

2017-02-01

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### Recommended Citation

Zafar, Afsheen and Rehman, Ahmed (2017) "Clinical Capability Self-Appraisal as Indicative of Preparedness For Future Medical Practice. A Graduates' Perspective," *Health Professions Education*: Vol. 3: Iss. 1, Article 7.

DOI: 10.1016/j.hpe.2016.07.001

Available at: <https://hpe.researchcommons.org/journal/vol3/iss1/7>

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# Clinical Capability Self-Appraisal as Indicative of Preparedness For Future Medical Practice. A Graduates' Perspective

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Received 12 February 2016; received in revised form 13 July 2016; accepted 17 July 2016

Available online 19 July 2016

## Abstract

**Purpose:** Pakistan is experiencing a wave of change in the undergraduate medical curriculum. The changes have led to emergence of an outcomes-based curriculum. However the extent to which an outcomes-based curriculum prepares the medical graduates for clinical practice has not been well studied. The aim of the present study was therefore to identify perception of the medical graduates of the extent to which an outcomes-based curriculum in Pakistan has prepared them for hospital practice.

**Methods:** In September 2015, recent graduates of Islamic International Medical College in Pakistan were asked to fill in the modified Clinical Capability Questionnaire to assess their perception of how the medical school education prepared them for clinical practice during their house job. The survey findings were analyzed using SPSS version 23.

**Results:** 43 students completed the questionnaire. Cronbach's alpha coefficients for each subscale ranged from 0.83 to 0.96 representing good internal consistency. Majority of the students reported good capability in clinical skills (mean=2.77) but rated themselves lower on procedural skills (mean=1.94), operational management (mean=1.99), and administrative tasks (mean=1.53). For the remaining six domains, students rated an average preparedness for holistic care (mean=3.13), collaboration (mean=3.01), prevention (mean=3.05), and self-directed learning (mean=3.02) while they reported inadequate preparedness in coping skills (mean=2.89) and interpersonal skills (mean=2.77)

**Conclusion:** Introduction of an outcomes-based curriculum does not guarantee student preparation for clinical practice during house job.

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**Keywords:** Clinical capability questionnaire; Integrated curriculum; Student preparedness; Undergraduate curriculum

## 1. Introduction

Medical education has undergone tremendous changes over the last few decades. It is both important and essential for undergraduate medical curricula to

draw relevance to medical practice. Inadequacy of undergraduate curricula in preparing future doctors for clinical practice has been reported time and again,<sup>1–4</sup> and has led to emergence of outcomes-based curricula. This performance based approach to education defines the product of medical schools in terms of desired learning outcomes and makes curricular delivery effective,<sup>5</sup> but to the extent these desired learning outcomes are achieved has seldom been studied.<sup>6,7</sup>

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Peer review under responsibility of AMEEMR: the Association for Medical Education in the Eastern Mediterranean Region

Pakistan is also currently experiencing a wave of change in undergraduate medical curriculum. Pakistan Medical and Dental Council (National regulatory and accreditation authority) and National Curriculum Revision committee (NCRC) of Higher Education commission developed a curriculum draft in 2011 and circulated for implementation by the concerned institutions. The curriculum is outcomes-based with emphasis on various learning methodologies, acquisition of skills and early clinical exposure.<sup>8</sup> So far we do not know how relevant it is to the clinical practice in Pakistan, since the extent to which the described outcomes are achieved has not been studied. Although such an evaluation is complex<sup>9</sup> and depends upon multiple indicators, evaluation using a self-administered questionnaire is an acceptable method and has been employed in several previous studies.<sup>10–15</sup>

The aim of this study was to identify the perception of recent graduates of Islamic International Medical College, Pakistan regarding their preparedness for hospital practice in medical schools. This study was a pilot study to further explore the strengths and weaknesses of current Pakistani Medical School Curriculum.

## 2. Materials and methods

Recent graduates of Islamic International Medical College were asked to complete the Clinical Capability Questionnaire to assess their perception of preparedness for clinical practice during their house job. Since experiential learning occurs at workplace therefore we included only those doctors who had graduated within last three months.<sup>16</sup> This allowed a sample who had enough clinical exposure that could allow them to generate an opinion on the adequacy of their undergraduate curriculum.

The clinical capability questionnaire designed and validated by Hill et al.<sup>6</sup> was used and the domains of “Practical skills and patient management”, “holistic care”, “preventive medicine”, “interpersonal skills”, “coping skills”, “collaboration” and “self-directed learning” were included. The survey assesses the perception of the graduates regarding their medical school's educational relevance in the above mentioned domains. It was modified to include 47 skills under the domain of “Practical skills and patient management” to make it more specific for students to answer. A similar but not exact modification has also been used by Scicluna et al.<sup>16</sup>

The survey consisted of two parts. The first part assessed the domain of “Practical skills and patient management” with 47 questions under four subscales namely “clinical skills”, “procedural skills”, “operational

management” and “administrative tasks”. The skills included under each subscale were similar to those used in the study by Scicluna et al.<sup>16</sup> except the ones categorized as operational management. We included only those skills under this subscale which required use of multiple procedural skills for their execution e.g.; advanced trauma life support management of trauma patients, or setting up of an intravenous (IV) line. Students were asked to rate their perception of their capability to perform a task on a five point scale that ranged from 0 to 4. 0 represented “I did not try the skill during Medical School or Internship”, 1 represented “I tried the skill but I cannot perform it”, 2 represented “I tried the skill and I can perform it supervised”, 3 represented “I tried the skill and I can perform it unsupervised”, and 4 represented “I tried the skill and I mastered it”. Responses of 3 or 4 were considered as evidence of good capability.

The second part consisted of 25 items for 6 subscales related to the rest of the 6 domains of the clinical capability questionnaire and ranked student responses on a scale of 1–5 where 1 represented ‘very inadequately’ and 5 ‘very adequately’. Responses marked 4 or 5 were taken as adequate preparation in medical school.

The survey findings were analyzed using SPSS version 23.

## 3. Results

43 graduates participated in the study. Cronbach's alpha coefficients for each subscale in both parts ranged from 0.836 to 0.965 indicating good internal consistency of the items in the subscale. The overall mean for the domain of “Practical skills and patient management” was 2.06 (SD=0.82). The majority of students reported good capability in clinical skills (mean=2.77 (SD=0.91)) but rated themselves lower on procedural skills (mean=1.94 (SD=0.92)), operational management (mean=1.99 (SD=0.97)), and administrative tasks (mean=1.53 (SD=1.22)). For the remaining 6 domains, student rated an average preparation in the holistic care (mean=3.13 (1.13)), collaboration (mean=3.01 (1.11)), prevention (mean=3.05 (1.23)), and self-directed learning (mean=3.02 (1.28)) while they reported inadequate preparation in coping skills (mean=2.89 (1.26)) and interpersonal skills (mean=2.77 (1.24)).

## 4. Discussion

Self-evaluations have been used for various purposes in medical education for both formative and summative

assessments.<sup>17–19</sup> Although self-assessment may not always correlate with performance,<sup>20–25</sup> especially in poor performers<sup>26</sup> but they do contribute towards improved self-efficacy which in turn is related to improved performance.<sup>16</sup> It has been proved that addressing the student's concerns reported on self-evaluation improves student confidence as well.<sup>27</sup> Thus reporting self-evaluation of clinical capability can be of immense value to decide whether curriculum outcomes are being achieved or not.

In our study the students rated themselves better in clinical skills including history taking and various clinical examination (mean=2.77) that nearly corresponds to their ability to perform the skill unsupervised although the overall mean for the domain of “Practical skills and patient management” was lower due to lower rating in procedural skills and operational management (A mean of 2.06 corresponds to their ability to perform tasks supervised). This shows that although they have exposure to the required skills and procedures they lack the confidence to perform them independently. This could be associated with either a lack of enough opportunities for practice or a lack of exposure in authentic situations during medical school. This has also been reported in another study where 99% of the respondents felt that “their responsibility for patient care was too limited” during medical school.<sup>28</sup> Similar findings were reported by Jolly and MacDonald who found inadequate exposure of interns to practical procedures and common clinical conditions, and poor training in difficult communication skills.<sup>3</sup> The deficiencies in performing procedures and prescription writing have also been reported in multiple studies from different parts of the world.<sup>21,28–31</sup>

In our study the lowest rated skill in the domain of practical skills and patient management was conducting administrative tasks (which included documentation and referral of patients) the score of which represented the opinion that graduates did not try the skill during medical school. This might be the result of either a complete lack of or inadequate representation of the administrative skills in the curriculum. A study from Australia also reported lower scores in the administrative skills as compared to the rest of the clinical skills but their mean score nevertheless equated to capable of performing the skill supervised.<sup>16</sup>

Despite changes in curricula in medical education over the last decade, these deficiencies still persist world over and point to the need to revise curricula according to the requirements of our current healthcare system. The inclusion or exclusion of a skill or topic in the curriculum should be need and evidence based and

it should be recognized that curricular content is as vital to its success as is its delivery.

The other domains included in our study were “holistic care”, “prevention”, “interpersonal skills”, “coping skills”, “collaboration” and “self-directed learning”. These domains correspond to our curricular outcomes like communication and counseling skills, team based approach, continuous professional development, health advocacy and professionalism. Students rated only average preparation for holistic care, collaboration, prevention and self-directed learning while they rated below average in coping skills and interpersonal skills. Similar findings have also been reported by other evaluators.<sup>28,29</sup> These results were surprising for us since our curriculum emphasizes a lot on self-directed learning and communication and counseling skills. Students have time slots for self-directed learning and small group discussions are a visible part of the curriculum. Coping skills are not formally taught but it is expected that students learn these skills while working in clerkships along with the clinical staff. Regardless of these efforts their perception in these areas is not good. This warrants a further in-depth study of the curriculum to see the representation and implementation of related content. One of the possible causes can also be lack of stress on explicit assessment of these skills resulting in students' poor self-perception in these areas. Several studies have documented improvements in these areas after including formal training and assessment<sup>16,32,33</sup> and our study also highlights this need.

The deficiencies highlighted in our study are not unique to our institute or country. A study from Israel reported that more than 50% of the graduates were of the opinion that their medical school training had not prepared them for the competences they needed for work in the clinical setting.<sup>28</sup> The fact that simply changing curricula to outcomes-based does not guarantee improvement in the workplace capability of graduates is obvious. Therefore the need of further exploring curriculum on the basis of these findings, revising it to include workplace related competencies and assessing them adequately is evident.

## 5. Conclusion

Graduates perceive that their preparedness for hospital practice is adequate in clinical examination skills only. Procedural skills, clinical management skills, administrative skills, holistic care, collaboration, prevention, confidence/coping skills, interpersonal skills

and self directed learning skills require more emphasis in the undergraduate curriculum.

### Disclosure

Ethical approval: ethical approval has been granted by Ethics Review Committee, Islamic International Medical College (Appl Riphah/IRC/15/0132 dated September 08, 2015).

### Funding

None.

### Other disclosure

Abstract of this study was presented at the International Conference on Medical Education (ICME), Istanbul 2015 and is published (abstract only) in volume 10 (October 2015, supplement) of the Journal of the Islamic International Medical College (JIIMC).

### Appendix

#### *Modified Clinical Capability Questionnaire*

##### Part 1:

Please indicate at which level you believe you can perform the following skills on a patient at the present time:

1. Pulse measurement
2. Blood pressure measurement
3. Lymph node examination
4. Thyroid examination
5. Mouth examination
6. Neurological examination
7. Ankle examination
8. Knee examination
9. Eversion of upper eye lid
10. CVS examination
11. Respiratory system examination
12. Abdominal examination
13. Digital rectal examination
14. Hernia examination
15. Breast examination
16. Gynecological examination
17. Genitalia examination
18. PAP smear
19. Vaginal swab
20. Sterile dressing
21. Spirometry
22. Blood glucose examination

23. Administration of a nebulized medication
24. IV fluid orders
25. Urine dipstick test for pregnancy
26. Pain control
27. Sedation
28. Subcutaneous injection
29. Intramuscular injection
30. Intravenous injection
31. Setting up and performing an IV cannulation
32. Venepuncture
33. Setting up a transfusion and IV fluids
34. Basic CPR
35. Airway management
36. ECG interpretation of Acute MI & unstable arrhythmias
37. ATLS trauma management
38. Suturing
39. Removing sutures
40. Urinary catheter (male)
41. Urinary catheter (female)
42. Inserting a nasogastric tube
43. Arterial blood gases (sampling and interpretation)
44. Prepare referral letter
45. Prepare medical certificate
46. Prepare death certificate
47. Obtain consent for procedures and investigation

##### Part 2:

Please indicate the level at which you believe that medical school prepared you to for following activities.

1. Cope with stress caused by my work
2. Recognize my own clinical limitations
3. Discuss health risk behaviors with patients
4. Cope with my own emotions in distressing clinical situations
5. Discuss relevant preventative health strategies with patients.
6. Balance my personal and professional life
7. Encourage patients to improve their health habits
8. Deal confidently with 'difficult' patients
9. Feel competent to tell a patient they have a terminal illness
10. Remain calm in difficult situations
11. Appreciate the importance of group dynamics when working within a team environment
12. Feel competent to counsel a distraught patient
13. Use opportunities to encourage patients to adopt healthier lifestyles
14. Provide education to patients and families
15. Deal with the family of the dying patients
16. Approach confidently senior staff for help in interpreting investigations

17. Be sensitive to the needs of nursing staff
18. Co-ordinate a comprehensive patient management plan with allied health professionals (e.g. physiotherapists)
19. Liaise with the social worker about my patients when necessary
20. Work as a team member in the department
21. Invest time in developing my knowledge and skills
22. Keep up to date with new advances in medicine
23. Evaluate the impact of family factors on illness
24. Understand the interaction of social factors with disease (eg, poverty, unemployment)
25. Appreciate the importance of a patient's cultural/ethnic and religious background

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