STUDENTS' PERCEPTION OF DIRECT OBSERVATION OF PROCEDURAL SKILLS AS WORKPLACE BASED ASSESSMENT TOOL IN GENERAL SURGERY

Shahzad Hussain Waqar

Pakistan Institute of Medical Sciences (PIMS), Shaheed Zulfiqar Ali Bhutto University, Islamabad Pakistan

ABSTRACT

Objective: To explore the perceptions about direct observation of procedural skills (DOPS) as workplace based assessment (WBA) tool among postgraduate students in general surgery.

Study Design: Sequential mixed method study.

Place and Duration of Study: The study was conducted in department of general surgery, Shaheed Zulfiqar Ali Bhutto Medical University, Pakistan Institute of Medical Sciences (SZABMU, PIMS), Islamabad from April 2015 to June 2015.

Material and Methods: An 18-item questionnaire was used as quantitative data collection tool that gave the numerical description of the trends, attitudes or opinions of the participants. Survey was followed by focus group discussion that was used as a tool of qualitative methods to enquire perceptions and explore the attitudes.

Results: All forty eight postgraduate students in general surgery were approached and questionnaire response rate was 100% (48/48). Fifty four percent of trainees had awareness about DOPS. Assessments were not appropriately planned and conducted. Total time for assessment and feedback is ≤30 minutes in majority of cases. Majority of trainees agreed that DOPS was beneficial and helped in improving their surgical skills. Major concerns were time constraints and lack of DOPS training. Feedback with advice on further improvement was not always given.

Conclusion: DOPS is useful assessment tool in general surgery but training is essential in its planning and implementation. Research is needed to address current negative perceptions.

Keywords: Direct observation of procedural skills, Feedback, Perceptions, Workplace based assessments.

INTRODUCTION

Recently there is a move toward competency-based postgraduate training using WBA tools as its integral component[1]. DOPS is a WBA tool where trainee's procedural skill is assessed through direct observation by the assessor in a real hospital setting. DOPS was formally introduced by United Kingdom Foundation Programme in 2005 and implemented throughout the country[1,2].

Assessment is always difficult to conduct; especially when assessing a technical skill[3]. College of Physicians & Surgeons Pakistan (CPSP) has recently started to sensitize the supervisors and faculty members about different WBA tools used in postgraduate training. DOPS is being used in our setting for the last two years and trainees undertake a number of DOPS for basic surgical procedures. DOPS is relatively a new concept in surgical postgraduate training with deficient research.

Researchers indentified a difference of opinions among faculty and students about DOPS[4]. Trainers thought DOPS a valid tool of assessment, while trainees perceived it somewhat stressful however they appreciate the feedback[5]. Students feel lack of desired standardisation in grading and its subjectivity. But they valued it in indentifying areas for improvement[6].

Surgical community has these concerns regarding the appropriate use of DOPS that is still not yet established and accepted[7], at our local setup. The purpose of the study was to investigate the perception that exists among

Correspondence: Dr Shahzad Hussain Waqar, H # 385, Street # 29, Sector G-8/2 Islamabad Pakistan (*Email:drshwaqar@gmail.com)*
Received: 20 Jan 2016; revised received: 26 Feb 2016; accepted: 21 Mar 2016

postgraduate students about DOPS as WBA tool in general surgery. Study also seeks to find out the barriers in its implementation at our institution.

MATERIAL AND METHODS

This sequential mixed method study with pragmatic research paradigm was conducted at Department of General Surgery, SZABMU PIMS Islamabad from April 2015 to June 2015. The hospital's ethical committee provided ethical approval for the study. With the initiative of CPSP, WBAs were started recently in our surgical unit especially DOPS & Mini-Clinical Evaluation Exercise (Mini-CEX) as part of postgraduates' portfolios. DOPS assessments were designed and integrated in routine ward working. Essential important and basic surgical procedures were selected for DOPS assessment.

All forty eight post-graduate residents working in department of general surgery were enrolled for the study after getting informed consent. Participants were recruited on voluntary basis by purposive sampling. Maximum variation type of purposive sampling technique was used. Moreover, individuals with good communication skills were selected to facilitate discussion.

Survey was used as quantitative data collection tool that gave the numerical description of the trends, attitudes or perceptions of the participants. An eighteen items self administrated questionnaire with rating scales was designed to assess the perceptions of the students regarding DOPS as WBA tool in general surgery. Questionnaire with closed-ended and open-ended questions included general demographics, prior knowledge, and experience of DOPS. Final survey form was verified by pilot

Table-I: DOPS assessment (n=48).

	Frequency	Percentage
Number of DOPS done		
1-5	23	47.9%
6-10	15	31.2%
11-15	7	14.6%
16-20	2	4.2%
More than 20	1	2.1%
Time to give feedback after DOPS assessment		
< 10 min	28	58.3%
11-20 min	8	16.7%
21-30 min	3	6.3%
31-60 min	1	2.1%
1-2 hours	2	4.2%
No feedback given	6	12.5%
Total time for assessment & feedback		
<10 min	4	8.3%
11-20 min	9	18.8%
21-30 min	31	64.6%
>30 min	4	8.3%
DOPS form completed		
Immediately	29	60.4%
Within 2 hours	5	10.4%
Same day	6	12.5%
Within 2 days	1	2.1%
Within 1 week	2	4.2%
Within 1 month	4	8.3%
Over 1 month	1	2.1%

study on four participants and amendments were made accordingly to make it more valid, reliable and acceptable. Focus Group Discussion (FGD) was used as qualitative tool to enquire perceptions and attitudes. Accordingly FGD explored the difficulties in implementing the DOPS as WBA tool in our institution and how these barriers could be overcome with possible workable solutions.

Study was conducted in two phases; first phase of quantitative data collection used a survey followed by qualitative FGD about various predetermined questions and new issues emerging out of the survey results. Questionnaires were distributed to participants and were recollected after 2 or 3 days. For qualitative data collection, two focal group sessions were conducted that consisted of six participants in each group. Researcher conducted both sessions using a semi-structured interview format, while one participant took notes. Interview included open-ended questions that lead to ideas directed by trainee's responses. Each group discussed the problems in implementing DOPS in the light of results of questionnaire and come up with practical solutions. Moderator ensured the group dynamics and ensured the participants of their confidentiality by giving them with pseudonyms. Each session lasted approximately 60 minutes and upon completion, the participants were served with tea and refreshments. No monetary incentive was offered. Session was audio-taped with backup facility and then transcriptions were done to record accurate information provided.

Quantitative data from questionnaires was analyzed by using the statistical programme SPSS version 17. Descriptive statistics were applied to analyze the variation. Statistical analyses included frequencies, and descriptive statistics including means with standard deviations. Final explanations were made on the basis of the statistical results. Data analysis of qualitative FGD was done by the identification of themes and subthemes that emerged through discussions of participants in focus groups. Comprehensive analysis of verbatim transcription of the whole discussion was done, followed by coding of the data in the transcripts. Categories were identified with assigning of sorted data. Analysis included

Table-II: Trainees' DOPS detail.

	Mean score with standard deviation	95% Confidence interval for students' mean score
Awareness about DOPS	1.10 ± 0.309	1.01 – 1.19
DOPS is used appropriately	1.67 ± 0.663	1.47 – 1.86
DOPS reflects trainee's progress	3.65 ± 0.699	3.44 -3.85
DOPS is beneficial for training	4.08 ± 0.498	3.94 – 4.36
DOPS helps in preparing for examinations	3.67 ± 0.595	3.49 – 3.84
DOPS is better assessment tools than others	3.77 ± 0.627	3.59 – 3.95
DOPS helps to be proficient in basic surgical skills	4.44 ± 0.501	4.29 – 4.58
DOPS should be continued	3.86 ± 0.476	3.70 – 3.97
DOPS helps in rectifying misconception	4.10 ± 0.472	3.97 – 4.24
DOPS provides specific and timely feedback	3.96 ± 0.355	3.86 – 4.06
DOPS helps in improving surgical skills	4.44 ± 0.501	4.29 – 4.58
DOPS alleviates fear of examination	3.97 ± 0.582	3.62 – 3.96
DOPS is easy to use as an assessment tool	3.71 ± 0.582	3.54 – 3.88

a descriptive account of the data with explanations of what was said in the discussion with emphasis on underlying factor. This was followed by interpretation of the themes (or perspectives), creating links between the themes, describing how these themes emerged and finally generating conclusions. An acceptance was reached after mutual consensus of the participants. The conclusion was supported by direct quotes to illustrate the different ways and by triangulation of quantitative and qualitative data.

RESULTS

All forty eight (100%) postgraduate residents of department of general surgery responded to the questionnaire. There were 32 (66.67%) males and 16 (33.33%) females with mean age of 27.1 ± 6.7 years. DOPS assessment was done by all trainees (table-I). Most trainees were in second year of postgraduate training (30/48, 62.5%) and 79% had done 1-10 DOPS assessments (38/48). The majority of the trainees (36/48, 75%) reported that feedback was given immediately within twenty minutes of assessment being performed. The average time taken to complete both assessment and feedback was reported as 25 minutes in the majority of cases (42/48, 87.5%). Assessment forms were filled promptly in most of the cases (40/48, 83.3%) same day.

Although the majority of trainees (44/48) agreed that DOPS is beneficial for their training and helped in rectifying misconceptions. However at the same time (43/48) reported that DOPS was not being used appropriately. Majority (36/48) consider DOPS as a better assessment tool than others. Almost all trainees believed that DOPS helped in improving surgical skills and to be proficient in basic procedures (table-II).

Table-III: Major themes generated by thematic analysis with some verbatim quotes.

1.	**Beneficial for surgical training** 'useful because we need some sort of supervision, especially when doing some surgical procedure' 'I'm benefited by doing DOPS; as I performed in front of my seniors that gives me a sense of learning appropriately' 'to me it's slightly fearful; when doing first time' 'enjoyed most the feedback part of the DOPS, because I became aware of my shortcomings and how to correct them' 'I think, DOPS reflects our capabilities of performing common surgical procedures that are necessary for our training'
2.	**Useful method of assessment** 'good method of assessment when you get results immediately' 'very useful as formative assessment and I love to have at least once in a month' 'DOPS really improves my psychomotor skills that will help me in final TOACHS examination' 'I feel some stress when perform before my supervisor'
3.	**Lack of Time** 'we are too busy in our duty calls, DOPS seems to be an extra burden to our duty' 'it's difficult for me to perform for DOPS after emergency call' 'hardly get time for DOPS, always did in hurry' 'sometimes availability of the seniors is issue'
4.	**Need for DOPS training** 'all assessors need training but assessors who are not teachers need more DOPS training' 'I am unable to understand the feedback given by assessor; is it highlighting the negatives only or trying to show his seniority status' 'lack of quality feedback irritates me; assessor did only tick-box exercise on the form' 'some assessors take this assessment very casually' 'I hope that DOPS assessments should be properly organized by trained assessors'

The themes and subthemes after FGD analysis for students can be seen in table-III. The major emerged themes included "beneficial for surgical training", "useful method of assessment", "lack of time" and "need for DOPS training". Majority agreed about usefulness of DOPS in their training programme and considered DOPS a better activity in improving their surgical skills. They accepted DOPS as a better formative assessment tool. Most trainees expressed concerns about proper implementation of DOPS while few considered DOPS as fruitless exercise in their busy working schedule. Trainees explained that there was a need to train both the assessors and the trainees; and incorporation of DOPS in the postgraduate curriculum of general surgery.

DISCUSSION

The reported results of this study present mixed views of students' perceptions towards DOPS, with concerns for assessors' training. Students identified DOPS as a beneficial tool for surgical training, a useful method of assessment, lack of time, poor quality feedback and lack of training in DOPS methodology. These results in some way correlate with Miller and Archer's systematic review that WBA methods were unable to produce intended impact on clinical performance[8].

The important finding of the study is that students felt the DOPS as a useful training tool in general surgery. They valued the DOPS a tool that facilitate learning and clinical performance. Wilkinson et al reported that 80% of 230 trainees thought Mini-CEX and DOPS assessment tools were useful for their personal development[9]. The major positivity described in this study may be explained by the knowledge that DOPS were undertaken voluntarily for this study by students because WBAs are yet not compulsory part of their training.

Majority of the participants expressed that introduction of DOPS had influenced positively on their training. This is contrary to the findings of Dean & Duggleby and McKavanagh who identified 61.2% and 60% students respectively disagreed with the statement that WBAs created a positive learning experience[10,11]. Similarly in several other studies, trainees questioned the educational value of WBAs tools[5,12-14]. An unexplained acceptance of DOPS shown by our students was probably because of their enthusiasm or novelty of this activity in their training programme.

DOPS was graded high as assessment tool by students of general surgery. They felt happy to have result immediately and get feedback for their learning and future training. DOPS helped in improving their psychomotor skills in basic surgical procedures. However few were concerned about their stress while performing before their supervisors and the stress surrounding the assessments[14]. Students thought this activity to be intended as formative rather than summative assessment[15]. Nesbitt and Jenkins reported a desire of trainees that only their successful achievements should be documented rather their potential weaknesses[6,16]. On exploration, students appreciated that giving positive feedback was the most significant part of DOPS assessment. However there is a need to train the assessors for feedback, as at few occasions assessors were focusing on the tick-box ratings only[13].

Recent evidence clearly showed the prevalence of negative feelings towards WBAs. Studies identified time constraints as being a major factor preventing the trainees from achieving the intended benefits[7,8,17]. These reports lead to low priority and contribute to the misuse of the DOPS[18-20]. Same trend was observed in our study that students struggled to find time for DOPS session during their busy working schedules, that add the stress of learning and training in workplace settings. This problem requires the decision of fixing the numbers of DOPS to be completed each year[21].

Another reported concern by the students was lack of proper implementation of DOPS encounters, despite the fact that students were usually free to select time, space and assessor. Such perceptions might be due to an incomplete

knowledge and understanding regarding DOPS assessment. This finding correlated with studies reported trainees perceptions that many assessors do not fully engage with WBAs[11-13]. The findings quoted ranged from 29% of trainees by Hrisos to 53% more recently by Sabey & Harris[21,22]. Hence to get maximum benefits out of this modality of assessment tool, there is a need to train the trainers for proper and successful conduct of DOPS sessions to make it more beneficial for the trainees.

Feedback is considered by the trainees as the most valuable feature of WBAs[8,13]. Effective feedback definitely has an impact on the students' learning and performance[23,24]. Deficient or incomplete feedback given by the assessor added unease to the students and sometimes decrease their motivation to learn[25]. This study also expressed concerns over given feedback. They believed that comments like 'well done bravo' or 'what's this nonsense' had no relevance to the procedure. Such comments were absolutely useless and did not enable any professional development for the students. Training for assessors specifically how to provide effective feedback would help to improve the quality of feedback[12].

LIMITATION

Being a single centred study is the major limitation. External validity and generalisibility of the findings may not be possible because of small sample size. Perceptions of postgraduate students of general surgery may limit the generalisability of findings from other students because there are differences between specialities in the implementations of DOPS sessions. Trainers' perceptions should also be studied for comparison and effectiveness.

CONCLUSION

DOPS proved to be an accepted assessment tool for students of general surgery. Findings of initial study conducted at a local setup revealed the usefulness of DOPS for surgical training; however trainees have incomplete understanding of the educational impact of DOPS. There are negative views about lack of time and lack of quality feedback. Study also stressed the need for training of the trainers for proper and successful conduct of DOPS session.

Further research is advised to determine successful implementation of DOPS to inculcate in general surgery. It is suggested to include WBA in undergraduate curriculum as part of clinical rotations. Alternatively studies should focus on examining the educational impact of DOPS.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

REFERENCES

1. Massie J, Ali JM. Workplace-based assessment: a review of user perceptions and strategies to address the identified shortcomings. Adv in Health Sci Educ 2015; 5: 1-19.
2. Beard J, Strachan A, Davies H, Patterson F, Stark P, Ball S, et al. Developing an education and assessment framework for the Foundation Programme. Med Educ 2005; 39: 841-51.
3. Khaliq T. Reliability of Results Produced Through Objectively Structured Assessment of Technical Skills (OSATS) for Endotracheal Intubation (ETI). J Coll Phys Surg Pak 2013; 24(1): 51-55.
4. Finall A. Trainers' perceptions of the direct observation of practical skills assessment in histopathology training: a qualitative pilot study. J Clin Pathol 2012; 65: 538-540.
5. Cohen SN, Farrant PB, Taibjee SM. Assessing the assessments: U.K. dermatology trainees' views of the workplace assessment tools. Br J Dermatol 2009; 161: 34-9.
6. Nesbitt A, Baird F, Canning B, Griffin A, Sturrock A. Student perception of workplace-based assessment. Clin Teach. 2013; 10(6): 399-404.
7. Naeem N. Validity, Reliability, Feasibility, Acceptability and Educational Impact of Direct Observation of Procedural Skills (DOPS). J Coll Phys Surg Pak 2013; 23 (1): 77-82.
8. Miller A, Archer J. Impact of workplace based assessment on doctors' education and performance: A systematic review 2010; BMJ (Clinical Research Ed.), 341: c5064.
9. Wilkinson JR, Crossley JGM, Wragg A, Mills P, Cowan G, Wade W. Implementing workplace-based assessment across the medical specialties in the United Kingdom. Medical Education 2008; 42(4): 364–373.
10. Dean BJF, Duggleby PM. Foundation doctors' experience of their training: A questionnaire study. JRSM Short Reports 2013; 4(1): 5.
11. McKavanagh P, Smyth A, Carragher A. Hospital consultants and workplace based assessments: How foundation doctors view these educational interactions? Postgraduate Medical Journal 2012; 88(1037): 119–124.
12. Basu I, Parvizi S, Chin K. The perception of online work-based assessments. The Clinical Teacher 2013; 10(2): 73–77.
13. Tailor A, Dubrey S, Das S. Opinions of the ePortfolio and workplace-based assessments: A survey of core medical trainees and their supervisors. Clinical Medicine (London, England) 2014; 14(5): 510–516.

14. Tsagkataki M, Choudhary A. Mersey deanery ophthalmology trainees' views of the objective assessment of surgical and technical skills (OSATS) workplace-based assessment tool. Perspectives on Medical Education 2013; 2(1): 21–27.
15. Beard J. Workplace-based assessment: The need for continued evaluation and refinement. The Surgeon: Journal of the Royal Colleges of Surgeons of Edinburgh and Ireland 2011; 9(Suppl 1); S12–S13.
16. Jenkins L, Mash B, Derese A. The national portfolio of learning for postgraduate family medicine training in South Africa: Experiences of registrars and supervisors in clinical practice. BMC Medical Education 2013; 13: 149.
17. Dijksterhuis MGK, Schuwirth LWT, Braat DDM, Teunissen PW, Scheele F. A qualitative study on trainees' and supervisors' perceptions of assessment for learning in postgraduate medical education. Medical Teacher 2013; 35(8): e1396–e1402.
18. Ali JM. Getting lost in translation? Workplace based assessments in surgical training. The Surgeon: Journal of the Royal Colleges of Surgeons of Edinburgh and Ireland 2013; 11(5): 286–289.
19. Bindal T, Wall D, Goodyear HM. Trainee doctors' views on workplace-based assessments: Are they just a tick box exercise? Medical Teacher 2011; 33(11): 919–927.
20. Pentlow A. Workplace-based assessments in surgery: Are we heading in the wrong direction? Medical Teacher 2013; 35(1): 80.
21. Hrisos S, Illing JC, Burford BC. Portfolio learning for foundation doctors: Early feedback on its use in the clinical workplace. Medical Education 2008; 42(2): 214–223.
22. Sabey A, Harris M. Training in hospitals: What do GP specialist trainees think of workplace based assessments? Education for Primary Care: An Official Publication of the Association of Course Organizers, National Association of GP Tutors, World Organization of Family Doctors 2011; 22(2): 90–99.
23. Veloski J, Boex JR, Grasberger MJ, Evans A, Wolfson DB. Systematic review of the literature on assessment, feedback and physicians' clinical performance: BEME Guide No. 7. Medical Teacher 2006; 28(2): 117–128.
24. Saedon H, Salleh S, Balakrishnan A, Imray CHE, Saedon M. The role of feedback in improving the effectiveness of workplace based assessments: A systematic review. BMC Medical Education 2012; 12(1): 25.
25. Pelgrim E, Kramer A, Mokkink H, van der Vleuten C. The process of feedback in workplace based assessment: Organization, delivery, continuity. Medical Education 2012; 46(6): 604–612.