WEB PAPER

Simple truths from medical students: Perspectives on the quality of clinical learning environments

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Abstract

Background: The opportunity for students to learn whilst in a clinical placement is a central component of undergraduate medical education and an educationally conducive clinical environment is essential if the student is to optimise learning opportunities.

Aim: This study, which was conducted by medical students, and amongst medical students aims to investigate the key conditions that students most value when placed in clinical settings.

Methods: A qualitative approach was adopted in which a series of focus group discussions were conducted by senior medical students trained in the facilitation of focus group moderation. In total, 30 students contributed to four separate focus groups.

Results: Whilst students identified some factors which were similar to previous studies, other factors considered important to learning in the clinical setting surfaced. Namely, the need for students to be self-motivated and the valuable contribution that other medical students can make to the learning of their peers.

Conclusions: Our findings concur with other similar studies. However, our findings were generated by medical students and not subject to influence by university teachers during the data collection and analysis. This not only serves to reinforce previous studies but also supports the use of peer data collection from medical students.

Introduction

The importance of authenticity

In New Zealand, the medical degree starts with students spending a full year alongside other undergraduates studying the theoretical concepts that underpin the health sciences. Over the next 5 years, the degree becomes progressively more medically focused and clinically based. Ultimately, in their sixth and final year, as trainee interns (TI) students spend almost all their time in a clinical setting learning alongside experienced clinicians (Tweed et al. 2010).

During the fourth and fifth years, students undertake clinical modules. Each module is a mix of classroom- and workplace-based learning (the practicum). This means that the time allocated to for learning in the workplace is inevitably limited and therefore opportunities to learn in the workplace should not be left to chance.

It has been argued that in the health care sector, the workplace, whether it is the hospital ward, the medical centre or the community clinic, should also function as part of a wider learning organisation (Davies & Nutley 2000).

Whilst this is a laudable objective and it may be stating the obvious, but for most health professionals, the clinical setting is first and foremost a place of work. However, for students of medicine and other aspirant health professions that same workplace must, at times, also serve as a very important and explicit learning environment. Whilst it may not be possible or desirable to reduce the volume of clinical work to incorporate student learning, it has been demonstrated that it is possible to improve the learning climate (Gordon et al. 2000).

The clinical setting is a workplace and an authentic place in which to learn medicine. Authenticity, a key feature of any workplace has long been regarded as an important form of occupational enculturation (Brown et al. 1989). These authors also maintain that in relation to practice-based learning, it was only by permitting students to engage actively in real contexts, such as the clinical setting, that learning could be fully optimised. In a clinical setting, students should not only
observe experienced practitioners in their work, they must be
given the opportunity to participate in many aspects of health
care delivery.

More specifically in the context of medicine, the view that
learning to be a doctor requires medical students to be
exposed to clinical environments and also to have active
involvement in patient management and care, has deep
historical roots which can be found in the writings of amongst
others of Osler and Flexner (Gunderson 2000).

An important point of difference
The literature pertaining to the clinically based education of
health professionals cites a number of factors which are said to
optimise learning in clinical contexts. Some key examples are,
the motivation of clinical staff towards the educational support
of students (Busari et al. 2005), the welcoming nature of
interpersonal relationships in the clinical setting (Stark 2003),
the availability of adequate resources to support learning
(Papp et al. 2003) and the opportunity for students to engage
in some form of direct yet supervised patient management
(Stark 2003).

The quality of learning environments has long been of
interest to medical educationalists and in the course of our
literature review, it was noted that whilst the studies involved
students as participants or subjects, the research was invariably
initiated and undertaken by academic staff. Indeed, not one
study that had as a focus the quality of clinical placements
which was wholly created and executed by students could be
located.

This is very important as it means that this study differs
significantly from others as it was almost exclusively designed,
conducted and analysed by medical students.

More specifically, the recruitment, organisation and mod-
eration of the focus groups (the chosen form of data
collection) were undertaken solely by medical students. We
argue that by adopting this peer approach to data collection,
we may have contributed to a reduction in any potential
for data contamination due to power differentials that may
arise when academic staff or their representatives con-
duct research that involves students as participants, particularly
when it involves staff and students from the same
institution (Ferguson et al. 2004; Ridley 2009). We also argue
that as a result of our peer initiated research and the associated
data collection, namely peer facilitated focus group interviews.
The participants may have been less guarded in their
comments, than if an academic staff member had moderated
the focus group interviews. Much has been written in several
disciplines about the particular challenges when determin-
ing who should act as moderator in focus groups discuss-
ing sensitive subjects with vulnerable populations (Folch-Lyon
&Trost 1981). In the context of feminist research, Madriz
(2003) acknowledges the importance of reducing power
differentials but does not explicitly advocate for peer lead
focus groups.

We also argue that by adopting a peer approach to data
collection, we have remained true to the notion of the fiduciary
relationship which is highly important in the context of both
education and research (Ferguson et al. 2004).

The academic staff involved in this project intentionally
adopted a background role, and the principal involvement of a
faculty staff member was that of a medical education advisor
(Peter Gallagher) who acted in training, advisory and support-
tive capacities.

The findings of this study, undertaken by medical students
indicated features, both positive and negative which medical
students believed contributed to their learning during clinical
attachments.

However, to reiterate what is a very important and different
feature of this study is that it was conducted by students, with
students, and for students. This means that our findings, which
not surprisingly converge with findings from other studies on
the same topic, are important as they serve to strengthen and
validate those studies.

In short, and as the important methodological difference, it
was the way in which this study was conducted that surfaced:
‘Some simple truths from medical students’.

Method
To gain a greater understanding of the conditions that students
face in a clinical learning environment, a descriptive qualitative
approach was adopted. Further it was decided that group
interviews, also known as focus group discussions would be
the best means of data collection. This is a method of data
collection that enables group members to feed off each other’s
ideas and an effective moderator will maintain group focus
whilst at the same time permitting flexibility in the direction
those aspects of the discussion might take (Liamputtong 2011).
To facilitate the discussion and to maintain consistency over
different sets of discussions, key trigger questions were
devised prior to the discussion. The opening trigger question
was: ‘Thinking back to some of your best clinical learning
placements in 4th and 5th year. What was it about those
clinical placements that provided good opportunities for
learning?’

Ethical considerations
Ethical approval was granted by the University of Otago and
student participants were invited to attend each focus group
discussion by the university representatives of New Zealand
Medical students Association (NZMSA). Usually, a key concern
when collecting data from students is that students may feel
vulnerable when sharing their experiences with academic staff
during a focus group discussion. However, this potential harm
was removed as each group discussion was facilitated by a
fellow student, the discussions were transcribed by a profes-
sional transcribing service, and only the primary researchers
(Sheng-Hui Weng, Zoe Fudakowski, Liz Carr and Peter
Gallagher) had access to the raw data.

Recruitment
From the potential population of approximately 240 students
located at a university campus in one of three geographically
dispersed campuses. An invitation, was sent to those students
who in 2010 had completed year 4 (2009) and year 5 (2010) of
their medical degree. In total, four group interviews were completed involving 30 students. The breakdown of those groups was:

Campus A \( n = 6 \)
Campus B \( n = 12 \)
Campus C (Group A) \( n = 6 \)
Campus C (Group B) \( n = 6 \)

Three of the group discussions were audio recorded and the fourth (Campus A) was video recorded.

Data collection
Given that the students who volunteered to moderate the focus groups had during their undergraduate programme very little teaching on how to undertake qualitative research, and no experience in focus group moderation, they were trained to run a focus group as part of the project. In light of the distance between the three participating campuses, the training was via video link-up and based around Morgan’s ‘rules of thumb’ (Morgan 1997).

Data analysis
The constant comparative method, proposed by Glaser and Strauss (1967), for the analysis of qualitative data formed the basis of our approach to identify codes, categories and themes in the data.

More specifically, the transcripts were initially read independently by Sheng-Hui Weng and Peter Gallagher, who made a personal line-by-line analysis of participant comments. For each transcript, participant comments were given a coding label.

That label was sometimes the actual words of the participants. For example, the references students made to being allowed to undertake forms of practical activity were afforded the label: ‘Doing stuff’.

Alternative phrases, this time chosen by the researcher team, were used to form the coding label. An illustration of which was that when students indicated that taking the initiative for their own learning as a TI was important, this was termed: ‘Proactivity’. These codes were eventually reduced to a smaller number of recurrent themes. Those were themes that arose within sets and across each set of group data.

Once Sheng-Hui Weng and Peter Gallagher had completed their independent analysis they exchanged, compared and then shared their respective analyses and settled upon a small number of themes present in the data.

There was a high degree of agreement between our individual analyses which was later supported by a further blinded thematic analysis undertaken by Zoe Fudakowski.

Results: Some simple truths
The categories that were found during the analysis, which had a high resonance across the students in all four focus groups, could be largely grouped into the following four overarching themes:

- Structural factors: The organisation of the clinical placement.
- Interpersonal factors: The ‘Spectrum of Support’ referring to support received on various levels from staff to peers.
- Intrapersonal factors: The proactivity, preparedness and personality of each student.
- Vocational development opportunities: including practical experience or clinical exposure and teaching opportunities.

Structural factors: Organisation
Effective organisation contributed to the creation of a positive learning and frequently the participants referred to by the administrative aspects of each placement:

- How well (the course is) organised...has an impact.

In particular mention of low student to doctor ratios commonly emerged as a factor that enhanced learning:

- One student per consultant...or two students...means that you just got to do a lot more...and you feel involved...you feel less intrusive for the patient.

Interpersonal factors: Senior staff, junior staff, student peers and ourselves
Whilst students openly acknowledged that doctors are busy people, with many different requirements on their time, they repeatedly emphasised appreciation when doctors took time to support their learning:

- It's really helpful when someone on your team, like house surgeon or registrar says, oh, I've got some spare time and will go over this with you, and I'm really grateful for that kind of thing.

Conversely, when doctors were unable to support learning, students found the clinical learning environment less welcoming and less helpful for the acquisition of good quality clinical skills.

The research also showed that it was not only the support of doctors that was important, support by other students and peers was also of highly valued:

- It’s really good going [to the clinical placement] with someone. When you have a student paired up with you and then...you have company to go around the wards and search stuff, when you’re alone you feel really isolated.

Senior staff members were able to provide key accurate learning points on important conditions. However, student peers and senior students can also provide knowledge which is most immediately relevant to junior students:

(Trainee Interns) are amazing ’cause they are the ones that...can show you how to do this, and [say] I know this sucks for you so I’ll help you.
When asked for tips for being a successful student, participants had much to say. Repeatedly, students stressed the need for a student to be able to find a way to become part of the team and alert the doctors that they were enthusiastic and keen to learn. They stressed the need for students to take the initiative to create a place for themselves in the busy clinical environment which was supportive of their learning:

Just putting yourself out there, actually asking for them to show you something instead of waiting for them.

Vocational development opportunities

The final factor we identified key in creating a positive clinical learning environment were the opportunities for students to obtain practical experience, clinical exposure and teaching opportunities that were patient centred: ‘The only way I remember is if I see them [clinical activities] on a real patient.’

Students found structured teaching to be essential to their development of knowledge and understanding of key topics, however the quality of tutorials was found to be variable:

If you have something to anchor on, if you have something to focus on, you feel more secure; you’re able to obtain that knowledge. ’It’s good to have… a general base of the tutorials so that you don’t go into the ward knowing nothing, but then… if you ended up with too much teaching, you lose a clinical contact.’

Students also enjoyed the chance to present topics to their classmates as a form of assessment:

Having to teach your class a topic, that really consolidates your knowledge.

If you take five minutes to present it to everyone that’s seventy five, a hundred times better than handing in a stupid piece of paper [referring to an assessed piece of work].

Where students lacked confidence, it was more difficult to participate:

If you’re not used to trying to push yourself forward… it’s a pretty intimidating learning environment.

’Self directed learning with direction’ was a valuable technique for getting a high quality learning experience.

I found the clinical situation exposed gaps in my knowledge and then that was a good time to go and look that up.

There was also a suggestion as to how students could make the most of having other students present on the wards:

I think that’s something that we need to work on is like, involving our fellow classmates… And fostering this culture where it’s better to help each other out than to compete.

Discussion

As previously stated, and not surprisingly, many of the findings which emerged from this study correspond to those found in the existing literature over the last decade or so (e.g. Gordon et al 2000; Boor et al. 2008; Durak et al. 2008). Therefore, this discussion will intentionally focus on two specific and related aspects of the research which we consider to be different. The first is the manner by which data were collected, and the second the need for students to be proactive during a clinical placement and personally seek out learning opportunities.

In the way that the study was conducted, students were able to develop a research technique for undertaking qualitative research with fellow students and importantly a method that overcame some of the difficulties associated with staff lead student interviews. We demonstrated that as a student group we could develop relevant trigger questions, train capable moderators and gather quality research data.

This meant that as students we took ownership of the findings and thus this study offers an important insight into how students reflect on the reality of learning in a demanding health care setting.

That students identified that their own personal characteristics influenced their performance in the learning environment may have been something that they was less likely to surface if the focus group had been moderated by an academic staff member. Interpersonal features of students and supervisors have been discussed in the literature (Sheehan et al. 2005). However, personality characteristics can be subtle in their influence and that influence can prove difficult to capture.

Further research or discussion with students and members of the health care team on the issue of proactivity may provide more insight and concrete advice. This information would be particularly useful for students who are struggling to fit into the clinical environment and for clinical teams who want to improve the learning opportunities for medical students. Students can be effective self-directed learners once they have been given a nudge in the right direction.

Implications for medical education

This research has a number of key messages which both students and staff should heed to improve the quality of learning during a clinical placement (the practicum).

Based on this research, we identify a number of practice points (Table 1) which could be used to guide and support students.

**Table 1. Practice points for clinicians and students.**

- Structural: Ensure an introductory session is conducted at the start of each clinical attachment as orientation to the physical environment and to outline to each other the expected learning objectives, examinable topics and expectations including the level of participation
- Interpersonal clinicians: Be inclusive of students in your clinical discussions and activities
- Intrapersonal students: Ask your student peers or senior clinicians about what is expected of you during each placement and encourage the practise of clinical skills or knowledge testing amongst peers
- Feedback: Provide individualised constructive feedback to each other after a task, during a placement and at the end of a placement
students and staff and thus enable students to get the most from their clinical experiences.

The first area highlighted in our research was that of the organisational structures in place to support learning within the clinical environment. This included ensuring the clarity of expectations and the role of students to all the members of the health care team, ensuring a low ratio of students to doctors and maximising participation in the team. Curriculum changes which would support this include longer attachments with the same team which would give interpersonal relationships a chance to develop. The curriculum should also ensure that tutorials adequately prepare students to be both helpful members of the team and ready to learn from the planned and opportunistic clinical encounters opportunities that are presented during any particular clinical placement.

Generally, students agreed that assessment was a useful tool to provide a framework and direction for their learning. The emphasis from students was on formative rather than summative assessment. The appreciation of timely feedback was also noted as students felt this was important for improving their clinical skills and problem solving.

The strengths of this study included that it was a qualitative research conducted solely by students. Qualitative research is becoming increasingly popular in medical education given its ability to provide new insights and information guided by the participants rather than researchers. Students identified the need for themselves to be active managers of their own learning, but also went on to identify concrete elements that would improve their learning in the clinical environment.

Limitations

The recruitment of student volunteers to each focus group meant it was possible that those who volunteered as participants were more outspoken and confident students who were interested in discussing this topic. Other areas of importance to students in a practicum could be identified if we were able to talk with specific cohorts within the student body, particularly those students form minority groups. As only students from one university were included in this study we can not assume that the results would be consistent across the country or in other countries.

Another important consideration is how to generalise this information is to other learning environments other than the hospital setting, for example rural settings, General Practice or other community settings. The students interviewed had undertaken practical experience in large hospital settings with busy clinical wards. It may therefore be possible that there are different barriers to improving the learning environment in those settings.

However, some of the findings about aspects of positive learning environments arose from students who undertook placements in rural or non-tertiary hospital settings. Factors that contribute to positive learning environments, even if applicable to a lesser degree, are likely to be of value to other environments.

Future research could include quantitative surveys based on the information gathered in these focus groups to measure the baseline and subsequent improvements in clinical learning, based upon any interventions based upon this study. Further qualitative research with specific student groups who may have different learning needs may reveal some new areas that need improvement.

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Notes on contributors

PETER GALLAGHER is the Medical Education Advisor at the University of Otago, Wellington New Zealand. When the project was conducted Liz Carr, Sheng-Hui Weng and Zoe Fudakowski were all final year medical students. All three are now interns in various hospital locations in New Zealand.

References


