

Confidence in performing core clinical skills: a survey of trainees completing internship training in Kuwait

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Background Competency in basic clinical procedures appears as an area that is not sufficiently emphasized during internship training. While some trainees in previous studies had stated that they did not have the required level of competence, others had indicated confidence in managing specific conditions although they had not been exposed to these topic areas during training. We did not encounter any publications dealing specifically with internship training in the Arabian Gulf region.

Objective This study was aimed at determining the confidence that interns had in performing core clinical skills and the extent to which they had been exposed to them during training.

Methods The survey involved 124 interns who had completed training in Kuwait. They responded to a questionnaire anonymously, stating how often they performed 48 core clinical skills and the confidence they possessed in undertaking them later on. 91 had responded to the questionnaire.

Results A half of the respondents had performed generic skills and felt confident to perform them in the future. A similar proportion had performed routine investigations and procedures related to

resuscitation on more than one occasion. Basic surgical procedures had been undertaken on many occasions. A substantial proportion lacked confidence in performing emergency resuscitative procedures and some clinical skills needed in routine situations. The perceived confidence to perform common skills in Obstetrics & Gynecology varied, with no observed gender variation. A small proportion of trainees stated that they felt confident in performing specific clinical skills although the experience they had in undertaking them was insufficient.

Conclusions While approximately a half had performed generic skills and routine investigations and were confident in performing emergency resuscitative measures, a considerable proportion lacked confidence in doing them. It is important that curriculum planners, course directors and internship trainers identify at an early stage the trainees who do not acquire sufficient competency and institute appropriate corrective measures.

Key words: internship training, clinical skills, performance, Kuwait

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Introduction

The period of internship (pre-registration year), provides the opportunity to the newly graduated doctor to undertake clinical practice under supervision. While being trained to perform a set of core clinical skills, he or she is expected to lay the foundation for developing the essential attitudes and values of the medical professional. In addition to acquiring a

specified level of competency in the skills, the trainee is expected to develop a sufficient degree of confidence for performing the procedures later on.

A review of past studies indicates that the learning of practical skills receives inadequate attention during training. Fewer than 15% of interns had performed five or more common practical procedures after their first postings,¹ and new doctors did not rate their development of practical skills as high.² Other studies of interns' perception of preparedness indicated that newly qualified doctors were not adequately prepared for internship duties.³ It is also seen that self-reported confidence of interns varied widely from supervisors' assessments of interns' competence.⁴ Moreover, many trainees had indicated that they were confident to initiate management of conditions in which they had no or little experience.^{1,5}

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The level of performance of clinical skills by medical interns in the Gulf Cooperation Council (GCC) countries has not been reported previously. Information on the training of medical interns in core clinical skills is essential in planning for and organizing internship training and implementing appropriate modifications in curricula. Current training programs need to be looked at closely to identify any deficiencies so that remedial measures may be introduced. Additionally, an environment should exist for inculcating in the trainees the attitude that recognizing own limitations and guarding against overconfidence in one's own abilities is important. The value of this attribute has been pointed out by some of the previous researchers as well.⁵

The Kuwait Institute for Medical Specialization (KIMS) administers the internship training program in Kuwait. During this period, the trainees are posted for attachments in the specialties of Medicine, Surgery, Obstetrics & Gynecology, and Pediatrics at the major regional hospitals and for an elective rotation in Primary Care practice.

Methods

New medical graduates completing internship training were surveyed with respect to:

- i. Clinical skills performed during training and the level of performance of these tasks;
- ii. Confidence in performing a set of core clinical skills;
- iii. Any gender variability in the confidence in performing selected clinical skills in the field of Obstetrics & Gynecology.

The views of clinical trainers and program directors of internship training in Kuwait and the skills that had been listed in previous investigations⁶ were used in compiling a list of 48 clinical skills that all interns should have performed by the time they completed internship training. The 48 skills were grouped under Medicine, Surgery, Obstetrics & Gynecology and Investigative Procedures. The skills that came under more than one specialty were categorised under a fifth group, Generic Skills. Interns who completed rotations in Surgery, Medicine, Obstetrics & Gynecology, and Pediatrics at major regional hospitals in

Kuwait during the 2005 to 2006 period participated in the study.

Interns who completed their rotations were handed over a copy of the questionnaire at the administration office at KIMS. Each subject responded to it anonymously. The respondents indicated the number of times the skills had been performed during training and their confidence to perform the skills in future. Out of the 124 eligible for the study, responses were received from 91 (response rate: 73.8%). The subjects who did not submit the completed questionnaires were not contacted again.

The data obtained were analysed based on the counts and percentages of responses in each category, and the results were correlated with the perceptions of confidence for performing each of the skills listed. Z test for proportions was used to evaluate the statistical association between the concordant pairs, i.e. those confident but never performed and those performed but not confident, as well as to see any gender variability of this relationship.

Results

The frequency of performance of selected clinical skills is summarized in Table 1.

Among the skills that were categorized as generic, nearly half the trainees had not performed cardiac defibrillation or endotracheal intubation (50.5%), while a considerable proportion had not performed artificial ventilation (42.9%) or securing airway (30.8%). A fifth of the trainees had never performed cardiopulmonary resuscitation. A little over half the trainees had performed insertion of intravenous line or insertion of urethral catheter more than 3 times. Over three quarters (81.3%) of the trainees also had never done pericardiocentesis or needle aspiration of joints, while over half of the trainees had not performed insertion of central venous catheter (59.3%), treatment of tension pneumothorax (58.2%), or insertion of thoracic drainage (58.2%). Of the procedures related to Surgery, the skills such as venous cut-down or operative intubation had never been performed by nearly 40% or a higher proportion of trainees. However, when analyzing the skills that had been performed over three times, over half the trainees had undertaken incision and drainage of abscesses (50.5%), and over two thirds catheterization (65.9%) and insertion of Foley's catheter (74.7%).

Table 1. Frequency of performance of selected core clinical skills by internship trainees; n=91*

Skills	Performed					
	Never		One/two times		One/two times	
	n	%	n	%	n	%
Generic Clinical Skills						
Cardiac defibrillation	51	56.0	28	30.8	9	9.9
Endotracheal intubation	46	50.5	26	28.6	13	14.3
Artificial ventilation	39	42.9	33	36.3	16	17.6
Securing airway	28	30.8	38	41.8	24	26.4
Administering cardiopulmonary resuscitation	22	24.2	38	41.8	30	33.0
Insertion of intravenous line	14	15.4	22	24.2	51	56.0
Inserting urethral catheter	12	13.2	23	25.3	54	59.3
Medicine						
Pericardiocentesis	74	81.3	10	11.0	4	4.4
Needle aspiration of joints	67	73.6	14	15.4	6	6.6
Insertion of central venous catheter	54	59.3	17	18.7	14	15.4
Treatment of tension pneumothorax	53	58.2	25	27.5	12	13.2
Insertion of thoracic drainage	53	58.2	25	27.5	9	9.9
Surgery						
Venous cut-down	65	71.4	12	13.2	5	5.5
Operative intubation	39	42.9	25	27.5	24	26.4
Anorectoscopy, proctoscopy/ sigmoidoscopy	31	34.1	34	37.6	23	25.3
Incision and drainage of abscesses	16	17.6	26	28.6	46	50.5
Catheterization	8	8.8	20	22.0	60	65.9
Insertion of Foley's catheter	6	6.6	13	14.3	68	74.7
Investigative Procedures						
Microscopic examination of microbiological specimens	52	57.1	17	18.7	18	19.8
Examination of blood film	43	47.3	22	24.2	20	22.0
Urine examination (microscopic/ dipstick)	20	22.0	25	27.5	41	45.1
Blood sampling (venepuncture)	10	11.0	31	34.1	47	51.6

* The totals under each category may not add up to 91 as the number of subjects who did not respond is not shown in the table.

With respect to the investigative procedures that the trainees had been expected to perform, nearly half the trainees had never undertaken microscopic examination of microbiological specimens (57.1%) or examination of blood films (47.3%). While about 20% of the trainees had not performed urine examination (microscopic/dip stick) and 11% blood sampling (venepuncture), these investigative procedures had been undertaken three or more times by nearly half the trainees.

The majority of the interns felt confident with routine skills such as inserting intravenous line (71.4%), inserting urethral catheter (69.2%), and nasogastric feeding (63.7%). Moreover, approximately half the trainees felt confident with emergency resuscitation skills such as securing airway (54.9%), administering cardiopulmonary resuscitation (46.2%), and pleural tap (41.8%). A third felt confident in performing artificial ventilation (38.5%) and endotracheal intubation (29.7%). Considerably lower percentages of the trainees were confident in performing lumbar puncture (25.3%), and needle aspiration of joints (20.9%) (Table 2).

Table 2. Interns' self-perceived confidence in performing selected clinical skills; n=91*

Clinical Skill	Concordant Pairs (%)				P value
	Confident		Confident but never performed	Performed but not confident	
	n	%	n (%)	n (%)	
Inserting intravenous line	65	71.4	1 (1.5)	6 (54.5)	<0.001
Inserting urethral catheter	63	69.2	1 (1.6)	6 (50.0)	<0.001
Nasogastric feeding	58	63.7	3 (5.2)	9 (60.0)	<0.001
Securing airway	50	54.9	1 (2.0)	8 (38.1)	<0.001
Administering CPR	42	46.2	3 (7.1)	20 (60.6)	<0.001
Pleural tap	38	41.8	3 (7.9)	11 (40.7)	<0.001
Artificial ventilation	35	38.5	3 (8.6)	12 (35.3)	<0.001
Endotracheal intubation	27	29.7	2 (7.4)	13 (32.5)	<0.001
Cardiac defibrillation	23	25.3	4 (17.4)	14 (32.6)	<0.001
Lumbar puncture	23	25.3	3 (13.0)	18 (40.0)	<0.001
Needle aspiration of joints	19	20.9	5 (26.3)	5 (11.1)	<0.001

* The totals under each category may not add up to 91 as the number of subjects who did not respond is not shown in the table.

Approximately three quarters of the respondents reported confidence in performing common skills such as repair of episiotomy (85.6%) and conducting normal deliveries (70.4%), while a half felt confident in performing high vaginal swab (52.8%) and collection of cervical smear (44%), and a third in undertaking artificial rupture of membranes (38.5%) and application of foetal electrodes (28.6%). The reported confidence showed no significant gender variation (Table 3).

Discussion

Our findings reveal that the interns surveyed had received only a limited amount of exposure

Table 3. Interns' self-perceived confidence in performing clinical skills in Obstetrics & Gynecology: selected skills presented on the basis of gender (M = male, F = female) of trainee; n = 91*

Clinical Skill	Confident				Concordant Pairs (%)									
	M		F		Confident but never performed				Performed but not confident					
	n	%	n	%	M	F	P value	M	F	P value				
	n	%	n	%	n	%	n	%	n	%				
Repair of episiotomy	40	44.0	36	39.6	0	0	0	0	1	1	2.4	4	10.0	0.148
Conducting normal deliveries	32	35.2	32	35.2	0	0	0	0	1	4	11.1	6	15.8	0.556
High vaginal swab	20	22.0	28	30.8	2	15.4	2	40.0	1	3	14.3	3	10.3	1
Collection of cervical smear	16	17.6	24	26.4	3	21.4	1	14.3	0.232	3	18.8	5	17.9	0.600
Artificial rupture of membranes	16	17.6	19	20.9	3	21.4	1	9	0.260	15	27.8	6	25.0	0.866
Application of fetal electrodes	12	13.2	14	15.4	2	15.4	0	0	0.131	6	37.5	7	33.3	0.910

* The totals under each category may not add up to 91 as the number of subjects who did not respond is not shown in the table.

to some of the core clinical skills. Furthermore, the degree of confidence that they possessed in undertaking these skills could be considered as insufficient. Some of the interns had stated that they felt confident to perform specific clinical skills, although they had not performed these skills during their period of training.

Relatively simple and common procedures and a few of the emergency resuscitative measures that all health personnel need to be familiar with do not appear to have received adequate attention. Substantial proportions of trainees had not performed endotracheal intubation or cardiac defibrillation even once, and lacked exposure to and confidence in the administration of cardiopulmonary resuscitation (CPR).

The General Medical Council in its widely accepted *Tomorrow's Doctors*⁷ recommend that all medical graduates must be able to demonstrate competence in performing cardiopulmonary resuscitation and advanced life-support skills safely and effectively. The reason for a substantial proportion of interns not having exposure to these important areas could be that in institutions in Kuwait registrars, senior registrars or anesthetists are available for performing CPR. The availability of such personnel may also lead to a situation in which trainees at the level of interns are not called upon to perform the procedure on a routine basis. CPR is an essential skill that could be performed effectively by personnel whose training is not as extensive as that of medical students or interns. It is thus necessary to ensure that all interns, irrespective of whether the expertise of anesthetists or other cate-

gories of staff is available, are adequately skilled and have confidence to perform CPR.

The majority of male trainees as well as female trainees, had undertaken common procedures in Obstetrics & Gynecology such as repair of episiotomy and conducting normal deliveries to a similar extent. As may be expected with this finding, the majority of the trainees stated that they had confidence in undertaking these procedures in the future. Although one may suspect that there may be an appreciable variation in the degree of exposure to clinical procedures in Obstetrics & Gynecology between male and female trainees on account of the value systems in the Arabian cultural setting that exist in Kuwait, the results here do not support such a view.

Some trainees who had not performed cardiac defibrillation or lumbar puncture had indicated that they had confidence to undertake these procedures in future. Although one could argue that it may be permissible for sub-optimally trained staff to undertake procedures that may be life-saving, especially in situations where trained and experienced personnel is not available, it is best that trainees who do not have sufficient experience do not embark on procedures such as cardiac defibrillation or lumbar puncture.

A number of previous studies in the UK have shown that the preparedness and confidence to perform clinical skills were insufficient among new medical graduates.^{1-4,8} Our study complements these observations, suggesting that the problem exists in many geographical regions.

It is necessary to identify at an early stage in the training interns who may not have acquired the requisite skills so that appropriate measures could be implemented to ensure that they acquire competency in the core skills within the available time. Additionally, the utilization of the training opportunities needs to be closely monitored so that training is comprehensive and all trainees get experienced in the core skills. This could include a review of how the trainees use the time slots that have been set apart for training. Some of the approaches that have been proposed such as the use of a diagnostic screening tool designed by Ben-David,⁹ and later developed further by Hesketh and co-workers¹⁰ would help in keeping track of the performances of junior doctors through their first postgraduate year.

A number of measures may be proposed for improving internship training. Under the current scheme, all interns receive a logbook each at the start of the clinical rotations. It lists the core skills and offers a format for recording the trainee's performances. We have observed that these log books are not optimally utilized, thus depriving the trainee as well as the trainer of the opportunity of performance review that is based on the actual experiences of the trainee.

Other formats of documentation that the interns need to be trained in is the use of portfolios,¹¹ which have been found to be useful in identifying learning needs¹² and for structuring learning around the perceived needs.¹³ The use of portfolios during internship training would additionally help the interns to get exposed to an approach that would also prove useful in own practice later on.

For acquiring competence in performing clinical skills and for developing confidence in performance, clinical skills labs could be introduced as a supplement to the current teaching methods.

Frankel and English highlight the importance of improved communication between the medical school and the employers of interns in taking remedial measures.¹⁴ With the introduction of a course on student self-direction in the final year, which was aimed at helping build confidence in the future role of intern, encouraging results have been reported.¹⁵ Additionally, a period of induction had helped in improving perception and competence levels

in clinical skills, history taking and examination.¹⁶

The present system of training of interns in Kuwait is specialty-based, with the interns being assigned clinical rotations in the established medical specialties. This compartmentalization does not facilitate adequate integration of subject content. While it is necessary to take steps to promote greater integration, multidisciplinary learning sessions, which would allow the trainee to observe the interrelations among specialties and enhance the learning experience could be introduced. The scheme of the Foundation Program that has been introduced recently in the UK¹⁷ is an approach that warrants serious study so that the administrators and trainers in the local setting could modify the training program appropriately.

Conclusion

The frequency and confidence in performing some core clinical skills were of a standard that cannot be considered as satisfactory given the duties and responsibilities expected of a trained doctor. It is important to identify at an early stage interns who may not acquire the required degree of competency in the core clinical skills and to take corrective measures. In addition to taking remedial measures during the phase of internship training, some steps could be introduced during the period of undergraduate studies. It is also important to closely monitor the progress of the internship trainees through the training program, and feedback and appropriate opportunities offered to maximize learning. When it is observed that skills that are currently included under the period of internship training could more effectively be learned at a later phase of training, the learning objectives related to these skills would best be moved to a subsequent stage when reviewing the curriculum.

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References

1. Clayton RA, Henderson J, McCracken SE, Wigmore SJ, Paterson-Brown S. Practical experience and confidence in managing emergencies among preregistration house officers. *Postgrad Med J* 2005;81:396-400.
2. Hesketh EA, Allan MS, Harden RM, Macpherson SG. New doctors' perceptions of their educational development during their first year of postgraduate training. *Med Teach* 2003;25:67-76.
3. Evans DE, Roberts CM. Preparation for practice: how can medical schools better prepare PRHOs? *Med Teach* 2006;28:549-52.
4. Barnsley L, Lyon PM, Ralston SJ, Hibbert EJ, Cunningham I, Gordon FC, et al. Clinical skills in junior medical officers: a comparison of self-reported confidence and observed competence. *Med Educ* 2004;38:358-67.
5. Turner KJ, Brewster SF. Rectal examination and urethral catheterization by medical students and house officers: taught but not used. *BJU Int* 2000;86:422-6.
6. Bax ND, Godfrey J. Identifying core skills for the medical curriculum. *Med Educ* 1997;31:347-51.
7. General Medical Council. Tomorrow's Doctors: Recommendations on undergraduate medical education. London: GMC; 1993 & revised 2003.
8. Evans DE, Wood DF, Roberts CM. The effect of an extended hospital induction on perceived confidence and assessed clinical skills of newly qualified pre-registration house officers. *Med Educ* 2004;38:998-1001.
9. Ben-David MF, Snadden D, Hesketh A. Linking appraisal of PRHO professional competence of junior doctors to their education. *Med Teach* 2004;26:63-70.
10. Hesketh EA, Anderson F, Bagnall GM, Driver CP, Johnston DA, Marshall D, et al. Using a 360 degrees diagnostic screening tool to provide an evidence trail of junior doctor performance throughout their first postgraduate year. *Med Teach* 2005;27:219-33.
11. Lynch DC, Swing SR, Horowitz SD, Holt K, Messer JV. Assessing practice-based learning and improvement. *Teach Learn Med* 2004;16:85-92.
12. Wilkinson TJ, Challis M, Hobma SO, Newble DI, Parboosingh JT, Sibbald RG, et al. The use of portfolios for assessment of the competence and performance of doctors in practice. *Med Educ* 2002;36:918-24.
13. Snadden D, Thomas ML. Portfolio learning in general practice vocational training: does it work? *Med Educ* 1998;32:401-6.
14. Frankel A, English S. Transfer of information from medical schools. *Hosp Med* 2004;65:170-3.
15. Whitehouse CR, O'Neill P, Dornan T. Building confidence for work as house officers: student experience in the final year of a new problem-based curriculum. *Med Educ* 2002;36:718-27.
16. Lempp H, Cochrane M, Seabrook M, Rees J. Impact of educational preparation on medical students in transition from final year to PRHO year: a qualitative evaluation of final-year training following the introduction of a new year 5 curriculum in a London medical school. *Med Teach* 2004;26:276-8.
17. General Medical Council. The Foundation Programme. London: GMC; 2007. Available from: URL: <http://www.foundationprogramme.nhs.uk/pages/home/taining-and-assessment>.

Note from Editor

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