

Views of Malaysian interns and their supervisors on the adequacy of undergraduate clinical skills training

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INTRODUCTION This study aimed to determine the views of Malaysian interns and their supervisors on whether undergraduate clinical skills training adequately equipped them for internship and their suggestions for improvement.

METHODS Pre-tested questionnaires covering demographic characteristics, the participants' views on clinical skills training (communication, history taking, physical examination, diagnosis, patient management and procedures) and their suggestions for improvement were sent to all interns and their supervisors through the hospital directors. Data compiled was analysed to determine any significant association.

RESULTS Out of the 32 hospitals with interns, 22 participated in the study. 521 completed questionnaires (350 interns, 171 supervisors) were analysed. The majority of interns felt that their undergraduate clinical skills training was adequate in all the aspects studied. The majority of supervisors, however, felt that it was grossly inadequate to poor in the areas of communication: breaking bad news (77% supervisors versus 13% interns), dealing with angry patients (75% versus 20%), giving information (59% versus 3%), communicating with patients' families (53% versus 7%); adult resuscitation: intubation (72% versus 23%), defibrillation (77% versus 31%), use of drugs (62% versus 19%); and all aspects of child resuscitation. This was statistically significant ($p < 0.05$). Suggestions for improvement included more clinical exposure, communication skills workshop and monitoring of logbooks.

CONCLUSION This study suggests that there are deficiencies, particularly in communication and resuscitation skills training, in undergraduate clinical skills training. In-depth studies are required to identify ways to improve training.

Keywords: clinical competence, education, internship and residency, medical, undergraduate
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INTRODUCTION

Internship is an important period in a doctor's training, as it is the transition period between being a medical student to obtaining full registration as a doctor.^(1,2) However, there are concerns whether these medical graduates are well prepared for their internship.⁽³⁾ In 2007, it was reported in local newspapers that the Ministry of Health (MOH) Malaysia was monitoring two local private medical colleges for allegedly producing interns who were not up to the MOH's standards.^(4,5) It was also alleged that these colleges did not provide adequate training to students in their clinical phase. A study in the United Kingdom also showed that pre-registration house officers (PRHOs) may have deficiencies in basic clinical skills.⁽²⁾ Another study suggested that medical schools provide excellent factual training, but the PRHOs were limited in their management of basic problems in the wards.⁽⁶⁾ In the Netherlands, a study also showed that PRHOs had adequate factual knowledge and were adequately trained in communication, history-taking and physical examination skills but were poor in pharmacological and patient management skills.⁽⁷⁾

It has been observed that medical students do not feel sufficiently prepared for housemanship.⁽⁸⁻¹⁰⁾ In addition, communication difficulties and emotional involvement remained major factors in the transition from being medical students to PRHOs.^(11,12) In Manchester University, where problem-based learning has been introduced, the graduates appeared better able

to deal with uncertainties, and were also more aware of their personal limits and the need to assert their rights for support when they felt that these limits had been reached.⁽⁶⁾

Few studies have been done locally concerning the preparedness of newly qualified doctors for the role of interns in Malaysia. A pilot study conducted by the author in a Malaysian hospital showed that interns and their supervisors viewed the training to be inadequate in communication skills, cardio-pulmonary resuscitation (CPR), fundoscopy, pharmacological management skills and taking cervical smear.⁽¹³⁾ With the findings obtained in the pilot study, it was decided to conduct this nationwide study to determine the views of interns and their supervisors regarding the adequacy of undergraduate clinical skills training and their suggestions for improvement.

METHODS

All Malaysian hospitals with interns were included in the study. The research project was registered online in the National Medical Research Register website, and approval from the MOH Ethics Committee was obtained. Hospital directors were then individually invited to participate in the study. Participation in the study was voluntary and prior consent was obtained. In order to maintain confidentiality, the participants were not identified.

The interns and their supervisors (specialists and senior medical officers involved directly in supervising the interns) were

asked to complete a demographic questionnaire and another questionnaire on their views regarding whether undergraduate medical training adequately equipped them in the areas of communication, history-taking, physical examination, diagnosis, patient management and practical procedures, as well as their comments on how undergraduate clinical skills teaching could be improved. The Likert scale was used to assess the respondents' opinion on skills training, with 1 = not taught or grossly inadequate, 2 = poor, 3 = satisfactory, 4 = good and 5 = excellent. Likert scores of 1 and 2 were combined as inadequate, while Likert scores 3, 4 and 5 were combined and considered adequate. For practical procedures, an additional column for 'not applicable' was added for the supervisors, as supervisors in unrelated disciplines would be unable to score certain skills, e.g. supervisors in non-gynaecology related disciplines would not be supervising interns in pap smear taking and those not treating children would not be involved in child resuscitation.

The demographic questionnaire covered age, gender, ethnicity, university from which the intern graduated, type of medical curriculum, years of supervising interns and qualifications (for supervisors only). These questionnaires, which had been pre-tested and modified from the questionnaires used in the pilot study, were sent to the interns and their supervisors between December 2007 and March 2008, through the respective hospital directors who had given written consent.⁽¹³⁾ Reminders were subsequently sent to the hospital directors to collect and return the completed questionnaires to the author for compilation and analysis. Data analysis was done using the Statistical Package for the Social Sciences version 19.0 (SPSS, Chicago, IL, USA). Chi-square tests and logistic regression (adjusting for demographic details) were used and applied to the variables studied to determine any significant association with the respondents' views on adequacy of undergraduate clinical skills training (significant at $p < 0.05$).

RESULTS

Out of the 32 Malaysian hospitals with interns (69%), 22 participated in the study. These included ten out of 13 general hospitals, 11 out of 16 district hospitals and one of three teaching hospitals. All the states in Malaysia, including the Federal Territory, were represented. Of the remaining hospitals that did not give consent, three were district hospitals that had initially agreed to participate but withdrew with apologies, as none of the questionnaires distributed were returned. Six hospitals failed to respond to written requests and reminders for permission to carry out the study. One hospital gave the reason that research projects were not handled by its hospital director but by a lecturer.

A total of 523 completed questionnaires were received, with 350 from interns, 171 from their supervisors and two from a nurse and medical officer, which were both rejected. The respondents' demographic characteristics are listed in Table I. Based on the figures provided by the 22 participating hospitals, the total number

Table I. Demographic characteristics of interns and supervisors in the study.

Demographic	% Interns (n = 350)	% Supervisors (n = 171)
Gender		
Male	43	58
Female	57	42
Ethnic group		
Malay	48	39
Chinese	34	34
Indian	17	26
Others	1	1
Age group (yrs)		
< 30	93	13
≥ 30	7	87
Graduated from:		
Local public universities	57	
Local private institutions	27	
Overseas universities	16	
Type of curriculum		
Problem-based learning	43	
Integrated	37	
Traditional	14	
Mixed	6	
Internship posting		
1st posting	26	
2nd posting	46	
≥ 3 postings	28	
Discipline*		
Medicine	30	33
Surgery	20	18
Obstetrics and gynaecology	19	20
Paediatrics	16	18
Orthopaedics/emergency & anaesthesia	15	11
No. of years supervising interns		
< 5 yrs		37
5–9 yrs		27
≥ 10 yrs		36

*For interns: current posting by discipline; for supervisors: discipline that they obtained postgraduate training in

of interns and supervisors were 766 and 252, respectively, giving a response rate of 46% (interns) and 68% (supervisors). However, the total number of supervisors provided was an estimated figure only. No figures were provided by the hospitals that did not give consent. At the starting point of the study, the total number of posts approved for interns in the 32 hospitals was 800.

While most interns were satisfied with their communication skills training in medical school (Table II), the majority of their supervisors felt that communication skills training was grossly inadequate to poor in the areas of breaking bad news (77%), dealing with angry patients (75%), giving information (59%) and communicating with patients' families (53%) (Table II). The majority of the interns and their supervisors felt that training was adequate in history-taking (100% vs. 81%), physical examination (99% vs. 76%) and diagnostic skills (98% vs. 69%). In terms of management skills, most of the interns felt that training was adequate in the areas of non-pharmacological management, i.e. diet and exercise (92%), drug management in acute/emergency

Table II. Respondents' views on communication skills training in medical school.

Skill	No. of respondents (%)				
	Grossly inadequate	Poor	Satisfactory	Good	Excellent
Interviewing patients					
Interns (n = 347)	0 (0)	2 (1)	79 (23)	190 (54)	76 (22)
Supervisors (n = 168)	1 (1)	24 (14)	114 (68)	29 (17)	0 (0)
Giving information					
Interns (n = 347)	0 (0)	9 (3)	128 (37)	178 (51)	32 (9)
Supervisors (n = 168)	14 (8)	85 (51)	62 (37)	7 (4)	0 (0)
Breaking bad news					
Interns (n = 345)	5 (1)	39 (11)	149 (43)	112 (33)	40 (12)
Supervisors (n = 166)	35 (21)	93 (56)	32 (19)	5 (3)	1 (1)
Dealing with angry patients					
Interns (n = 347)	7 (2)	64 (19)	150 (43)	104 (30)	22 (6)
Supervisors (n = 168)	36 (22)	89 (53)	39 (23)	4 (2)	0 (0)
Communicating with patients' families					
Interns (n = 348)	2 (1)	22 (6)	117 (34)	169 (48)	38 (11)
Supervisors (n = 169)	12 (7)	77 (46)	71 (42)	9 (5)	0 (0)
Communicating with staff*					
Interns (n = 347)	4 (1)	17 (5)	122 (35)	153 (44)	51 (15)
Supervisors (n = 168)	1 (1)	30 (18)	106 (63)	31 (18)	0 (0)

*Colleagues, bosses and subordinates

conditions (90%) and drug management in chronic illness (94%). However, only 52% of the supervisors felt that the training was adequate in non-pharmacological management, 54% in drug management in acute/emergency conditions and 67% in drug management in chronic illness.

The majority of the interns felt that their training was adequate in the following practical skills: measuring blood pressure and blood sugar, taking blood, setting intravenous line, male and female catheterisation and fundoscopy (Table III). On the other hand, 47% and 41% of the supervisors, respectively, opined that the interns training in fundocopy and cervical smear taking were grossly inadequate to poor (see Table III). For both adult and child resuscitation, the majority of interns felt that their training was adequate (Table III). However, 63% of the supervisors felt that training was adequate only in adult basic CPR skills. In intubation, defibrillation and use of drugs, the majority of the supervisors felt that the training was grossly inadequate to poor (Table III). In child resuscitation, the majority of the supervisors felt that training was grossly deficient to poor in all aspects, i.e. basic CPR (55%), intubation (76%), defibrillation (78%) and use of drugs (71%).

It was statistically significant ($p < 0.05$) that more female than male interns perceived that their training in communicating with staff was adequate. Compared to interns in their first posting, those who had done three or more postings were more likely to perceive their training in dealing with angry patients and communicating with patient's family as inadequate. Interns who graduated from overseas and local private colleges were more likely to perceive their training in setting intravenous line and female catheterisation as inadequate compared to those from local public universities. Similarly, more interns from medical schools with problem-based, integrated or mixed curricula perceived their training in adult resuscitation (intubation) as adequate compared to interns

from schools offering a traditional curriculum. It was statistically significant ($p < 0.05$) that female supervisors were less likely than male supervisors to perceive that the training in communicating with patient's family was adequate. Supervisors from surgical disciplines (orthopaedics/emergency/general surgery) were more likely to perceive training in breaking bad news as adequate compared to those from the disciplines of paediatrics, internal medicine and obstetrics and gynaecology.

Overall, it was statistically significant ($p < 0.05$) that supervisors were more likely than interns to view the undergraduate clinical skills training as inadequate in all aspects of communication skills, history-taking, physical examination, diagnosis, non-pharmacological management, drug management of acute and chronic conditions and some practical skills, i.e. fundoscopy, pap smear taking, adult and child resuscitation (Table IV).

Suggestions to improve undergraduate training included providing more clinical exposure and hands-on training, using audio-visual aids and real-life scenarios, more communication skills workshops using role-play and standardised patients covering informed consent, with the focus on counselling and patient education, medico-legal issues, breaking bad news, dealing with angry and difficult patients as well as communication with specific groups of patients, e.g. teenagers, human immunodeficiency virus patients. The supervisors suggested more properly run teaching sessions, workshops and formal examination on history-taking and physical examination skills. For example, to improve physical examination skills, interns could practise on real patients so as to truly appreciate the findings and signs, and be given more opportunities for hands-on experience in the ward. They also suggested that all classroom teaching, lectures or tutorials be supplemented with bedside or ward teaching in order to ensure

Table III. Respondents' views on practical skills training in medical school.

Skill	No. of respondents (%)					
	Grossly inadequate	Poor	Satisfactory	Good	Excellent	NA/ not marked
Measuring BP						
Interns (n = 348)	0 (0)	2 (1)	42 (12)	157 (45)	147 (42)	
Supervisors (n = 168*)	1 (1)	7 (4)	74 (43)	68 (39)	18 (11)	4 (2)
Fundoscopy						
Interns (n = 347)	3 (1)	29 (8)	144 (41)	120 (35)	51 (15)	
Supervisors (n = 156*)	12 (7)	61 (35)	72 (42)	10 (6)	1 (1)	16 (9)
Taking blood						
Interns (n = 349)	5 (1)	14 (4)	84 (24)	152 (44)	94 (27)	
Supervisors (n = 168*)	1 (1)	16 (9)	82 (48)	60 (35)	9 (5)	4 (2)
Setting IV line						
Interns (n = 349)	9 (3)	19 (5)	96 (28)	151 (43)	74 (21)	
Supervisors (n = 167*)	2 (1)	17 (10)	92 (54)	49 (29)	7 (4)	4 (2)
Measuring blood sugar						
Interns (n = 347)	1 (0.3)	8 (2)	63 (18)	145 (43)	130 (37)	
Supervisors (n = 160*)	2 (1)	11 (6)	81 (49)	53 (31)	13 (8)	15 (5)
Male catheterisation						
Interns (n = 349)	3 (1)	9 (2)	76 (22)	147 (42)	114 (33)	
Supervisors (n = 151*)	1 (1)	12 (7)	74 (43)	52 (30)	12 (7)	21 (12)
Female catheterisation						
Interns (n = 349)	6 (2)	12 (3)	85 (24)	143 (41)	103 (30)	
Supervisors (n = 161*)	2 (1)	11 (6)	82 (48)	56 (33)	10 (6)	11 (6)
Pap smear						
Interns (n = 346)	5 (1)	43 (13)	167 (48)	99 (29)	32 (9)	
Supervisors (n = 90*)	10 (6)	27 (16)	42 (24)	9 (5)	2 (1)	82 (48)
Adult resuscitation						
Basic CPR						
Interns (n = 349)	1 (0.3)	9 (3)	115 (33)	154 (44)	70 (20)	
Supervisors (n = 144*)	8 (5)	55 (32)	66 (38)	14 (8)	1 (1)	28 (16)
Intubation						
Interns (n = 340)	11 (3)	67 (20)	153 (45)	95 (28)	14 (4)	
Supervisors (n = 141*)	32 (18)	70 (41)	36 (21)	3 (2)	0 (0)	31 (18)
Defibrillation						
Interns (n = 343)	17 (5)	88 (26)	157 (46)	66 (19)	15 (4)	
Supervisors (n = 137*)	34 (20)	72 (42)	30 (17)	1 (1)	0 (0)	35 (20)
Use of drugs						
Interns (n = 346)	8 (2)	58 (17)	188 (54)	79 (23)	13 (4)	
Supervisors (n = 139*)	22 (13)	65 (38)	45 (26)	6 (3)	1 (1)	33 (19)
Child resuscitation						
Basic CPR						
Interns (n = 339)	18 (5)	55 (16)	152 (45)	83 (25)	31 (9)	
Supervisors (n = 97*)	14 (8)	39 (23)	38 (22)	5 (3)	1 (1)	74 (43)
Intubation						
Interns (n = 328)	38 (12)	91 (28)	146 (44)	46 (14)	7 (2)	
Supervisors (n = 95*)	24 (14)	48 (28)	22 (13)	0 (0)	1 (1)	76 (45)
Defibrillation						
Interns (n = 335)	53 (16)	109 (32)	136 (41)	34 (10)	3 (1)	
Supervisors (n = 90*)	23 (13)	55 (32)	12 (7)	0 (0)	0 (0)	82 (48)
Use of drugs						
Interns (n = 335)	36 (11)	97 (29)	156 (47)	42 (12)	4 (1)	
Supervisors (n = 97*)	20 (12)	49 (28)	24 (14)	4 (2)	0 (0)	75 (44)

*Excluding those that marked NA/not marked.

NA: not applicable; BP: blood pressure; IV: intravenous; CPR: cardiopulmonary resuscitation

adequate clinical exposure, and that an updated log-book on practical procedures carried out in the wards be kept by medical students. More assessments, especially in communication skills using objective structured clinical examinations and monitoring

of log-books for practical procedures, were also recommended. Besides skills training, supervisors also proposed that medical schools address the attitude problems of some students so as to inculcate positive and responsible attitudes among future interns.

Table IV. Difference in perceptions of adequacy of undergraduate clinical skills training between the interns and supervisors.

Clinical skills training	No. (%)		Unadjusted OR (95% CI)	p-value	Adjusted OR (95% CI) [¶]	p-value
	Interns*	Supervisors				
Interviewing patients	345 (99)	143 (85)	0.04 (0.01–0.15)	< 0.001	nsc	
Giving information	338 (97)	69 (41)	0.02 (0.01–0.04)	< 0.001	nsc	
Bad news	301 (87)	38 (23)	0.04 (0.03–0.07)	< 0.001	0.08 (0.04–0.16)	< 0.001
Angry patients	275 (79)	43 (25)	0.09 (0.06–0.14)	< 0.001	nsc	
Communicating with patients' family	324 (93)	80 (47)	0.07 (0.04–0.11)	< 0.001	0.13 (0.06–0.27)	< 0.001
Communicating with staff	326 (94)	136 (81)	0.28 (0.16–0.51)	< 0.001	nsc	
History taking	334 (100)	136 (81)	0.01 (0.00–0.10)	< 0.001	nsc	
Physical exam	343 (99)	131 (76)	0.05 (0.02–0.13)	< 0.001	nsc	
Diagnostic skills	340 (98)	115 (79)	0.05 (0.02–0.11)	< 0.001	nsc	
Non-drug management	322 (92)	88 (52)	0.09 (0.05–0.15)	< 0.001	nsc	
Drug management (acute conditions)	315 (90)	90 (53)	0.12 (0.08–0.19)	< 0.001	nsc	
Drug management (chronic conditions)	329 (94)	112 (67)	0.12 (0.07–0.20)	< 0.001	nsc	
BP measurement	346 (99)	159 (95)	0.12 (0.02–0.55)	0.001	nsc	
Fundoscopy	315 (91)	83 (53)	0.12 (0.07–0.19)	< 0.001	nsc	
Taking blood	330 (95)	150 (90)	ns			
Setting IV drip	320 (92)	148 (89)	ns			
Blood sugar measurement	338 (97)	146 (92)	0.30 (0.13–0.72)	0.004	nsc	
Male catheterisation	337 (97)	137 (91)	0.38 (0.17–0.84)	0.014	nsc	
Female catheterisation	331 (95)	138 (91)	ns			
Pap smear	298 (86)	52 (59)	0.22 (0.13–0.37)	< 0.001	nsc	
Adult resuscitation						
Basic CPR	339 (97)	81 (53)	0.04 (0.02–0.08)	< 0.001	nsc	
Intubation	262 (77)	39 (28)	0.12 (0.07–0.18)	< 0.001	nsc	
Defibrillation	280 (69)	31 (23)	0.13 (0.08–0.21)	< 0.001	nsc	
Drug management	280 (81)	52 (38)	0.14 (0.09–0.22)	< 0.001	nsc	
Child resuscitation						
Basic CPR	266 (79)	44 (45)	0.23 (0.14–0.37)	< 0.001	0.25 (0.12–0.53)	< 0.001
Intubation	199 (60)	23 (24)	0.20 (0.12–0.34)	< 0.001	nsc	
Defibrillation	173 (52)	12 (13)	0.14 (0.08–0.27)	< 0.001	nsc	
Drug management	203 (60)	28 (29)	0.27 (0.16–0.44)	< 0.001	nsc	

*Reference value [¶]Adjusted for age, gender and race

OR: odds ratio; CI: confidence interval; ns: not significant; nsc: no significant confounders; BP: blood pressure; IV: intravenous; CPR: cardiopulmonary resuscitation

DISCUSSION

Clinical skills are considered to be of core importance to medical students and doctors.⁽¹⁴⁾ Despite the recent guidelines issued on the training of PRHOs in the United Kingdom, little is known about their actual ability to perform basic clinical skills prior to entering the medical register.⁽¹⁵⁾ Until recently, medical school curricula have concentrated on promoting knowledge, together with the ability to take history, examine patients effectively and formulate a reasonable diagnostic hypothesis.⁽⁸⁾

The majority of supervisors felt that their interns were inadequately trained in breaking bad news, explaining a patient's condition, dealing with angry patients, and in communicating with patients' families. However, most of the interns felt that they were adequately trained in these communication skills at medical school. Breaking bad news and explaining a patient's condition are important skills and must be taken seriously. A study conducted in the United Kingdom in 2005 showed that 78.9%

of interns had initiated the breaking of bad news to a patient at least once and 92.3% of them had been involved in explaining a patient's condition.⁽⁷⁾ While no claims could be made for their actual performance in practice, their perceptions of competency would indicate that the extensive and compulsory undergraduate teaching they had received on this subject helped to prepare them for this difficult task.⁽⁷⁾ Suggestions from the interns and supervisors on how to improve communication skills included having more teaching sessions and workshops on communication skills and more Objective Structure Clinical Examination stations to assess communication skills.

It is noteworthy that only 36% of female supervisors found the training in communicating with a patient's family to be adequate as compared to 53% of their male colleagues. The important role that family members (especially female members) play in caring for and providing support (emotionally and financially) to the patient, as well as the effect of their attitudes and beliefs

on the patient's health, are likely better understood by a female. Thus, female supervisors may give greater emphasis to the need for effective communication with family members.

More interns who had done three or more postings felt that their training was inadequate in dealing with angry patients as compared to those who had done only one or two postings. It is possible that interns who had spent a longer time in their internship may have encountered more angry patients, and therefore felt the inadequacy of their training in handling such patients. For history-taking skills, both supervisors and interns felt that the training in medical schools had adequately prepared the students for internship, although some felt that it could be further improved. It was suggested that students should not be allowed to look at the patient's record during clerking and to have a standardised format for history-taking so as to ensure that details are not left out when taking history. Other suggestions included more training in the diagnostic process and more opportunities to practice and clerk a large number of cases in the ward. In the area of patient management skills, although the majority of the supervisors and interns felt that they were adequately trained, a substantial proportion of supervisors (48% and 46%, respectively) felt that the training was inadequate in non-pharmacological management (diet, exercise) and management of acute illness/emergencies.

To improve patient management skills, the respondents proposed that skills acquired at the bedside or in the ward should be reinforced by further classroom teaching and tutorials. In terms of practical skills, the respondents felt that medical schools had adequately trained their students. However, they felt that training in fundoscopy, pap smear taking and resuscitation could be further strengthened. Recommendations on improving these practical skills included giving students more experience with patients through personal encounters, and allowing them to help interns perform simple practical procedures, such as blood taking on real patients instead of manikins. One intern mentioned that in his undergraduate training, he had only observed a pap smear done once. Another commented that pap smear had been taught only theoretically in his undergraduate training. Although no reasons were given, it is possible that some female patients are unwilling for medical students to perform a pap smear. However, greater efforts need to be made to ensure medical students receive hands-on practical training by persuading women to have pap smear done by a medical student under supervision.

In resuscitation skills training, an intern mentioned that he had received only verbal training on defibrillation and drugs used in resuscitation, and had practised on a manikin. Another intern indicated that he had not received instruction on resuscitation at all. It would be difficult and inadvisable for medical students to participate in actual resuscitation of collapsed patients without adequate training and for medico-legal reasons. As such, it may be more feasible for medical schools to concentrate on basic life support training and to provide theoretical knowledge on the use of drugs and defibrillation, while MOH may consider introducing

advanced life support training into its induction programme for interns just prior to the start of their internships.

One difficult area that affects medical training is the student's attitude. Even when basic skills training and opportunities to clerk cases and perform practical procedures are provided, the extent of hands-on clinical experience is determined by the willingness of the students to complete the tasks properly. Hence, it is important to monitor the students' log-books to ensure that adequate experience has been obtained. Furthermore, since training of pre-registration doctors is a continuum from medical school into the pre-registration training period, it is advisable to reassess what areas/skills need to be taught and the best time to teach these skills, in order to obtain the maximum benefits. A spiral curriculum enables students to revisit what has been taught earlier, and helps to reinforce and deepen their understanding and skills in that particular area. Therefore, a short refresher course between a medical graduate passing his final year and prior to entry into internship may be helpful. This would address important and potentially deficient areas, such as advanced training in adult and child resuscitation with certification, and advanced communication skills, such as breaking bad news, communicating risks and information, including taking informed consent. As MOH receives graduates from universities all over the world, a formative assessment cum top-up training may be introduced in the first week of an intern's posting into the various disciplines. For example, in an Obstetrics and Gynaecology posting, skills such as taking pap smears could be assessed and practical hands-on top-up training provided in the first week.

In this study, a comparison was made between the perceptions of interns and supervisors concerning clinical skills training. We found statistically significant differences between their views with regard to all aspects of communication, history-taking, physical examination, diagnostic and management skills, practical skills in fundoscopy, pap smear taking and resuscitation. The majority of interns in this study felt that they were adequately trained in areas that their supervisors found to be deficient. The fact that the interns themselves had difficulty identifying their own weaknesses is surprising, as self-evaluation is typically better at identifying specific areas of weakness than supervisor evaluation. This may be due to the differing expectations of MOH supervisors and interns regarding an intern's job responsibilities and the level of expertise required. As the supervisors have been in clinical practice for some time, with 63% having supervised interns for more than five years, their views on the interns' perceived deficiencies should be taken seriously and action should be taken to rectify these deficiencies.

One limitation of this study is that the other stakeholders' views (patients, medical schools and MOH management) were not included in the study. In addition, the intern's actual acquired clinical skills were not assessed. This study suggests that interns have deficiencies in some basic clinical skills at the commencement of their internship, especially in communication and resuscitation skills. However, these deficiencies were not fully

recognised by the interns themselves. In-depth studies into the areas of perceived deficiencies need to be done, and the training modules produced should standardise clinical skills teaching in the areas found to be deficient. Each medical school should review its curriculum regularly and improve on it in light of the comments and responses of the interns and their supervisors regarding the training received, its perceived deficiencies and suggestions for improvements.

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