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Challenges in implementing direct observation of procedural skills as assessment tool in postgraduate training of general surgery

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ABSTRACT

Objective: To explore challenges in implementing Direct Observation of Procedural Skills as a workplace based assessment tool in postgraduate training of general surgery.

Methodology: This was a qualitative exploratory study done in Pakistan Institute of Medical Sciences, Islamabad. Nine participants were interviewed in person. The participants have been involved in DOPS program as resident, assessor or as a member of hospital administration. The interviews were recorded and transcribed. Thematic analysis of the qualitative data was carried out using manual and Computer Assisted Qualitative Data Analysis Software NVivo 10. Tree nodes (codes) were developed and arranged in different categories giving rise to discrete themes.

Results: A total of 57 codes were initially developed which gave rise to two distinct themes. Lack of awareness about the utility of DOPS among faculty and residents, lack of training of assessors and residents and time constraints due to heavy workload in hospitals were the chief challenges in implementing DOPS as an assessment tool. Arranging awareness / training workshops, developing realistic DOPS protocols by monitoring body were considered to be important steps for effective implementation of DOPS. Faculty development programs by training institutes were also suggested.

Conclusion: Lack of awareness, lack of training and time constraints are major the challenges in implementing DOPS program while faculty development by training workshops and making DOPS protocols are the suggestions for an effective implementation.

Key words: Direct observation of procedural skills, General surgery, Workplace based assessment, Challenges, Postgraduate training.

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Introduction

The assessment of technical skills is quite a challenging task.[1] Workplace based assessment (WBA) is a process for assessing residents in workplace, and has been used in both undergraduate and postgraduate training programs.[2] Direct observation of procedural skills (DOPS) - a WBA technique is a relatively new assessment tool in which an assessor assesses residents by directly observing them during a procedure performed in a real life clinical setting. Being an evaluation based on performance, DOPS is the assessment of 'DOES' in Miller's pyramid.[3] The traditional apprenticeship model has been widely in vogue until recently in majority of postgraduate medical institutes with "see one, do one, teach one" teaching technique.[4] However, both undergraduate and postgraduate medical education are increasingly making

use of DOPS as a means of WBA.[5, 6] There have been significant differences about DOPS among the students and the faculty. The faculty members considered DOPS as a form of assessment with good validity though with reservations about its feasibility because of time constraints.[7] Students found DOPS a bit more stressful but they liked the idea of feedback.[8] Some students also appreciated DOPS for having a positive effect on their approach towards the learning process though some of them did not fully comprehend the intricacies of this system.[9] Majority of the above mentioned studies about DOPS are, however, carried out in a foreign setting and very few focused on using DOPS in general surgery. In Pakistan, the progress of WBA of surgical skills has been very slow as compared to the developed countries.[10] The use of DOPS is still being established and in the process of being accepted, particularly in our setup. Waqar SH studied students' perception of Direct Observation of Procedural Skills as Workplace Based Assessment tool in general surgery. However it was needed to know perceptions of assessors and administrative challenges in implementation of DOPS as an assessment tool in general surgery.[11]

To keep pace with the advancements in assessment techniques across the globe, DOPS was introduced in postgraduate training of general surgery in 2015 in Pakistan Institute of Medical Sciences, Islamabad. However, the program had to be abandoned due to some reasons. It seemed appropriate to explore reasons which led to the discontinuation of DOPS as WBA technique to have insight in to the challenges faced while implementing it as an assessment tool. This was likely to help us find ways and means of successful implementation of this useful assessment technique.

A qualitative study was, therefore, planned to explore the challenges in implementing Direct Observation of Procedural Skills in postgraduate training in general surgery at Pakistan Institute of Medical Sciences, Islamabad by recording perceptions of postgraduate residents, faculty members and hospital administration. The findings were expected to help in elaborating the challenges faced in implementation of DOPS along with their possible solutions.

Methodology

A qualitative exploratory design was chosen to probe challenges in the implementation of DOPS giving an opportunity of exploring new ideas and opinions. Interviews in person were used for data collection to allow open ended evaluation of the issue in question. For this purpose an interview guide was developed and validated using triangulation technique. A total of nine interviews were carried out where further interviews were stopped because of data saturation. Maximum variation purposive sampling technique was used for selecting participants which included three post graduate trainees, three faculty members from the department of general surgery and three representatives of administrative staff including Medical Superintendent, Director Medical Education and Head of department of surgery.[12] Those residents and faculty members who had not attended the DOPS program introduced by department of surgery were excluded. Approval of the study was obtained from Advanced Studies Research Board and Ethical Review Board of Khyber Medical University. Informed consent from every participant was obtained assuring confidentiality and anonymity. All interviews were recorded and later transcibed using the transcription software Inqscribe.[13] The transcribed text was shown to the participants for approval as part of respondent validation. Data were analyzed by means of thematic analysis in which open and axial coding was done to isolate categories and concepts leading to themes. NVivo 10, the computer assisted qualitative data analysis software was used for the association and thematic analysis of the data.[14] The resultant categories, subthemes and themes were discussed with fellow researchers to reduce personal bias. Findings were presented in tabulated form.

Results

A total of nine interviews were carried out. The participants included three faculty members, three postgraduate trainees, Medical Superintendent, Director Medical Education and Head of department of surgery at Pakistan Institute of Medical Sciences, Islamabad.

Initial thematic analysis of the interviews revealed common words and phrases linked by distinct concepts. These were converted into perception codes for identification and grouping. A total of 57 such codes were identified and labeled. From open codes, their axial codes, categories and themes were identified in 2nd cycle of coding. Finally, two super-ordinate themes were identified including challenges in successful implementation of DOPS (Table I) and suggestions for achieving this purpose. (Table II)

Table I: Theme Challenges

Subtheme	Categories	Subcategories	Quotes
Assessors and residents issues	Lack of awareness	Feedback	People don't know DOPS has a role in formative assessment by its feedback option.
		Educational impact	Well, I wish people were aware that residents learn in DOPS while being assessed.
		Innovative, structured and objective tool of assessment	. . .unaware of objectivity of DOPS
	Work overload / Time constraints	Duties, emergencies, routine work	We are overburdened and we don't have time.
		Faculty resistance	Faculty can't spare time for DOPS
		Unavailability of residents	I've to run to get residents for DOPS. They're all busy in duties.
	Lack of training	Shaky Admin	Admin doesn't know what to do.
		Inexperienced assessors	The assessors themselves don't know
		Apprehensive residents	Residents are scared of doing procedure while being observed.
	Lack of interest	Lack of awareness	No one knows its importance.
		Time constraints	Everyone is busy
		Work overload	We have a hell lot of patients
		Lack of compulsion	Why would someone waste time if it's not mandatory.
Administrative issues	Managing workload		Admin has to look in to the problem of dealing with the workload.
	Lack of dedicated place		No special place is there for DOPS.
	Lack of trained staff		The trained staff is not there.
Monitoring body issues	Lack of standard and realistic protocols		We can't carry out all steps . It's so cumbersome.
	Lack of compulsion		It's kinda optional.
	Inadequate training of assessors and residents		Training is lacking. CPSP, hospital or DME should train people for better results.

Table II: Theme Suggestions

Subtheme	Categories	Quotes
Monitoring body	Enhance awareness	CPSP or university should tell people how important it is.
	Train assessors and residents	Training is lacking. Both assessors and residents need to be knowing what they're supposed to do. Residents are apprehensive because they're unaware.
	Develop realistic and standardized protocols	Realistic and practical protocols are essential.
	Make DOPS an essential part of assessment	DOPS should be compulsory part of exam.
	Incentives for assessors	Why can't CPSP offer CME points for participating in DOPS?
Institutes & hospitals	Faculty development programs through DME	Faculty should be trained.
	Facilitate assessment	Admin has to make it possible.
	Management of workload to adjust educational activities	Workload needs to be properly distributed.
	Organize faculty committees	Faculty committees can look into problems of effective implementation of DOPS.
Assessors and residents	Enhance awareness	Doctors whether trainee or teacher should keep their knowledge updated.
	Develop interest in training	Training is important. Everyone has to take interest in it.
	Time management	Patients are too many, no doubt but we have to be good in time management.

Discussion

Direct Observation of Procedural Skills was introduced in Pakistan Institute of Medical Sciences, Islamabad as workplace based assessment technique for monitoring postgraduate training of general surgery residents. However this program had to be abandoned because of many unavoidable reasons. This study explored the challenges faced in the implementation of this program and found multiple factors responsible for this apparent failure. The reasons included lack of awareness among the stakeholders about the full potentials of DOPS and a lack of experience coupled with inadequate administrative support. The need for workshops for enhancing awareness and training faculty along with developing infrastructure was highlighted by almost all participants.

Surgical education has significantly changed during the past few decades.[15, 16] Many newer techniques have been coming up for adequately assessing the operative skills of general surgery residents.[17] Some of the global assessment tools include Objective Structured Assessment of Technical Skills (OSATS), Global Operative Assessment of Laparoscopic Skills (GOALS), Global Rating Scale (GRS), Surgical Efficiency Score (SES), and Global Rating Index for Technical Skills (GRITS). Direct Observation of Procedural Skills is among the non global assessment tools which also include Surgical Procedure Feedback Rubric (SPR), OpRate, McGill Inanimate System for Training and Evaluation of Laparoscopic Skills (MISTELS), Procedure Based Assessment (PBA) Tool, Penn Assessment of Surgical Skills (PASS), Operative Performance Rating System (OPRS), Ottawa Surgical Competency Operating Room Evaluation (O-SCORE), and Resident Operative Case Tracking and Evaluation System (ROCTES).[18-21] Direct Observation of Procedural Skills has been considered among the suitable ones for measuring non-technical surgical competence while operating.[22]

Direct Observation of Procedural Skills is exclusively planned to review procedural skills involving real patients in a single encounter. This is a vital facet of DOPS which distinguishes it from other forms of assessment such as a supervisor's evaluation which relies on observation over a period of time.[23] Awareness about its full potentials is of great importance for its successful implementation. Majority of the participants of this study agreed on the importance of a suitable form of monitoring of the postgraduate training. However, many of them were not sure about DOPS being a suitable tool for workplace based assessment. One of the reasons for this apparent skepticism was a lack of knowledge and awareness of the available options DOPS could offer.

Some of the study participants were unaware of the educational impact of DOPS and considered it as merely a way of documentation. Lörwald AC et al demonstrated the positive effect of DOPS on residents' performance and concluded that it could have educational impact if correctly implemented.[24] This was in contrast to the findings of this study in which participants questioned the educational impact of DOPS clearly demonstrating the value of awareness and training workshops for a more effective implementation.

Validity and reliability of assessment techniques for assessing procedural skills is always an area of concern. Siau K et al recently established evidence of validity and reliability in favour of DOPS in assessing Flexible Sigmoidoscopy and suggested that it can be used for charting competency development.[25] Participants in our study shared the same view and had a positive view about the predictive capability of performance in DOPS as compared to competence in a procedural skill.

Major challenges met by participants thus included a lack of awareness about the importance of DOPS as a newer assessment technique having feedback option with educational impact, lack of prior training of assessors and residents to make them conversant with the procedure, difficulty in sparing time for DOPS due to a heavy workload faced by all stake holders, lack of realistic DOPS protocols and some administrative issues. Suggestions offered for effective implementation of DOPS aimed at enhancing awareness among faculty and residents and training them for better utilization of this assessment tool. Time management workshops, organizing faculty committees, making realistic DOPS protocols, faculty development programs and offering incentives for assessors were also suggested.

Conclusion

Participants in this study agreed that Direct Observation of Procedural Skills was an innovative way of assessment for residents of general surgery. Lack of awareness about the utility of DOPS among faculty and residents, lack of training of assessors and residents and time constraints due to heavy workload in hospitals were the chief challenges in implementing DOPS as an assessment tool. Arranging awareness / training workshops, developing realistic DOPS protocols by monitoring body were considered to be important steps for effective

implementation of DOPS. Faculty development programs by training institutes were also suggested.

Limitation of the study: The study was limited by the fact that it focused on challenges faced in implementation of DOPS as an assessment toll in postgraduate training in one institute only. There is need to look in to these challenges on a much wider scale to know the actual situation on ground.

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