MEDICAL STUDENTS' ATTITUDES TOWARDS COMMUNITY HEALTH

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ABSTRACT: Attitudes of medical students are important because as members and leaders of the health team in the national health system, they are potentially influential in affecting the opinions of others, particularly of their peers, other health workers, the public and public officials after graduation. This study was undertaken to describe the magnitude of, and social and demographic factors associated with, negative attitudes towards community health activities among medical students in Addis Abeba, Ethiopia. The study population consisted of all premedical, preclinical 1, preclinical 2, clinical 1 and clinical 2 students of the Faculty in the 1985/86 academic year. A cohort of students consisting of all premedical and preclinical 1 students also completed the same questionnaire for a second time in the second half of the 1988/89 academic year (ie, after a three year interval). A total of 434 out of 523 students (83%) completed the questionnaires in the academic year 1985/86. For the academic year 1988/89 the corresponding figure was 219 out of 262 (83.6%). It is shown that medical students in Addis Abeba, Ethiopia are predominantly young, males, christians, Amhara, from major urban centers and mid- or upper- income families. It is also shown that negative attitudes towards community health activities increased during the course of medical school and that this negative attitude was positively associated with type of high school attended (non-government) and with parental income (mid- or upper-level) in this population of medical students.

INTRODUCTION

The national health policy of Ethiopia emphasizes the expansion of rural health services, disease prevention and control, and promotion of self-reliance and community involvement in health activities [1]. Medical doctors, as members of (or as leaders of) the health workers team, have a critical role to play in the implementation of this policy.

It has been stressed that the objectives and activities of medical schools should be aimed at developing not only technical knowledge and skills, but also attitudes in line
with the health policy of the country [2]. The stated objective of the Faculty of Medicine of Addis Abeba University is to produce basic doctors capable of functioning within the health system of the country [3].

Attitudes of medical students are important because as members and leaders of the health team in the national health system, they are potentially influential in affecting others' opinion particularly their peers, other health workers, the public and public officials after graduation. It has been recognized for sometime that the knowledge, skill and attitude of a graduating physician is closely associated with the socio-demographic characteristics of the student and the policy and practice of the

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medical school [4]. Little, however, is known about the attitudes of Ethiopian medical students on community health activities, which are the salient feature of the national health system. Even less is known about the relationship between their personal characteristics and their attitudes toward community health. The present study was undertaken to describe the magnitude of, and social and demographic factors associated with, negative attitudes towards community health activities among medical students in Addis Abeba, Ethiopia.

MATERIALS AND METHODS

The Faculty of Medicine of Addis Abeba University was established in 1964 and is involved in undergraduate and post graduate medical education. Medical students undergo one year of premedical (premed) education in the Faculty of Science and two years each of preclinical (preclin) and clinical (clin) education and one year of internship in the Faculty of Medicine. The yearly intake into the premedical year approximates 120 students.

The study population consisted of all premed, preclin 1, preclin 2, clin 1 and clin 2 students of the Faculty in the 1985/86 academic year. The students were asked to complete a questionnaire during the first-half of the academic year. A cohort of students consisting of all premeds and preclin 1 students also completed the same questionnaire, for a second time, in the second-half of the 1988/89 academic year (ie, after a three year interval). This allowed for analysis of longitudinal as well as cross-sectional differences.

A four-point Likert scale was used in the questionnaire which was designed to measure attitude towards community health activities. Public health specialists and a psychologist were consulted in the preparation of the questionnaire. It was pretested on a group of medical students from another medical school (Jimma Institute of Health sciences). Ten items were drawn up to assess attitudes concerning the following activities: 1) rendering service in rural areas after graduation (hereafter called 'rural service'), 2) giving more importance to prevention of disease and promotion of health than to the treatment of the sick (= 'prevention of disease'), 3) being involved in administrative activities within the health system (= 'health administration'), 4) working among people in the community in addition to work in clinics or hospitals (= 'community work'), 5) involving other sectors of the community outside of the health sector in health activities (= 'inter-sectoral collaboration'), 6) the activities of traditional healers in the country (='traditional health'), 7) encouraging people to participate in health activities, through their mass associations, (= 'community participation'), 8) the importance of a health referral system (= 'referral system'), 9) spending some time in the training of low-level health workers (= 'training health workers'), and, 10) using locally produced, cheaper health technology (= 'appropriate technology').

The students were requested to indicate their responses by choosing from among a set of four choices: 'strongly agree', 'agree', 'disagree' and 'strongly disagree'. In order to increase the validity of the measure, a) the "undecided" choice was left out[5], b) one-third of the questions were phrased negatively and c) the questionnaire was administered anonymously. All students completed the questionnaire within a class room setting. The date of the survey was not pre announced.

Students were classified to have negative attitudes to a particular item if their response to that variable was 'disagree' or 'strongly disagree' for the positive worded items and 'agree' or 'strongly agree' to the negative worded items. Responses were scored as follows: 'Strongly disagree' =1, 'disagree' =2, 'agree' =3, 'strongly agree' =4. The scores were then summed up over all items. The maximum possible score was 40 and the minimum 10. Higher scores indicated a 'positive' attitude and lower scores indicated a 'negative' attitude toward community health activities. The scores obtained by all students were then categorized into quartiles. Students with scores within the upper-most quartile of the distribution (those with 'positive' attitudes) were then compared, with students with scores in the lowest quartile of the distribution (those with 'negative' attitudes), in terms of their socio-demographic characteristics. Comparison of students within the upper-most and lowest quartiles of the score distribution reduces misclassification of students with positive and negative attitudes.

Students were classified into three categories of parental income to measure the association of this variable with negative attitudes towards community health practices. Although measurement of income alone may not fully represent level of socio-economic class comparison of upper and lower income groups in terms of attitudes is unlikely to be biased. We classified towns with a population of 50,000 or more during the 1984 Census (6) as 'major' cities.

The Statistical Analysis System software [7] was used for data processing on a micro-computer. The Chi-Square and Fischers' exact tests were used to test for significant associations.

RESULTS

A total of 434 out of 523 students (83%) completed the questionnaires in the academic year 1985/86. Response rates for each medical school year were as follows: Premeds = 105/120 (87.5%), preclin 1 = 84/106 (79.2%), preclin 2 = 98/120 (81.6%), clin 1 = 71/96 (73.9%) and clin 2 = 76/81 (93.8%). For the Academic year 1988/89 the corresponding figures were: preclin 2 = 87/95 (91.6%), clin 1 = 60/89 (67.4%) and clin 2 = 72/78 (92.3%), with a total response rate of 83.6%.

In the 1985/86 Academic year 85.5% of the students were male, only 15.9% were 25 years of age or above, 92.3% were Christians, and, 48.1% were Amhara, 23.1% Tigrai and 11.3% from the Oromo ethnic group. 62.4% of the students attended their high school education in a major city and 29.0% in a provincial town. 59.4% had parents living in a major city and 26.0% in a provincial town (Table 1). 27.7% of the respondents had parents with a combined monthly income of 800 Birr or more and 50.7% had incomes between 200 and 799 Birr (1 Birr = 0.48 US Dollars). The corresponding figures for the 1988/89 academic year are also shown in the same table.

The proportions of medical students with negative attitude toward selective community health activities is shown in Table 2. The cross-sectional data of the 1985/86 academic year shows that the proportion of students with negative attitudes toward prevention of disease was 15.2% which increased to 32.9% in the clin 2 group. Similarly the proportion of students with negative attitude toward health administration work increased from 29.5% (premed) to 40.8% in the clin 1 group. No appreciable changes in the proportions was seen for community work, referral system and training of health workers. For rural service, inter-sectoral collaboration, traditional health, community participation and appropriate technology the proportion of students with negative attitudes decreased with increase of medical school year.

Longitudinal analysis of the cohort of premed and preclin 1 students after three years of medical school, ie., as they reach clin 1 and clin 2 years, respectively, shows that for all the community health activities (except for traditional health, inter-sectoral collaboration and referral system) the proportion of students with negative attitudes increased with increasing medical school stay. For traditional health, there was a decrease and for inter-sectoral collaboration and referral system, no appreciable difference in the proportion.

Out of the 219 medical students surveyed in 1988/89, 57 (25.5%) students with a total score of less than or equal to 27, (ie., within the lowest quartile of the score distribution = 'negative attitude') were compared with 56 (25.5%) students with a total score of more than or equal to 33 (ie., within the upper-most quartile of the score distribution = 'positive attitude') in terms of their demographic, social and economic characteristics as shown in Table 3.

Although there were positive associations between the female gender and age ($\geq$ 20 years) with negative attitude to community health activities, these were not statistically significant ($p>0.05$). For gender there is an almost two-fold difference in the proportions of male and female students with negative attitudes, the large p value being a result of the small

Table 1 Socio - economic characteristics of medical students in Addis Abeba, Ethiopia

Academic year	1985/86						1988/89			
Medical school year	Pre med	Pre clin1	Preclin2	Clin1	Clin2	Total	Preclin2	Clin1	Clin2	Total
Parental monthly income (In Birr*)										
≤ 199	17(21.8)**	13(26.0)	11(20.3)	7(18.9)	10(19.6)	58(21.5)	14(18.4)	15(31.2)	10(17.5)	39(21.5)
200-799	39(50.0)	21(42.0)	28(48.3)	21(56.7)	28(54.9)	137(50.7)	39(51.3)	25(52.1)	26(45.6)	90(49.7)
≥800	22(28.2)	16(32.0)	15(25.8)	9(24.3)	13(25.5)	75(27.7)	23(30.3)	8(16.6)	21(36.8)	52(28.7)
Type of high school										
Government	87(82.8)	64(81.0)	70(71.4)	58(73.4)	61(80.2)	340(79.6)	66(89.2)	41(89.1)	52(80.0)	159(85.9)
Non-government	18(17.2)	15(19.0)	28(28.6)	11(26.6)	15(19.7)	87(20.4)	8(10.8)	5(10.9)	13(20.0)	26(14.0)
High school location										
Major city	60(57.2)	52(61.9)	58(59.2)	43(60.5)	58(76.3)	27(62.4)	50(62.5)	32(57.1)	40(59.7)	112(58.0)
Provincial town	33(31.4)	24(28.5)	32(32.6)	24(33.8)	13(17.1)	126(29.0)	26(32.5)	16(24.2)	23(34.3)	65(33.6)
Other	12(11.4)	8(9.5)	8(8.2)	4(5.6)	5(6.6)	37(8.5)	4(5.0)	8(12.1)	4(5.9)	16(8.3)
Parental residence										
Major city	57(54.3)	49(58.3)	60(61.2)	42(59.1)	50(65.8)	258(59.4)	50(61.7)	29(52.7)	39(58.2)	118(58.1)
Provincial town	32(30.4)	26(30.9)	28(28.5)	17(23.9)	10(13.1)	113(26.0)	25(30.8)	17(30.9)	21(31.3)	63(31.0)
Other	16(15.2)	9(10.7)	10(10.2)	12(16.9)	16(21.0)	63(14.5)	6(7.4)	9(16.3)	7(10.4)	22(10.8)

* 1 Birr = 0.48 US Dollars ** Percentages in parenthesis; Values for non-respondents not shown. This accounts for the variations in the total number of students for the various variables.

TABLE 2 Percentages of medical students Ethiopia, with negative attitudes towards selected community health activities, in Addis Ababa.

Academic year / Medical school year	1985/86						1988/89			
	Premed	Preclin1	Preclin2	Clin1	Clin2	TOTAL	Preclin2	Clin1	Clin2	TOTAL
Rural service	16.2	10.9	9.3	13.2	3.9	10.9	13.8	18.3	9.7	13.7
Prevention of disease	15.2	13.6	15.3	21.4	32.9	19.0	29.8	20.0	23.6	25.1
Health administration work	29.5	35.4	32.9	40.8	27.6	32.9	35.6	53.5	44.4	43.4
Community work	35.5	31.7	36.1	38.6	46.0	37.4	34.5	40.0	37.5	36.9
Inter-sectoral collaboration	5.8	12.2	9.4	2.8	2.6	6.8	9.1	5.0	18.0	10.0
Traditional health	25.7	28.0	22.4	15.4	14.4	21.6	11.5	18.3	8.3	12.3
Community participation	6.6	11.1	9.5	4.2	3.9	7.2	10.3	11.6	15.3	12.3
Referral system	16.2	21.7	17.3	18.5	15.8	19.7	21.8	15.0	16.6	18.2
Training health workers	8.5	6.0	5.1	2.8	5.2	5.8	21.8	25.0	22.2	21.8
Appropriate technology	31.0	32.9	20.6	24.6	19.7	26.0	31.0	43.3	31.9	34.7

Table 3 Demographic and socio-economic factors associated with negative attitude towards community health activities among medical students in Addis Abeba Ethiopia.

		Total	Number(percent) with negative attitude	P-Value
Sex	Male	93	43(46.2)	N.S*
	Female	6	5(83.3)	
Age(years)	≤ 19	10	4(40.0)	N.S
	20-24	78	35(46.0)	
	25-	8	4(50.0)	
Med school year	Preclin 2	46	19(40)	N.S
	Clin 1	32	20(62.5)	
	Clin 2	34	17(50.0)	
Ethnicity	Amhara	48	18(37.5)	<0.05**
	Oromo	12	6(50.0)	
	Tigrai	20	10(50.0)	
	Other	19	10(52.6)	
Religion	Christian	82	39(47.6)	N.S
	Muslim	13	7(53.9)	
	Other	2	1(50.0)	
Parental monthly income(Birr)				
	≤ 199	19	6(31.6)	<0.05**
	200-799	42	18(42.8)	
	≥ 800	30	14(46.6)	
Parental residence				
	Major city	57	28(49.1)	N.S
	Other	43	16(37.2)	
High - school type				
	Government	76	30(39.4)	<0.05**
	Non-governm.	12	10(83.3)	
High school location				
	Major city	57	30(52.6)	N.S
	Other	42	14(33.3)	

* Two-tail Fischer's exact test, N.S = non significant. ** Statistically significant. Values for non-respondents not shown. This accounts for the variations in the total number of students.

number of females.

There were statistically significant positive associations between attendance at a non-government high school, high parental income and negative attitude towards community health activities. Stratified analysis of type of high-school attended versus the occurrence of negative attitudes, controlling for the effect of parental income shows (Table 4) that the association between attendance at a non-government high school and negative attitude is independent of parental income level. For both mid- and upper- parental income levels there is an association between attendance of a non-government high school and negative attitudes, although the association is statistically significant ($p<0.05$) only for the upper- parental income category.

The statistically significant association between a positive attitude and coming from the Amhara ethnic groups (Table 3) disappears when income levels are controlled for in the analysis. The spurious associations is due to the relatively small number of Amhara students who attended a non-government high school ($n = 4$), and who had parents from mid- or upper-income categories, compared to students from other ethnic groups. No statistically significant association was observed between location of high school (major city/ other) or parental

Table 4 Negative attitude towards community health activities and type of high school attended controlling for parental income level, among medical students in Addis Abeba, Ethiopia.

	Total	Number(percent) with Negative" attitude	" P-VALUE*
Parental monthly income ≤ 199 Birr High School Type			
Government	18	6(100.0)	
Non-Government	0		
Parental monthly income =200 - 799 High School Type			
Government	35	15(42.8)	N.S**
Non-Government	3	2(66.1)	
Patental monthly income > 800 High School Type			
Government	18	6(33.3)	<0.05***
Non-Government	9	7(77.8)	

* Fischer's exact test (2-tail) ** N.S = non significant. *** Statistically significant.

residence (major city/other) and negative attitudes towards community health.

DISCUSSION

The study examines the relationship between the medical school environment (medical school year) and socio-demographic characteristics of students on the one hand and their attitude towards community health activities on the other. It is shown that medical students in Addis Abeba are predominantly young, male, Christian, and Amhara, from major urban centers, and mid- or upper- income families.

Examination of the cohort of premeds, preclin 1 and preclin 2 students after three years of medical school years showed that there was a general trend in which the magnitude of negative attitudes towards community health activities increased except for traditional health. For the cross-sectional data of 1985/86 this trend was shown only for prevention of disease and health administrative work.

The deterioration of attitudes with increasing medical school year and academic year, particularly to social issues in medicine has been shown in studies conducted in developed countries. Ewan [8] who compared medical students with their contemporaries in non-medical faculties and who also followed a cohort of first year medical students for four years has shown that medical students had less positive attitudes towards social factors in medicine than non-medical students and that there was a deterioration of their attitude towards the negative as they progress through medical school. On the other hand Dornbush [9] showed that attitude toward social sciences in medicine are maintained during the course of medical school, and Perricone [10] showed that students social concern increases during their progression through the medical school. Rezler [11] who reviewed the literature on attitudinal changes during medical school concluded that the medical school environment does not seem to increase student humanism or benevolence and in fact contributes to the development of cynicism. A recent study from Africa [12] of final year medical students also noted a high proportion of medical students with negative attitudes toward community health disciplines.

The change in attitude during the course of medical school could be due to the medical school environment. It may also be due to factors external to the medical school (eg. societal factors in general). Highly urbanized, technology-intensive, teaching-hospital-centered medical school environments could probably lead to changes in attitudes towards the negative side[8].

85% of curriculum time in the preclinical years is allotted to basic science disciplines in the Faculty of Medicine (3). In the clinical years 92% of the time is spent on clinical disciplines, the rest is spent on a rural

community health training program. Most of the clinical teachings are carried out in two of the largest hospitals in Addis Abeba. Thus, the relatively heavy focus of medical education in basic science and clinical teaching conducted in teaching hospitals may be responsible for the deterioration of attitudes with increasing medical school year seen in this study population.

Our study also shows a positive association between negative attitudes toward community health and attending a non-government high school, and coming from a mid- or upper-income parents. The relatively small number of females in the study population will not permit firm conclusion as to the importance of the association between negative attitude and the female sex. The relative hardship conditions of rural areas (the focus of national community health activities) when compared to urban areas could account for this association.

All non-government high-schools in Addis Abeba charge some kind of tuition fee while government schools are free. Thus, there is a tendency for non-government school students to have parents from mid- or upper- income categories than students from government high-schools. This social class difference could partially explain the association between attending a non-government high-school and negative attitudes toward community health among medical students. It is possible that the students from upper income families want to earn high income also, and associate community health activities with low income.

Furthermore, it is also shown that this association is partially independent of parental income levels. This could be a result of the high-school environment per-se. It is conceivable that the predominant use of Western text books and other instructional materials in non-government schools, exclusivity of student population, elitism, the composition of the teacher population (expatriates from developed countries) or location (within the capital city) of these schools may predispose to negative attitudes towards community health activities. The exact component of the high-school environment which fosters negative attitudes, however, can not be deduced from the present study.

Our results are unlikely to be biased. The response rates were fairly high. The objectives of the survey was not pre-announced to students and those who completed the questionnaires were those present in class during the survey day. Classes of community health subjects were not employed for survey purposes. Absence from classes is, therefore, unlikely to be associated with negative attitudes towards community health activities. Likewise medical school attrition is unlikely to systematically or selectively affect those with particular attitudes. Our study also shows that the socio-demographic characteristics of student did not change as they progressed through medical school.

We conclude, therefore, that medical students' negative attitudes towards community health activities increase during the course of medical school and that this negative attitude is positively associated with the type of high-school attended (non-government) and with parental income (mid- or upper-level) in this population of medical students.

Thus important consideration should be given both by the relevant departments within medical schools and ministries of health to influence medical students with negative attitudes toward community health with the aim of effecting favorable changes in their attitudes. Further studies are also required to clearly characterize the component of the high school environment which favors initiation or development of negative attitudes toward community health activities among medical students.

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