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Medical Education

The Long Case as a Formative Assessment Tool – Views of Medical Students

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INTRODUCTION

The long case has been valued for its authenticity and holistic patient assessment but due to contextual specificity and unreliability it has also been criticised.[1,2,3,4,5,6] Time is a defining characteristic of the "long" case but is also the major impediment to increasing its reliability by introducing more cases[5]. Attempts to improve reliability include adaptations into OSLERs and mini-CEXs allowing more direct observation.[7,8]

Despite awareness of limitations of the long case, our institution continues to use it for formative assessment of medical students undertaking musculoskeletal attachment. We undertook a largely qualitative study to ascertain the views of medical students on the value of the long case, with the specific question, "are medical students in favour of the long case as a formative assessment tool?"

A literature search of the Ovid® database using search terms 'Assessment', 'Long Case' and 'Medical Student' retrieved 70 relevant articles, only 3 of which included student opinion.[9,10,11] Our study adds to the extensive literature on reliability and validity of the long case by examining educational impact and acceptability.[12]

METHODS

The study was undertaken for a Masters in Clinical Education degree and ethical approval for all aspects was secured from the Medical School's Research Ethics Board. Anonymity of participants was ensured and voluntary informed consent was obtained with adherence to all required aspects of data protection as per University policy.

A questionnaire and a series of focus groups were used to assess the primary outcome - whether students were in favour of the long case as a formative assessment tool. Inclusion criteria were third year students undertaking musculoskeletal attachment in our Institution from September to December 2017. This comprised four sets of up to 30 students undertaking a 3 week attachment with a total of 106 students attending during the study. The small number of third year students who attended an alternative Institution was excluded.

Due to student numbers (30 every 3 weeks) there are insufficient suitable inpatients to allow individual long cases in rheumatology. Groups of up to five students are assigned a rheumatology inpatient for their long case on Monday and each student given a specific area on which to concentrate, for example history of presenting complaint or hand examination. Students prepare the case in their own time and present the case as a group at the bedside to a supervising tutor on the Thursday for formative assessment. Tutors give feedback to the group and may conduct further teaching on the case.

Questionnaires were completed by consenting students after their long case and collected from an assigned folder to ensure anonymity. Questionnaires from each student set were studied with coding of Likert question responses (Figure 1) and free text comments. Focus groups took place on the final day of the students' attachment, led by the principle investigator with conversations recorded and transcribed. Thematic analysis was undertaken of questionnaire and focus group data and representative quotations selected.

The study supervisor undertook an independent analysis of the data to provide rigour and independently agreed with the thematic analysis. It was planned to analyse questionnaires using a Chi squared test comparing categorical data on two levels but there were insufficient numbers to allow this. The alternative Spearman's ϱ-test was applied using the SPSS® (IBM Statistical Package for the Social Sciences) software package to compare ordinal variables.

RESULTS

An 86% response rate to questionnaires was achieved which was appropriate for analysis. There was a trend for older students to have completed more previous long cases, which was statistically significant ($p<0.025$) and unsurprising. A proportion (10-15%) seemed to have spent less than 15 minutes with the patient either in preparation or presenting the case, which raises doubt about the validity of their experience as an example of a genuine "long case". Feedback from the doctor was positive or mixed in all cases except one who reported receiving no feedback. Feedback from the patient was more variable. No statistical correlation was found between time spent in preparation, feedback, age, or

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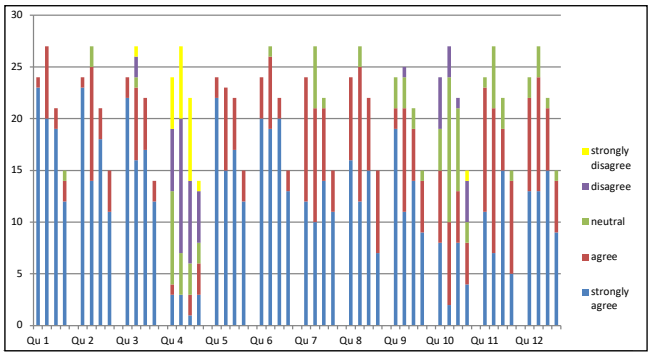

Qu 1: It was easy to make contact with the patient
Qu 2: The patient was available to meet at a suitable time
Qu 3: The ward allowed sufficient time and space to meet
Qu 4: I had reservations about interacting with the patient
Qu 5: The patient was happy to interact with me
Qu 6: I learnt new facts about the condition
Qu 7: The patient gave me clear and accurate information
Qu 8: I understood what it was like to live with the condition
Qu 9: The patient was at ease throughout
Qu 10: I learnt more from the long case than bedside teaching
Qu 11: The long case was an enjoyable way to learnt
Qu 12: The long case was good practice for starting work

Fig 1. Graphical representation of responses to Likert questions of questionnaire

Results for the four student sets are displayed for each question.

sex and whether students were in favour of the long case. Students reported an overall positive view of the long case in terms of organisation, patient and student acceptability, and educational impact. Response to one question ("I learnt more from the long case than other bedside teaching sessions") had a more varied response with most students reporting neutral response. Most students were in favour of the long case; (84 for, 3 against, 4 missing = 92% overall, or 97% valid answers). One student reported they found the long case *"repetitive and uninteresting"*, and strongly disagreed that they had learnt more from the long case than from bedside teaching sessions. The other students not in favour of the long case gave no free text reasons.

There were frequent free-text comments that the long case was *"good practice"*. Other comments reflected the depth of the long case as an advantage with phrases such as *"thorough"*, *"detailed learning"* and *"extra time"*. Students valued the opportunity for patient interaction with mention of improved confidence, communication, and understanding the patient's experience. Key words often repeated by students were *"real"* and *"integrated"*. There were references to *"real life"*, *"a real patient"*, *"realistic experience"* and linking lectures or textbooks to real cases. Regarding disadvantages of the long case, most students focussed on logistical problems. These included the patient being tired, occupied by meals, visitors and tests, feeling inconvenienced by teaching, students finding it hard to decide when to see the patient and feeling uncomfortable approaching the patient without an introduction. Four students found the presentation *"stressful"*, *"nerve-wracking"* or *"intimidating"*. Only 6 students made note of the disadvantage most mentioned in the literature, that the long case narrowly focusses on one encounter and knowledge gained in this encounter may not transfer to cases in general (contextual specificity). A phrase used which captures this point was, *"only so much to be learnt from one patient"*.

Only one dissenting voice chose "disagree" for question 3 ("The ward environment allowed me time and space to see the patient"). In fact it was clear that students had frequent difficulties in the ward and perhaps most students had not reflected in detail before answering this question, or felt disinclined to respond in a negative way concerning the ward.

We intended to hold 4 focus groups but insufficient numbers attended for the first focus group to be properly viable. Subsequent sets were successful with 6 students attending from sets 2 and 3, and 8 from set 4. Thematic analysis from focus group discussion revealed a breadth of both positive and negative views of the long case.

DIFFICULTIES UNDERTAKING THE LONG CASE

There was poor understanding of what was meant by a "long case" reflecting its declining use as a term. Requests for more guidance were common. Students also frequently commented on difficulties with the ward environment.

"it was like, a long case, what is that?"2D

"it could be a nightmare … you literally don't have a clue and no one really teaches you how to do them"3D

"It took so long to go through it all…it almost was causing hassle on the ward....like the lunch was sitting outside and it was just an absolute havoc..." 2B

"the patient's been away having tests or they're sleeping or people are there, and [we] found it quite stressful just being able to speak to the patient" 4H

THE LONG CASE WAS NOT A "FAIR" METHOD OF ASSESSMENT DUE TO CASE VARIABILITY

Students were able to identify the main disadvantage of the long case, namely the high contextual specificity. They frequently described the case as not "fair".

"it's hard to standardize because different patients have different levels of complexities…so like some of us might, may have a tougher time…so I guess it's good in the sense that it's formative and not, you know, summative."3E

"I just feel it's totally variable and not fair for everyone." 2A

"you're not getting the same exposure as everyone else and say that group's case came up in the exam you're kinda raging." 4E

AUTHENTICITY OF THE PATIENT ENCOUNTER

Students recognised this advantage of the long case which has been extensively discussed in previous literature.

"It grounds what you're learning in practice….it's actually really interesting to meet the patient and see what it looks like in practice."3C

"An OSCE is kind of fabricated, yeah, it's not real life." 4H

HOLISTIC "WHOLE PERSON" MEDICINE

This advantage of the long case has also been previously well recognised. The students used terms reflecting integration.

"in a long case you did everything, you see everything and you were able to tie it all together better" 4E

"you're not just focussing in, so you're getting an idea of the patient as a whole." 4H

EDUCATIONAL VALUE

The most varied views were on educational value of the long case. There are probably too many student, patient and tutor variables in each case to declare that the long case of itself is educationally valuable. Early detailed patient encounters are certainly memorable occasions which can help consolidate learning.

*"If I think of lupus I'll picture her so it makes the stuff easier to remembe*r." 3D

Encounters with real patients may be taken more seriously than simulated patients and this may improve the educational value of the long case.

"..preparing you for your exams then simulated patients are good but actually preparing you for being a doctor the patients on the ward is what you need." 2D

However other students did not feel preparing the long case was educationally valuable and required the presence of a tutor in order to feel that effective learning was taking place and tended to prefer bedside teaching.

"I learnt more by interacting more with the consultant."3C

"Having the consultant there and guiding me was definitely when I learnt."3E

As there is no summative testing on rheumatology during the musculoskeletal attachment it is difficult to know how well students genuinely retained the information from their teaching and we cannot make any objective comment on the true educational value of the long case. Some long case encounters are wonderful learning opportunities as stated by one student:

"I can clearly see that patient in my head and probably will do for the rest of my medical career now." 3F

Some are as stated in one questionnaire "*repetitive and uninteresting*".

STRENGTHS AND LIMITATIONS OF THE STUDY

By using both questionnaires and focus groups triangulation of methods was achieved and the study was able to include quantitative findings. Questionnaire return rate of 86% and focus group participation by 19% of the study population was achieved. Being aware of investigator reflexivity, the researcher kept a research diary. Participating students were sent a copy of the study write-up for comment to ensure respondent validation had occurred.

Due to time restrictions, a convenience sample was employed which is a weak sampling method. Students from a single academic year in one institution were sampled and only the first half of the year undertaking musculoskeletal attachment was included. As focus groups rely on volunteers, we acknowledge that a random sample of students may not have been achieved as participants may differ from non-participants. Investigator reflexivity is a potential limitation to all qualitative research as analysis can be subjective and prone to bias. The fact that the lead investigator had an interest in the long case and has spent time researching it may predispose her in favour of the long case.

DISCUSSION

Students were able to correctly identify the accepted advantages of the long case in terms of its authenticity and holistic nature. Their language did not include the standard terminology but they spoke of the long case "integrating" many aspects and involving a "real" patient encounter. The questionnaires demonstrated an understanding of these advantages and aligned well with the more detailed views expressed in focus group discussions. Concerning disadvantages of the long case, the brief comments on the questionnaires were more superficial and mainly included practical difficulties faced conducting the long case, some of which might have been specific to our long case set-up. It took the more detailed discussion in the focus groups to allow the issues surrounding "fairness" to surface, but these were also strongly felt. Again, the students used layman's language to describe this recognised problem of "reliability" in the long case.

The opportunity for feedback was mentioned as an advantage of the long case in questionnaire responses. In the focus group discussions, requests for better feedback emerged as a strong theme.

"It's the feedback you need; you need feedback to improve and I just think that's the most important thing" 3D

In this study, a single doctor acting as tutor supervised each case and gave formative feedback. The tutors may not have had specific training in delivering feedback, and feedback was given in a group setting, potentially limiting what could be said to individual students. Interestingly one of the only three studies to look at medical student views also identified the quality of feedback as an important variable[13].

This study found that despite the disadvantages voiced, the vast majority of students were in favour of the long case. As well as supporting the existing literature, this study identified new themes regarding medical students' views on the long case, namely difficulties conducting a long case and importance of feedback. Previous studies on logistical issues are limited to costs when the long case is used for examinations, and do not cover other practical issues. [13] Our students had problems with their timetable, the ward environment, coordinating groups, understanding how to conduct the long case, and meeting the patient. While we want students to show initiative and adaptability and become familiar with the real ward environment, we also want to maximise teaching and learning opportunities. This study has shown the importance of these issues when it comes to medical students' experience of the long case, and if we want to improve we must address them wherever possible. We acknowledge that these issues depend to a great degree on the specific context and do not apply to long cases in general.

It should also be possible to modify our feedback arrangements for the long case, such as stating that feedback is being given, delivering fair and structured comments and issuing corrections where necessary, especially in examination technique. We have discussed how there was divergence of opinion among the students regarding whether the long case was educationally valuable. The educational value of the experience may have depended on the degree to which practical difficulties overshadowed the case and also the quality of feedback delivered afterwards.

In summary, the long case can be a useful tool for formative assessment as well as a rich source of learning for medical students. However, every long case is unique and amongst the variety there will be exciting cases that students recall throughout their careers as well as cases of poor educational value which students may not enjoy. In this way, long cases reflect the real world of medicine where some cases before us can be mundane or difficult but all are patients deserving of our attention and care.

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