

## ROLE OF CASE-BASED DISCUSSION AS WORKPLACE-BASED ASSESSMENT TOOL IN UROLOGY AND GENERAL SURGERY

Shimee Shahzadi<sup>1</sup>, Muhammad Shah<sup>2</sup>, Liaqat Ali<sup>3</sup>, Humera Adeeb<sup>4</sup>, Brekhna Jamil<sup>5</sup>

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<sup>1</sup>Demonstrator, Department of Anatomy, Khyber Girls Medical College, Peshawar

<sup>3</sup>Professor, Department of Urology, Institute of Kidney Diseases, Peshawar

<sup>4</sup>Assistant Professor, Institute of Health Professions Education & Research, Khyber Medical University, Peshawar

<sup>5</sup>Associate Professor, Institute of Health Professions Education & Research, Khyber Medical University, Peshawar

### Correspondence

<sup>2</sup>Muhammad Shah, Assistant Professor, Department of Surgical "B" Unit, MTI/Hayatabad Medical Complex, Peshawar

☎: +92-333-5829224

✉: [drmuhammadshah@yahoo.com](mailto:drmuhammadshah@yahoo.com)

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### ABSTRACT

#### OBJECTIVES

To determine the effectiveness of case-based discussion in terms of medical record-keeping, clinical reasoning, clinical judgment, and self-reflection in the management of patients.

#### METHODOLOGY

A multidisciplinary descriptive study was conducted in the Department of Urology Institute of Kidney Diseases, Hayatabad Medical Complex Peshawar, and Department of General Surgery, Hayatabad Medical Complex Peshawar, Pakistan, from January to December 2023. A total number of 20 postgraduate residents, ten from Urology and General Surgery, participated in the study with equal male and female participants. Case-based discussion (CBD) assessments focused on medical record-keeping, clinical Decision-making, clinical judgment, management, follow-up, and reflective writing. The data was collected on structured proforma and was analyzed on SPSS-25.

#### RESULTS

The total number of study participants was 20, and 410 Case-Based Discussion sessions were conducted. This constitutes an average of 4.8 assessments per week. Most encounters were related to medical clinical decisions and management. The case-based discussion showed significant improvement on the Likert scale of the supervisor's rating, which extended over four quarters on all major parameters of formative assessment ( $p < 0.001$ ). The multimodal regression test showed significant enhancement in learning parameters on case-based discussions.  $R^2=0.172$  F ration= $25.141$   $n=410$  ( $p=0.001$ ). There was no significant difference in the gender of residents as well as training specialty of residents of urology and general surgery ( $p > 0.05$ ).

#### CONCLUSION

A case-based discussion is an effective tool for formative assessment of Urology and General Surgery postgraduate residents.

**KEYWORDS:** Urology, Surgery, Clinical, Patient, Kidney

## INTRODUCTION

Pakistan's urological and Surgical training is mainly time-bound and apprenticeship-based, not competence-based. This apprenticeship model is applied to the College of Physicians and Surgeons Pakistan (CPSP) and the Public and Private Universities offering master's in surgery (MS) Programs. However, the accrediting body of the Pakistan Medical & Dental Council stresses formative assessment but is underutilized in internal evaluation. The day needs to include Formative assessment as a cornerstone in undergraduate and postgraduate medical education across the training programs. Some of the methods of formative assessment that assess the "Does" level of Miller's Pyramid are included in workplace-based assessment (WBPA) tools.<sup>1</sup> There are WPBA methods, such as the Mini Clinical Evaluation Exercise (Mini-

CEX), Direct Observation of Procedural Skills (DOPS), Multiple Source Feedback (MSF), and Case-Based Discussion (CBD).<sup>2</sup> Mini-CEX and DOPS are useful, reliable, and valid workplace-based assessment tools with effective feedback. The supervisor's and residents' satisfaction with Mini-CEX and DOPS are exemplary.<sup>3,4</sup> These two tools assess clinical skills, communication skills, and procedural skills. The proven educational impact of both modalities has compelled the College of Physicians and Surgeons, Pakistan, to include both as an essential part of the e-log of residents. The faculty of Urology CPSP is indeed a pioneer in starting the Mini-CEX and DOPS as mandatory WPBA tools in residency programs. The faculty has already introduced Objective Structured Clinical Examination (OSCE) stations on dissertations and e-log book in examinations. The Department of

Urology, IKD, has piloted the OSCE and Objective Structured Teaching Examination (OSTE) stations in Mock exams in different accredited centers. Case-based discussion is a relatively new tool in WPBA. Case-based discussion is called chart-simulated recall in the USA and Canada. It has been adopted by the National Clinical Assessment Authority (NCAA) and the General Medical Council, respectively. Case-based discussion can retrospectively assess multiple parameters of record keeping, medical ethics, and professionalism in written communication, clinical reasoning, and clinical judgment. As a new WPBA tool, there is paucity in the literature regarding the utility of CBD in postgraduate urological training.<sup>5,6</sup> Mini-CEX and DOPS are considered effective WPBA tools, but one of the drawbacks of Mini-CEX and DOPS is the Hawthorn effect. The president's behavior is different in the WPBA evaluation under observation. The evaluator is only left genuinely to assess clinical reasoning in such cases. This limitation of Mini-CEX and DOPS suggests adopting an alternate WPBA method to compensate for the Hawthorn Effect. The rationale of the study was based on this observation. The study's objective was to assess the CBD as a potential tool to compensate for the limitations of Mini-CEX and DOPS.

## METHODOLOGY

This descriptive study was conducted at the Department of Urology Institute of Kidney Diseases (IKD) and Department of General Surgery Hayatabad Medical Complex Peshawar (HMC), Pakistan, from January 2023 to December 2023. A total of 20 second- and third-year postgraduate residents with similar intelligence and emotional quotients, ten each from urology and general surgery, were selected by non-probability consecutive sampling. Ethical approval was sought from Institutional Research and Ethical Board (IREB) via IREB/226/Est/IKD. The study enrolled all the postgraduate residents and faculty members, fulfilling the criteria. Ten residents from Urology and Ten from General Surgery, comprising 05 males and females, were subjected to CBD sessions every Wednesday and Thursday. The senior registrar of the unit was assigned to bring the patient's written history and documents sheet, stating that the resident had already been discharged on the day of the session. Each study participant faced at least 08 evaluation sessions of CBD. The study participants were informed about the parameters to be assessed at the start of the session. Each CBD evaluation was 20 minutes, followed by 10 minutes for verbal and written feedback. Each parameter on the CBD evaluation proforma is rated on a unipolar 5-point Likert scale. The CBD evaluation proforma consists of nine parameters assessed from the

trainer's perspective. The nine parameters on the Likert scale are graded as Development Required (D), Satisfactory (S), Outstanding (O), and not assessed (N). The global evaluation rating on the Likert scale is described as Level 0 (Below that expected for the early year of training), Level 1 (Appropriate for early year training), Level 2 (Appropriate for completion of an early year of training), Level 3 (Appropriate for the central level of training), Level 4 (Appropriate for certification). The data were analyzed in SPSS version 21.

## RESULTS

Table 1: The Details of CBD Sessions Setting and Meantime

Quarter of year 2023	Identity of Quarter of the year	Frequen cy	%age (&)
	Jan-March	102	24.8
	April-June	105	25.6
	July- September	101	24.6
	October to December	102	24.8
Clinical Setting	Urology IKD	230	56
	General Surgery HMC	180	43.9
The mean time for one CBD session ± SD (minutes)		20.48±2.31	
The mean time for a feedback session ± SD (minutes)		8.79±2.61	

The CBD sessions demonstrated the significant ( $p=0.001$ ) improvement of five parameters (Medical record keeping, Clinical reasoning, judgment, management and follow-ups, reflective writing, and professionalism) on the Likert scale with each passing quarter of 2023, as shown in Figure 1.

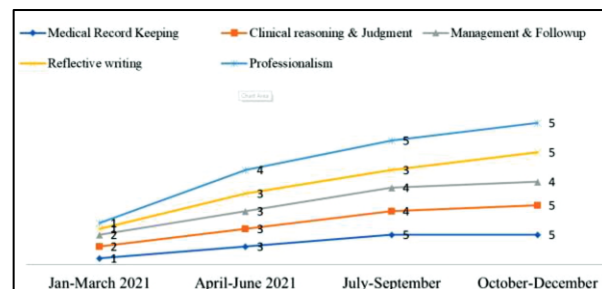


Figure 1: The Line Graph of Five Parameters on the Global Rating Scale Over Four Quarters

The multimodal regression test showed significant enhancement in learning the parameters of CBD by The  $R^2=0.172$  F ratio=25.141 n=410 ( $p=0.001$ ). The cross-tabulation of the difference in CBD sessions showed no significant ( $p > 0.05$ ) difference in the performance of male and female residents and between the training speciality of residents of urology and general surgery ( $p > 0.05$ ).

## DISCUSSION

Medical education is an art that crafts the teaching of science. Workplace-based Assessment tools are emerging as effective tools in formative assessment.<sup>7,8</sup> Though there is a long way to inculcate the formative evaluation in a cumulative summative assessment score, the high-value research on this topic has come as a ray of hope in assessing postgraduate residents at the "Does" level of Miller's pyramid. The present study has conferred the importance of relatively less studied CBD among other WPBAs.<sup>9,10</sup> The educational impact of WPBA, including CBD, has been studied in detail in an article. The author endorsed the effectiveness, feasibility, validity, and reliability of WPBA in different surgical disciplines, including Urology and General Surgery. The results mentioned in the review article are comparable with the present study.<sup>11,12</sup> The present study shows that CBD significantly improves all the parameters of record-keeping, clinical judgment, decision-making, management, follow-up, and reflective writing. A study also reported a statistically insignificant difference (p-value 0.087) between scores obtained between traditional assessment tools and those evaluated by CBD.<sup>10</sup> Their conclusion also endorses the present study's findings that CBD enhances critical thinking in clinical judgment and fosters self-reflection. Janet et al. have also endorsed CBD's effectiveness in formative assessment, face, and content validity as a workplace-based assessment tool.<sup>11</sup> In another review article, Case-based discussions were found to be superior in efficacy compared to DOPS and Mini-CEX.<sup>13,14</sup> The CBD was rated more valid and reliable, too. Though few studies have resulted in higher scores for the male gender in the evaluation of postgraduate residents,<sup>15,16</sup> there was no significant difference in the cross-tabulation of genders in the present study. Our results are comparable with the literature. The current study has implications for supervisors, medical educationists, postgraduate residents, and the department of medical education of accrediting bodies like CPSP and PMDC in Pakistan. Implementing the WPBA culture in teaching hospitals is truly a herculean task and needs all stakeholders' continuous dedication, commitment, and involvement.<sup>17,18</sup> Workshops, Seminars, and hands-on training on CBD can improve the results even more in formative and summative assessment with the broader aim of achieving seven-star doctors of PMDC. However, we have not compared CBD with other WPBA modalities, so we cannot comment on the superiority of CBD over other WPBA modalities. However, further research on the utility index of all the WPBA in different surgical disciplines is desired. This will help us understand the better way of incorporating CBD as a mandatory tool in WPBA.

## LIMITATIONS

This study's strength is its multidisciplinary setting and large sample size of CBD sessions. The limitation of the study lies in its descriptive nature, which inherently carries the selection bias and cannot be generalized until experimental studies compare CBD with other WPBA tools.

## CONCLUSIONS

Case-based discussion is an effective tool for the formative assessment of postgraduate residents in Urology and General Surgery.

**CONFLICT OF INTEREST:** None

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## CONTRIBUTORS

1. **Shimee Shahzadi** - Concept & Design; Data Acquisition
2. **Muhammad Shah** - Data Analysis/Interpretation
3. **Liaqat Ali** - Drafting Manuscript
4. **Humera Adeeb** - Critical Revision
5. **Brekhna Jamil** - Supervision; Final Approval



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