
7	Emergency resuscitation skills	less	more
8	General interventional procedures	less	more
9	Self confidence	less	more

NB. the relevant competencies are grouped together.

5- Graduates Comments and Recommendations; (13,29%) of graduates wrote comments; Twelve of the commenter's were from Karbala college. The comments concise is shown in table (4).

Table(4); Graduates comments and recommendations

no	Comments and recommendations	Episodes
1	Need active exposure and training at casualty and dealing with urgent critical conditions	5
2	Should focus on practical training instead of extensive theory.	3
3	The theory knowledge practically is not applicable locally	2
4	Curriculum should be more transparent	2
5	The sequential graduate's feedback is useful.	2
6	The training curriculum is confusing	1
7	Should have equality in dealing with students.	1
8	Do not embarrass students during training, it cause psychological harm affects future career.	1

Discussion

This self feedback is easily approached and inexpensive but is of moderate objective validity . It is applied anonymously there fore bias should be reduced *(10, 14)*.Definitely the Objective Structured Clinical Examination (OSCE), is more appropriate, but is rarely used because it is demanding and costly (*11*)**.** On the other hand trainers` scoring of graduate's competency usually is higher than graduates self evaluation scorings, this fact leaves the question of tutors skills scoring validity unresolved *(12,15)*.

This study size (n; 45) was obligatory for administrative reasons, even though small size relevant questioners have been published in recognizable educational journals *(13, 17)*.

Although limited, this appraisal may declare the performance standard of graduates who learned on similar curricula and learning environments but formal national feedbacks which include graduates of all Iraqi medical faculties would be upscale.

The high response rate 98% may mark the participant's enthusiasm to attain excellence and awareness of own opinions significance.

Certainly student learned on traditional teaching method may not master many clinical methods and skills, but there is explicit high score performance regarding (19) clinical skills (Table 1) like

endotracheal intubation, respiratory assistance, venous cannulation, CVP, urinary catheterization, and nasogatric tube management *(16,17)*. Graduates of 2010 had been in the residency job for two months, even though they denied acquiring some of the above mentioned emergency skills at time. Certainly tutor's efficiency is highly significant for this good news of success, but also most of these high scored skills (table 2) have been coached in the clinical skill lab of Kerbala as well as in the other two graduating colleges. This fact demonstrates the skill lab impact on self confidence and skills acquisition *(3,18)*. In fact skill lab partially resolved the problems of competency and socio religious embarrassment of students training on other sex or similar sex patients . Clinical skill mastery is developmental and skill lab system is designed as a preclinical first stage process that doesn't totally cancel the great real patient turn of skill acquisition.

To be fully effective, skill lab should be scholarly managed, and well equipped with sufficient and efficient tutors, facilities and recourses. Ideally simulation training should be integrated with the core knowledge syllabus and the procedures should be standardized by all tutors and is similar by all learners. Certainly one skill lab session is insufficient for skill acquirement, it should be gradual process, starts early, and being progressive, thereafter skill is applied on real patient under close supervision and feedback processes*(1,2,18,19)*.

On the contrary of the success there is evident reduction in performance of (25) clinical skills, table (2). Some of these skills are ward based competencies e.g. bowel sounds, and taking culture swab... etc. Some of these skills can be learned in skill lab as well, e.g. wound suturing and surgical knots, or learned on standardized patients or peer examination *(3)*. Professions like communications, cervical Pap smear, shock management, or traumatic vascular assessment require a full health care environment with the attendance of sincere, genuine trainers who are able to exploit the proper patient in the proper time to demonstrate, to perform, and then to feedback. However no body warrants skills improvement of graduates with the current on job training.

The apparent differences of graduate's competence of the different colleges are unreliable because of the inequality of graduating scores of the groups.

There is evident gender difference in clinical competence of graduates, although both male and female students have attended same curriculum course, as is shown in tables (3), female graduates perform better than male in communications and clerkship professions and follow up, but males are superior in self confidence and in five essential psychomotor skills like emergency assessment and resuscitation or general interventional procedures, this fact is consistent with Zagreb University study *(12)*.

Although skill lab training have been comprehensively performed on breast and genital examination skills, still there is a gander differences (appendix *2*). Societal and self interest reasons might be incriminated *(21)*. These differences should be concerned by curriculum planners, and health authorities noting that females are over 70% of medical graduates in Iraq and their average graduating scorings are higher .

Confidence; In fact some unconfident accent reappeared after 2010 appraisal table (4) and appendix *(1, 2)*. It may be logical to consider this problem into two separate issues;

First, (33%) of graduates do not trust their own competency to confront responsibilities of first in charge doctor in the casualty or the wards *(2)*. Frequent active students participation on the real hospital environment of casualty and inpatient care may ensure improvement. These are in excess to the early frequent organized preclinical skill simulations and the shift to a more clinical, and problem based curriculum on the expense of the dry needless instructions *(1, 8)*.

The second issue is that (24%) of graduates are unconfident about their curricula table (4) and appendix (1, 2). Graduate appreciated the preclinical skill lab significance first (89%), the second is the bed side training (84%), but the third is the basic science teaching. Educators are invited to promote the most useful methods and to improve the others.

Graduates comments and recommendations; table (4) The contemporary curriculum is outcome based, this set of graduate comments are precious, genuine, and logical, do not need an extra comments but should never been ignored, in stead should be sincerely concerned when designing modern curriculum and education policy *(1,5,22)* .

Conclusions

Most of the improved competencies are related to urgent interventional skills which were coached through skill lab training.

Most of the down grade performance competencies are bed side every day professions, which were not included in the skill lab program for some reason or another, or are not recommended as skill lab procedures.

Graduates valued skill lab training more than other teaching methods, skill lab facilitate clinical skill acquisition and raise graduates self confidence.

Gender has a strong impact on skill performance, males are superior to females in psychomotor urgent and interventional skills but females are better in communications and clerkship skills, this create a problem of health care planning.

One third of graduates are unconfident to confront duties and emergency conditions.

A quarter of graduates are unconvinced about their implemented curriculum.

Recommendations

Faculty's curricula should be turned into contemporary outcome and community based design and should offer more efforts on skill acquisition and professionalism.

Objective pre and post residency appraisals include graduates of all Iraqi medical faculties should be more factual and more informative.

Ministry of Health may be responsible to apprentice medical graduates through an eligible legislation including clinical skill competence and health care professions.

APPENDICES

Appendix (1); complete comparison table of performance between the graduating universities.
Numbers in lines 2 and 3;(first number; +, second; ±,third, lower;—)

no	Clinical skills	Kerala (+, ±, —)	Babel &Kuffa (+,±,—)
1	Auscultation of abdomen	20(62.5%), 11(34.4%), 1(3.1%)	11 (84%), 2(15%), 0
2	Examination of the female and male breast and regional Lymph N	24(77.4%), 4(12.5%), 3 (9.7%)	8 (52%), 3(23%), 2(15%)
3	Communication with patient and proper history taking	23(71.9), 9(28.1%) 0	10(67%), 3(23%) 0
4	Communication with patient and family	19(61.3%), 9(29%), 3 (9.7%)	7(53%), 5(39%), 1(7%)
5	Normal / abnormal Pulses; radial, femoral, popliteal…ect	20 (66.7%), 7(23%). 3(10%)	10 (67%), 3 (23%), 0
6	Examination of liver, spleen, kidneys, hernias and masses.	17(54.8%), 14(45.2%) 0	0, 8 (61%), 5 (39%)
7	Communication with senior doctors	11(35.5%), 15(48.4%), 5(16.1%)	5(38%), 6(46%), 2 (15%)
8	Surface markings of the abdominal contents.	12 (40%), 10(33, 3%) 8(26.7%)	7 (42%) 6(42%), 2 (16%)
9	Examination of the cranial nerves	15(46.9%), 14(43.8%) 3(9.4%)	10 (80%), 6(46%) 0
10	Communication with staff	14(43.8%), 12(37.5%) 6(18.8%)	6(46%), 6(46%), 1(7%)
11	Full respiratory examination.	24 (75%), 7(21.9%), 1(3.1%)	9(70%), 4(33%), 0
12	Assessment of the peripheral sensory examination and reflexes	10(31.2%), 19(59.4%) 3(9.4%)	7(54%), 6(46%), 0
13	Performing simple suturing	4(12.9%), 9(29. %), 18(58.1%)	3(23%), 7(54%), 3(23%)
14	Assessment of the vascular supply to a limb after trauma or surgery	7(24.1%), 11(37.9%), 11(37.9%)	4(30%), 7(54%), 2(15%)
15	Assessment of visual acuity, color vision	13(43.3%), 12(40%),	5 (4.8%), 4(33, 3%)

	and pupillary reflexes	5(16.7%)	4 (30%)
16	No difficulties in communication with sub staff	10(32.3%), 15(48.4%), 6(19.4%)	2(15.3%), 4(31%), 6 (46%)
17	Venous cut-down.	3(9.7%),0, 28(90.3%),	1(7%), 3(23%), 9(69%)
18	Respiratory assistance, oropharyngeal airway, emergency tracheostomy / cricothyroidotomy.	2(6.2%), 2(6.2%), 28(87.5%)	2 (15.3%), 5(38%), 6 (46%)
19	Endotracheal intubation.	0, 12(37.5%), 20(62. %)5,	4(31%), 4(31%), 5 (38%)
20	Central venous pressure (CVP) measurement and central vein cannulation.	4(12.5%) 2(6.2%) 26(81.2%)	2 (1%) 4. (31%) 7, (54%)
21	Standard dipsticks to analyze samples of urine.	1(3.1%), 3(9.4%), 28 (87.5%)	3(23%),2(1%)5, 8(62%)
22	Plaster of Paris application.	1(3.1%), 2(6.2%), 29(90.6%)	4(30%), 3(23%), 6 (46%)
23	Cervical pap smear	1 (3.1%), 9 (28.1%) , 22(68.8%)	2 (15, %) 3(33%), , 6 (46%)
24	Taking an arterial blood sample (radial and femoral).	5(15.6%), 4(12.5%), 23 (71.9%)	4(31%), 4(31%), 5 (38%)
25	Splints application.	1(3.2%), 6(19.4%), 24(77.4%)	4 (31, %) 8(62%), 1(7%)
26	Taking swabs for bacterial examination from lesion or blood (aerobic and anaerobic).	2(6.2%), 11(34%). 19(59.4%)	1(7%), 9(69%), 3(23%)
27	Drug dose and recording outcome accurately	3(9.1%), 16(48.5%) , 14(42.4%)	0, 5(39%), 7(60%),
28	Practicing joint immobilization.	1(3.2%), 7(22.6%), 23 (74.2%)	0, 5(38%), 8(62%)
29	The indications and application of different % of oxygen therapy.	2(6.1%), 13(39.4%), 18(54.5%)	1(7%), 11(84%), 1(7%)
30	Diagnoses of common infectious skin lesions.	5(15.2%), 23(69.72%) 5(15.2%)	4(30%), 23(54%), 2(15%)
31	Methods of parenteral fluid, nutrition, &medication administration.	5(15.6%), 16(50%). 11(34.4%)	4(30%), 8(62%), 1 (7%)
32	Appropriate Male and Female urinary catheterization.	9(27.3%), 14(42.4%), 10 (30.3%)	4 (30%), 7(54%), 2(15%)
33	Intravenous injection, cannulation, venous blood sampling.	13(39.4%), 15 (45.5%), 1(5.2%)	6 (46%), 4(31%), 3(23%)
34	Nasogastric tube insertion and management.	5(15.2%), 15 (45.5%), 13(39.4%)	5(38%), 3(23%), 5(38%)
35	Proper application of Glasgow Coma Score.	12(36.4%), 14(42.4%), 7(21.2%)	3(23%), 7(54%), 3(23%)
36	Examination of the external genitalia of (♂& ♀).	6(18.2%), 11(33. %) 3, (16%)	1(7%), 6(46%), 6 (46%)
37	Prescription, setting up, and operating a nebulizer correctly.	3(9.7%), 9(29%). 19(61.3%)	2(15%), 4(34%), 7(54%)
38	Proper shock management.	2(6.1%), 24(72.7%), 7 (21.2%)	1(7%), 10(78%), 2 (15%)
39	Pregnant and fetal assessment.	11(34.4%),18(56. %)2 3 (9.4%)	5(38%), 6(46%), 2(15%)
40	Principles and practice of proper wound care.	5(15.2%), 25(75%), 3(9.1%)	3(23%), 8(62%), 2(15%)
41	Writing concise, accurate and legible	6(18.8%), 18(56.2%),	5(39%),3(31),

	follow-up case notes.	8(25%)	5 (38%)
42	Recognizing drugs involved with common medical conditions	2(6.1%), 26(78.8%), 5(15.2%)	3(23%), 7(56, %) 3(23%)
43	Requesting and filling investigations formats accurately	8(24.2%), 16(48.5%), 9(27.3%)	3(23%), 7(56%), 3(23%)
44	Obtaining and testing midstream urine.	3 (9.4%), 9(28.1%), 20 (62.5%)	2(15%), 4(31%), 7(54%)
45	The basic science knowledge is consistent with the present job	2 (6.2%), 23(71.9%), 7 (21.9%)	2 (15%), 8(62%) 3 (46%)
46	Your learned clinical skills are sufficient for the intern job.	3 (9.7%), 13(41.9%), 15 (48.4%)	0, 7 (54%), 6 (46 %%)
47	You are unembarrassed and confident when facing urgent critical clinical conditions.	4(12,1%), 20 (60,6%), 9 (27.3%)	2 (15%), 6(46%), 5 (38%)
48	You are unembarrassed and confident when facing urgent critical clinical conditions.	3 (6.2%), 20(63.6%), 9 (27.3%)	2(15%), 5(38%), 6 (46%)
49	The preclinical skill lab training sessions were useful (if implemented in your faculty).	14 (42.4%), 15(45.5%), 3 (9.3%)	4 (30%), 7(54%), 2 (15%)
50	The bed side clinical training sessions were useful and consistent with this intern job.	9(28%), 18(56.2%), 5 (15.6%)	4 (30%), 7(54%), 2 (15%)

Appendix (2); complete table of gender performance variables *(F; female, M; male).*				
no	Clinical skills	Perfect(+)	Equivocal (±)	Cannot(-)
1	Auscultation of abdomen	F20, 62.5%. M11, 84.6%.	F11. 34.4%. M2, 15.4%.	F1, 3.1%. M2, 15.4%.
2	Examination of the female and male breast and regional Lymph N	F24, 77.4%. M8, 61.5%.	F4, 12.9%. M3, 23.1%.	F3, 9.7% M2, 15.4%
3	Communication with patient and proper history taking	F23,71.9% M10,76.9%	F9,28.1% M3,23.1%	F0 M0
4	Communication with patient and family	F10, 61.3% M7,53.8%	F9, 29% M5, 35.5%	F3, 9.6 M1, 7.7%
5	Normal / abnormal Pulses; radial, femoral, popliteal…ect	F20, 66.7% M10, 76.9	F7, 23.3% M3, 23.1%	F3, 10% M0.
6	Examination of liver, spleen, kidneys, hernias and masses.	F17, 54.8% M8,61.5%	F14, 45.2% M5, 38.5%	F0 M0
7	Communication with senior doctors	F11, 35.5% M5, 38.5%	F15, 48.4% M6, 46.2%	F5, 16.1% M2, 15.4%
8	Surface markings of the abdominal contents.	F12, 40% M7, 53.8%	F10, 33.3% M4,30.8%	F8, 26.7% M2,15.4%
9	Examination of the cranial nerves	F15,46.9% M7. 53.8%	F14, 43.8% M6, 46.2%	F3, 9.4% M0
10	Communication with staff	F14, 43% M6, 46.2%	F12 ,43.8% M6, 46.2%	F6, 18.8% M1, 7.7
11	Full respiratory examination.	F24, 75% M9, 69.2%	F7,21.9% M4, 30.8%	F1, 3.1% M0.
12	Assessment of the peripheral sensory examination and reflexes	F10, 31.2% M , 53.8%	F19, 59.4% M6, 46.2%	F3, 9.4% M0
13	Performing simple suturing	F4, 12.9% M4, 30.8%	F9,29% M7,53.8%	F18, 53.% M3, 23.1%
14	Assessment of the vascular supply to a limb after trauma or surgery	F7, 24% M4, 30.8%	F1 , 37.9% M7,53.8%	F11, 37.9% M2, 15.4%
15	Assessment of visual acuity, color vision and pupillary reflexes	F13, 43.3% M5, 41.7%	F12, 40% M4,33.3%	F5, 16.6% M3, 25%
16	No difficulties in communication with sub staff	F10,32.3% M2,16.7%	15, 48.3% M4, 33.3%	F6,19.4% M6,50%
17	Venous cut-down.	F3,9.7% M1,7.7%	F0 , M3,23.1%	F28, 90% M9, 69.1%
18	Respiratory assistance, oropharyngeal airway, emergency tracheostomy / cricothyroidotomy.	F2,6.2% M2,15.4%	F2,6.2% M5, 38.5%	F28,87.5% M6,46.2%
19	Endotracheal intubation.	F0 M4, 30.8%	F12, 375% M4, 30.8%	F20, 62.5% M5,38.5%
20	Central venous pressure (CVP) measurement and central vein cannulation.	F4,12.5% M2 ,15.4%	F2,6.2% M4,30.8%	F26, 81.2% M7,53.8%
21	Standard dipsticks to analyze samples of urine.	F1,3.1,3% M4,23.1%	F3,9.4% M2, 15. 4%	F8,7.5% M8,61.5%
22	Plaster of Paris application.	F1,3.1% M4,30.8%	F2,6.2% M3,23.1%	F29,90.6% M6, 46.2%
23	Cervical pap smear	F1, 3.1% M2, 15.4%	F9,28.1% M4, 30.8%	F22,68.8% M7,53.8%
24	Taking an arterial blood sample (radial and femoral).	F5,15.6% M4, 30.8%	F4,12.5% M4,30.8%	F23,71.9% M5, 38.5%
25	Splints application.	F1,3.2 % M1,7.7%	F6,19.4% M8,61.5%	F24, 77%.4 M4,30.8%
26	Taking swabs for bacterial examination from lesion or blood (aerobic and anaerobic).	F2, 6.2% M1, 7.7%	F11, 34.4% M9, 69.2%	F19, 59.4% M3, 23.1%
27	Drug dose and recording outcome accurately	F2, 6.5%	F14, 45.2%	F15, 48.4%

		M1, 7.7%	M7, 53.8%	M5, 38.5%
28	Practicing joint immobilization.	F0. M1, 7.7%	F5, 16.7% M8, 61.5%	F25, 83.3% M4,30.8%
29	The indications and application of different % of oxygen therapy.	F2, 6.2% M1, 7.7%	F15, 46.9% M9, 69.2%	F15, 46.9% M3,23.1%
30	Diagnoses of common infectious skin lesions.	F8,25% M1,7.7**%**	F20,62.5% M10,76.9%	F4, 12.5% M2, 15.4%
31	Methods of parenteral fluid, nutrition, &medication administration.	F4, 13.3% M4, 30.8%	F18, 60% M6, 46.2%	F8, 26.7% M3, 15.4%
32	Appropriate Male and Female urinary catheterization.	F9 , 29% M4, 30.8%	F14, 45.2% M7, 53.8%	F8, 25.8% M2, 15.4%
33	Intravenous injection, cannulation, venous blood sampling.	F13, 41.9% M6, 50%	F16,51.6% M3, 25%	F2, 6.2% M3, 25%
34	Nasogastric tube insertion and management.	F5,15.6% M5,38.5%	F16,50% M2, 15.4%	F11, 34.4% M6, 46.2%
35	Proper application of Glasgow Coma Score.	F10, 31.2% M5, 38.5%	F16, 50% M5, 38.5%	F6,18.8% M3, 23.1%
36	Examination of the external genitalia of (♂& ♀).	F5,16.1% M2,15.4%	F10,32.3% M 7,53.8%	F16,51.6% M4,30.8%
37	Prescription, setting up, and operating a nebulizer correctly.	F2,6.7% M3,23.1%	F9,30% M4,30.8	F19,63.3% M 6,46.2
38	Proper shock management.	F2, 6.2% M1,7.7%	F24,75% M10,76.9%	F6,18.8% M2, 15.4%
39	Pregnant and fetal assessment.	F12, 38.7% M4, 30.8%	F16,51.6% M8,61.5%	F3, 9.7% M1, 7.7%
40	Principles and practice of proper wound care.	F12, 38.7% M2, 15.4%	F16,51.6% M9,69.2%	F3,9.7% M2,15.4%
41	Writing concise, accurate and legible follow-up case notes.	F6,19.4% M5,41.7%	F19, 61.3% M2, 16.7%	F6, 19.4% M5, 41.7%
42	Recognizing drugs involved with common medical conditions	F3,9.4% M2, 15.4%	F25, 78.5% M8,61.5%	F4,12.5% M3,23.1%
43	Requesting and filling investigations formats accurately	F7, 21.9% M5, 38.5%	F18,56.9% M5,38.5%	F7,21.9% M3, 23.1%
44	Obtaining and testing midstream urine.	F2,6.5% M1,8.3%	F7, 22.6% M6, 50%	F22, 71% M5, 41.7%
45	The basic science knowledge is consistent with the present job	F0 M2, 15.4%	F24, 75% M8, 61.5%	F17, 53 % M3, 23.1%
46	Your learned clinical skills are sufficient for the intern job.	F1, 3.6% M2, 15.4%	F14, 50% M7,53.8%	F13,46.4% M,4,30.8%
47	You are unembarrassed and confident when facing urgent critical clinical conditions.	F2,6.2% M4, 33.3%,	F21, 65.6% M5, 41.7%	F9,28.1% M3,25%
48	You are unembarrassed but confident when dealing with emergency case	F1, 3.1% M4, 33.3%	F19, 59% M7,58.3%	F12, 37.5% M1, 7.6%
49	The preclinical skill lab training sessions were useful (if implemented in your faculty).	F15, 47% M 8, 61.5 %	F15, 47% M8, 61.3%	F2, 6% M1,7.7%
50	The bed side clinical training sessions were useful and consistent with this intern job.	F10, 31.2% M3, 25%	F18, 56.5% M7,53.3%	F4, 12.5% M2, 16.7%
F; female, M; male, %; valid percentage				

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