Students' attitudes and potential behaviour with regard to whistle blowing as they pass through a modern medical curriculum

John Goldie,[1] *Lisa Schwartz,*[2] *Alex McConnachie*[1] *& Jillian Morrison*[1]

Objective To examine students' attitudes and potential behaviour with regard to whistle blowing as they progress through a modern undergraduate medical curriculum.

Design Cohort design.

Setting University of Glasgow Medical School.

Subjects A cohort of students entering Glasgow University's new learner-centred, integrated medical curriculum in October 1996.

Methods Students' pre- and post-Year 1, post-Year 3 and post-Year 5 responses to the whistle blowing vignette of the Ethics in Health Care Instrument (EHCI) were examined quantitatively and qualitatively. Analysis of students' multichoice answers enabled measurement of movement towards professional consensus opinion. Analysis of written justifications helped determine whether their reasoning was consistent with professional consensus and enabled measurement of change in knowledge content and recognition of the values inherent in the vignette. Themes in students' reasoning behind their decisions of whether or not to whistle blow were also identified.

Results There was little improvement in students' performance as they progressed through the curriculum in terms of their proposed behaviour on meeting the whistle blowing scenario. There was also no improvement in the quality of justifications provided. Students' reasoning on whether or not to whistle blow was found to change as the curriculum progressed.

Conclusions The EHCI has the potential to elicit students' attitudes towards ethical issues at entry to medical school and to measure change as they progress through the curriculum. Students should be encouraged to contemplate dilemmas from all ethical standpoints and consider relevant legal implications. Whistle blowing should be addressed as part of the wider domain of professionalism.

Keywords education, medical, undergraduate/ *standards; curriculum; ethics, medical/*education; attitude; cohort studies; Great Britain.

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Introduction

The ability to self-regulate is integral to the definition of a profession.[1,2] This privilege is dependent on trust existing between the profession and the public.[2–4] In the UK, trust in the medical profession has been threatened by a number of recent and well publicised tragedies.[5] This has brought the self-regulatory abilities of the medical profession under close scrutiny and has contributed to the imminent introduction of revalidation for UK medical practitioners.

[1]Department of General Practice, University of Glasgow, UK
[2]Cancer Care Ontario, Toronto, Ontario, Canada

Correspondence: Dr John Goldie, Department of General Practice, University of Glasgow, 4 Lancaster Crescent, Glasgow G12 0RR, UK. Tel.: 00 44 141 211 1666; Fax: 00 44 141 211 1667; E-mail: johngoldie@fsmail.net

As part of the process of self-regulation doctors have an ethical obligation to act when they believe that a colleague's conduct, performance or health is a threat to patients.[6] 'Whistle blowing' has been used to describe this action. Whistle blowers, however, have often not been well protected. Some have faced economic and emotional deprivation, victimisation and personal abuse, while often receiving little support from statutory authorities.[7] The culture and the law are changing to promote and protect whistle blowers. The General Medical Council (GMC) view whistle blowing as a core duty of a doctor,[8,9] and the recent introduction of the Public Interest Disclosure Act 1998 gives legal protection to individuals raising genuine concerns about malpractice.[5]

In recent years the UK has followed North America in bringing ethics and law into the mainstream of

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Key learning points

Students may arrive at medical school with negative attitudes towards whistle blowing. Students' potential moral ambivalence towards whistle blowing requires to be acknowledged.

As in other studies, there was little improvement in students' performance as they progressed through the curriculum in terms of their potential whistle blowing behaviour.

Students should be encouraged to contemplate ethical dilemmas from all ethical perspectives and consider relevant legal implications.

The Ethics in Health Care Instrument has the potential to elicit students' attitudes towards ethical issues at entry to medical school and to measure change as they progress through the curriculum.

Whistle blowing must be addressed as part of the wider domain of professionalism.

undergraduate medical curricula.[10] *Tomorrow's doctors*, the GMC's consultative document on the future of undergraduate medical education in the UK,[11] recommends ethics and law as a core curricular theme. The *UK Consensus Statement*, on undergraduate teaching of medical ethics and law, recommends whistle blowing as a core curricular topic.[12] Unfortunately, few evaluation studies of these curricula have been undertaken, resulting in little being known about students' attitudes and potential behaviour relating to whistle blowing.[13] The University of Glasgow introduced a new learner-centred, integrated medical curriculum in 1996. It has medical ethics and law as one of the vertical themes running throughout the 5-year course. This provided an opportunity to study longitudinally the effect of ethics teaching on students' potential behaviour when confronted with ethical dilemmas. As part of this study it was possible to examine students' attitudes and potential behaviour with regard to whistle blowing.

Study aim

The aim of the study was to examine students' attitudes and potential behaviour to whistle blowing as they progress through the medical curriculum.

Method

A cohort design was adopted, using a cohort of 162 students from the first intake of Glasgow's new curriculum.

Instrument

The adapted Ethics in Health Care Survey Instrument (EHCI) was used.[14,15] The EHCI consists of 12 case vignettes which include an ethical dimension. The case vignettes are set by a panel of professionals (including clinicians, philosophers, ethicists and lawyers). Nine of the 12 cases feature 'consensus problems' about which there is broadly shared agreement among specialists in medical ethics. The other cases feature 'knife-edge problems', about which professional judgements are scarce or divided. The inclusion of the 'knife-edge' vignettes in the instrument is important, however, as they demonstrate that not all ethical problems will have a course of action that can be shown to be professionally favoured by reference to official professional standards and to the medical ethics literature.[14,15]

In addition to asking subjects to choose one of the pre-set answers to each case vignette, the EHCI also asks them to justify their chosen response. For the purpose of this study, only the responses to the whistle blowing vignette, question 10 (Fig. 1), were considered.

In October 1996 the EHCI was distributed to all students entering the new curriculum. There was no compulsion for students to undertake the questionnaire; their participation was entirely voluntary. The students were assured of this and of the confidentiality and anonymity of their responses. A consent form was attached to the instrument. A total of 162 students returned a completed EHCI pre-Year 1, forming the cohort under observation.

Formal ethics teaching is mainly delivered in the first 3 years of the curriculum as part of the Vocational Studies course. The main teaching format in Vocational Studies is small group teaching led by a generalist clinical tutor. The content of Vocational Studies ethics sessions has been described previously.[14,15] The EHCI was distributed to the cohort post-Year 1, the year when the largest proportion of ethics sessions take place, and post-Year 3, following completion of Vocational Studies.[14,15]

A total of 101 students, of whom 67 were from the cohort, left the curriculum after Year 3 to undertake an intercalated BSc. The remaining students entered the predominantly clinical years of the curriculum, during which formal ethics teaching consists of two 2-hour,

Question 10 – The Registrar

You are a senior house officer. Mrs Katz is a 54-year-old woman who has been on your ward for 9 days. She is in the terminal stages of cancer and is clear headed and aware. Afraid of the pain, she has asked her doctor, 'Please do not let me suffer.' This has been accepted and is written in her chart as an advanced directive. One day, Mrs Katz tells you she wants to live to see the birth of her first grandchild. Later that night, while you are on duty, you are called to attend Mr Katz, who has suffered a cardiac arrest. Your registrar, heading the team, decides not to resuscitate, despite your information regarding Mrs Katz's comment made earlier that day.

Your options are:
1 Do nothing.
2 Recount the incident to the consultant in charge.

Please state the reasons for your choice:

Figure 1 Question 10 in the EHCI, the whistle blowing vignette.

Consensus responses

Category 1	Based on the consensus reasoning of experts in the field of medical ethics, legal requirements on practitioners, or on policies issued by relevant professional institutions

Subcategories of non-consensus responses

Category 2	Based on the subject's personal values/ morality
Category 3	Influenced by other non-medical/legal value systems
Category 4	Although based on moral argument, it is not consistent with the profession's normative values
Category 5	Indeterminate

Figure 2 Consensus responses and sub-categories of non-consensus responses.

small group workshops along with 13 half-day topic teaching lecture and large group sessions. While each of the half-day sessions contain an ethical component, only one of the sessions is directly related to ethics and law. The emphasis in ethics teaching in Years 4 and 5 is on preparation for professional life, including working with others and critical case analysis. In April 2001, the EHCI was distributed to cohort students who were in the process of completing the medical curriculum.

Students' pre-set responses to the consensus questions in each questionnaire were tabulated on an Excel spreadsheet. The written responses to each vignette were also transcribed and added to the database.

Analysis

Statistical analysis of the multichoice answers to the whistle blowing vignette (Fig. 1) enabled measurement of whether, and to what extent, the subjects' judgement moves towards the consensus judgement of informed professionals.[14,15] Statistical analysis was performed using S-Plus v4·5. Simple comparisons of the answers given to vignette 10 between pairs of timepoints were made using McNemar's test.

Students' written justifications of their pre-set answer to vignette 10 were classified independently by the researchers (JG and JM). They were initially classified as being either a 'professional consensus' or an 'other' response, a form of data reduction after Huberman and Miles.[16] A 'professional consensus' response was considered to be one based on the consensus reasoning of experts in the field of medical ethics, legal requirements of practitioners, or on policies issued by relevant professional institutions. The 'other' response category was subclassified (Fig. 2). These categories were derived from the reflections of the Glasgow researchers (JG, LS, JM) and one of the original developers of the instrument (Ken Kipnis, University of Hawaii, USA), and grounded in responses given by students in both Hawaii and Glasgow.[17]

Students' written categories were compared with their choice of pre-set answers to determine whether their thinking was consistent with professional consensus.

Responses judged to be consensus responses were further classified on the hierarchies of subjects' action justifications and values recognition (Figs 3 & 4). The hierarchical levels were grounded in responses given by Glasgow students and influenced by the consensus aim of medical ethics education.[17] Comparison of the positions of students' justifications on the hierarchies pre- and post-instruction was used as a measure of change following instruction.[17]

Hierarchy of subjects' action justifications

Level 3	The subject, in proposing a course of action, not only demonstrates the ability to identify, classify and analyse the issue(s) involved, but also demonstrates the ability to consider alternatives when deciding his/her course of action
Level 2	The subject, in proposing a course of action, demonstrates his/her ability to identify, classify and analyse one or more of the ethical issue(s) contained
Level 1	The subject, in proposing a course of action, demonstrates that he/she is able to recognise and/or identify one or more of the ethical issue(s) contained

Figure 3 Responses judged to be consensus responses were further classified on the hierarchy of subjects' action justifications.

Values recognition hierarchy

Level 4	The subject recognises the value system(s) inherent in his/her course of action, the value system(s) of the individuals involved in the decision making process and those of wider society
Level 3	The subject recognises both the value(s) inherent in his/her course of action and those of the individual(s) involved in the decision making process
Level 2	The subject recognises the value(s) inherent in either his/her course of action or those of the individual(s) involved in the decision making process
Level 1	There is no recognition of the value(s) inherent in the subject's proposed course of action or those of the individual(s) involved in the decision making process

Figure 4 Responses judged to be consensus responses were further classified on the hierarchy of values recognition.

The reliability of the categorisation/classification process was estimated using the kappa coefficient (Table 1). The results indicated acceptable interrater reliability. Following independent rating, areas of disagreement between the raters on the categorisations and hierarchical classifications of the written responses were identified and the responses were further examined and discussed until agreement was reached.

Table 1 Kappa coefficients for the agreement between the two researchers on the categorisations and hierarchical classifications of students' written justifications on all survey occasions

Categorisation as consensus or non-consensus	Five category classification	Action justification hierarchy	Values recognition hierarchy
0·84	0·76	0·97	0·79

Students' written responses were further coded independently by JG and JM to identify themes for students' reasoning behind their decisions to whistle blow or not. Cross-checking of the researchers' themes showed a high level of agreement.

Results

A total of 111 cohort students returned an EHCI post-Year 1 and 85 post-Year 3. The final year class contained 107 students, 102 of whom were from the original intake and 79 of whom belonged to the original cohort. In all, 62 cohort students returned the EHCI post-Year 5. All 62 respondents had provided a multichoice answer to vignette 10. There were pre- and post-curriculum written responses on vignette 10 from 50 students. A total of 30 students provided written responses on four occasions and a further 10 did so on three occasions. Students remaining from the original cohort were similar to the whole class in terms of age (mean age 24 years for the cohort, 23 years 8 months for the class), gender (male:female 1 : 2·5 for the cohort, 1 : 2 for the class), origin overseas (10% for the cohort, 9% for the class) and holding a previous degree(s) (8% for the cohort, 8% for the class). They were also similar to the original cohort in terms of gender (1 : 2·5, 1 : 2 for the original cohort), overseas origin (10%, 9% for the original cohort) and holding a previous degree (8%, 5% for the original cohort).

Statistical analysis of students' choices of pre-set answer to vignette 10 showed no significant movement towards consensus at any point in the curriculum. Analysis of the written justification categorisations, from each of the four occasions, confirmed little movement towards consensus (Table 2).

Students' thinking behind their choice of the consensus pre-set answer was not always consistent with the consensus thinking of the profession (Tables 2 and 3). The reasoning behind responses categorised as non-consensus was most often categorised as being based on the student's personal values/morality (Table 3). This was also the case when the reasoning behind the choice

Table 2 Comparison of the number of consensus written justifications provided by students with the number of consensus multichoice responses chosen for each timepoint

	Consensus justifications provided	Consensus multichoice response chosen	% agreement
Pre-Year 1 ($n = 50$)	18	28	64%
Post-Year 1 ($n = 40$)	16	30	53%
Post-Year 3 ($n = 30$)	11	18	61%
Post-Year 5 ($n = 50$)	15	31	48%

of consensus pre-set answer was not consistent with professional consensus thinking (Table 3).

There was little improvement in students' performance in terms of the position of their written justifications on the hierarchies as they progressed through the curriculum (Table 4). This was the case both in terms of knowledge content and their abilities to recognise the values inherent in the vignette.

Students' reasoning behind their decision of whether or not to whistle blow is shown in Table 5. Often more than one theme was identified from a response. Where the reasoning behind the decision to whistle blow was aligned with professional consensus thinking, the themes of patient autonomy and patient advocacy were found most frequently:

'If (the patient) is clear headed and aware then she is surely competent enough to make this decision. Everyone is allowed to change their minds and if you watched her die knowing what you knew then you are denying this right. It would almost be like murder.'

Where the reasoning behind the consensus pre-set answer was not aligned with professional consensus thinking, the most frequent course of action proposed was to opt out of taking responsibility by passing it onto the chief of staff:

Table 4 The hierarchical ratings given by the researchers to written justifications judged to be based on reasoning consistent with professional consensus at each survey point

	Pre-Year 1	**Post-Year 1**	**Post-Year 3**	**Post-Year 5**
Action justification hierarchy				
3	0	0	0	0
2	0	1	0	0
1	18	15	11	15
Values recognition hierarchy				
4	0	0	0	0
3	1	0	0	2
2	17	15	11	13
1	0	1	0	0

'If you provide the most senior member of staff with the information you know then they are responsible.'

Where students decided not to whistle blow, the commonest justification used, particularly in the earlier curricular years, was that the decision of the registrar, as the most senior doctor present, should be respected. It was often considered that junior staff should not criticise the decisions of those more senior:

'As an SHO [senior house officer] I would have to respect the decision of my registrar, even if I don't agree with the decision.'

Concern about possible detrimental effects on students' careers was also cited in the early curricular years:

'I am well aware of the hierarchical structure in hospitals and if you do something to severely irritate a more senior member of staff, you may never progress up the career ladder.'

Table 3 The researchers' categorisation of written justifications judged not to be consistent with consensus reasoning with students' corresponding multichoice answer at each survey point

	Category	**Pre-Year 1**	**Post-Year 1**	**Post-Year 3**	**Post-Year 5**
Multichoice answer					
	2	15	7	9	13
Non-consensus	3	0	0	0	0
	4	3	3	2	5
	5	4	0	1	1
	2	8	5	5	11
Consensus	3	0	0	0	0
	4	0	3	0	1
	5	2	6	2	5

Table 5 Students' reasons for and against whistle blowing and the frequency of their occurrence at each survey point

	Pre-Year 1	Post-Year 1	Post-Year 3	Post-Year 5	Total
Reasons given for not whistle blowing					
The registrar knows best/not my place to criticise	10	3	5	4	22
Its what's written that's important	5	3	2	8	18
Resuscitation wouldn't work/it's for the best	5	3	1	5	14
Detrimental effect on career	2	4	5	0	11
What's done is done	0	0	3	5	8
In case of legal repercussions	1	0	0	1	2
To avoid hurting family	1	0	0	0	1
Reasons given for whistle blowing (professional consensus based)					
Patient autonomy	9	9	6	10	34
Patient advocacy	6	3	3	2	14
Patient's right to life	4	3	1	1	9
To prevent it happening again	2	3	0	1	6
Duty to report colleagues' bad conduct	1	2	1	1	5
Registrar should respect colleagues' contribution	1	1	0	2	4
Reasons given for whistle blowing (others)					
Let the chief decide/take responsibility	3	9	3	10	25
Duty to save patient	1	2	1	0	4
Own conscience	0	3	0	1	4
In case of legal repercussions	1	0	1	0	2
Personal opinions	4	3	2	3	12

'I would love to have the courage to report the incident, but feel when it came to it I would bottle out. This is partly because of the supposed "fear" of the old boy system and also because I have no evidence it would perhaps become dirty. I would be too afraid of the backlash.'

The fear of a detrimental effect on career, however, did not appear in any of the post-Year 5 justifications.

As students progressed through the curriculum, the theme 'It's what's written down that's important' was used more frequently in written justifications. These responses are based on the argument that later unrecorded verbal instructions should not supersede earlier written ones:

'Unfortunate that she did not live to see her first grandchild, but unless this was clarified as the patient having changed her advance directive, it is incidental and should not affect her DNR status.'

Another theme that became more common in the later curricular years was that reporting the registrar would not bring the patient back to life:

'What can you do now? The lady is dead. Saying anything would only cause trouble for a lot of people. But, if your conscience can't live with it then tell, but expect trouble.'

Discussion

Cohort studies are particularly appropriate in research on human growth and development. They provide greater opportunity to observe trends and to distinguish 'real' change from chance occurrences.[18] This study, like most cohort studies, suffered from sample mortality. Students undertaking intercalated degrees were a major factor in sample mortality. However, cohort students consisted of 60% of the students completing the new Glasgow medical curriculum. They were found to be representative of the final year class and of the original cohort.

Cohort studies can also suffer from 'control effects'. This was a potential source of bias because the same instrument was used on four separate occasions. However, the time intervals of 1 year between the first and second stages of the study, 2 years between the second and third stages, and a further 2 years between the third and fourth stages made this less likely. In addition, the students did not receive feedback on the 'correct' answer to vignette 10, or on how they performed individually.

There was little improvement in students' performance as they progressed through the curriculum in terms of their proposed behaviour on meeting the scenario in the whistle blowing vignette. This is

consistent with the findings of other studies. Feudtner *et al.*'s survey of students from the later years of six Pennsylvanian medical schools found that while 61% of students had witnessed unethical behaviour, only 27% reported speaking to a senior member of the team about such incidents.[19] Rennie and Crosby's survey of Dundee University medical students' attitudes to fellow students' academic misconduct found that only 40% of students felt they should whistle blow, and only 13% said they would actually do so. They also found that students in the later curricular years were less likely to feel that they would or should whistle blow.[13]

Even where students chose the consensus pre-set option to vignette 10, their underlying reasoning was not always consistent with their consensus choice (range 48–64%). Many students failed to recognise, or were unaware of, the ethical issues involved in the scenario. There was no improvement in the quality of consensus written justifications in terms of both knowledge content and recognition of the values inherent in the vignette as students progressed through the curriculum. In producing justifications consistent with professional consensus thinking, students mainly analysed the scenario in terms of the principle of autonomy, with little consideration of the other main ethical principles or any legal ramifications. This was despite being encouraged to contemplate dilemmas from all ethical perspectives and to consider the relevant legal implications. While all the principles were covered in teaching sessions, autonomy, with informed consent and confidentiality, formed the main thrust of teaching in the first year of the curriculum. Students' focus on autonomy may in part be due to the emphasis placed on autonomy during the early curricular years.[14,15]

Whistle blowing was not specifically covered in any of the formal curricular ethics sessions, although concerns about non-maleficent/beneficent behaviour in the form of respect for patients, justice in the sense of fair if not equal treatment and access to good standards of care were discussed with students. This lack of formal teaching on whistle blowing would, at first glance, appear to be a major factor in the lack of impact on students' learning. However, our previous study on the impact of the first year of the new curriculum found a significant move away from consensus ($P = 0{\cdot}017$) among students from the old curriculum who had received formal teaching on whistle blowing.[14] Hafferty and Franks[20] argue that medical ethics is best framed as part of one's professional identity rather than as a body of knowledge and skills. They view medical education as a form of 'moral enculturation', of which formal ethics teaching is only a small part, and say that any attempt to develop a comprehensive ethics curriculum must acknowledge the broader cultural milieu within which the curriculum must function. Considerable evidence exists on the negative impact of undergraduate medical education on students' attitudes.[21–23] This is often associated with the influence of the 'hidden curriculum' on the process of medical socialisation.[20] During Vocational Studies sessions in Glasgow's new curriculum, tutors were encouraged to model reflective practice in the form of discussion and exchange and to be open about cases they were concerned with. This was found to promote a climate where constructive criticism of colleagues' actions was acceptable.[24] Empirical evidence has suggested that students are more profoundly affected by role models than by formal coursework.[25–27] It is important for medical teachers to be aware of their impact as role models, both positive and negative.[10,13] Members of staff should attempt to incorporate ethics into every aspect of their teaching and should identify and discuss ethical issues with students.[10,12] This is likely to encourage openness among students and teachers and promote a climate where whistle blowing may be viewed as acceptable.

The process of medical socialisation often begins well in advance of formal entry into medical school.[23] Our previous studies have shown that our students rarely start their ethical learning from a position of having little or no knowledge, or having few opinions on ethical matters. Pre-curriculum, students scored highly in vignettes covering autonomy, competence, right to treatment and withdrawal/withholding treatment (75%, 81%, 93%, respectively). However, they performed less well in vignettes covering the area of professionalism, with little improvement as the curriculum progressed.[14,15] This study provides evidence that some students enter medical school with negative attitudes to whistle blowing. This is perhaps not surprising given that culturally we are not predisposed towards whistle blowers and this can result in a moral ambivalence among students towards whistle blowing.[5,7,8,13] The EHCI could possibly be used by teachers as a tool for identifying students' perceptions on entry to medical school and evaluating change as they progress through the curriculum. While covering whistle blowing, we must acknowledge students' potential moral ambivalence and be explicit about the difficulties faced by whistle blowers. The topic must be covered responsibly to reduce the risk of it diminishing into a realm of witch hunts and surveillance cultures. Ideally, a discrete system of responsible reporting for the safety of potential victims should be encouraged.[13]

This paper has implications for the future planning of the teaching of whistle blowing and the wider domain of professionalism in the Glasgow curriculum. We

recommend that the EHCI (or similar tool) be used to elicit students' attitudes towards ethical issues at entry to medical school and to measure change as they progress through the curriculum. Care must be taken to ensure that students do not focus on autonomy to the exclusion of the other main ethical principles when considering ethical dilemmas. The issue of professionalism requires to be addressed by all members of the teaching staff and students, and be made more explicit in both the formal and informal curricula.

Contributors

JG conceived and designed the study, collected data, supervised data analysis and wrote the paper. JM was involved in the conception and design of the study, its ongoing management and analysis of data and contributed to the writing of the paper. LS was involved in the conception and design of the study and contributed to the writing of the paper. AMcC was responsible for data analysis and contributed to the writing of the paper.

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