# ORIGINAL ARTICLES

## PERCEPTIONS OF FACULTY AND HEALTH CARE MANAGERS ABOUT MANAGERIAL SKILLS AND TRAINING NEEDS OF DOCTORS WORKING AS HOUSE OFFICERS IN MEDICAL INSTITUTIONS

**Manzar Zakaria, Syed Ahsan Azeem*, Iftikhar Hussain****

Combined Military Hospital Rawalpindi Pakistan, *Pakistan Institute of Medical Sciences Islamabad Pakistan,

Army Medical College Rawalpindi, National University of Medical Sciences (NUMS) Rawalpindi, Pakistan

## ABSTRACT

***Objective:*** To find out the perceptions of faculty and health care managers about the managerial skills of house officers, areas in which they are deficient and the learning strategies to improve these skills.

***Study design:*** Cross sectional study.

***Place and Duration of Study:*** The study was carried out in affiliated institutions of Armed Forces Postgraduate Medical Institute Rawalpindi, Pakistan Institute of Medical Sciences, Islamabad, and Holy Family Hospital Rawalpindi, from 15th December 2014 to 15th February 2015.

***Material and Methods:*** Questionnaire was used for data collection. It consisted of three sections. It assessed the respondents' perceptions of house officers' managerial skills, areas in which they were deficient and learning strategies for these skills. A probability convenience sample of faculty members and health care managers of institutions affiliated to Army Medical College, Pakistan Institute of Medical Sciences and Holy Family Hospital Rawalpindi was selected.

***Results:*** A total of 106 health care managers and faculty members were approached, of which 88 responded. Respondents were equally divided among health care managers and faculty members. The following skills of house officers received the lowest ratings by the respondents, 'Skills of using evidence based guidelines for allocating health care resources', 'how to function in their position as a leader', 'how the Pakistan healthcare system is organized and financed'. Respondents were unanimous that medical graduates need training in managerial skills and majority (93%) of them preferred lectures as the teaching strategy.

***Conclusion:*** Health care managers and faculty members in Rawalpindi/Islamabad region perceive the managerial skills of house officers as inadequate. They believe that training is required at undergraduate level to improve these competencies.

**Keywords:** Management competency, Medical education.

## INTRODUCTION

Pakistan Medical and Dental Council (PMDC) introduced the competency-based curriculum in 2010. This curriculum similar in design to the CANMED curriculum, envisaged developing 7 competencies in a medical graduate. These competencies are stated in the mission statement of PMDC, which intends to produce a 7 star physician[1,2]. A medical graduate is supposed to possess clinical competencies of being skillful, knowledgeable, critical thinker and researcher. In addition he should be able to take the role of community health promoter, leader and a professional. The latter three competencies require managerial skills. Five years after the introduction of competency based education it is a matter of concern that management skills in a medical graduate are not given their due importance[3,4]. Medical education literature also supports that residents and medical graduates feel that they need more training in management[5,6]. Studies also show that physicians perceive that they have inadequate training for management[7].

The purpose of this research was to find out perceptions of the faculty and health care

**Correspondence:** Dr Manzar Zakaria, Prof of Medicine, CMH Rawalpindi, Pakistan
*Email: manzarz@icloud.com*

*Received: 30 Apr 2015; revised received: 03 Jun 2015; accepted: 08 Jun 2015*

managers about the managerial skills of house officers, areas in which they are deficient and the strategies to improve these skills.

## MATERIAL AND METHODS

This Cross sectional study was carried out in affiliated institutions of Armed Forces

**Table-1: Mean scores of health care administrators and faculty members perceptions on house officers' managerial skills and knowledge (group 1: faculty members; group 2: health care administrators).**

| Competency | Skill and knowledge skills of house officers in each competency | Group1 N=44 Mean ± SD | Group 2 N=44 Mean ± SD | *p*-value |
|---|---|---|---|---|
| Competency 1 | Can feedback to their colleagues | 3.19 ± 0.969 | 3.24 ± 0.98 | 0.286 |
| | Know how to handle their personal finances | 2.98 ± 1.115 | 3.33 ± 0.90 | 0.111 |
| | can handle feedback from their superiors | 2.90 ± 0.878 | 3.24 ± 0.983 | 0.105 |
| | Know how to create openings | 2.86 ± 1.03 | 3.10 ± 0.96 | 0.275 |
| | Know how to negotiate on their salary and working circumstances | 2.83 ± 1.03 | 2.93 ± 0.99 | 0.669 |
| | Adept at estimating time requirements time management and are capable of finishing their job requirements on time | 2.69 ± 0.950 | 2.69 ± 0.98 | 1.00 |
| | Capable of setting priorities between providing patient cares and official work requirements. | 2.70 ± 1.149 | 2.55 ± 1.02 | 0.423 |
| Competency 2 | Know how to manage their ward effectively | 2.71 ± 1.02 | 2.93 ± 0.99 | 0.333 |
| | Know which rights and duties they have to fulfill being a doctor(e.g. Health law) | 2.83 ± 1.15 | 2.81 ± 1.11 | 0.923 |
| | Know what has to be written in a medical file to avoid legal issues | 2.74 ± 1.06 | 2.76 ± 1.01 | 0.196 |
| | Know what will be expected of them when they become a specialist | 2.67 ± 0.954 | 2.90 ± 1.03 | 0.275 |
| | Know how to deal with conflicts at their workplace | 2.67 ± 0.954 | 2.81 ± 1.07 | 0.519 |
| | Know how to lead or participate in a committee or meeting | 2.67 ± 0.954 | 2.81 ± 1.02 | 0.509 |
| | Know how to take interviews for employment of their colleagues | 2.57 ± 0.966 | 2.81 ± 1.04 | 0.281 |
| | Know how to deal with medical mistakes they made themselves | 2.67 ± 0.979 | 2.55 ± 0.97 | 0.577 |
| | Know how their specialty's department is organized and financed | 2.48 ± 0.917 | 2.69 ± 1.02 | 0.315 |
| | Know how to deal with medical mistakes made by others | 2.50 ± 0.969 | 2.52 ± 0.94 | 0.909 |
| | Stand up for their patient, when they feel that the amount of care he/she receives isn't enough | 2.38 ± 0.962 | 2.40 ± 1.11 | 0.916 |
| | Know how the Pakistan healthcare system is organized and financed | 2.31 ± 0.897 | 2.31 ± 1.00 | 1.00 |
| | Know how to function in their position as a leader | 2.69 ± 1.00 | 2.93 ± 0.99 | 0.278 |
| Competency 3 | Take into account when allocating healthcare resources, that they are limited | 2.64 ± 0.98 | 2.64 ± 0.88 | 1.00 |
| | Take the cost of healthcare resources into account when allocating them | 2.57 ± 0.99 | 2.62 ± 0.91 | 0.819 |
| | Are actively involved in preventive healthcare | 2.52 ± 1.09 | 2.55 ± 0.97 | 0.916 |
| | Allocate healthcare resources based on evidence-based medicine, guideline, or protocol | 2.24 ± 0.932 | 2.26 ± 0.83 | 0.902 |
| Competency 4 | Know when they have fulfilled requirements for further training | 3.40 ± 1.08 | 3.45 ± 1.04 | 0.838 |
| | Know how to use information technology effectively in patient care | 2.98 ± 0.95 | 3.26 ± 0.94 | 0.169 |
| | Participate actively in evaluating and improving systematic quality processes (e.g. Improving patient safety) | 2.79 ± 0.95 | 2.81 ± 0.86 | 0.905 |
| | Know where they can find medical resources (books, internet and databases) to keep up their medical knowledge | 3.33 ± 0.98 | 3.50 ± 0.86 | 0.410 |

Postgraduate Medical Institute Rawalpindi, Pakistan Institute of Medical Sciences, Islamabad; and Holy Family Hospital Rawalpindi. Duration of study was from 15th December 2014 to 15th February 2015.

A total of 106 health care managers and faculty members were approached, out of whom 88 completed the questionnaire. A non-probability convenience sample of clinical faculty members and health care managers of the following medical colleges were included in the sample: 1) Armed Forces Post Graduate Medical Institute, Rawalpindi 2) Pakistan Institute of Medical Sciences, Islamabad and 3) Holy Family Hospital, Rawalpindi.

Data was collected over a period of 8 weeks from December 2014 to January 2015. Prior permission for undertaking the surveys was obtained from institutional ethical review board.

The general purpose of the research was included in the questionnaire. Healthcare managers and faculty members were approached in person to participate in the study.

Questionnaire was used as a tool of measurement (see Annexure A; available via link). Validated survey questionnaire was adapted from the literature[8]. This questionnaire was further developed after getting it reviewed in a focus group discussion that consisted of 5 members of the faculty of health professional education of College of Physicians and Surgeons Pakistan. Appropriate modifications were done after piloting it on a sample of faculty members and health care managers. The survey questionnaire meets the criteria of a validated tool as laid down in literature[9,10]. The questionnaire consists of 3 sections:

Perceptions of House Officers Managerial Knowledge and Skills: For assessment and identification of gaps in capacities.

Need Assessment for Training: For effectively highlighting specific areas for capacity training.

Learning and Teaching Strategies: For outlining training methods and strategies for filling the capacity gaps.

The first section consists of 28 statements about the managerial competencies of medical graduates in 4 areas of practice management:
Competency 1: Balance between patient care and personal development,
Competency 2: Effectively operating within the health care settings,
Competency 3: Allocating finite health resources appropriately, and
Competency4: Using information technology to deliver appropriate health care.

Faculty/health care manager responses were elicited on a Likert scale (1=totally disagree, 5= totally agree) for the first section.

In the second section multiple options were offered to ascertain the managerial needs of the house officers. In the third section, options were offered on teaching strategies to be employed to impart managerial skills through teaching (workshops, lectures, etc).

Data was analyzed using SPSS version 20. Descriptive statistics were applied on the quantitative variables. Differential response of the faculty members was reported on the Likert scale (1-5), and the number and percentage of faculty members and healthcare managers selecting a preferred management topic was stated as number and percentage. Similarly number and percentages were used to report preferred method of imparting managerial skills.

Cronbach alpha was applied to measure reliability of the questionnaire. Any item in section 1 of the questionnaire which was not meeting the standard of inter rater reliability was removed. Responses of faculty members and health care managers in section 1 of the questionnaire were compared. Independent sample t test was applied for significance. A $p$ value of $< 0.05$ was considered to be significant.

## RESULTS

Respondents were evenly divided among faculty members and health care managers 44 in each group. The overall response rate was 83%.The mean age of the faculty members and healthcare managers was 50 years (SD 2.49) and 46 years (SD 5.13) respectively. Mean number of years' experience of health care managers and faculty members was 19.26 years (SD 2.837). These indicate greater clinical and management experience. Among health care managers 4 (9.5%)were females and 38 (90.5%)males. And among faculty members 9 (21.4%) were females and 33 (78.6%) males. This reflects gender distribution in these institutions.

### Perceptions on Knowledge and Skills

Table-1, table-2 and fig-1 show the perceptions of the health care managers and faculty members about the managerial skills of house officers, areas in which they are deficient and the strategies to improve them respectively.

Mean score of health care managers and faculty members were compared. A *p* value of >0.05 in all the domains of managerial skills showed no significant difference in their responses. Reliability statistic Cronbach alpha for the 28 items was 0.96.

## DISCUSSION

### Perceptions on Knowledge and Skills

Healthcare managers and faculty members who participated in this study rated the managerial skills of their house officers as moderate (mean: 2.73, SD: 0.24). In an earlier study carried out by Berkenbosch in Netherlands the mean score on managerial skills was 2.9, this is quiet similar to the result in our study[6]. We expected a larger difference in the score as Can MED model of competency medical education was introduced in Netherlands in January; 2005. Currently, as mentioned previously, there is no training in medical colleges on managerial skills in

**Table-2: Showing responses of faculty members and health care administrators on training requirements of house officers.**

| S. no. | Management competency in which house officers need training | Faculty members response in percentage (N=44) | Health care Administrators response in percentage (N=44) |
|---|---|---|---|
| 1 | Quality processes | 21 | 18 |
| 2 | Practice management | 24 | 21 |
| 3 | Negotiation | 25 | 24 |
| 4 | Time management | 30 | 26 |
| 5 | Financial planning | 26 | 31 |
| 6 | Medical ethics | 31 | 30 |
| 7 | Cost effectiveness of diagnosis and management | 33 | 30 |
| 8 | Partnership with specialist | 31 | 33 |
| 9 | Knowledge of carrier options | 33 | 36 |
| 10 | Medical computer systems | 38 | 33 |
| 11 | Leadership | 38 | 36 |
| 12 | Communication | 36 | 38 |
| 13 | National health care | 42 | 38 |
| 14 | Knowledge of health care system | 42 | 38 |
| 15 | Judicial aspect of medical mistakes | 44 | 42 |
| 16 | Preventive health care | 45 | 42 |
| 17 | Medical graduates don't need training | 0 | 0 |

Pakistan. This, and little professional experience of house officers, explains this perception. However, our study provides a benchmark which can be used to compare the results of future studies after introduction of manager competency in the curriculum of house officers' training.

Our study results are different from Berkenbosch where highest ratings were given to the following competencies: 'capable of updating their medical knowledge', 'receiving feedback effectively', 'using evidence based medicine to effectively allocate health resources' and 'knowing when they are eligible for further medical training'[8]. Interestingly in our study, the skill of using 'evidence based guidelines for allocating health care resources' was rated among the lowest. Other skills in which lower scores were given in our study were: 'how to function in their position as a leader', 'how the Pakistan healthcare system is organized and financed', 'stand up for their patient, when they feel that the amount of care he/she receives isn't enough', and 'are actively involved in preventive healthcare'. This highlights the point that there are contextual differences between countries. Similar studies from elsewhere cannot be applied directly to Pakistan.

**Training Need Assessment**

In our study 100% of respondents (table-2) agreed that there is need for managerial training in undergraduate medical curriculum. This unanimous response is consistent with PMDC perspective, which instructed in 2010 that managerial skills should be introduced into the curriculum[1] .The unanimous response that training is required is different to the response obtained by Berkenbosch et al, which reports 94% of respondents think there is a need for managerial training[9]. This difference in perception could be because of contextual difference in educational environment or the fact that managerial training in some form has already been introduced in their curriculum. There are multiple studies available in the literature, showing that residents and house officers feel that they need training in non-clinical skills including management[12].

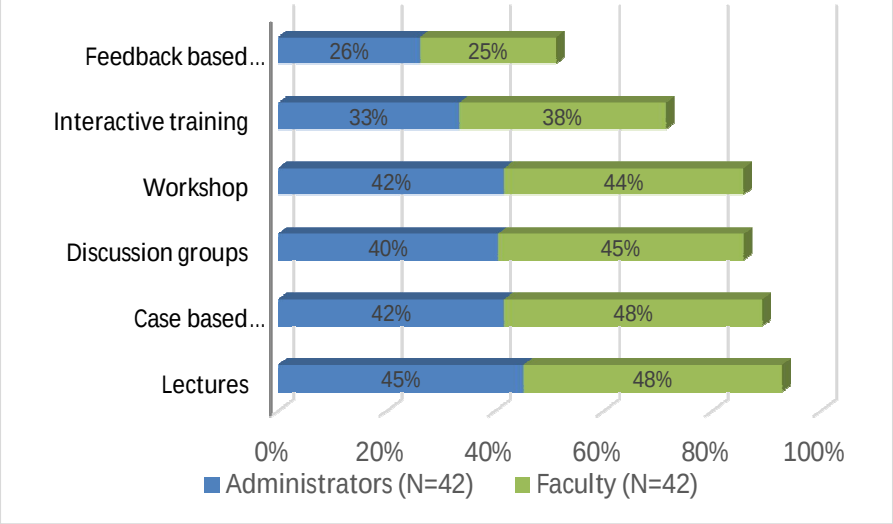


**Figure-1: Learning strategies selected for imparting managerial skills.**

The trainings topics that ranked highest include 'preventive healthcare', 'judicial aspects of medical mistakes', 'knowledge of healthcare system', 'national healthcare' and 'communication. It is nonetheless important to note more than 18% of respondents believe that

training is required in all areas; therefore identifying a high deficiency in all areas. In the study carried out by Berkenbosch et al, all areas are not identified as high deficiency areas[8]. In the areas like 'computer systems', 'national health', 'electronic database' and 'preventive medicine less than 20% respondents thought training is needed[8]. This is in sharp contrast especially for preventive medicine, 87% of respondents in the study think this is an area where training should be carried out. This finding underscores that space should be allocated to the neglected topics in our current curriculum.

**Learning and Teaching Strategies**

The learning strategies that rank highest included 'lectures' followed by 'case based learning', 'discussion groups' and 'workshops'. The majority of respondents (93%) favored 'lectures' which is in contrast with the study by Berkenbosch et al, where 'workshop' is ranked as highest followed by 'coaching and feedback from supervisors'. These differences are interesting and can possibly be explained since the subject has not been introduced into educational institutions, highlighting a gap in knowledge of healthcare managers and faculty members in our institutions[11]. These perceptions may change after introduction of 'management' training. This also highlights that 'train the trainers' program may need to be instituted before introducing curriculum of managerial skills in graduate medical programs.

Our study is unique as this is the first study in the region where this issue has been addressed. A review of the local and regional literature does not show any study in which managerial skills of residents and house officers have been assessed. Another distinction of this study is that it compares the responses of health care managers and faculty members. This is important because in our national health setup it is often the healthcare manager that does the appraisal of house officers.

Our study was limited to only three institutions in Rawalpindi/Islamabad region so the sample may not be representative of the entire country. Faculty members and health care managers of private medical colleges were not included. Faculty members of the basic sciences were not included in the study, however, reason for their exclusion was the absence of house officers and fellows in their departments. Views of other significant stakeholders like medical graduates, students, patients were not taken. All the participants that were approached did not respond.

There are many unanswered questions towards development of curriculum for managerial skills. The qualifications of the persons responsible for running managerial programs need to be identified. It is not clear whether the trainers should be members of the existing faculty or they should be specialized managers. How much time needs to be allocated to this curriculum. Validated assessment tools for management competency also need to be developed[13,14]. Medical education literature is silent on many of these issues. Answers to these questions are essential in design, development and implementation of curricula of managerial skills for medical graduates. Future research should also be carried out to find out the house officers, students and patients perspectives to meet their expectations.

## CONCLUSION

This study of perceptions of faculty members and health care managers about the management competency of their house officers show that they rate this competency as less than average. There was no significant difference between the perceptions of health care managers and faculty members. This study reiterates the requirement of the regulatory bodies that competency of health care management should be included in the curriculum of house officers. This study will support curriculum designers for developing a

curriculum for house officers' in competency 'manager'.

## CONFLICT OF INTEREST

The authors of this study reported no conflict of interest.

## AUTHORS CONTRIBUTION

Manzar Zakaria, conception design, data analysis, Syed Ahsan Azeem, conception, Iftikhar Hussain, conception, data analysis

## REFERENCES


1. Naqvi SS, Shaikh AA, Khan MJ, Mahmood MA, Shah MT, Bhatti AF. Curriculum of MBBS. 2011; Pakistan Medical and Dental Council & Higher Education Commission of Pakistan.
2. Frank JR, Jabbour M. Report of the CanMEDS Phase IV Working Groups. Ottawa: The Royal College of Physicians. and Surgeons of Canada 2005.
3. Daugird AJ, Spencer DC. The perceived need for physician management training. J FamPract. 1990; 30: 348, 351–52.
4. Busari JO, Berkenbosch L, Brouns JW. Physicians as managers of health care delivery and the implications for postgraduate medical training: A literature review. Teach Learn Med. 2011; 23: 186–196.
5. Berkenbosch L, Brouns JW, Heyligers I, Busari JO. How Dutch medical residents perceive their competency as manager in the revised postgraduate medical curriculum. Postgrad Med J. 2011; 87: 680–687.
6. Brouns JW, Berkenbosch L, Ploemen-suijker FD, Heyligers I, Busari JO. Medical residents perceptions of the need for management education in the postgraduate curriculum: A preliminary study. Int J Med Educ. 2010; 1:7 6–82.
7. Busari JO, Verhagen EA, Muskiet FD. The influence of the cultural climate of the training environment on physicians' self- perception of competence and preparedness for practice. BMC Med Educ. 2008; 8: 51.
8. Berkenbosch L, Bax M Scherpdier A, Heyligers I, Muijtens AM, Busari JO. How Dutch medical specialists perceive the competencies and training needs of medical residents in healthcare management. Medical Teacher. 2013; 35(e): 1090-1102.
9. Survey designs. In: Creswel JW, editor. Educational research-Planning, conducting, and evaluating quantitative and qualitative research. New Jersey: Pearson education,Inc., 2012; p.375-421.
10. Anthony R, Artino JR, Jeffrey S, Rochele LA, Kent J. Developing questionnaire for research: AMEE guide no. 87. Medical Teacher. 2014; 36: 463-74.
11. Crites GE, Schuster RJ. A preliminary report of an educational intervention in practice management. BMC Med Educ 2004; 20: 15.
12. Schoenmaker SG, Berkenbosch L, Ahem S, Busari JO. Victorian junior doctors' perception of their competency and training needs in health care management.Aust Health Rev. 2013; 37 (4): 412-17.
13. Hopmans CJ, Hoed PT, Wallenburg I, Laan L, Harst E, Elst M, et al. Surgeons attitudes toward a competency-based training and assessment program; results of a multi-center survey. J. Surg Educ. 2013; 70 (5): 647-54.
14. Rao NR, Kodalli R. Mian A, Ramtekkar U, KamarajanC, Jibson MD. Psychiatric residents' attitudes toward and experiences with the clinical-skills verification process: a pilot study. Acad Psychriatry. 2012; 36 (4): 320-22.