ORIGINAL ARTICLE

Exploring standards of assessment for MHPE programs in Pakistan: Perspective of program directors

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A B S T R A C T

Background: Masters in health professions education (MHPE) programs in Pakistan has created many challenges for its curricular components. It is necessary to explore these components in the local context, so as to agree to what constitutes minimally agreed MHPE standards.

Objectives: To identify the similarities and variations in assessment of MHPE Programs of Pakistan.

Methodology: Collective case study design was used to collect data from 07 programs directors about assessment methodology/policy used in their programs through semi structured interviews. After transcription of interviews and open coding, axial codes were transferred to Microsoft excel sheet for themes identification through content, thematic and discourse analysis simultaneously using NVIVO software, word frequency and matrix coding queries. Trustworthiness of data was ensured through credibility, conformability, dependability and transferability.

Conclusion Formative assessment, assignments, end of term examination and thesis defense are similarities of different programs proposed as minimum standards for existing and future programs. OSTE is proposed as variations and guidelines for accrediting agencies and EPAs, self-assessment, peer assessment and online assessments are the challenges tasks ahead to work.

Keywords: *Standards, masters, MHPE, faculty development*

Introduction

Masters in health professions education (MHPE) programs number has rapidly increased in the recent years to 121 in 2014.[1] In Pakistan in a short span of time 7 programs have been inaugurated in different parts of the country.[2] This increase in number is due to efforts of accrediting bodies and attractive format of MHPE that include face to face contact and online self-directed learning that suits working class in their extremely busy schedule. In USA: ACGME (Accreditation council of graduate medical education)[3] in Canada: canMED (Canadian Medical Education Directives) competency framework,[4] in UK: GMC (General medical council) guidelines on tomorrows doctor[5,6] and LCME[7,8] (Liaison

committee of medical education, a body authorized for accreditation by World federation of medical education) have emphasized to implement instructional and assessment standards. This have forced medical institutions world over to hire trained manpower in medical education to implement these standards which though are voluntary but must be contextualized for implementation. Moreover, MHPE program's credentials immerse students in culture of research and scholarly work for 2-3 years and help in acquisition of knowledge of theories and practice in the context of modern educational trends world over. Rapid increase in number raise concerns regarding quality of medical education being delivered in these programs and question of similarity, variation and challenges facing these programs.

Harden's ten questions have been used to develop new curricula since 1985. These questions provide a framework of steps involved in curricular planning and development. This framework has been previously used to analyze medical curriculum in University of Gezira, Saudi Arabia in 2017.[9] Higher education commission (HEC) of Pakistan masters' standards grant exemption of thesis and introduced additional course work in lieu of thesis, however, this could not be considered for MHPE program. Similarly, World federation of medical education (WFME) postgraduate standards were also exempted for MHPE format as it had a different format from face to face and online self-directed learning. WFME published its master's standards in late 2016 when current research study was well in progress. These standards mirror the framework of the trilogy of Basic medical education (BME), Post graduate (PG) and continuing professional development (CPD) standards which were revised in 2015, but there is no distinction between basic and quality development standards. Hence Harden's ten question framework[10] (Table 1) was used in the context of WFME domains standards in the current study. Moreover, to develop local contextualized curriculum standards (assessment for the present study), the perspective of MHPE program directors who were involved in the design of these programs from their program's inception is extremely important.

Aims and Objectives

The main objective was to explore MHPE curricular components focusing especially on assessment using a protocol based on Harden's 10 question framework and WFME domains. A consensus opinion of the program directors of 07 programs operative in Pakistan was taken that can assist in developing contextualized local standards.

Table 1: Harden's 10 questions framework.

	Harden's 10 questions
Q1	What approach was followed in the need assessment of MHPE?
Q2	What are aims and objectives of your course?
Q3	What is the minimum number of modules that need to be taught in MHPE program?
Q4	Should a particular sequence be followed while teaching these modules?
Q5	How do you balance contact session time with self-directed time during implementation of modules within limits of SPICES model as an educational strategy?
Q6	Most of the MHPE programs have contact session in the beginning to promote peer assisted learning while others have kept these at the end of module to promote self-directed learning. What is your experience about advantages of 02 methodologies?
Q7	What is your overall assessment policy?
Q8	Is any other method of communication being used with students apart from email and web-based information for communication of program curricular contents?
Q9	How do you ensure friendly educational environment at own & student's workplace in term of providing full text articles, VPN account and access to the library?
Q10	How do you manage availability of qualified and experienced faculty for your program and how do you balance the availability of local and foreign faculty as a part of process management?

Methodology

Qualitative descriptive collective case study design was used to collect the data. Miles and Huberman[11] in 1994 contended that studying multiple cases gives the researcher reassurance that the events in only one case are not "wholly idiosyncratic". All participants were given special names for maintaining confidentiality. Telephonic interviews were conducted using semi-structure open ended questions; data was collected from program directors of 07 programs. The responses were transcribed in NVIVO pro 11 software and open coding was done for storage in nodes. Codes having some relations (axial codes) were transferred to Excel sheet for identification of themes using content, thematic and discourse analysis as described by Ryan et al.[12] Simultaneously various queries were run in NVIVO for content analysis and observation of emerging patterns. Themes identified from 04 or more program directors were proposed as contextualized assessment standards. Minority themes were labeled as variation proposed for guidance of accrediting agencies at the time of accreditation. Challenges were also identified as tasks to be done in future by stakeholders. Credibility (internal validity and reliability), conformability (objectivity), dependability (external reliability) and transferability (external validity) were used for trustworthiness of the data. Harden's 10 questions including those of assessment were contextualized and validated by Riphah university medical education department's experts. Exploratory questions regarding continuous summative

assessment, OSTE (objective structured teaching examination) and EPAs (entrusted professional activity) were included for assessment of certain WFME outcome domain standards.

Results

A total of seven participants were interviewed. Out of 7 participants, 72% (n=5) were male and 28% (n=2) were female. Average age of the participants was 53.7 years (range 49-58). Mean experience as instructor was 16 years (range 11-32 years) and mean experience as program director was 4.28 years (range 1-6 years). All participants were actively and decisively involved with medical education departments of their respective institutions.

Questions regarding assessments generated similar responses from the program directors. Almost all of them agreed that assignments with 40% weightage and end of module/end of term examinations with 40% weightage and thesis/research project with 20% weightage are the core assessment tools. In addition; punctuality, participation, presentations and active contribution are some of the components of internal assessment. OSTE (observed structured technical examination) self-assessment, peer assessment, online assessment and EPAs (entrusted professional activity) are the future challenges for stakeholders. Individual responses to questions are presented in the tables 2-5.

Table 2: Questions regarding assessment I

Questions Regarding Assessment I	
Q: What is your overall assessment policy?	
Respondent 1	Continuous summative assessment based on assignments.
Quote	[We give 60% weightage to continuous assessment and 40% weightage to end of course assessment. Now within this continuous assessment again we have broken it down to individual work, group work and end of the session face to face assessment. Continuous summative assessment is broken down into components, so that student does not fail because of failing in one component only]
Respondent 2	We have formative and summative assessments. Continuous summative assessment is based on assignment and overall behavior e.g. Attendance, punctuality, performance in presentation and participation
	and OSTE. End of term examination is a high-stake examination and in the end is Thesis defense. Weightage of different components is (40/40/20)
Quote	[We have two types of assessments. Formative assessment and summative assessment. We have formative assessment i.e. ongoing assessment which is on and off constructive feedback to improve knowledge, skills and behavior. Summative assessment is in the form of assignments system, we have workplace based and evidence-based assessments at the end of course depending upon credit hours of the course, students gets marks based on 40% weightage for assignments they do it, 40% for the end of term assessment and 20% for thesis. For the knowledge we have MCQs and SAQ. For skills we have OSTE examination, we also assess dissertation for writing skills].
Respondent 3	Formative and summative assessments, Continuous summative assessment based on assignments, OSTE (observed structured technical examination), Thesis defense, End of term examination, Different weightage of components.
Quote	[Well we have 6 contact sessions and for each session we have 3 assignments. Then we have formative assessment in the form of providing feedback to the students. 20% assessment is what we call internal. So assessment includes written assessment, formative assessment, summative assessment and thesis assessment by reviewers and ultimate defense which is done by 2 reviewers. A balance has been developed among various components of assessment. Sometimes you have to make rules and regulation to fulfill the requirements of the regulation body or HEC]
Respondent 4	Continuous summative assessment, End of term assessment, Weightage of different components (70/30)
Quote	[We have hybrid plan of continuous summative assessment as well as end of the year assessment in a proportion of 70% and 30%]
Respondent 5	Continuous summative assessment based on assignments, End of module assessment, End of term assessment and Thesis defense
Quote	[In overall assessment we have the assignments, the exam at the end of module and finally an exit exam. That is how we assess our students and finally the thesis to assess their research potential].
Respondent 6	Continuous summative assessment (60% pass) Thesis defense

Quote	[If someone achieves 60% in final assignments he passes. Our assignments are not MCQ. They are based on critical thinking and checking other valuable abilities of scholar, researcher and expert teacher. If a student achieves less than 60% marks as aggregate in their assignments he fails. Finally, we have thesis for assessment of research potential]
Respondent 7	Institutional policy
Quote	[At our institution we follow the assessment policy of our university].

Table 3: Questions Regarding Assessment II

Questions regarding Assessment II	
Q: Can EPAs (Entrusted professional activity) become building blocks of a competency or outcome based MHPE curriculum?	
Respondent 1	No for EPA
Quote	[Philosophy is outcome-based competency that is time bound and thus can't be implemented]
Respondent 2	Mainly for workplace
Quote	[EPA is mainly for workplace]
Respondent 3	Yes, for EPA
Quote	[May be in future, availability of time is hurdle]
Respondent 4	Yes, for EPA.
Quote	[Can be in future if time allows]
Respondent 5	Yes
Quote	[Can be considered in future as it is mainly for workplace].
Respondent 6	Yes, for EPA
Quote	[Can be implemented but it is mainly for workplace]
Respondent 7	No

Table 4: Questions regarding Assessment III

Questions regarding Assessment III	
Q: What is the rationale of continuous assessment if end of the term assessment has to take place in addition to the continuous assessment?	
Respondent 1	Assessment of critical thinking and evidence-based practice
Respondent 2	No end of term examination (not useful)
Respondent 3	High stake examination (end of term)
Respondent 4	University rules
Respondent 5	University rules
Respondent 6	For overall assessment
Respondent 7	Assessment of integrated skills

Table 05: Questions regarding Assessment IV

Questions regarding Assessment IV	
Q: Is OSTE (Objective structured technical skills examination) a component of overall assessment?	
Respondent 1	Yes
Respondent 2	Yes
Respondent 3	No
Respondent 4	Yes
Respondent 5	No
Respondent 6	No
Respondent 7	No

Discussion

All programs assess students by assignments and give almost same weightage i.e. about 40%. All agree to formative and summative assessment. All adopt continuous summative assessment system. All programs have a research project as a requirement for successful completion of the course. Sara thinks continuous summative assessment is helpful in assessing comprehensively, Rida thinks end of term examination is a must as it is a high-stake examination as shown in Table 02. She and most of programs conduct OSTE, whereas Wazir thinks that it is premature entry in assessment system. Although all programs have a research project with article writing as a requirement, Malik and Inam think that thesis writing is not an essential component. Still others believe that they have to follow university policy to have both continuous summative assessment and end of term examination.

The opponents of the end of term examination think that assessing students by MCQ or SAQ does not promote critical thinking and scholarly characteristics among students that is the aim of the course. While comparing with WFME standards the PD were meticulous in following instructions of educational process, instructional and learning methods, program scope, contents and context, research and scholarship, program structure and duration and process of curriculum development.[13] The instructional and learning strategies include a blend of face to face learning, distant learning, online learning, individual and group learning, independent learning, e-learning, supervision, mentoring, tutorials, seminars and workshops. WFME want to promote independent thinking, creative problem solving,

synthesizing information, developing communication and appreciation of social, environmental and cultural implication of action of students in their new roles as education leader.[13] The curricular contents were specially geared to meet these expectations. Course Program structure, contents, duration and fee were clearly communicated and research and scholarly activities introduced by international level quality research teams. However, the student's involvement in curricular development process as desired by WFME was demanding in almost all programs.

Similarities and Variation (Assessment System)

Assessment system of all programs is as per WFME guideline. The assessment system is rationalized against promoting critical thinking, independent thinking, and creative problem-solving skills in the light of best evidence-based practice from the literature. Knowledge and skills are examined by "end of term examinations and OSTE" and research and scholarly skills by thesis writing and defense. Student's behavior during contact sessions, punctuality, participation, presentation and communication skills are scrutinized during the contact sessions. "Continuous summative assessment" promotes useful learning as students are also being observed closely in community of practices, groups sessions during self-directed and independent learning time and during discussion related to assignments and aspects of professionalism and again during e-learning especially for confidentiality of participants, use of non-civilized language and pasting of objectionable material against others names. Assessment also includes formative assessment with frequent feedback after each assessment. However, there was no mention of self-assessment, peer assessment and online assessment by any PD in their interviews.

In 1998 the process of assessment standards was started by WFME in policy document.[14] MHPE standards were available in Feb 2016.[13] In 2009 Downing, in 2012 Altahawi,[6] in 2015 Fitzgerald[7] talk of various challenges in assessment in health professions in general and issues related to students perspectives, competency and portfolio based assessments. Self-assessment is integral to many appraisals. In 2008 Colthart[15] talks of self-assessment on identification of learner needs, learner activity and impact on clinical practice. The issue of ideal

method of comprehensive assessment is not resolved and would continue to remain so in the scenario of ever-changing methods of instruction, curriculum, required competencies and outcomes. Online assessment is another viable available tool depending upon quality IT networking.

EPAs as competency

In 2008 Beth and Bierer et al[16] at Cleveland clinic college of medicine faculty decided that assessment should enhance learning and adopted only formative assessments to document student performance in relation to nine broad-based competencies. No grades were used to judge student performance throughout the 5-year program. Instead, assessments were competency-based, related directly to performance standards, and were stored in e-Portfolios to track progress and document student achievement. The class size was limited to 32 students a year. In 2012 Gruppen[17] proposed competency-based model for preparing health professionals and constructing educational programs for improving global health. In 2013 Eglar et al[18] used competency-based education in family medicine. In 2005 Reich et al[19] designed comprehensive educational competency improvement program for their residents in medicine and in 2007 Dannifer[20] devised portfolio-based approach to a comprehensive, competency-based assessment system that is fully integrated with the curriculum to foster an educational environment focused on learning.

Similarities and Variation (EPAs as competency)

However almost all PDs objected to the idea of introducing EPAs in medical education to make it a competency-based program with the plea that EPAs are clinical related activities and are not time bound whereas MHPE is a time bound course. Every PD has to make a willful effort to introduce some competency-based curriculum in which outcome could be observed by some assessment tool.

Conclusion

This study has helped to bring program directors of seven MHPE programs in the country together. Assignments (40-60% weightage) and end of module/ end of term assessment (40% weightage) are agreed as

similarity and proposed as contextualized local assessment standards, whereas, OSTE and internal assessment including punctuality, participation, presentation skills are proposed as variations for guidance of accrediting agencies. Accreditation of these programs and implementation of newer methods of assessment, like EPAs, self-assessment, peer assessment and online assessments are the future challenges. Further studies are required to know the perspective of the students.

R e f e r e n c e s

1. Tekian A, Roberts T, Batty HP, Cook DA, Norcini J. Preparing leaders in health professions education. Med Teach 2014; 36(3):269-71.
   DOI: https://doi.org/10.3109/0142159X.2013.849332
2. Aly SM, Shamim MS. MHPE programs in Pakistan: concerns for quality. J Pak Med Assoc. 2016; 66(4):366-7.
3. Jagannathan J, Vates GE, Pouratian N, Sheehan JP, Patrie J, Grady MS. et. al. Impact of the Accreditation Council for Graduate Medical Education work-hour regulations on neurosurgical resident education and productivity. J Neurosurg 2009; 110(5):820-7.
   DOI: https://doi.org/10.3171/2009.2.JNS081446.
4. Frank JR, Danoff D. The CanMEDS initiative: implementing an outcomes-based framework of physician competencies. Med Teach 2007; 29(7):642-7.
   DOI: https://doi.org/10.1080/01421590701746983.
5. Executive Council. International standards in medical education: assessment and accreditation of medical schools'–educational programmes. A WFME position paper. Med Edu. 1998; 32(5):549-58.
   DOI: https://doi.org/10.1046/j.1365-2923.1998.00302.x
6. Altahawi F, Sisk B, Poloskey S, Hicks C, Dannefer EF. Student perspectives on assessment: Experience in a competency-based portfolio system. Med Teach 2012; 34(3):221-5.
   DOI: https://doi.org/10.3109/0142159X.2012.652243.
7. Fitzgerald JT, Burkhardt JC, Kasten SJ, Mullan PB, Santen SA, Sheets KJ et. al. Assessment challenges in competency-based education: A case study in health professions education. Med Teach 2016; 38(5):482-90.
   DOI: https://doi.org/10.3109/0142159X.2015.1047754.
8. Kassebaum DG. Origin of the LCME, the AAMC-AMA partnership for accreditation. Academic medicine. Acad Med 1992; 67(2):85-7.
   DOI: https://doi.org/10.1097/00001888-199202000-00005.
9. Ahmed YA, Alneel S. Analyzing the curriculum of the faculty of medicine, University of Gezira using Harden's 10 questions framework. J Adv Med Educ Prof. 2017; 5(2):60-66.
10. Harden RM. Ten questions to ask when designing a curriculum. Med Educ 1986; 20(4):356-65.
    DOI: https://doi.org/10.1111/j.1365-2923.1986.tb01379.x
11. Miles MB, Huberman AM. An expanded sourcebook qualitative data analysis, 2nd ed. London: Sage Publicatoin;2000.
12. Ryan GW, Bernard HR. Techniques to Identify Themes. Field Methods 2003; 15:85-109.
    DOI: https://doi.org/10.1177/1525822X02239569
13. World Federation for Medical Education. Standards for Master's Degrees in Medical and Health Professions Education. 2016:1-25. Available from :URL: https://wfme.org/download/masters-standards-2016/
14. Executive Council. International standards in medical education: assessment and accreditation of medical schools'–educational programmes. A WFME position paper. Med Edu. 2002; 32(5):549-58.
    DOI: https://doi.org/10.1046/j.1365-2923.1998.00302.x
15. Colthart I, Bagnall G, Evans A, Allbutt H, Haig A. et. al. The effectiveness of self-assessment on the identification of learner needs, learner activity, and impact on clinical practice: BEME Guide no. 10. Med Teach. 2008; 30(2):124-45.
    DOI: https://doi.org/10.1080/01421590701881699.
16. Bierer SB, Dannefer EF, Taylor C, Hall P, Hull AL. Methods to assess students' acquisition, application and integration of basic science knowledge in an innovative competency-based curriculum. Med Teach. 2008; 30(7):171-7.
    DOI: https://doi.org/10.1080/01421590802139740.
17. Gruppen LD, Mangrulkar RS, Kolars JC. The promise of competency-based education in the health professions for improving global health. Hum Resour Health. 2012; 10:43.
    DOI: https://doi.org/10.1186/1478-4491-10-43.
18. Iglar K, Whitehead C, Takahashi SG. Competency-based education in family medicine. Med Teach. 2013; 35(2):115-9.
    DOI: https://doi.org/10.3109/0142159X.2012.733837.
19. Reich LM1, David RA. Comprehensive educational performance improvement (CEPI): an innovative competency-based assessment tool. Mt Sinai J Med. 2005; 72(5):300-6.
20. Dannefer EF1, Henson LC. The portfolio approach to competency-based assessment at the Cleveland Clinic Lerner College of Medicine. Acad Med. 2007; 82(5):493-502.
    DOI: https://doi.org/10.1097/ACM.0b013e31803ead30