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Global health education in Swedish medical schools

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Keywords

Medical education, Global health, Education, Medical student, Social determinants, International health, Public health

ABSTRACT

Aims

Global health education is increasingly acknowledged as an opportunity for medical schools to prepare future practitioners for the broad health challenges of our time. The purpose of this study was to describe the evolution of global health education in Swedish medical schools and to assess students' perceived needs for such education.

Method

Data on global health education was collected from all medical faculties in Sweden for the years 2000-2013. In addition, 76% (439/577) of all Swedish medical students in their final semester answered a structured questionnaire.

Results

Global health education is offered at four of Sweden's seven medical schools, and most medical students have had no global health education. Medical students in their final semester consider themselves to lack knowledge and skills in areas such as the global burden of disease (51%); social determinants of health (52%); culture and health (60%); climate and health (62%); health promotion and disease prevention (66%); strategies for equal access to health care (69%) and global health care systems (72%). A significant association was found between self-assessed competence and the amount of global health education received ($p = <0.001$). A majority of Swedish medical students (83%) wished to have more global health education added to the curriculum.

Conclusion

Most Swedish medical students have had no global health education as part of their medical school curriculum. Expanded education in global health is sought after by medical students and could strengthen the professional development of future medical doctors in a wide range of topics important for practitioners in the global world of the twenty-first century.

INTRODUCTION

Global health education is increasingly acknowledged as an essential component of today's medical school curriculum, in order to prepare students for the health challenges of our time. Interest in global health is on the rise among both medical students and faculty members, and the role of global health in medical education is attracting considerable national [1-3] and international recognition.[4-13]

From a Swedish perspective, the global discussion has coincided with a general overhaul of the goals of Swedish medical curricula. There is a growing awareness that future doctors will require more than just clinical skills, and in the government *'Inquiry on the Renewal of Medical Education in Sweden'* it has been proposed that medical education will need to include a considerably broader range of subjects and training.[1] The document specifically stresses that future doctors will need to understand social determinants of health from a global perspective, and thereby also will need to put greater focus on health promotion, disease prevention, and interprofessional collaboration.[1]

We live in an interdependent world where understanding and competence in global health is crucial for future doctors in order to be well equipped for the complex challenges to come. Due to travel and migration of patients and providers, it is today challenging for a Swedish medical doctor to be ignorant of global health and still maintain Swedish standards of care. Diseases and health issues no longer respect national boundaries, as seen by the global pandemic of non-communicable diseases and recurring outbreaks of communicable diseases such as Ebola and influenzas. Social and economic determinants of health are as important in high- as in low-income countries, to understand why certain groups in the population fare worse than others in terms of health.[5] The concept of global health includes factors that may not have been traditionally emphasized in clinical education, such as global disparities of disease, social and economic determinants of health, and health system strengthening.[4, 14, 15] Education in global health is thus valuable for all health professionals, regardless of their location, speciality, or role.

Medical schools throughout Sweden have begun to acknowledge the need to reform their curricula and to include more of global perspectives on health,[16, 17] but there is no national consensus on the role of global health education, nor what competencies global health education should address.[3] The purpose of this study was to describe the evolution of global health education in Swedish medical schools and to assess students' perceived needs for such education.

METHOD

Study design and study subjects

All seven medical schools in Sweden and all medical students graduating from these programs during spring 2014 took part in this study. Program administrators provided data on global health courses, their extent and syllabus, and numbers of enrolled students between 2000 and 2013. The Swedish medical program consists of 11 semesters, over 5.5 years, and all 577 Swedish medical students in their final semester at the time of the study were given the opportunity to answer a written questionnaire. The medical school in Örebro was opened in 2011, and consequently did not yet have any students in the last semester to enrol in the study.

Data collection

A questionnaire was distributed during lectures, and the students who had not responded to the paper version of the questionnaire were invited to fill out the questionnaire online. A total of 376 students filled out the paper version (86%), and 63 responded online (14%). The survey instrument was anonymous, with no personal identifiers other than age, gender, and name of medical school.

The questionnaire assessed the medical students' experiences and appreciation of global health education. The students' subjective assessment of their competence was chosen rather than knowledge-based questions in order to reflect the student's own perception regarding level of competency. The design of the questionnaire was based on previously published scientific literature on global health education[4, 6-8]; on the *Inquiry on the renewal of Medical Education in Sweden*[1]; the current Swedish higher education ordinance[18]; and the Swedish Medical Association core curriculum investigation.[3] From these sources we identified nine core global health subjects and competencies on which we based the items in the questionnaire (Supplementary file 1).[1, 3, 4, 6-8, 18] The questionnaire used five-point Likert scales or binary "yes/no" questions.

Definitions

Global Health was defined according to the representatives of The Consortium of Universities for Global Health as:

[...] an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. Global health emphasises transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration; and is a synthesis of population based prevention with individual-level clinical care.[14]

Global health education was defined as participation in global health courses, i.e. courses with a syllabus dominated by global health issues and challenges. We differentiated between elective and mandatory courses, and the participants were asked to specify what course they were referring to. Global health experience was defined as participation in global health educational activities or other global health experiences within or outside the medical programme, such as global health work for a non-governmental organization (NGO) or work within the health care system in a low- or middle-income country.

The number of students enrolled at medical school per year from 2000-2013 was collected from the national university and higher education statistics.[19] For the descriptive summary, the response alternatives "disagrees entirely" and "disagrees" were coded as "disagreement", while "agree" and "agree entirely" were coded as "agreement". Low level of competence was defined as when the participant stated a "disagreement" to having the competence.

Statistical analysis

Binary data were presented as proportions, with differences assessed for statistical significance by Chi-square test. Ordinal data were derived from Likert scales and were presented with median and interquartile range with differences assessed for statistical significance by Mann-Whitney U and with correlations assessed by Spearman's correlation. Data were analysed using IBM SPSS statistical software. The level for statistical significance was set to 5% ($p = 0.05$).

Ethics

This study was not found to involve any evident risk or gain for the participants. An evaluation of the regional ethical review board in Lund, Sweden, identified no ethical implications for the study subjects (DNR 2013/796).

RESULTS

Five out of seven of the Swedish medical schools offered global health education during 2000-2013 (Panel 1). There was no uniform approach to curriculum content, although all courses included teaching on global health burden and social determinants of health. Of the seven Swedish medical schools included in the study, only one had a mandatory class in global health. Four of the medical schools offered elective courses in global health, involving on-campus learning as well as experience-

based understanding from community and clinical settings. At one school the course in global health was strongly recommended, but not mandatory, for students who wished to go abroad to write their thesis. One university had never offered medical students any specific global health course. There was a slight increase in the number of courses offered and number of students participating in global health education during 2000-2013. On average 36% of Swedish medical students participated in a global health course during their medical education during 2000-2013 (national range 24%-46%). In the year of 2014, less than 1% of the Swedish medical curricula was devoted to global health education (1.8 of 220 study weeks) (Figure 1).

The response rate to our questionnaire was 76% (439 of 577) of medical students in their final semester. The study participants' global health experiences are presented in Table 1. A minority of medical students in their final semester felt that they had satisfactory competence in core global health subjects such as global perspective on health care systems (30%); strategies for equal access to health care (31%); health promotion and disease prevention (34%); environmental and climate impact on health (38%) and culture and its impact on health and health care (40%) (Figure 2, grey bars). About half of the respondents considered themselves to lack competence related to socioeconomic determinants of health (52%) and global burden of disease (51%). A majority reported to have knowledge and skills in leadership, and interprofessional collaboration (65%), and human rights and ethics (72%).

There was a statistically significant correlation between low self-perceived competence and lack of training within each of the key areas of global health ($p = <0.01$) (Figure 2). Few medical students reported that their studies had given them enough training in core subjects such as global perspective on health care systems (26%); strategies for equal access to health care (38%); health promotion and disease prevention (28%); environmental and climate impact on health (32%); culture and its relation to health and health care (32%); socioeconomic determinants of health (48%); and the global burden of disease (54%) (Figure 2, black bars). A majority of the medical students felt they had been trained in leadership and interprofessional collaboration (75%) and human rights and ethics (61%). Overall, 45% of the students who had received training experienced high self-perceived competence, compared with 20% of students without training.

Almost all medical students considered issues of global burden of disease (92%); socioeconomic determinants of health (88%); culture and its relation to health and health care (87%), and health care systems (85%) to be integral parts of global health education (Supplementary file 2). Almost half of the students regarded leadership and interprofessional collaboration (41%) to be part of global health

education. A majority of students reported they had been given insufficient teaching in global health science (81%), and wished to develop skills related to global health subjects (83%) (Table 2). About two thirds of the students (67%) agreed that all medical students should have a mandatory course in global health.

DISCUSSION

In this survey of all medical faculties and graduating medical students in Sweden, we found that most medical students have had no global health education as part of their medical school curriculum. A majority of Swedish medical students reported insufficient competences in key topics of global health, corresponding to a lack of learning opportunities in these areas. Our results indicate a strong demand among the students to further develop their knowledge and skills in global health and to have global health education expanded and included in their mandatory curriculum.

The results also reveal an impression among Swedish medical students that global health education offers learning opportunities for a broad spectrum of clinical and non-clinical topics with considerable domestic relevance. Global health education for medical students can improve knowledge and skills in areas such as socioeconomic determinants of health, health inequalities, health systems, and cultural understanding of health,[7, 8] proficiencies that are increasingly beneficial to physicians in national health services of high-income countries.

Our findings are congruent with previous literature stressing that global health education is pertinent to high-income country medical students in an increasingly globalized world.[1-10, 20-23] It has been put forward that global health education needs to be further developed and implemented in Swedish Medical Schools[1, 18] and similar statements have been made for Canada,[13, 20] Germany,[24] the UK[4, 8] and the USA.[13] These observations have been seconded by continuous calls for global health education among students worldwide.[4, 8, 11, 13, 20, 22, 24, 25]

The volume and scope of Swedish global health education varied considerably during the study period, possibly due to factors such as reorganizations of the education, competing courses and educational topics, financial challenges and lack of conclusive arguments or studies of its educational value.[4, 8, 12, 20] The tendencies to exclude, remove or postpone global health education indicate that the value of this type of education is all too often not fully perceived.

The importance of global health as a tool for competence development has been repeatedly acknowledged and emphasized,[1, 3-6, 8-11, 13, 16, 17, 20, 22-24, 26, 27] and international efforts have suggested a common definition of core competencies in global health education.[6, 10, 13] Rowson et al declared that global health education should be taught with a multi-disciplinary perspective, and that it should introduce a range of perspectives of global health and critically discuss interventions and values.[4] Johnson et al outlined the need for global health education among medical students according to the following six themes: the global burden of disease; socioeconomic and environmental determinants of health; health systems, global health governance, human rights, ethics and cultural diversity and health.[8] Medical faculties in Sweden and international work groups, commissions and federations all have emphasized the importance of preparing the future medical doctors in core competencies, such as socioeconomic determinants of health, culture and health, human rights and ethics, health systems, health promotion and disease prevention on an individual and societal level, climate and health, strategies to reduce health inequalities, global burden of disease and inter-professional collaboration. [5, 7, 8, 16, 17, 22] The importance of implementing global health in the core curriculum for medical education is also stressed by European Academic Global Health Alliance,[5] and The International Federation of Medical Students' Associations.[22]

While we identify global health education as an important means for professional development for future medical doctors, with a clear role to play in the Swedish medical school curricula, the results of this study must be interpreted in the light of certain limitations. The global health topics addressed in our questionnaire might have been understood somewhat differently among the respondents. Also, self-estimation and questionnaire responses run the risk of systematically under- or overestimating skills and knowledge, and only certain aspects of experiences and teaching may be remembered. In order to address some of these limitations, we collected the students' assessments but relied primarily on the official course syllabi information from the medical faculties themselves. It should also be noted that the questionnaire was handed out during the first two thirds of the 11th semester, and that the responses consequently were uninfluenced by experiences occurring during the very last weeks of medical school. The response rates were however similar between universities, regardless of the global health education offered. The view of higher education authorities and faculty boards on global health education and on the competencies it develops is an area of future research.

Conclusions

Our results suggest that medical students lack knowledge in key areas of global health, while teaching in global health is in high demand. Global health education can be a means to increase the fulfilment of knowledge and skills in topics such as socioeconomic determinants of health, global perspective on

health care systems, health promotion and disease prevention, human rights and ethics, culture and its relation to health and health care, and environmental and climate impact on health. Learning activities should reflect the cross-disciplinary nature of our global health challenges and their potential solutions. Expanded teaching in this area could facilitate the professional development of future medical doctors in a wide range of competencies important for practitioners in the global world of the twenty-first century.

Declaration of Conflicting Interests

The Authors declare that there is no conflict of interest.

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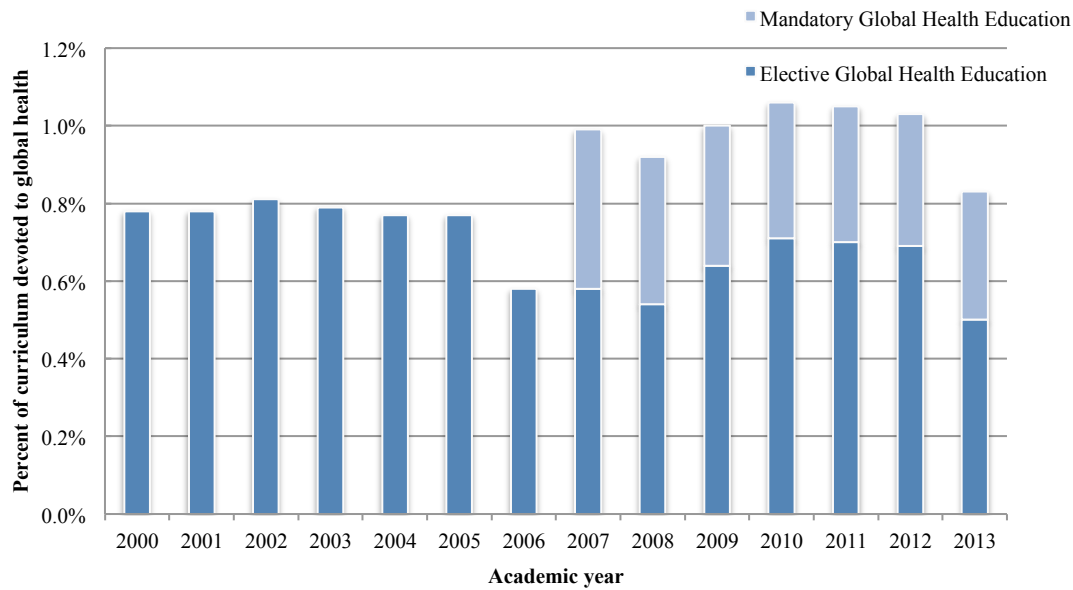


Figure 1. Percent of Swedish medical curricula study weeks devoted to global health education per year 2000–2013.

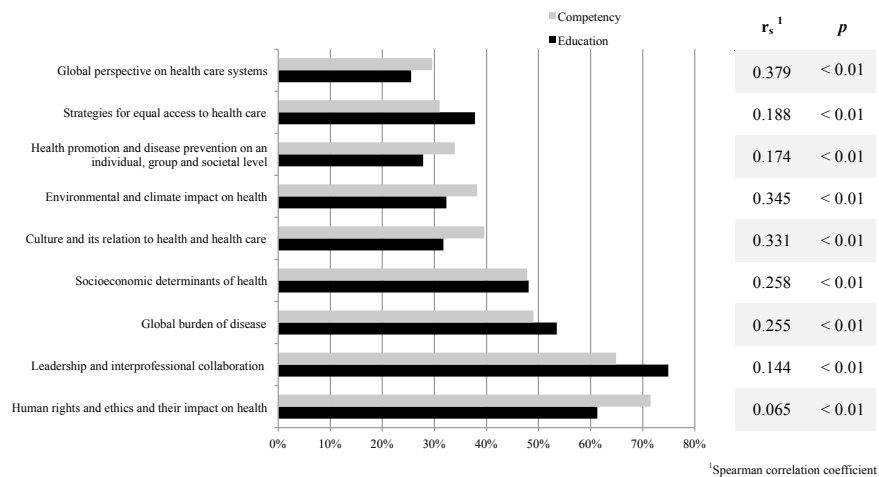


Figure 2. Exposure to global health education in the medical school curriculum (black) and its correlation with self-perceived satisfactory competencies in the area of global health (grey).

Table 1. Study participants among final semester medical students in Sweden, 2014

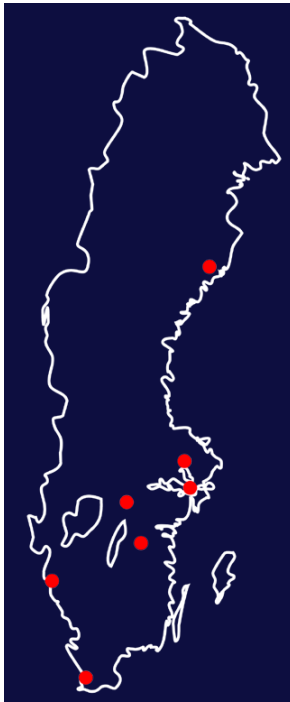
	n	%¹
Response rate	439/577	76.1%
University		
Umeå	75/100	75.0%
Uppsala	65/90	72.2%
Stockholm	84/104	80.8%
Linköping	65/80	81.3%
Gothenburg	73/102	71.6%
Lund	76/101	75.2%
Gender²		
Female	258	58.8%
Male	180	41.0%
Age		
Median age [Interquartile range]	26	[25–29]
23–25	126	28.7%
26–28	196	44.7%
29–31	59	13.4%
32–34	36	8.2%
35–37	11	2.5%
≥38	11	2.5%
Global health experience		
International professional experience	13	3.0%
International NGO experience	22	5.0%
Mandatory global health course	76	17.3%
Elective global health course	107	24.4%
No global health experience	258	58.8%

¹Response rate: % of Swedish medical students in their final semester. All other %-figures are proportions of number of respondents

²One student did not identify with either male or female gender

Table 2. Views on global health education among final semester medical students in Sweden (5-point Likert scale where 1-2 signified disagreement and 4-5 signified agreement)

	Median	Agreement	
	IQR	n	%
Medical school has provided enough global health education	2 [2–3]	40/439	9.1%
Global health competencies should be developed for medical students	4 [4–5]	364/439	82.9%
All medical students should be offered an elective course in global health	4 [4–5]	368/439	83.8%
Global health education should be mandatory	4 [3–5]	292/439	66.5%



Umeå University

Since 2007 medical students in their fifth semester take a mandatory course on “Global Health, Work and Environmental Medicine, Medical Law, Epidemiology, and Social Medicine (GAMES)” for 4.5 weeks. Before this combined course was introduced, lectures in global health were scattered throughout the curriculum. Umeå University only offers on-campus lectures. There is no program for experience-based understanding from community and clinical education in resource poor settings. The syllabus includes public health, global and national health burden, health systems, health promotion and disease prevention, health economics, registries and databases, social determinants of health, climate and health, and statistical methods.

Uppsala University

One elective course in “Global Medicine” for 5 weeks has been offered twice a year, from 1995 to 2012 for students in their fourth semester. It was dropped due to a reorganization of the curriculum. The course had consisted of lectures and international experiences. The syllabus included global and historic health, social determinants of health, health in low- and middle-income countries (with a focus on infectious and nutritional diseases of childhood), reproductive health and HIV/AIDS, and pharmaceutical issues.

Karolinska Institute

One elective course in “Global Health” for 5 weeks has been offered twice a year since the 1990s. It is open to students in their fifth, tenth, or eleventh semesters and consists of classroom lectures and international experiences. The syllabus includes global health, health care systems, epidemiology and statistics, social determinants of health, reproductive medicine, and international health agencies and strategies.

Örebro University

Medical students were enrolled in a program at Örebro University for the first time in 2011. No global health course is available thus far. However, the first class has not yet graduated and the curriculum for the last semesters has yet to be determined. It should also be noted that they have global aspects in their professional development-education, though no specific course.

Linköping University

No course in global health is offered

Gothenburg University

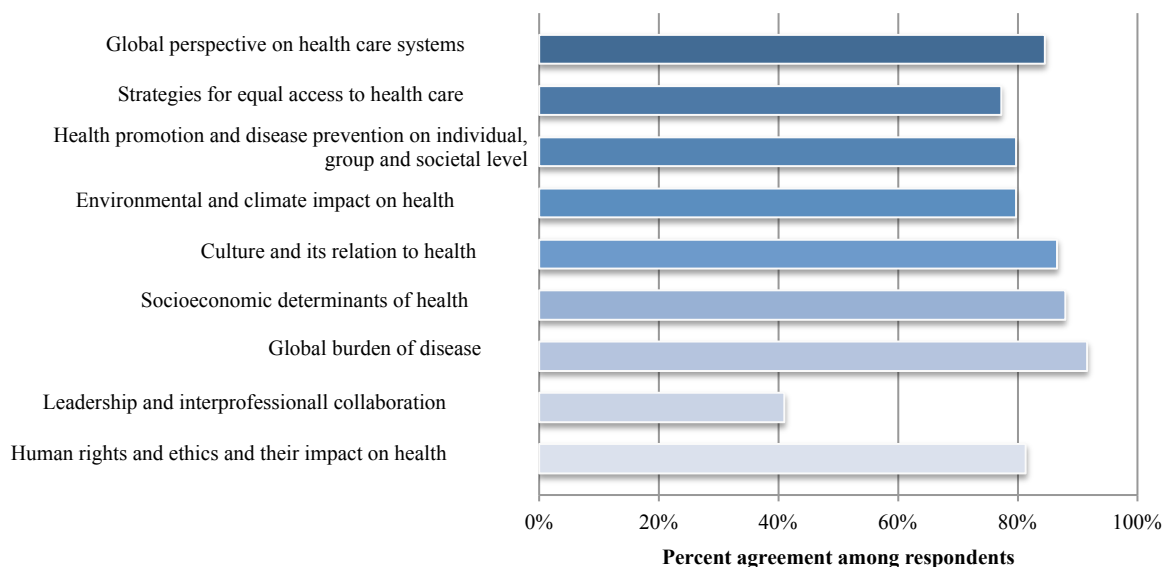
One elective course in “Global Health” for 5 weeks has been offered twice a year since 1995 with an intermission in the years 2004-08. Since 2008, it is open to students in their tenth semester and consists of on-campus education. The course is strongly recommended but not mandatory for those going abroad for their thesis work. The syllabus includes global health development, health systems, epidemiology and biostatistics, social determinants of health, sexual and reproductive health, child health, mental health, violence and health, disaster medicine, human rights, and discussions on bilateral and multilateral health organizations and their strategies.

Lund University

Two elective courses for 5 weeks each are open to students in their eleventh semester. A course in “Global Health” has been offered annually from 2000 to 2006 and twice yearly since then. A second course in “Paediatric healthcare in low- and middle-income countries” has been offered twice a year since 2009. Both courses combine lectures on campus with international experiences. The two courses include the following subjects: global and historic health burden, social determinants of health, health burden in low- and middle-income countries with a focus on infectious and nutritional childhood diseases, non-communicable diseases, mental health, health and climate change, sexual and reproductive health and HIV/AIDS, human rights, health promotion and disease prevention and health systems.

Supplementary file 1. Global Health core subjects and competencies included in the questionnaire

Subject	Competence
Leadership and interprofessional collaboration[1, 3, 4, 6-8, 18]	Ability to take part in leadership and interprofessional collaboration within the health care sector, and with other professions
Global burden of diseases[1, 4, 6-8]	Knowledge of how and why the burden of disease differs between and within countries
Culture and its relation to health and health care[1, 4, 6-8, 18]	Understanding of culture and its relation to health perceptions and health care seeking behaviour from an global perspective
Global perspective on health care systems[1, 3, 4, 6-8, 18]	Knowledge of differences in health systems within and between low-, middle-, and high income countries and the importance of governance, accountability and leadership
Strategies for equal access to health care[1, 4, 6-8]	Knowledge and understanding of strategies for equal access and quality of treatment at health care services, The Right to Health concept within the Human Rights convention
Socioeconomic determinants of health, i.e. the impact of political, social, cultural and economic factors on health[1, 4, 6-8, 18]	Knowledge and understanding of how political, social, cultural and economic factors impact health on an individual and population level, from a national and global perspective
Health promotion and disease prevention on an individual, group and societal level[1, 7, 18]	Ability to initiate and participate in health promotion and disease prevention programs on an individual, group and societal level
Environmental and climate impact on health[8]	Knowledge and understanding of environmental and climate impact on health
Human rights and ethics, and their impact on health[1, 3, 4, 6-8, 18]	Humanistic approach towards patients with special consideration of ethical principles and human rights



Supplementary file 2. Issues agreed to be integral to global health education by final semester medical students in Sweden, 2014

