**Medical Ethics Online: a free self-paced course on the Peoples-uni Open Online Courses site.**

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***Abstract***

*Students on a free self-study online course on medical ethics came from 60 countries, were more likely to be medical practitioners, have come from the global north and to have heard about the course through the web than other students enrolled in the Peoples-uni Open Online Courses site. Students scored high marks on the 5 quizzes. A third of the students gained a certificate of completion. Course feedback was overwhelmingly positive, and the topic of professionalism the most quoted lesson that the students had learned, with patient rights and autonomy, legal issues, and questions of healthcare organisation and public health also being frequently mentioned. The course is an example of the way in which open online courses can play a role in providing increased awareness of medical ethics, and it identifies a need to attract interest in this area from low- and middle-income countries*.

**Background.**

The People’s Open Access Education Initiative, Peoples-uni, was developed “To contribute to improvements in the health of populations in low- to middle-income countries by building Public Health capacity via e-learning at very low cost” (1,2). In addition to modules for academic credit leading to a master’s level award, a set of Open Online Courses are available for self-paced learning leading to certificates of completion, available without cost to anyone who can find them on the web, as well as for some special targeted audiences (3).

Courses include those developed especially for Peoples-uni, and those provided by others and hosted on the site. Various attempts were made to add a course on medical ethics to this site, and replace the credit bearing course (Public Health Ethics) which had been offered previously by Peoples-uni over four semesters from 2010 to 2012. The development of the course we describe here, called Medical Ethics Online, arose from discussions held at workshops held in Kolkata, India in 2014-15, where concerns were raised about erosion of trust in the medical profession and lack of available options for ethics education suitable for practising clinicians, trainees and medical students (4,5). A further need was identified for education to meet the demand for training in healthcare leadership and professionalism, reinforced by the team at Health Education England, who were promoting bilateral exchanges between the NHS and developing countries, especially in South Asia and Africa. The now defunct NHS Global Health Exchange programme provided part sponsorship in the initial stages of the development of the course. Subsequent course development was led by one of us (RW), supported by a group of expert volunteers recruited from professional networks and the infrastructure team of Peoples-uni.

We report experience with the development the Medical Ethics Online course, its uptake according to demography in comparison with other courses on the Open Online Courses site, the scores on Multiple Choice Question (MCQ) quizzes and the rates of course completion. In addition, we report which parts of the course were deemed most relevant to the audience, as identified by the students during course feedback.

**Methods.**

A framework of topics that might be covered in such a course identified 12 topics in five sections (see Table 3 for the list of sections and topics). Sixteen experts in medical ethics, from a wide variety of countries and backgrounds were asked to contribute to presentations covering each of these areas. Presentations were edited by RW, with case examples and references pertaining to India, the UK and international declarations and conventions for purposes of illustration. The presentations were then converted to pdf files for ease of access, with hyperlinks connecting to open access resources. The presentations were placed as a course on the Moodle platform of the Peoples-uni Open Online Courses site ([http://ooc.peoples-uni.org](http://ooc.peoples-uni.org/)), and included the learning outcomes and information about navigating the course. Each course section had an MCQ quiz, which did not require a pass grade. Students could repeat the quiz and the highest recorded mark was used for analysis. An anonymous feedback questionnaire included three free text questions: (answers to the first two questions were required):

1. “What is the main lesson you have learned from taking this course?”
2. “Please use this space to give us feedback about the course”
3. “Would you like to keep in contact about future courses or activities relating to Medical Ethics? Don't forget to add your email address if so”

A certificate of completion was automatically generated if the student had obtained a grade in each quiz and had completed the feedback questionnaire. The course is published under a Creative Commons licence.

After a pilot, the course was launched in April 2016, and has been available for enrolment since then. Students could enrol themselves in the Open Online Courses site (established on the Moodle online educational platform) and then enrol on the Medical Ethics course site to be able to access and work through the materials at their own pace. The student experience of accessing various parts of the course was tracked throughout the course completion facility of Moodle, and unless a student enrolled separately using a different username and password, there was no possibility of double counting, although individual students were able to enrol in multiple courses if they wished.. There was no special advertising of the course, although previous Peoples-uni students were informed of the existence of Open Online Courses, and posts were made to various social media outlets to notify potential students of the existence of both Open Online Courses and the modules for academic credit.

Information was extracted in June 2019, representing three years of student enrolments. Data on user information collected during the enrolment process was extracted using the configurable reports facility of the Moodle platform, and data on quiz scores and certificates gained were accessed from the course reports. In order to compare the students enrolled in the Medical Ethics Online course with others enrolled on the Open Online Courses site, the demographic details of all other students were also obtained through the configurable reports facility, as described in a previous report (3).

Descriptive data were recorded and statistical analyses were performed using the chi square test. Attribution of the free text responses to the topics covered in the course in (question 1 of the feedback questionnaire) was preformed twice each by two observers, and the (rounded) mean of the four measures reported.

Ethics approval for this report was not sought - during the enrolment process students are informed that their data may be analysed to improve the course and that in any resulting publication it would not be possible to identify individual students.

**Results.**

To June 2019, students had enrolled themselves on various of the Peoples-uni Open Online Courses, of whom 449 enrolled on the Medical Ethics course. Their demographic data are shown in Table 1. Compared with students on other courses, those on the Medical Ethics course were older, more likely to be medical practitioners, to have come from a high income country and to have heard about the course through the internet.

Date of birth categories were collapsed from the four possible answers in the user information into before and after 1980 for convenience. Students came from 60 countries, with 58% from high income English speaking countries in the global north, compared with 43% of the remainder. The largest single source of students was the USA (132 students, 33% of those with data on their country).

Two thirds of the students on the ethics course had heard about the course through the web, compared with less than a third of the other students. Students on the ethics course were more likely to be medical practitioners (40%) than other students (26%).

**Table 1. Demographics of students taking Medical Ethics, in comparison with other students enrolled on other Peoples-uni Open Online Courses**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Medical Ethics Online (% of those with data) [N=449]** | **All others excluding Medical Ethics (% of those with data)**  **[N=3711]** | **Chi square and p value of difference between students on Medical Ethics and others** |
| **Year of Birth** | | |  |
| Born before 1980 | 196 (45%) | 1074 (40%) | Chi square 4.3; p=0.04 |
| Born 1980 or after | 238 (55%) | 1620 (60%) |
| **Gender** | | |  |
| Female | 226 (53%) | 1443 (50%) | Chi square 2.3; p=0.13 |
| Male | 197 (47%) | 1472 |
| **Occupation** | | |  |
| Medical practitioner | 173 (40%) | 689 (26%) | Chi square 38.8; p<0.00001 |
| Other | 168 (39%) | 1360 (51%) |
| Student | 92 (21%) | 626 (23%) |
| **Geography** | | |  |
| US/UK/Ireland/Aust/NZ/Canad | 231 (58%) | 1106 (43%) | Chi square 49.0; p<0.00001 |
| Indian subcontinent | 50 (13%) | 231 (9%) |
| Africa | 62 (16%) | 620 (24%) |
| Other | 53 (13%) | 604 (24%) |
| **How did you hear about the course** | | |  |
| Heard through web | 277 (67%) | 680 (28%) | Chi square 233.3; p<0.00001 |
| Other | 138 | 1723 |

Numbers not adding to total due to missing data

*Certificates of completion.*

140 students gained a certificate of completion (31%), and Table 2 shows that males, those giving their occupation as students, those from the global north and those who heard about the course other than through the web were more likely than their demographic comparison groups to gain a certificate.

**Table 2. Certificate of completion among students enrolled in Medical Ethics Online**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **N** | **N Gained certificate (%)** | **Chi square and p value of difference between students who did and did not gain a certificate** |
| **Year of Birth** | | |  |
| Born before 1980 | 196 | 54 (28%) | Chi square 1.85; p=0.17 |
| Born 1980 or after | 238 | 80 (34%) |
| **Gender** | | |  |
| Female | 226 | 58 (26%) | Chi square 6.39; p=0.011 |
| Male | 197 | 73 (37%) |
| **Occupation** | | |  |
| Medical practitioner | 173 | 56 (32%) | Chi square 12.7; p=0.0017 |
| Other | 168 | 39 (23%) |
| Student | 92 | 41 (45%) |
| **Geography** | | |  |
| US/UK/Ireland/Aust/NZ/Canad | 231 | 83 (36%) | Chi square 10.1; p=0.018 |
| Indian subcontinent | 50 | 10 (20%) |
| Africa | 62 | 13 (21%) |
| Other | 53 | 12 (23%) |
| **How did you hear about the course** | | |  |
| Heard through web | 277 | 72 (26%) | Chi square 9.19; p=0.002 |
| Other | 138 | 56 (41%) |

*MCQ quiz results.*

There were 5 quizzes, one for each of the course sections, each having either 4, 7, 8 or 9 questions, giving 32 questions overall. The distribution of scores was consistent between the quizzes. Overall, there was a score in 853 of the quizzes, of which 523 (61%) were top marks.

*Feedback.*

150 students submitted responses to the feedback questionnaire (this was one of the requirements to gain a certificate -10 students who submitted responses had not completed the quiz, so were not eligible for the certificate). Many of the responses were general in nature, but we explored which of the various parts of the course were mentioned in answer to the question “What is the main lesson you have learned from the course”. Table 3 shows the number of times to which each of the 12 topics that made up the course were referred. There was good agreement within and between observers. The topic of professionalism was most frequently quoted. The individual duties of the clinician, patient rights and autonomy as well as legal requirements and the final topics on healthcare organisation and public health were also frequently mentioned.

**Table 3. Feedback to question (1): What is the main lesson you have learned from taking this course?**

|  |  |  |
| --- | --- | --- |
| **Section title** | **Topic title** | **Number of mentions in the feedback that relate specifically to the Topic** |
| Rights and responsibilities | Duties and obligations of the clinician, including and introduction to patient rights | 16 |
| Autonomy, consent, confidentiality and the role of the family | 19 |
| Ethico-legal frameworks | Ethical and legal frameworks | 11 |
| Mental health and questions around capacity | 0 |
| Understanding risk and questions of disclosure | 1 |
| Beginning and end-of-life | Advance directives and the right to refuse care | 1 |
| Issues around the beginning and end of life, including DNR | 5 |
| Governance | Research governance and protocols for the protection of human subjects | 4 |
| Negligence, misconduct and boundaries of responsibility | 3 |
| Questions of probity and professionalism, including honesty and transparency | 23 |
| Healthcare | Healthcare organisation and questions of justice | 9 |
| Essentials of public health and policy | 13 |

The second feedback question asked “Please use this space to give us feedback about the course”. The responses were overwhelmingly positive, and the box gives some of the examples. A few students made constructive suggestions such as to change the layout, update to include recent developments, and to increase the use of case studies.

*Box with some examples of feedback:*

“Excellent course it really makes me think about my work and the ethics and legal implications”

“I felt this course challenged me and taught me the importance of being honest and trustworthy.”

“This is an extremely useful and relevant course to modern day's practice. I found this extremely helpful in clearing some concepts about professionalism”

“Excellent course! Well structured. Covered various aspects of ethic in medicine, multiple sources provided for detailed information, easy accessible learning with practical questions. Really appreciate feedback and explanation on quizzes.”

“This course is really helful to the professional and unprofessionals. It will provide fundametal knowledge about medical ethics.

I can said that this course must be mandatory for the medical students and health professionals.”

“The course made clear that a physician providing his/her position of best patient care must include the patient's rights to make an informed decision acceptable to both parties involved.”

“I enjoyed the sections on conduct and professionalism. I will be taking the professionalism course as well.”

“course is nice because I am in USA and it gives me global perspective”

“Learned about international attempts to unite ethics and priorities for advancements in advocating both. Much debate will offer solutions not only in native countries but as a whole system.”

“This is very good course Specially for learners in developing countries. It is good if you can add more activities. Thank you for the team!”

“I appreciate that the course used simply terminology in explaining often difficult-to-grasp topics such as health care organizations and policies.”

“Thank you for the course. It is a broad overview of may different areas in medical ethics. Future courses may be more specific. Also, case vignettes and examples helped a lot to understand concepts.”

Question 3 asked “Would you like to to keep in contact about future courses or activities relating to Medical Ethics? Don't forget to add your email address if so.” and 37 students gave an email address.

**Discussion.**

The course was offered in the context of a programme aimed at health professionals in low- to middle-income countries, and while it attracted students from 60 countries, we were surprised to see relatively more students from the global north (and especially from the USA) than the generality of students accessing courses on the site. Possibly due to some publicity derived from the origins of the course, and a number of Indian authors of the presentations, enrolments were not less frequent from the Indian sub-continent on the ethics course than other courses on the site. Another course on the same site, titled Medical Professionalism with 328 students (many of who enrolled in the Medical Ethics Online as well), had an even greater preponderance of students from the global north (62%). Internet searching seemed to have been a potent source of students on the course, rather than word of mouth or referral from others. How to attract interest in this area from low- and middle-income countries is a question raised by the experience we describe.

Among the 12 topic titles covered in the course, the one including professionalism was most mentioned. Not unexpectedly, the theme of rights and responsibilities was highly mentioned, but we were somewhat surprised to see the broader societal issues of healthcare including public health included frequently in the lessons learned, It is unlikely that the choices made by the students represented the quality of the presentations in those sections of the course, since each presentation was produced to a common format and edited by the lead developer to ensure consistency. Rather, it may have something to do with this course existing on a site which has a focus on public health. Furthermore, healthcare organisation and delivery invariably affect the working environment of clinicians as well as the experiences of their patients, making these issues relevant and topical. It might be worth taking account of these results in the development of future courses, or revisions to the course we describe.

The 12 topics chosen in this course match closely the core content of courses suggested by the Institute of Medical Ethics (6), and comprise a comprehensive coverage of the field. Other suggestions cover a more limited list (7,8) and others also available online are restricted to the ethics of research (9,10). The lack of reference among our students to research ethics suggests that it might be preferable to provide separate courses for practitioners and researchers. There are a number of available online medical ethics courses (8-10), although most of these are in the context of higher degree programmes or as Massive Open Online Courses (MOOCs) that run to a timetable and are not available between times (11). Others may or may not still be regularly accessed (12-14). Few of those we have identified are as easy to access or navigate as ours. Pati et al suggest in the context of India (4) “…. ethics courses are yet to find their rightful place in the teaching of public health in India. The curricula vary across institutes in terms of the time and content devoted to the teaching of public health ethics.” Mishra also comments in the lack of public health ethics courses in India (15). We surmise that this is likely to be the case in other settings as well, both in the context of formal public health courses, and those available for continuing professional development for a wide range of practitioners and researchers.

That 31% of the participants gained a certificate of completion relates favourably to other open courses. We have previously reported rates of 15% (3) and 11-20% (16) among Open Online Courses, and that completion rates from most Massive Open Online Courses are even lower.

**Study limitations.**

The experience we describe, and the demographic comparisons we have made between students on the ethics and our other online courses may not be generalisable to other audiences and course contexts.

Quiz scores derived from MCQ tests give an indication of student understanding on each topic but do not allow for different interpretations or judgements. In a clinical setting, ethical judgement usually entails evaluating the evidence that is available and making an informed judgement, as opposed to making a binary choice between right and wrong, so the information for quiz scores is limited and inadequate to assess any impact on practice. The additional criterion for course completion other than gaining a grade in each quiz, of sending course feedback, was chosen to allow us to identify the potential impact of different parts of the course. These criteria may not be generalisable to other courses with different outcome measures.

**Conclusions.**

An online course on medical ethics, offered without charge for self-paced learning, reached a wide audience and was well received. Relatively more students came from the global north than among those enrolled in other courses on this online Open Online Courses site, leading us to suggest further attention to the recruitment of health students from low- to middle-income countries in courses on medical ethics. Among the 12 topic titles covered, professionalism was the most mentioned specifically among the lessons learned by students in their feedback, which suggests that this aspect might warrant increased emphasis in future courses.

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