

## 'You learn better under the gun': intimidation and harassment in surgical education

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**BACKGROUND** Medical literature has documented a high prevalence of intimidation and harassment in the educational context. However, the research has failed to adequately delineate the nature of these phenomena as well as the different ways in which diverse actors perceive the behaviours in question.

**METHODS** Based on qualitative methodology anchored in a social constructionism framework, how teachers (staff surgeons) and learners (surgical residents) define intimidation and harassment were documented and compared. In addition, teachers' and learners' perceptions of the impact of these behaviours on the learning environment, including their effects on the socialisation of surgeons in training, were examined.

**FINDINGS** Five group interviews and 22 individual interviews were conducted across 2 university departments of surgery with a total of 22 faculty and 14 resident participants. Interviewees acknowledged the existence of intimidation and harassment, while at the same time rationalising its occurrence. This paradox was encapsulated in participant descriptions using terms such as 'good intimidation'. Our examination of the data helped us to understand that participants sustained the paradox of beneficial intimidation and harassment by rationalising questionable behaviours on 3 specific dimensions, namely: whether an acceptable *purpose* could be attributed to the perpetrator; whether positive *effects* of the

behaviour existed, and whether there was a perceived *necessity* for the behaviour.

**INTERPRETATIONS** Even while their dysfunctional characteristics are recognised, intimidation and harassment are often seen as functional educational tools. The cultural value currently accorded these behaviours needs to be taken into account in educational interventions designed to shift attitudes and actions in this domain.

**KEYWORDS** humans; surgery/ \*education; \*harassment, non-sexual; \*education, medical, undergraduate; clinical competence/ \*standards; teaching/ \*methods.

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'I've had one negative experience since I've been here... [the staff surgeon] was being tense in the OR, so he took it out on me. He hit me, he was verbally abusive ... having said that I can now tie better knots than anyone in my year probably ... It was that interaction that probably bumped me up to practise, motivated me more. So ... I suppose it is a learning tool in that way. It's a motivational tool.' (Resident individual interview 4)

### INTRODUCTION

Medical education studies suggest that intimidation and harassment are not isolated events but rather part of an ongoing powerful cycle that is deeply rooted, endemic and affects all levels of practitioner.<sup>1,2</sup> Over the last decade, an increasing literature base has developed, reporting up to 92.9% of perceived mistreatment, abuse, intimidation or harassment experienced by medical students, residents and staff.<sup>1–13</sup> As Myers<sup>14</sup> notes, '... [the]

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## Overview

### What is already known on this subject

Research has documented high rates of intimidation and harassment in medical education. However, this literature is primarily survey-based.

### What this study adds

Our qualitative study provides insight into how teachers (staff surgeons) and learners (surgical residents) perceive intimidation and harassment and how their perceptions may shape the experience of these phenomena in the training environment.

### Suggestions for further research

Future research should explore the relationship between these aspects of surgical training and other aspects at the forefront of the educational literature, such as decreasing interest in surgery as a career choice and attrition out of residency programmes.

belittling of residents has often been accepted as a salutary rite of passage, and some supervisors feel justified in perpetuating a standard of behaviour to which they became inured as students'.

Because some doctors see these behaviours as part of the natural socialisation of a good doctor, the medical community continues to debate the role of these behaviours in education.<sup>14-18</sup>

Social constructionism informs us that individuals often perceive a single case differently based on divergent assumptions, backgrounds and interpretations.<sup>19,20</sup> Although the current literature on intimidation and harassment in surgical education provides insight into reported levels of behaviours, these data are derived from self-reported surveys in which the terms used are often not explicitly described.

As a consequence, the meanings of these concepts to different stakeholder groups and the influence of educational contexts on these

meanings have been inadequately explored. Therefore, in order to understand such socially complex phenomena, careful consideration of meaning is critical, as individuals are understood to interpret and respond to behaviours differently based on their perceptions of what those behaviours mean. For example, is public chastisement of a resident perceived as an instance of intimidation or as a means of redirection? How is this interpreted by the resident? Does this differ from a staff person's interpretation? And how would someone outside the surgical realm describe this situation?

Medical educational surveys of the effects of intimidation and harassment have employed data collection methods that require participants to indicate the frequency of events they have been involved in or exposed to. However, social constructionism suggests that the self-report technique is likely to involve biases which shape responses but are not explicitly articulated in them. As has been noted, survey responses are neither rooted in concrete examples nor are the factors influencing their perception and reporting evident for scrutiny. The difficulty is twofold: clear demonstration of the participants' shared or separate understandings of the definitions is lacking, and, as a consequence, it is difficult to know if all are reporting instances of the same type and/or degree. If not, the reports on which our current estimations of the prevalence and experience of intimidation and harassment in medical education are based may be exaggerated, underestimated or simply distorted and unreliable. Until we have confidence in our understanding of the dimensions and prevalence of these phenomena, we cannot judge the degree to which intervention might be warranted, what such interventions should consist of, with what audiences, and in what educational contexts.

### Objectives

In order to guide the development of a grounded theory<sup>21</sup> of the social construction of the meanings of intimidation and harassment in the surgical setting, this study had 2 central objectives:

- 1 to document and compare how teachers (staff surgeons) and learners (surgical residents) define intimidation and harassment, and
- 2 to examine and compare teachers' and learners' perceptions of the impact of intimidating and harassing behaviours on the learning environ-

ment and the socialisation of surgeons in training.

## METHODS

### Setting and subjects

Two departments of surgery at 2 academic centres with different academic cultures were chosen as the research sites. The smaller centre is known for high levels of hands-on training early on, closer relationships between staff and residents and a training programme that equips residents with a strong skill set for community practice. The other, larger site has a stronger traditional academic focus. This centre stresses the importance of incorporating research training into surgical practice. Many residents graduating from this site do not proceed into community practice but continue training in subspecialty fellowship programmes. However, both sites run programmes accredited by the Royal College of Physicians and Surgeons of Canada and share many similarities: residents spend the same number of years in training, spend their training rotating through various surgical divisions, take 'call' on a scheduled basis and work in an apprenticeship-style teaching model with a variety of staff surgeons.

Following institutional ethics approval, both convenience and purposeful sampling were employed to solicit the participation of junior and senior staff surgeons (2–30 years of experience), junior and senior residents (Years 1–6), men and women, all major surgical divisions, and clinician educators and clinician scientists. We used a combination of convenience and purposeful sampling in order to provide an adequate and information-rich environment reflective of the diversity of the study population.<sup>22</sup> These 2 sampling methods enabled us to confirm or disconfirm aspects of the developing theory as the study unfolded. Sampling was completed when no new concepts related to the research question were discovered.

After receiving informed consent, 5 group interviews (3 staff groups and 2 resident groups) and 22 individual interviews (14 staff interviews and 8 resident interviews) were conducted across both departments of surgery, with a total of 22 faculty and 14 residents, each participating in 1 interview setting. Overall, a variety of surgical divisions were represented in the study, including general surgery,

orthopaedics, urology, neurosurgery, paediatric surgery, vascular surgery, plastics and surgical oncology.

### Data collection

Given that surgeons and surgical residents have busy, often inflexible schedules, voluntary participation in research is often difficult. Therefore, in order to accommodate a majority of participants, 2 data collection methodologies were utilised. Because the issue of intimidation and harassment is a very sensitive topic, the first approach involves discussion in a non-threatening, minimally hierarchical peer group setting,<sup>23</sup> while the other option involves conducting individual interviews. While there are advantages and disadvantages to both methodologies, we considered a combination of both techniques as the most appropriate means to obtain the richest possible data set.

Group interviews can help to stimulate participants, with forthright individuals drawing out those who are more timid by initiating discussion of sensitive issues and creating an environment that sanctions discussion. As well, the examples given by a participant may act as triggers for others' memories of experienced or witnessed events. To function productively these groups require as little hierarchy as possible in their participants' relationships with one another; therefore, we carried out separate resident and staff group interviews. Residents were further divided into junior and senior groups.

Despite potential positive outcomes, there is a concern that group interviews do not allow some participants to disclose their true sentiments because of an unwillingness to do so among their colleagues in a group setting. To counterbalance this potential non-disclosure in groups, independent interviews were also used because this method provides the advantage of privacy, which may encourage participants to speak more freely.<sup>24</sup>

A concern with group interviews is that a pronounced leader/follower effect may occur, rather than the triggered sharing expected in larger focus groups. This occurred in only 1 group interview and to a limited degree. Overall, the group interviews conducted provided interactions and comparisons between individuals that were important additions to our individual interviews.

The semistructured interview was designed to elicit a detailed discussion of what staff and residents

understood intimidation and harassment to mean and how they arrived at these meanings. It began with open-ended questions to probe participants' understandings of the terminology itself, followed by a discussion of 3 video scenarios that had been developed based on the literature<sup>25</sup> and validated using key informants. The video vignettes were not developed as depictions of actual examples of intimidation and harassment, but rather the aim was that the prompts, while descriptive of common challenging scenarios, were also sufficiently ambiguous, thus stimulating discussion of how participants decide which behaviours are considered intimidating or harassing. The video scenarios included:

- 1 a surgeon's removal of a resident's operating opportunity due to time pressures;
- 2 a discussion among staff and residents about whether or not a 'good' resident would take pregnancy leave during surgical residency, and
- 3 a surgeon flooding a resident with unrelated questions during a procedure, until the resident turns the tables and begins to ask questions that the staff person cannot answer.

The video discussion component of the interview script was intended to focus participants on shared examples and to increase the likelihood that divergent perceptions were likely to be real and not secondary to artefact. All interviews and group interviews were conducted by trained facilitators.

#### Data analysis

Data collection and analysis occurred in overlapping successive and concurrent phases.<sup>21</sup> Interviews were audio-recorded, transcribed and anonymised. Reflecting the grounded theory approach of this study, data analysis began with a process of iterative and recursive reading of all transcripts by 3 researchers.<sup>21</sup> This facilitated the initial gross category development reflective of emergent themes. Regular meetings of the 3 reviewers (a surgical resident, an operating room nurse and a qualitative researcher) occurred bi-weekly. This process was important to the research as it allowed for the resolution of discrepancies between reviewers regarding thematic categorisation and language usage in the entitling of each thematic code. Discrepancies were carefully inspected to ensure the authenticity of the analysis, by consulting specific instances in the transcripts, discussing the relationship to established themes and reaching

consensus as a group.<sup>26</sup> Further refinement of the coding structure occurred with each set of transcripts. Following complete coding of the data sets, the developed coding structure was confirmed as appropriately and comprehensively categorising the participants' descriptions and discussions. This coding structure was applied to the data set by 1 researcher using NVivo qualitative data analysis software, which facilitates axial coding among thematic categories to reveal any potent interrelationships.<sup>27</sup>

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## RESULTS

The results represent the dominant issues raised when participants discussed what principles informed their understandings of intimidation and harassment. As there were no consistent differences between issues raised by residents and staff or issues raised by participants from the 2 teaching centres, a single coding structure was sufficient to accommodate trends in the entire data set. Initially, 4 thematic categories emerged:

- 1 the *context* of the behaviour;
- 2 the *characteristics* of the behaviour;
- 3 the *outcomes* related to the behaviour, and
- 4 the *reason* for the behaviour.

The category of *context* described the situational markers (who, what, where or when) used to determine whether or not intimidation and/or harassment were perceived to have existed in the video examples. This category was further divided into the subcategories of participants and their relationships, occasion and place and time. *Characteristics* were defined as the modifiers of the situational markers which aid in identifying whether or not intimidation and/or harassment existed and included the subcategories of language, perception, implicit/explicit, intention and threat. *Outcomes* described what was perceived to have occurred because of an episode of intimidation and/or harassment. These codable units were almost exclusively negative in scope, including emotional effects (i.e. loss of self-confidence), reactions (i.e. avoiding the perpetrator) and other consequences (i.e. personal harm). *Reason* was defined as the purpose attributed to the exhibition of a behaviour that could be identified as intimidation or harassment. It included motives that were considered by participants usually to be positive (as in descriptions related to education) or negative (as in psychological purposes).

With further review of the coding structure, it was clear that a number of commonalities existed across the entire data set. Participants demonstrated a reluctance to use the terms 'intimidation' or 'harassment'. This reluctance may be related to a number of factors, including participants' perceptions of the adverse repercussions associated with these 'loaded' terms. For example, a faculty member expressed concern that a complaint of harassment could have negative consequences for a faculty member's reputation with this comment:

'Right off the bat it has a huge negative tone. and the surgeon can be called up in front of a board, and it could have huge implications.' (Staff group interview 3)

Other participants' comments suggested a conscious effort to move away from what some viewed as 'excessive political correctness':

'I think it would, uh, decontaminate or clarify things if we didn't use the word harassment. and even intimidation, although it's not a bad word, it gets people's back up. and you could hear ... resentment about the culture that has been built around harassment.' (Staff group interview 1)

Participants also felt that 'surgical culture' allowed them to accept behaviours in the operating room that they would in other circumstances (such as a cocktail party) label as intimidation or harassment.

Surgeons and surgical residents were reluctant to use these terms even when they expressed discomfort with a social interaction and were able to articulate its negative psychological effects. Many interviewees acknowledged the existence of intimidation and harassment, but justified its occurrence, suggesting a paradox underpinning the social construction of these phenomena in surgery. This paradox was encapsulated in participants' rationalisations of 'good intimidation'. Strong educational undertones to participants' rationalisations are highlighted in this faculty member's statement:

'... people do perceive [intimidation and harassment] as an effective tool.' (Staff individual interview 10)

Perhaps more interestingly, the notion of intimidation and harassment as an effective learning tool was suggested and supported by residents. For instance, a resident explained that:

'... sometimes it takes a person like this surgeon to scare you into doing something. Some people need to be scared into doing things, and there needs to be sort of a whip to them.' (Resident group interview 1)

Therefore, we focused our interest on developing a better understanding of how participants justified the behaviours in question. We examined relationships among our analytical categories in order to trace their logic. From this examination, we were able to articulate 3 dimensions of rationalisation, any of which place the behaviour into the category of intimidation or harassment. These dimensions are:

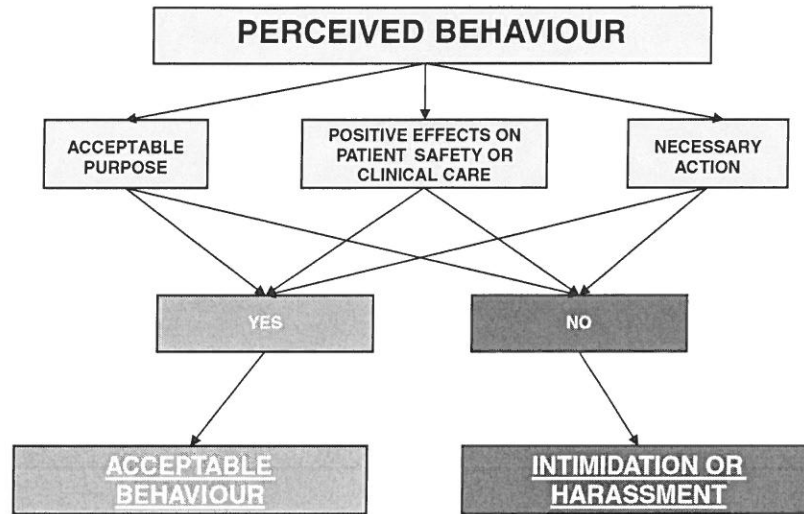
- 1 an acceptable *purpose* that can be attributed to the perpetrator;
- 2 a positive pedagogical or clinical *effect* of the behaviour, and
- 3 a perceived *necessity* for the behaviour to achieve the purpose.

These dimensions of rationalisation form what we have called the legitimacy assessment model of rationalisation (Fig. 1). These dimensions occurred across both resident and faculty discussions at both academic centres.

The first aspect of the 'legitimacy assessment' model of rationalisation involves the participants' determination of whether a purpose is evident in the behaviour and whether that purpose is acceptable. If an educational or clinical purpose for a behaviour could be articulated, the behaviour was less likely to be viewed as problematic. For example:

'Well, there's always an intent, to everything we do. But it depends on whether the intent is good or not. Like if somebody is giving me a hard time about something I did in the OR, and their intent is for me to get better at it or improve, then that's good. It wouldn't, you know, it wouldn't be classified as harassment. Although I might feel uncomfortable, but it's good. But if somebody's doing the same thing with the intent of humiliating me or doing it in front of other people or something that I don't think I did wrong and they're still blaming me for it, then that would be harassment.' (Resident individual interview 5)

As this resident's statement illustrates, if an educational purpose is found, the episode is not likely to be considered intimidation or harassment. However, if an acceptable purpose cannot be ascertained, the same event would more likely be classified as



**Figure 1** The legitimacy assessment model of rationalisation.

intimidation or harassment. Staff participants also echoed these sentiments, as illustrated in a faculty member's reflection on the teaching they had received:

'...in the back of my head, probably the people I remember the most in my training are the guys that are a little bit scary at times. Because their input kind of got earned and seared into my skull and I go back to that. But as long as it was always about the surgery. People that would bother you or harass you about things that have no importance to the surgery, what kind of car you drive or something like that, that's just unacceptable.' (Staff group interview 3)

Both of these comments demonstrate that similar behaviours can be interpreted differently depending on whether or not the recipient deems the speaker's purpose to be acceptable.

The next factor in the legitimacy assessment is the concept of effect. If behaviours were perceived to have a positive effect on education or clinical care, participants were more likely to justify these as legitimate. In fact, if pressing clinical care or patient safety issues were perceived, most interactions were deemed legitimate. One faculty member assessed the video scenario regarding the surgeon taking over the case due to time pressures:

'I don't see it as being particularly intimidating, because there is a ... uh ... good reason why ... the issue at stake here is the speed and safety of completing a procedure that has gone on longer

than anticipated, and you know, that's an issue of patient safety.' (Staff individual interview 10)

In this regard, the mitigation of undesirable clinical consequences served as a legitimacy trump card, rendering all other concerns negligible, including concerns about trainee abuse. This trump card was invoked to dismiss a range of questionable educational interactions, including 'bizarre personalities', off-colour comments and abuse, as not only acceptable but also effective teaching tools in a high-risk clinical environment.

Residents also recognised the primacy of the 'safety' issue in assessing the legitimacy of social interactions among teachers and learners, echoing faculty's willingness to disregard a range of potentially inappropriate behaviour in the context of perceived threats to safety:

'... your patients are sick, and things need to be done fast and so they [staff] can be very blunt and short and you know that's how it is, but you know you're going to have to do it. Although sometimes you hate it.' (Resident group interview 2)

In addition to purpose and effects, participants used a third factor, the concept of 'necessity', in their legitimacy assessments. Participants shared stories of teachers accessing intimidating or harassing tactics when their toolbox of teaching strategies had proven incapable of eliciting the desired response in the learner. Such stories held echoes of the 'safety' trump card as well, in their reference to the surgical teaching setting not affording the luxury of allowing

a learner's poor progress to continue. For instance, a teacher asserted that:

'... harassment is always inappropriate unless one accepts that after repeated attempts, appropriate attempts to get somebody to change behaviour, you may want to take a harassing view, a harassing approach.' (Staff individual interview 5)

Similarly, residents acknowledged that not all teaching methods resulted in equal amounts of learning for all residents. As this resident perceived it, some trainees need stronger motivators to learn and perform well:

'You can use a little bit of putting somebody under the, on a hot seat, or on the spot with a little bit of stress and adrenalin. Sometimes I think that helps. It helps me to be put under stress and if I don't know the question then I'll go read about it and I'll probably never forget that cause I was like, it gave me a little bit of a, like a pinch in the ear or something.' (Resident individual interview 5)

Interestingly, in many participants' descriptions there was a sense that, while not ideal (because of negative emotional effects), such methods were acceptable strategies in the high-risk setting of surgical education. It is within this setting that we identified a number of negative cases, mostly focusing on the identification of the negative impacts of 'good intimidation'. We compared these cases to others in order to develop our understanding of the limits of intimidation and harassment as motivating factors as well as the perceived boundaries of intimidation and harassment. These negative examples enriched our understanding of people's perceptions of what intimidation and harassment do in surgical education.

## DISCUSSION

The concepts of 'intimidation' and 'harassment' are suffused with unique meanings for surgical teachers and learners, meanings that underscore the socially constructed nature of these phenomena. The meanings are predicated on core cultural beliefs in surgery, such as the concept of looming risk, and provide the basis for rationalisations of behaviour that participants readily acknowledge as unacceptable in other social settings. The study has described the logical steps underlying such rationalisations – steps toward a legitimacy assessment that supports the notion that intimidating and harassing behaviours in

educational interactions are distasteful but effective and, in fact, a necessary aspect of surgical socialisation.

Participants in our study viewed intimidation and harassment as both dysfunctional and functional. This is suggestive of why 20 years of prevalence survey data have not managed to change surgical culture. If we reflect on the survey results, we can understand that simply telling people that intimidation and harassment are prevalent will not convince them that they are problematic when they perceive a utility to their presence. Therefore, we need to provide teachers with other educational tools to apply in situations where they may currently resort to intimidation and harassment. We need to look at the relationship between this aspect of surgical training and other aspects at the forefront of the medical educational literature, such as decreasing interest in surgery as a career choice<sup>28–31</sup> and attrition out of residency programmes.<sup>32,33</sup>

The assignment of clinical safety motives to legitimise behaviour leads us to a potentially slippery slope in the logic underlying these rationalisations. The nature of surgery is inherently life-threatening, which means that a wide variety of situations can have 'safety' issues attributed to them, raising the question of whether there may be a general perception that one can justify anything. Perhaps in other clinical settings where a similar 'trump card' of safety in high-risk situations exists (for example, in emergency departments or intensive care units), these same rationalisations might ring true.

Given its exploratory purpose and grounded theory design, this study has limitations that constrain the interpretation and application of the results. The nature of the subject population (surgeons and surgical residents) restricts our discussion to surgery and we cannot comment on whether the situation is different within other specialties or if between-group differences exist. Future research should explore these findings in other specialties. In addition, the sample size, while sufficient for a grounded theory study, will not sustain demographic comparisons such as gender, age, specialty and other distinguishing characteristics. Moreover, although we did employ 2 sampling methodologies in order to be as reflective as possible of the age, gender and academic role diversity of our population, it is still possible that our work includes a sampling bias – that we nevertheless engaged a population unusually interested in this topic. Furthermore, despite using small groups and individual interview techniques, the nature of the

topic being discussed results in the potential for response bias because of the politics of intimidation and harassment.

## CONCLUSION

Our findings suggest that the current definitions of intimidation and harassment are ambiguous. Therefore, the survey research that has dominated this domain must be treated with caution, as health professional teachers' and learners' perceptions and categorisations will be contextually anchored and culturally sensitive. Future surveys should consider the context and culture of the environment and be sensitive to the role of the educational and clinical justifications that are captured by our legitimacy assessment.

Our study places pressure on educators to move beyond rhetorical exhortations against intimidation and harassment and towards reflective analyses of how members of a clinical culture attribute meaning to these phenomena. This is not to argue that we should embrace intimidation and harassment as effective pedagogy – there is an abundance of evidence that learners learn better when fear, frustration and conflict are not part of their educational environment.<sup>34</sup> But it is a strong reminder that the sociological aspects of education are not highly amenable to abstracted solutions. If we wish to challenge the presence of intimidation and harassment as features of surgical education, we must understand both their perceived functionality and dysfunctionality; we must ascertain what social circumstances cultivate these behaviours and devise educational alternatives that allow surgical teachers to achieve their core objectives, such as safety, while promoting a positive learning environment.

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## REFERENCES

- Jacobs CD, Bergen MR, Korn D. Impact of a programme to diminish gender insensitivity and sexual harassment at a medical school. *Acad Med* 2000;**75** (5):464–9.
- Baldwin DC, Daugherty SR, Rowley BD. Residents' and medical students' reports of sexual harassment and discrimination. *Acad Med* 1996;**71**(10):25–7.
- Quine I. Workplace bullying in junior doctors: questionnaire survey. *BMJ* 2002;**324**:878–9.
- White GE. Sexual harassment during medical training: the perceptions of medical students at a university medical school in Australia. *Med Educ* 2000;**34**:980–6.
- Mangus RS, Hawkins CE, Miller MJ. Prevalence of harassment and discrimination among 1996 medical school graduates: a survey of eight US schools. *JAMA* 1998;**280**(9):851–3.
- Frank E, Brogan D, Schiffman M. Prevalence and correlates of harassment among US women physicians. *Arch Intern Med* 1998;**158**(4):352–8.
- Baldwin DC, Daugherty SR. Do residents also feel 'abused'? Perceived mistreatment during internship. *Acad Med* 1997;**72** (10)(1):51–3.
- Cook DJ, Liutkus JF, Risdon CL, Griffith LE, Guyatt GH, Walter SD. Residents' experiences of abuse, discrimination and sexual harassment during residency training. *CMAJ* 1996;**154**(11):1657–65.
- van Ineveld CH, Cook DJ, Kane SL, King D. Discrimination and abuse in internal medicine residency. *J Gen Intern Med* 1996;**11**(7):401–5.
- Cook DJ, Griffith LE, Cohen M, Guyatt GH, O'Brien B. Discrimination and abuse experienced by general internists in Canada. *J Gen Intern Med* 1995;**10**(10):565–72.
- Uhari M, Kokkonen J, Nuutinen M, Vainionpaa L, Rantala H, Lautala P, Vayrynen M. Medical student abuse: an international phenomenon. *JAMA* 1994;**271** (13):1049–51.
- Wolf TM, Randall HM, von Amen K, Tynes LL. Perceived mistreatment and attitude change by graduating medical students: a retrospective study. *Med Educ* 1991;**25**:182–90.
- Sheehan KH, Sheehan DV, White K, Leibowitz A, Baldwin DC Jr. A pilot study of medical student 'abuse':



- student perceptions of mistreatment and misconduct in medical school. *JAMA* 1990;**263**:527–32.
- 14 Myers M. Abuse of residents: it's time to take action. *CMAJ* 1996;**154**(11):1705–8.
  - 15 Field T. Those who can, do; those who can't, bully. *BMJ* 2002;**324**:786.
  - 16 Becker K. Both sides need help when bullying happens. *BMJ* 2002;**324**:786.
  - 17 Anonymous. Bullying in medicine. *BMJ* 2001;**323**:1314.
  - 18 Kassenbaum DG, Cutler ER. On the culture of student abuse in medical school. *Acad Med* 1998;**73**(11):1149–58.
  - 19 Palincsar AS. Social constructivist perspectives on teaching and learning. *Annu Rev Psychol* 1998;**49**:345–75.
  - 20 Schwandt T. Three epistemological stances for qualitative inquiry: interpretivism, hermeneutics and social constructionism. In: Denzin N, Lincoln Y, eds. *Handbook of Qualitative Research*. 2nd edn. Thousand Oaks, California: Sage Publications 2000.
  - 21 Glaser B, Strauss A. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing 1967.
  - 22 Kuzel AJ. Sampling in qualitative inquiry. In: Crabtree B, Miller W, eds. *Doing Qualitative Research*. 2nd edn. Thousand Oaks, California: Sage Publications 1999.
  - 23 Kitzinger J. Introducing focus groups. *BMJ* 1995;**311**:299–302.
  - 24 Britten N. Qualitative interviews in medical research. *BMJ* 1995;**311**:251–3.
  - 25 Konner M. *Becoming a Doctor – a Journey of Initiation in Medical School*. New York: Penguin Books 1987.
  - 26 Creswell JW. *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. 2nd edn. Thousand Oaks, California: Sage Publications 2003.
  - 27 Kelle U. *Computer-aided Qualitative Data Analysis. Theory, Methods and Practice*. Thousand Oaks, California: Sage Publications 1995.
  - 28 Gelfand DV, Podnos YD, Wilson SE, Cooke J, Williams RA. Choosing general surgery: insights into career choices of current medical students. *Arch Surg* 2002;**137**:941–7.
  - 29 Bland KI, Isaacs G. Contemporary trends in student selection of medical specialties: the potential impact on general surgery. *Arch Surg* 2002;**137**:259–67.
  - 30 Polk HC. The declining interest in surgical careers, the primary care mirage and concerns about contemporary undergraduate surgical education. *Am J Surg* 1999;**178**:177–9.
  - 31 Erzurum VZ, Obermeyer RJ, Fecher A *et al*. What influences medical students' choice of surgical careers. *Surgery* 2000;**128**:253–6.
  - 32 Morris JB, Leibbrandt TJ, Rhodes RS. Voluntary changes in surgery career paths: a survey of the programme directors in surgery. *J Am Coll Surg* 2003;**196**:611–6.
  - 33 Aufses AH, Slater GI, Hollier LH. The nature and fate of categorical surgical residents who 'drop out'. *Am J Surg* 1998;**175**:236–9.
  - 34 Knowles MS, Holton EFI, Swanson RA. *The Adult Learner: the Definitive Classic in Adult Education and Human Resources Development*. 5th edn. Houston, TX: Gulf Professional Publishing 1998.

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