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Preparedness for hospital practice in assuring quality of care

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# Preparedness for hospital practice in assuring quality of care

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## Abstract

**Purpose** – The purpose of this paper is to identify the dimensions of preparedness for hospital practice among newly graduated medical officers in Malaysian hospitals who are undergoing their housemanship training; and to compare the level of preparedness among the different curricula and predict the dimensions of preparedness for hospital practice.

**Design/methodology/approach** – A national study was carried out and data collection was by means of self-administered questionnaire. Data obtained ( $n = 1,213$ ) were subjected to exploratory factor analysis using Statistical Package for Social Sciences version 18 in extracting the dimensions of preparedness for hospital practice.

**Findings** – Nine dimensions of hospital practice were identified which were access to information and IT skills, interpersonal skills, basic skills, and continuing professional development, holistic skills, coping skills, ethic and legal skills, patient management skills, scientific knowledge, and clinical skills. Overall, the respondents felt their medical schools prepared them for hospital practice. The strongest predictor for preparedness for hospital practice is coping skills. Holistic skill and preparedness for hospital practice was found to be negatively associated. Those who graduated from twinning programmes between Malaysian and overseas universities were found to be better prepared for hospital practice.

**Social implications** – An understanding on preparedness for hospital practice among newly graduated medical officers is a step forward in assuring patient safety and quality of care.



**Originality/value** – Although of significant importance, however, a study of this nature is rarely researched and the first for Malaysian houseman.

**Keywords** Patient safety, Medical training, Healthcare system

**Paper type** Research paper

## Introduction

Much concern has been raised on the preparedness of newly graduated medical officers for hospital practice. The concern is granted given the fact that incompetency and medical error may, and can, lead to grave consequences. The housemanship period is a two-year training programme for newly graduated medical officers aimed at building competency and preparation for hospital practice. It is also a transition period between medical school and hospital practice. The housemanship is also a period when, under supervision, new doctors put into daily practice the knowledge, skills, behaviours and attitudes that they learned as medical students (Goldacre *et al.*, 2010). Basically, it is a time when the novice physician consolidates and builds on the theoretical knowledge he/she gained as an undergraduate and learns to apply it in caring for patients; as well as to develop the technical, clinical, personal, and professional skills that form the basis of medical practice.

The Malaysian Government's concern on the need to ensure the quality of medical graduates can be exemplified by the directive from the Ministry of Health to extend the housemanship period from one to two years. This is to ensure that the graduates receive adequate training, clinical experience and are competent to practice. Under the new structure, housemen undergo a rotation of four months in six departments, which are the emergency department, medical, paediatric, general surgery, orthopaedic, and obstetrics and gynaecology. It is envisaged that the six-department rotation will increase the standard of medical practice in the country as opposed to the previous three-department rotation. Apart from clinical competence alone, there is also a growing concern on the need for medical education outcome to produce health professionals who are also aware of the medico-legal and ethical ramifications of healthcare services (Watmough *et al.*, 2006); and also equipped with ICT skills (Rehman and Ramzy, 2004).

## Literature review

Calls for patient safety and the need to reduce medical error have been raised time and again by both policy-makers and practitioners of medicine. Administration of the wrong dose of drugs is the most common error, which accounts for 28 per cent of all errors (Berwick and Leape, 1999). Wu *et al.* (2003) found that mistakes made by pre-registration house officers had serious outcomes in 90 per cent of the cases, which included death in 31 per cent of cases. The ground-breaking study by the Institute of Medicine estimated that at least 44,000 people, and as many as 98,000 people, die each year due to medical errors that could have been prevented (Institute of Medicine, 1998).

A number of studies have been carried out on the effects of the hospital as a working environment on junior doctors (Calman and Donaldson, 1991; Gillard *et al.*, 1993; Roche *et al.*, 1997, 1998; Bogg *et al.*, 2001). The heavy workload and long hours are particularly worrisome (Gillard *et al.*, 1993; Bogg *et al.*, 2001). In several studies, junior doctors themselves have expressed concerns for their rudimentary organisational skills, extreme workload, stress, depression, inadequate supervision, and insufficient support from senior staff (Calman and Donaldson, 1991; Roche *et al.*, 1997, 1998). Studies have also shown that there are stressors or perceived problems faced by graduating medical students going into the community (Tamblyn, 1999; Williams *et al.*, 1997).

Lack of preparedness for hospital practice has been linked to stress in junior doctors (Paice *et al.*, 2002), and it is therefore important to investigate what might help junior doctors feel better prepared. Goldacre *et al.* (2003) found that 42 per cent of newly graduated medical officers in the UK felt unprepared for their first clinical posts. The study also found significant and substantial differences between medical schools in how well prepared their graduates felt. Hill *et al.* (1998) on the other hand found that undergraduate medical training should adequately prepare junior doctors for practice in interpersonal skills, confidence/coping skills, collaboration, practical skills and patient management, understanding science, prevention, holistic care, and self-directed learning.

Despite the need for undergraduate medical education to provide the foundation for subsequent learning and practice, there is substantive evidence that this need has not been met adequately. Studies in published literature indicated that junior doctors are unprepared for the practice demands of their first hospital year in several areas, including clinical skills, communication skills, clinical pharmacology, and medical ethics (Jolly and Macdonald, 1989; Remmen *et al.*, 1999). In part, such deficiencies highlight the increasing need for better curriculum planning and reviews. However, the role of undergraduate training in preparing doctors capable of delivering the required standard of care has been less well studied (Hill *et al.*, 1998).

In Malaysia, the rapid increase in the number of medical schools has given rise to concerns on issues such as of oversupply of medical graduates and quality assurance. Although accreditation of medical schools in the country is mandated, however, rapid expansion of medical education over the past few years has highlighted the need to evaluate outcomes, rather than processes alone (Lim, 2008). Given the circumstance, it is therefore imperative to assess newly graduated medical officers on whether they feel they have acquired the right competence and skills for hospital practice. The transition between medical school and hospital practice is experienced during the housemanship period, and given the fact that this stage provides the link between theory and practice, the research has focused on medical officers who are undergoing their housemanship. Thus, the objective of this study is to identify the dimensions of preparedness for hospital practice among Malaysian housemen and to compare the level of preparedness among the different curricula, as well as to predict the dimensions of preparedness for hospital practice.

### Methodology

In developing the framework for the study, a series of meetings were held with officials from the Ministry of Health Malaysia on issues faced by the housemen; followed by an extensive review of the literature. Variables deemed important for the study were identified which covered aspects of preparedness for hospital practice and the skills required, use of ICT and internet, as well as medical and ethical issues in medical practice.

This is an empirical study with self-administered questionnaire as the main method of data collection. Questionnaire developed for the study covered several key areas regarding preparedness of medical officers undergoing housemanship for hospital practice. The items were chosen and constructed based on validated instruments from prior research. Respondents were asked to indicate their response to a set of sentences beginning with "My undergraduate medical training prepared me to [...]" using a five-point Likert scale for 1 (very inadequate) to 5 (very adequate). Items on preparedness for hospital practice were adapted from surveys done among newly graduated doctors in the UK and Australia (Hill *et al.*, 1998), which explored eight subscales which were interpersonal skills, confidence/coping skills, collaboration, practice skills and patient management, understanding science, prevention, holistic care, and self-directed

learning. Paolo and Bonaminio (2003) provided items on the ability to cope with stress of medical practice and recognition of clinical limitations, and work by Durning *et al.* (2005) on supervisor's evaluation of medical graduates was also referred to in developing items for the questionnaire.

Items on medico-legal and ethics were adapted from the work carried out by Watmough *et al.* (2006), while items on work-related use of IT and the internet were based on the work of Rehman and Ramzy (2004), Mansoor (2002) and Arora (2005). Based on Cave *et al.* (2007), the instrument ended with an overall single-item evaluation with the statement, "My experience at medical school prepared me well for this job I have undertaken so far".

Face validity for the research instrument was established from the various meetings between the research team on the suitability of items for the study. This was followed by a pilot test, in which 30 housemen from Hospital Kuala Lumpur were requested to fill in the questionnaire and also gave their comments. Input from the pilot study further improved the instrument for its intended purpose.

At the point of conducting the study, the number of housemen attached to public hospitals and teaching hospitals was found to be 2,046. Approval to conduct the survey and ethical approval was first obtained from the Ministry of Health Malaysia. Since it was a national study which covered the whole of the country including the Borneo states of Sabah and Sarawak, therefore, the best data collection method was by self-administered questionnaires. The questionnaires were distributed to the population of all medical officers who were undergoing their housemanship training in hospitals throughout the country. Altogether 32 hospitals covering the length and breadth of the country participated in the survey. For each hospital, coordinators were appointed to oversee and facilitate the distribution and collection of the questionnaires. The coordinators comprised mainly nurses and they played a significant role in the successful administration of the survey and data collection.

From a total of 2,046 questionnaires sent out, a total of 1,278 responses were received. This gave a response rate of 62.46 per cent. Of these, 1,212 questionnaires were analysed. Data cleaning was done by purging out outliers and data from questionnaires which were incomplete or not properly filled up. Thus, only data from properly completed questionnaires were used for the analyses, or 59.24 per cent. Outliers and questionnaires which were not properly filled-in made up only 5.16 per cent of the response received. Once data cleaning was done, the data was subjected to an exploratory factor analysis (EFA) to gather information about the interrelationship among the variables especially those related to the preparedness of housemen for hospital practice which is the pivotal concern in this study. The reliability of the instrument was established by assessing the internal consistency measure of Cronbach's coefficient  $\alpha$ . These, and subsequent data analyses was carried out by Statistical Package for Social Sciences version 18.

In conducting EFA, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.916, which was above the cut-off point of 0.50. Bartlett's test of sphericity was significant at an  $\alpha$  level of 0.000, meaning that factors which form the variables have significant correlations among themselves. The data were also subjected to the Cronbach's  $\alpha$  test of reliability and a result of 0.857 at  $\alpha$  level of 0.001 was obtained. A coefficient of over 0.90 would be acceptable to any instrument, and the generally agreed upon lower limit for Cronbach's  $\alpha$  is 0.70 (Hair *et al.*, 1998). This indicates that the data are reliable and thus further analysis can be done. Nunnally and Bernstein (1994) stressed that coefficient  $\alpha$  should be applied to all new measurement methods even if other estimates of reliability are also necessary.

**Result**

Factor analysis was carried out by principal component analysis and varimax rotation. In performing the factor analysis, out of an overall total of 53 original items in the research instrument, seven items with high loadings on multiple subscales were deleted. The remaining 46 items, grouped into the nine subscales were used in subsequent analysis. The subscales together with their associated  $\alpha$  coefficients are shown in Table I.

In order to ensure that each item in a subscale is correlated with total subscale score, the corrected item-to-total correlation was computed with the expectations that the values should be greater than 0.3, else such item may be measuring something different from the scale as a whole. The item-to-total correlation and subscales is shown in Table II.

Once the validity and reliability of the instrument was established, further analysis was carried out. Demographic distribution by age showed that majority of respondents was between 20 and 25 years (53.7 per cent), followed by those who were between 26 and 30 years (44.1 per cent). Understandably, those who were more than 30 years old only made up 2.2 per cent of the respondents. Females were 58.3 per cent while males comprised 41.7 per cent of the respondents. Distribution by curriculum showed that 55.2 per cent graduated from Malaysian universities; 25.7 per cent went through twinning programmes with Indian and British medical schools in the country; and the remaining 10 per cent were graduates from foreign universities. For financing mode of studies, 55.2 per cent of the respondents received government scholarships; 29.8 per cent were self-funded and other modes of financing made the remaining 15 per cent.

Mean analysis was carried out on all nine dimensions extracted from the factor analysis, as shown in Table III.

The above table indicates that Malaysian housemen felt they were prepared with the requisite skills for hospital practice. The mean was highest for basic skills and continuing professional development (CPD), followed by holistic skills, ethics and legal skills, scientific knowledge, clinical skills, access to information and IT skills, patient management skills, interpersonal skills, and lastly, coping skills. One sample *t*-test with test value of 3 indicated statistical significance ( $p = 0.000$  for all nine subscale constructs at  $p < 0.05$ ). This suggests that the housemen in this study do, in general, believe that their medical school training does prepare them for the hospital practice.

The housemen were also presented with a single-item which generalised their preparedness for medical practice through the statement "My experience at medical school prepared me well for this job I have undertaken so far". The result for this single-item variable is shown in Table IV.

Subscale	No. of items	$\alpha$ coefficients
IT skills	7	0.902
Interpersonal skills	7	0.892
Basic skills	7	0.837
Holistic skills	6	0.828
Coping skills	4	0.762
Ethics and legal skills	4	0.842
Patient management skills	5	0.790
Scientific knowledge	4	0.750
Clinical skills	3	0.691

**Table I.**  
Subscale  
construction and  
reliability scores

Item	Subscale	Corrected item – total correlation
Adequateness of using specialized medical-related software	IT skills	0.795
Adequateness of getting instructional materials	IT skills	0.768
Adequateness of computer-based search of medical literature	IT skills	0.765
Adequateness of getting meeting, conference information	IT skills	0.746
Adequateness of communicating for professional purposes	IT skills	0.734
Adequateness of accessing digital patient record, if applicable	IT skills	0.725
Adequateness of finding diagnosis, therapy, cases information	IT skills	0.713
Telling patient about terminal illness	Interpersonal skills	0.685
Dealing with difficult patients	Interpersonal skills	0.655
Counselling distraught patients	Interpersonal skills	0.580
Remaining calm in difficult situations	Interpersonal skills	0.571
Dealing with dying patients	Interpersonal skills	0.542
Evaluating own medical experience	Interpersonal skills	0.409
Confidently approaching senior staff in interpreting investigations	Interpersonal skills	0.397
Doing efficient physical examination	Basic skills	0.653
Taking patients' history	Basic skills	0.644
Investing time in developing skills	Basic skills	0.501
Being responsible for own learning	Basic skills	0.470
Identifying own education needs	Basic skills	0.471
Continually evaluating own performance	Basic skills	0.475
Appreciating importance of group dynamics in teams	Basic skills	0.465
Encouraging patients to adopt healthier lifestyle	Holistic skills	0.652
Appreciating importance of patients' culture/ethnicity	Holistic skills	0.604
Providing health education to patients' family	Holistic skills	0.577
Encouraging patients to improve health habits	Holistic skills	0.576
Understanding social factor interactions with diseases	Holistic skills	0.543
Being sensitive to nursing staff needs	Holistic skills	0.491
Coping with work stress	Coping skills	0.772
Coping emotionally in distressing clinical situations	Coping skills	0.712
Recognising own limits	Coping skills	0.611
Balancing work and personal life	Coping skills	0.588
Being aware of legal issues	Ethics and legal skills	0.758
Being aware of ethical issues	Ethics and legal skills	0.738
Coordinating patients' management plan	Patients' management skills	0.532
Liaising with social workers when necessary	Patients' management skills	0.529
Selecting drugs based on costs, risks and benefits	Patients' management skills	0.521
Understanding diseases, cellular basis	Scientific knowledge	0.731
Understanding basic sciences to clinical conditions	Scientific knowledge	0.512
Justifying drug use on its action mechanism	Scientific knowledge	0.512
Discussing preventive health strategies with patients	Scientific knowledge	0.493
Performing basic ward procedures	Clinical skills	0.743
Performing basic surgery	Clinical skills	0.683
Handling most clinical emergencies	Clinical skills	0.422

**Table II.**  
Reliability  
analysis of items

The above finding indicates that the respondents felt their medical school experience prepared them for hospital practice. One sample *t*-test with a test value of 3.00 showed statistical significance. This item was further analysed in order to explore if there is any significant difference between Malaysian graduates; those who went through twinning programmes; and those who graduated from other countries. Mean analysis showed that preparedness for hospital practice is highest amongst respondents who underwent twinning programmes between international and Malaysian universities (mean 3.66); followed by those who graduated from Malaysian universities (mean 3.53); and those who graduated from abroad (mean 3.26). Table V shows the mean analysis between these three groups of housemen.

Analysis of variance showed significant difference between these three groups of respondents ( $\rho = 0.000$ ,  $p < 0.05$ ). *Post hoc* test by least significant difference as shown in Table VI indicates that those who went through a twinning programme were significantly better prepared than those who graduated from Malaysian universities; and also those from abroad. On the other hand, those who graduated from Malaysian universities felt that their medical school experienced prepared them better than those who graduated from abroad.

Regression analysis was also carried out between the nine dimensions of preparedness for hospital practice against the overall single-item that their experience at medical school had prepared them well for their work. Tables VII and VIII show the results.

**Table III.**

Dimensions of preparedness for hospital practice

Dimension	Mean	SD	Sig
Access to information and IT skills	3.48	0.678	0.000
Interpersonal skills	3.46	0.606	0.000
Basic skills and continuing professional development (CPD)	3.87	0.507	0.000
Holistic skills	3.77	0.525	0.000
Coping skills	3.39	0.703	0.000
Ethics and legal skills	3.75	0.640	0.000
Patient management skills	3.47	0.594	0.000
Scientific knowledge	3.58	0.571	0.000
Clinical skills	3.51	0.678	0.000

**Table IV.**

Mean for single-item on preparedness for hospital practice

	Mean	SD	Significance
My experience at medical school prepared me well for this job I have undertaken so far	3.53	0.856	0.000

**Table V.**

Preparedness for hospital practice and curricular

	<i>n</i>	Mean	SD	95% confidence interval for mean	
				Lower bound	Upper bound
Malaysian	669	3.53	0.839	3.47	3.60
Twinning	312	3.66	0.817	3.57	3.75
International	232	3.26	0.951	3.14	3.39
Total	1213	3.52	0.866	3.47	3.56



The regression analysis above shows that access to information and IT skills, basic skills, coping skills, and clinical skills are statistically significant at  $p < 0.05$ . Of these dimensions, the strongest contributor to the model was coping skills as shown in the highest  $\beta$  score. Coping skills which comprised items on coping with work stress, coping emotionally in distressing clinical situations, recognising own limits, and balancing work and personal life should therefore be a considered factor in developing strategies to deal with the professional and personal pressures associated with being a medical practitioner. Thus, in order to better prepare medical graduates for the realities of hospital practice, medical schools should also enhance these skills in their curriculum.

It is also interesting to note the negative  $\beta$  coefficient for holistic skill. Although holistic skill is not a significant predictor of preparedness for hospital practice,

Curricular ( <i>I</i> )	Curricular ( <i>J</i> )	Mean difference ( <i>I</i> - <i>J</i> )	SE	Sig.	95% confidence interval	
					Lower bound	Upper bound
Malaysian	Twinning	-0.130*	0.059	0.027	-0.24	-0.01
	International	0.271*	0.065	0.000	0.14	0.40
Twinning	Malaysian	0.130*	0.059	0.027	0.01	0.24
	International	0.401*	0.074	0.000	0.25	0.55
International	Malaysian	-0.271*	0.065	0.000	-0.40	-0.14
	Twinning	-0.401*	0.074	0.000	-0.55	-0.25

**Note:** \*The mean difference is significant at the 0.05 level

**Source:** Survey data

**Table VI.**  
*Post hoc* test  
by LSD between  
preparedness  
for hospital practice  
and curricula

Adjusted $R^2$	SE of the estimate
0.281	0.734

**Note:** Predictors: (constant), clinical, IT skills, holistic, coping, science, ethics, patient, basic skill, interpersonal

**Table VII.**  
Model summary

Model		Unstandardised coefficients		Standardized coefficients		
		<i>B</i>	SE	$\beta$	<i>t</i>	Sig.
1	(Constant)	0.189	0.178		1.061	0.289
	IT skills	0.138	0.038	0.108	3.627	0.000
	Interpersonal	0.009	0.060	0.006	0.153	0.878
	Basic Skill	0.174	0.069	0.102	2.537	0.011
	Holistic	-0.062	0.062	-0.038	-1.009	0.313
	Coping	0.260	0.040	0.211	6.436	0.000
	Ethics	0.062	0.048	0.046	1.283	0.200
	Patient	0.044	0.059	0.030	0.743	0.457
	Science	0.081	0.053	0.053	1.520	0.129
	Clinical	0.233	0.040	0.182	5.766	0.000

**Note:** Dependent variable: experience at medical school prepared me well for this job so far

**Source:** Survey data

**Table VIII.**  
Regression  
analysis between  
preparedness and  
medical school  
experience

nevertheless its negative  $\beta$  coefficient value deserves attention. The negative value indicates that holistic skill and preparedness for hospital practice is negatively associated. Thus, a one unit standard deviation change in holistic skill is expected to result in a  $-0.038$  standard deviation change in preparedness for hospital practice. Analysis of items from holistic skill indicates practices that are beyond the control of housemen themselves such as providing health education to patients' family; and encouraging patients to adopt healthier lifestyle. Thus, this could have led to the negative association, although the  $\beta$  value of  $-0.038$  is quite minimal.

### Discussion

The study sheds light on the rarely researched area of housemanship training, which forms the bridge between medical school education and the veracities of hospital practice for all medical graduates. The study elucidated the perception of the housemen as to whether their undergraduate medical training prepared them for the various dimensions of preparedness; which were access to information and IT skills, interpersonal skills, basic skills and CPD, holistic skills, coping skills, ethics and legal skills, patient management skills, scientific knowledge, and clinical skills. Of these, IT skills, basic skills, coping skills and clinical skills were predictors for the outcome of preparedness for hospital practice. Coping skill is the strongest predictor of preparedness for hospital practice, and this is not a surprising finding given that items in this skill includes coping with work stress, coping emotionally in distressing clinical situation and balancing work and personal life. A single-item measure posed to the respondents inquiring whether their medical school experience prepared them for their work had a mean value of 3.53, indicating a good level of preparedness.

Overall, newly graduated Malaysian medical officers felt that their medical schools prepared them for hospital practice (mean 3.39-3.87) based on the finding on the above nine sets of dimensions. Those who went through twinning programmes with international universities felt that they were better prepared in comparison to those who went to Malaysian medical schools, or those who went abroad. This finding was not to the contrary given the fact that the twinning programmes for medical education in the country are mostly carried out with reputed international universities. The International Medical University, for example, partners with universities such as University of Glasgow, University of Southampton, Royal College of Surgeons Ireland, and University of Aberdeen, to name a few. The Melaka Manipal Medical College partners with Manipal, which is India's top medical school. Thus, students who underwent these twinning programmes received the best of private medical education within a local context.

Malaysian graduates were also found to be better prepared than those who went overseas for their medical education. This is understandable since the practice of medicine also requires interpersonal communication between patient and physician; and an understanding of the local culture and norms. Regression analysis indicates access to information and IT skills, basic skills and CPD, coping skills and clinical skills as predictors of preparedness for hospital practice. IT skills have become more significant now in medical education as hospitals and health services in general have become highly dependent on information and communication technology.

This study thus supported the work of Hill *et al.* (1998), Cave *et al.* (2007), and Illing *et al.* (2013) on the need for medical schools to better prepare their graduates for hospital practice. However, unlike these earlier studies, the dimension of access to information and IT skills as a predictor of preparedness for hospital practice can be

singled out and expanded into future research. This is because of all industries; the field of medicine has been most highly impacted by technological advances in information technology. The natural fit between medicine and the digital age should be realised by both medical educators and researchers. The fusion has allowed for advancement in telemedicine and total hospital information system creating seamless efficiencies within complex hospital environment. At the other extreme end, Lanier (2013, p. 11) envisions a future where “[...] nanorobots, holographic radiation, or just plain old robots using endoscopes might someday perform heart surgery”.

The Malaysian medical education is at a crossroad where the government has taken steps to liberalise by allowing private medical education to complement the public education system. There are currently 35 medical schools in the country providing undergraduate training for a population of 29 million. The rapid increase in the number of medical schools in the country has raised concerns in some quarters (Lim, 2008). Medical schools used to be elitist with the best and brightest scrambling for limited scholarship and places of study. Now there are more places for medical education in the country, and with an expanding middle-class, parents can also afford to send their children abroad to pursue their studies in medicine.

The issue that has been raised by both the medical fraternity and public at large is whether there is also an erosion in the quality of medical graduates entering the job market as a result of recent developments. The government has tried to mitigate the impact by increasing the duration of housemanship from one to two years, and has introduced shift duty in an effort to reduce stress among the housemen. It must also be noted that while the number of medical graduates have increased over the years, however, facilities for housemanship training have not proportionately increased. Fauzi (2012) postulates the country needs more teaching hospitals to accommodate the increase. Housemanship training is being carried out in teaching hospitals and larger state hospitals in the country. In view of the demand for places, perhaps it may be pertinent for the Ministry of Health to consider expanding facilities for houseman training to include district hospitals as a stopgap measure.

## Conclusion

The housemanship period provides the link between medical school and hospital practice. It also provides training for the first stage of career in medicine for a medical graduate. Thus, it is imperative to understand preparedness for hospital practice among newly graduated medical graduates. Overall, Malaysian housemen felt they were prepared for hospital practice although those who graduated from twinning programmes felt better prepared than those from local universities. On the other hand, graduates from universities abroad felt less prepared than those from Malaysian universities. While the study sought to elucidate the level of preparedness for hospital practice among the houseman, it was not designed to establish a direct relation between preparedness for hospital practice and quality of medical education received by the housemen participating in the study. Factors contributing to a sound medical education are varied and multifaceted, which is beyond the scope of the study. Nonetheless, a systematic and in-depth feedback from the housemen is a welcomed feature for further improvements in the country’s medical training.

While the nature of this study has been empirical and data collected was through self-administered questionnaire, however, the richness of qualitative data has not been explored. Building on the finding from this study, future research may probe deeper on preparedness for hospital practice among medical graduates through focus group

discussions and interviews with housemen themselves and their supervisors. Illing *et al.* (2008) identified under-preparedness for prescribing, covering both pharmacological knowledge underpinning prescribing, as well as the practical elements of calculating dosage, writing up scripts, etc. Thus, future research direction may address specific dimensions of preparedness or under-preparedness. This will further enhance our understanding on the issue to effect policy influence.

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