ClinicSearch

Clinical Trials and Case Studies

Rizwana Shahid *

Open Access

Short Communication

Comparing Block Assessments 2020 of 1st year MBBS Professional Annual Examination at Rawalpindi Medical University, Pakistan

Rizwana Shahid [1]*, Syed Muarraf Hussain [2], Farzana Fatima [3]

[1]Assistant Professor Community Medicine, Rawalpindi Medical University.

[2]Deputy Controller Examination, Rawalpindi Medical University.

[3]Demonstrator Medical Education, Rawalpindi Medical University.

***Correspondence Author:** Rizwana Shahid, Assistant Professor Community Medicine, Rawalpindi Medical University.

Received Date: July 07, 2024 | Accepted Date: July 24, 2024 | Published Date: September 09, 2024

Citation: Rizwana Shahid, Syed Muarraf Hussain, Farzana Fatima, (2024), Comparing Block Assessments 2020 of 1st year MBBS Professional Annual Examination at Rawalpindi Medical University, Pakistan, *Clinical Trials and Case Studies*, 3(5); **DOI:**10.31579/2835-835X/075

Abstract:

Objectives: To compare block assessments 2020 of 1st year MBBS annual examination at Rawalpindi Medical University.

Methods: A cross-sectional comparative study was done on the results of 1st Professional MBBS annual examination that was carried out during November – December 2020 at Rawalpindi Medical University. Students were subjected to block-wise assessments with inclusion of all relevant basic and clinical sciences content. Only the results of 60 MCQs attempted by 336 1st year medical students RMU during their 3 block assessments taken during 1st Professional MBBS exam were analyzed by using SPSS version 25.0 software. Descriptive statistics were applied. Mean scores of block assessments were reciprocally compared by paired t-test. $P < 0.05$ was considered significant. 95% Confidence Interval of the mean scores was also calculated.

Results: The overall result of block-I, block-II and block-II assessments during 1st year annual examination 2020 was 68.9%, 76% and 70% respectively. Mean score of the students in block-I assessment was 41.4 ± 6.02 (95%CI: 40.75 – 42.04), while mean score of block-II and block -III assessment was 45.6 ± 5.61 (95%CI: 45 – 46.2) and 42.1 ± 6.7 (95%CI: 41.4 – 42.8) respectively. on applying paired t-test, statistically significant differences were observed between the means of block-I and block II (P 0.00), between block-II and block-III (P 0.000) and block-III and block-I (P 0.007).

Conclusion: There was a significant difference in block assessments of the same group of students subjected to 1st year MBBS professional annual examination 2020.

Keywords: block assessments, 1st year MBBS, basic and clinical sciences

Introduction

Integrated curriculum in undergraduate medical education was introduced worldwide with an intention to break the barriers between subjects and to teach basic sciences in relevance with clinical significance [1]. It has gained much recognition and acceptance specifically in North America, Europe, Asia, Australia and New Zealand [2]. Association of American Medical Colleges (AAMC) [3], General Medical Council of UK [4] and Australian Medical Council (AMC) [5] have also recommended integrated curriculum for implementation in undergraduate medical education.

According to Flexnerian curriculum, basic sciences in medical schools should be taught first with subsequent coverage of clinical sciences thereafter [6]. On the other hand, most educators favored integrated curriculum for promoting the learning of basics in the context of clinical, professional and ethical practice to make learning more meaningful [7]. Implementation of integrated curriculum in medical education is the need of time to keep pace with international standards. It is imperative to internationalize higher education of the country [8]. The alignment of institutional mission, vision and values with intended outcomes of the basic medical curriculum is of paramount significance to achieve the desired goals in terms of optimum health of the community in long run [9].

Integration is an essential ingredient of competency-based curriculum that has logically and intelligently been incorporated in basic medical education across the globe [10]. Apart from modifying the content and outcomes to be attained in the light of current health problems of any geographical area, assessments should also be constructed in accordance with Miller's pyramid of clinical competence [11]. It is essential to have alignment of the learning outcomes with teaching strategies and

assessment methods as incongruence between instructional strategies and assessment tools not only make it difficult for the teachers to perceive the actual learning of their students but also make them incapable in adjustment of their teaching content in compliance with recent advancements or level of students' learning [12].

Of the 19 public sector medical universities of Punjab, Rawalpindi Medical University (RMU) of Pakistan is pioneer in revolutionizing undergraduate medical education by introducing integrated modular curriculum in 2017-18 session that was in accordance with World Federation for Medical Education (WFME)[13]. Dividing the educational material into modules keeping in view the relevance of basic and clinical contents was done rationally by the stringent efforts of competent faculty, educationists and administrators. The timetables and detailed study guides for understanding of students are also accessible at University website [14]. Students were also kept in loop as being stakeholder, it is their legal right to be aware of their educational system in terms of modular content, mode of assessments, their internal assessments and pass percentage etc. the present study has therefore been carried out to compare the assessment results of 3 blocks of 1st annual exam conducted among 1st year MBBS students of RMU during 2020. Only mean scores achieved by students in Multiple Choice Questions were analyzed. This comprehensive analysis would enable us to further scrutinize the reasons for differences in scores that would pave the way for betterment in future.

Methods

A cross-sectional comparative study was done on results of 1st Professional MBBS annual exam taken during November – December 2020 at Rawalpindi Medical University (RMU). The examination was taken block-wise as students were also taught module and block-wise. Following implementation of integrated modular curriculum of MBBS at RMU, students were taught the basic as well as respective clinical sciences subjects with both horizontal and vertical integration in their respective modules. The content of two modules constitutes one block. So, block assessments in present study basically refers to the assessments taken on completion of 2 modules. Only the results of 60 MCQs attempted by 336 1st year medical students RMU during their 3 block assessments taken during 1st Professional MBBS exam were analyzed by using SPSS version 25.0 software. Descriptive statistics were applied. Mean scores of block assessments were reciprocally compared by paired t-test. $P < 0.05$ was considered significant. 95% Confidence Interval of the block assessments were also computed for determining the precision of the scores.

Results

A total of 335 medical students appeared in assessment, each in Block-I, Block-II and Block-III assessment during 2020. This assessment was carried out by Examination department of Rawalpindi Medical University, Rawalpindi. Each block was comprised of 2 modules as shown below in Table 1.

Blocks	Modules	
Block-I	Foundation	Musculoskeletal-I (MSK-I)
Block-II	Musculoskeletal-II (MSK-II)	Blood & Immunity
Block-III	Cardiovascular	Respiration

Table 1: Modules included in each Block

The highest percentage was secured in Block-II assessment as depicted below in Figure 1.

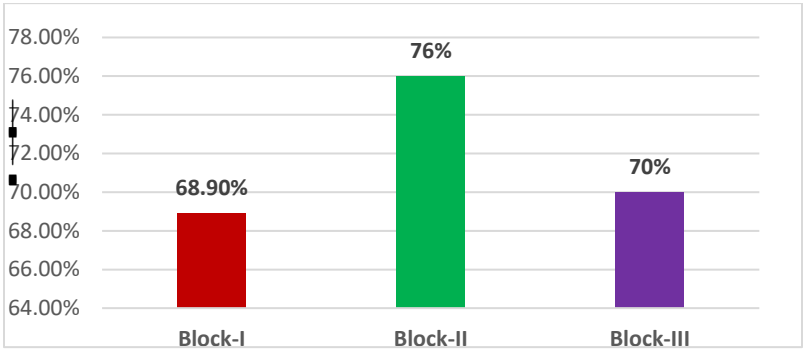

Figure 1: Results in percentage of each block assessment

Students achieved relatively higher mean score in block-II assessment as illustrated below in Table 2.

Assessments of MBBS students (mean ±SD) Total score = 60			
Blocks	**Block-I (n= 336)**	**Block-II (n= 336)**	**Block-III (n= 336)**
(mean ±SD)	41.4 ± 6.02	45.6 ± 5.61	42.1 ± 6.7
95% CI	40.7 5 - 42.04	45 – 46.2	41.4 – 42.8

Table 2: Mean scores of block assessments of 1st year MBBS annual exam 2020

Statistically significant differences were observed between the results of 2 blocks of 1st year MBBS class as shown below in Table 3.

Mean score in Block-I	**Mean score of Block-II**	**P-value**
41.4 ± 6.02	45.6 ± 5.61	*0.000
Mean score in Block-II	**Mean score of Block-III**	**P-value**
45.6 ± 5.61	42.1 ± 6.7	*0.000
Mean score in Block-I	**Mean score of Block-III**	**P-value**
41.4 ± 6.02	42.1 ± 6.7	*0.007

Table 3: Statistically significant difference between the results of 3 blocks of 1st year

Discussion

The highest percentage in present study was achieved by students during block-II assessment that was followed by the weightage of block-III and block-I respectively as shown in Figure 1. Modular learning has been proved very effective worldwide. Designing modular curriculum is an art by breaking down the whole syllabus and inclusion of content in each module logically in accordance with achievement of Specific Learning Outcomes (SLOs) [15]. Each module of undergraduate medical curriculum includes certain themes with both horizontal and vertical integration and of course with enclosure of relevant learning outcomes covering all 3 domains of learning [16]. The term "Block" used for modular curriculum in current study refers to the components of 2 modules as shown in Table 1. On the other hand, a similar study by Anwar MI et al overlooking the first two years of medical education at AJK Medical College Muzaffarabad revealed that their blocks in undergraduate medical curriculum were comprised of two or three modules [17]. The difference between scores of block assessments was found to be statistically significant as reflected in Table 3. The maximal score in block-II in comparison with that of block-I in my opinion could be due to interaction of the students with medical studies for the very first time. In addition to this, many other logistical deficits might be the culprit as the strength of the students in public sector medical institutes of the Punjab is up to 350 students in one academic year. Although small group teaching strategies are also mentioned in MBBS study guides of RMU, there might be many hurdles in their sensible implementation due to limited infrastructure and faculty or staff shortage. Pakistan has also been chastised on international forums for mushroom growth of medical colleges in the country despite shortage faculty that substantially trickles down the educational quality [18]. The reasons for significant discrepancies in assessment scores should be scrutinized by securing the feedback of the students and faculty.

The results depicted in present study are related to Multiple Choice Questions (MCQs) attempted by the students, although they were also subjected to SEQs based assessment, OSPE and viva voce in their annual examination. Due to their objectivity and unbiasedness, only the results of MCQs were considered for this study. 95% Confidence Interval (CI) calculated for the assessment of each block was observed to be narrow that statistically reflects the precision with very low margin of error. Critical analysis of CI reveals minimal difference between upper and lower confidence limits showing that majority gained scores in block-I, block-II and block-III assessments varying about 1.29, 1.2 and 1.4 score respectively. These results are probably due to strict compliance with academic policies or almost equal understanding of the assessed subjects or modules by most students. Their annual attendance record can also be correlated with their academic performance for visualizing the mutual relationship between the said attributes. The medical students at RMU are not only subjected to end-module assessment but also undergo end-block assessment that constitute their formative assessment. A similar study carried out by Ali S et al among 3rd year MBBS students at a private medical college were satisfied with combined block assessments carried out in their institutes as they promoted deep learning and provided them with an opportunity to have multiple revisions of their syllabus. Such block assessments positively contributed to their academic performance that was measured summatively [19]. Likewise, a cross-sectional survey among 1st year medical students at a private medical college of Peshawar revealed preference of integrated modular curriculum by most students with minimizing the number of assessments and of course mitigating the counseling sessions with tutors. Although more than 80% of the students favored end module assessments but inclusion of research in curriculum was applauded by only 65%. However, diverse teaching strategies employed to facilitate their learning were perceived to be beneficial [20]. Improving the educational climate of the students by provision of all essential logistics and learning materials will also have a positive influence on the assessment results [21]. Analyzing the summative results with multiple coalition factors will considerably enable us to make schemes for improving the academics of our students.

Conclusion & Recommendations

There was statistically significant difference between three block assessments taken during 1st professional MBBS annual examination 2020. Analyzing other attributes like accommodation of the students in hostels or at homes, their mode of study, Continuous Internal Assessment (CIA) weightage etc. may prove beneficial in justifying block-wise difference in assessments of medical students.

Conflicts Of Interest: The authors declared no conflict of interest.

Source Of Funding: The author(s) received no financial support for the research, authorship and or publication of this article.

References

1. Brauer DG, Ferguson KJ (2015). The integrated curriculum in medical education: AMEE Guide No. 96. Medical Teacher; 37: 312-322.
2. Liaison Committee on Medical Education (LCME) (2013). Functions and structure of a medical school: Standards for accreditation of medical education programs leading to the M.D. Degree. Washington, DC: 2013.
3. Corbett EC, Whitcomb ME, (2004). The AAMC project on the clinical education of medical students: Clinical skills education. *Washington, DC: AAMC.*
4. General Medical Council (GMC), (2010). Update: Standards for curricula and assessment systems. *London: GMC.*
5. Australian Medical Council Limited, (2012). Standards for assessment and accreditation of primary medical programs by the Australian Medical Council, *Kingston, ACT: AMC.*
6. Harden R.M. Approaches to curriculum planning. *Med Educ.* 1986; 20(5): 458–466.
7. Quintero GA, Vergel J, Arredondo M, Ariza M, Gomez P, Pinzon-Barrios A (2016). Integrated Medical Curriculum: Advantages and Disadvantages. *J Med Educ Curric Dev*. Jan-Dec; 3: JMECD.S18920.
8. Harden RM (2019). Internationalization of higher education is on the agenda. *Harden's Blog.*
9. Hudzik JK (2015). *Comprehensive Internationalization - Institutional pathways to success.* Edited by Jones E. London and New York: Routledge - Taylor Francis.
10. Husain M, Khan S, Badyal D (2020). Integration in Medical Education. Indian Pediatr. 2020 Sep 15;57(9):842-847. PMID: 32999111.
11. Olle TC, Carol C, Arvin D, Wade G, Stanley H, Danielle H. et al (2021). Entrustment decision making: Extending Miller's Pyramid. *Academic Medicine Feb 2021;* 96(2): 199-204.
12. Zhao L, Zhao B, Li C (2023). Alignment analysis of teaching–learning-assessment within the classroom: how teachers implement project-based learning under the curriculum standards. *Discip Interdscip Sci Educ Res 2023; 5: 13.*
13. THE NEWS. THE Impact Rankings places RMU first among medical universities. May 03, 2022.
14. Academic Calendar / LOCs.
15. Understanding Modular Learning. 2024.
16. Khyber Medical University. Northwest School of Medicine: Study Guide.
17. Anwar MI, Kiani JA, Nadeem N (2018). Integrated medical curriculum: Design, delivery and assessment during first two years of medical education – A review at AJK Medical College,

Muzaffarabad, Pakistan. PJMHS Oct-Dec 2018; 12(4): 1591-1595.
18. DAWN. Faculty shortage affects the quality of medical education in Pakistan. 21 January 2017.
19. Ali S, Khan HF (2016). Impact of Combined modular assessment on deep learning and personal development of medical students. *Pak J Med Sci*. 2016 Jan-Feb; 32(1): 191-195.
20. Khan SA, Asadullah M, Naz S (2015). Trends in medical education from traditional to integrated system: valued by first year MBBS students at a private medical college of Peshawar. *Journal of Medical Students* 2015; 1(1): 12-19.
21. Wajid R, Asher A, Tariq J (2022). Perception of undergraduate medical students about integrated modular curriculum and factors affecting. *PJMHS*; 16(7): 63-65.