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The influence of undergraduate clinical training on the attitude of medical students to rural medical practice in Nigeria

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Summary

A study of a cohort of Nigerian medical students before entry and at the completion of their clinical years of training, has shown that their overall attitude towards rural medical practice deteriorated slightly but not significantly in the process. The attitude had improved slightly in students who had grown up largely in rural areas and deteriorated in those brought up in the townships. Similarly, clinical training did not significantly affect their attitude towards the compulsory 1 year National Youth Service Corps which may involve their service in the rural areas after graduation. Factors which were important in the development of these attitudes, as volunteered by the students, included the area of upbringing (urban or rural), the individual's life plan, and professional exposure before and during training. The importance of the knowledge gained from this study in the educational and health service planning in Nigeria are discussed.

Résumé

Une étude des étudiants en médicine au Nigéria a démonstré que leur attitude vis-à-vis de la practice en milieu rural n'a changé que très peu — même après leur éducation en médicine. L'attitude s'est améliorée un peu parmi les étudiants élevés dans des locaux rurals, tandis que la même attitude s'est détériorée parmi ceux venant des grandes villes. Aussi l'éducation clinicale n'a pas changé signifiamment leur attitude envers le service national d'une année qui pourrait les amener dans les locaux rurals. Des facteurs déterminants exprimés par les étudiants sont lieu de naissance (village ou ville), le place de vie de l'individus (ce qui apparait être formé tôt dans la vie) et l'exposition professionelle avant et pendant l'éducation médicale. L'importance des renseignements obtenus par cette étude dans le planning du service de santé et de l'éducation au Nigéria est discutée.

Introduction

It is a universal experience that highly trained professionals, such as physicians, gravitate towards the large urban centres for their practice, leaving the rural areas without these essential services [1]. With the advent of the primary health-care movement, many governments have intensified their efforts to ameliorate this situation through a better organization of the health services. Studies in Nigeria by Morgan and Ransome-Kuti [1] had led to the opinion that perhaps a re-organization of the health services with some incentives for rural practice would solve the problem. The attitude of practising doctors towards rural practice was quite encouraging in that study.

Other studies conducted among medical students showed a similarly positive attitude and revealed other factors which influence the student's attitudes [2,3]. The latter study suggested that some of these influences may benefit from educational modification in the process of their training, as education is geared towards the improvement of the knowledge, attitudes and practices (skills) of the students.

In view of these observations, the present study was carried out to explore the current attitudes of Nigerian medical students towards rural practice and the subsequent National Youth Service Corps (NYSC) Programme, as

well as the factors influencing these attitudes. The influence of clinical training at the University of Ibadan on these attitudes was also studied.

Subjects and methods

The study involved the 1982–85 cohort of clinical medical students of the University of Ibadan. The first phase of the study was conducted at the end of the pre-clinical training of the students in 1982 and before the commencement of clinical training. The second phase of the study was conducted at the end of the entire medical school training in May 1985. During the 3-year clinical training the students had 8 weeks' rural residential training in community medicine as well as 6 weeks' postings in general medical practice in peripheral hospitals.

The study was assessed using a semi-structured self-administered questionnaire which was given to the students during lecture periods. The questionnaires were subsequently collected after the students had had time to complete them at their leisure. Statistical comparison of information obtained from the study data were done using the Z-test on proportions.

Results

Sixty-five and 71% of the students given questionnaires in the first and second studies respectively, replied to them. Table 1 shows the general data of the study group. Most of the students were from the southern states of the country, as well as the 'middle-belt' states of Benue, Kwara and Plateau. The females were on the average 2 years younger than the males, and none of them had a previous university degree.

Table 2 shows the attitude of the students towards rural practice, given in response to the question 'Would you be ready to serve in a rural area in the country if so required by the government?'. The duration of time the subject would be ready to give such rural service was

Table 1. General data on the study group

Relevant information	Pre-clinical study respondents	Follow-up (post-clinical) study respondents
Number of questionnaires served	129	211
Number of questionnaires returned	84 (65%)	150 (71%)
Number of females	20 (24%)	27 (18%)
Age range (years)	19–28	21–32
Mean age (years; mean ± s.d.)	22 ± 2.1	24 ± 2.1
Number of previous degree holders	4 (5%)	8 (5%)
Number of foreign students	5 (6%)	3 (2%)

Table 2. Attitude of the students to rural health service before and after clinical training

Attitude	Pre-clinical training (n = 84)	Post-clinical training (n = 150)
Positive overall	58 (69%)	85 (57%)
Committed (to 2 years or more)	33 (39%)	63 (42%)
Willing to serve for only 1 year	25 (30%)	22 (15%)
Negative	24 (29%)	62 (41%)
Not sure	1 (1%)	3 (2%)
No answer	1 (1%)	0

also ascertained. Periods of 1 year or less were not considered a significant commitment to rural service as the present NYSC already makes this mandatory for the Nigerian students. The overall positive attitude was 69% before clinical training and 57% after training.

Table 3 shows the factors which the students volunteered as influencing their attitude towards rural practice. This response was elicited by a semi-structured questionnaire. Table 4 shows the place of upbringing of the students as well as the attitudes of each of these student groups towards rural service. A highly significant number of the students who grew up in rural areas showed commitment to rural service as compared with those who grew up in urban centres ($P < 0.01$). While clinical training produced a slight positive shift in this committed attitude in the students with rural upbringing, the shift was much less in the urban group. However, these shifts in attitude in either group were not statistically significant. Overall positive attitude improved in the rural and deteriorated in the urban group.

Table 5 shows the factors within their clinical training which the students mentioned as influencing their attitude towards rural posting, positvely or negatively. This question was open and the answers were supplied entirely by the students. Table 6 shows the attitude of the students towards participation in the NYSC, while Table 7 shows their responses to three value statements in health care delivery. There were improvements in the attitudes of the students to the last two statements after clinical training but these did not reach statistical

Table 3. Factors influencing the attitude of the students to rural practice

Factor	Numbers affected* (%)	
	Pre-clinical study (n = 84)	Post-clinical study (n = 150)
Personal life plan	48 (57%)	84 (56%)
General government and societal attitude to rural practitioners	24 (29%)	21 (14%)
Professional exposure so far	6 (7%)	33 (22%)
Religion	5 (6%)	15 (10%)
Teachers' influence†	3 (4%)	4 (3%)
Relatives' or friends' influence†	4 (5%)	1 (0.7%)
Others (volunteered by students)	10 (12%)	10 (6.8%)
Lack of facilities in rural areas†	5 (6%)	3 (2%)
Considerations for social justice	3 (4%)	3 (2%)
Hatred of rural life†	0	1 (0.7%)
Desire to experience rural life†	1 (1%)	1 (0.7%)
Compulsion of the NYSC†	0	1 (0.7%)
Considerations for marriage†	0	1 (0.7%)
Innate desire†	1 (1%)	0
Not answered	8 (10%)	10 (7%)

*Multiple factors were indicated by some of the students.
†Factors which alone did not determine any student's attitude.

Table 4. Place of upbringing and its relation to 'commitment' to rural practice

Principal place of upbringing	Pre-clinical training*		Post-clinical training	
	Total (*n*)	Committed (*n*)	Total (*n*)	Committed (*n*)
Urban	63	20	122	40
Rural	15	11	24	21
Urban and rural	1	1	1	1
Foreign student	5	1	3	1
Total	84	33	150	63

*For the comparison of level of commitment among the students brought up in either urban or rural areas in this group of students: $Zc = 2.664$; $P = 0.008$ (two-sided test).

The difference in the post-clinical training group was even wider (see text) $Zc = 4.742$; $P < 0.001$ (one-sided test), $P < 0.003$ (two-sided test).

Table 5. Factors within the clinical training programme which influenced the student's attitude towards rural practice

Factor	Number influenced	
	Pre-clinical training	Post-clinical training
Positive		
Rural posting	0	43 (29%)
Peripheral postings in general practice	0	2 (1.3%)
Teaching in community medicine*	9 (9.5%)	12 (8%)
Aspects of teaching in paediatrics	0	2 (1.3%)
Combinations of the above	0	10 (6.7%)
Total	9 (9.5%)	69 (46.3%)
Negative		
Pressure for specialization from teaching hospital models	0	7 (4.7%)
Deficiencies experienced in peripheral GP postings	0	4 (2.7%)
Deficiencies experienced in rural community medical postings	0	3 (2%)
Professional disdain for rural doctors	0	1 (0.7%)
Bad experience of poor teaching in community medicine	0	1 (0.7%)
Total	0	16 (10.8%)

*Training in theoretical community medicine started in the pre-clinical years.

Table 6. Readiness of the students to participate in the National Youth Service Corps (health) programmes as organized now

Attitude	Pre-clinical training	Post-clinical training
Definitely yes	40 (47.6%)	79 (52.7%)
Conditional yes	10 (11.9%)	10 (6.7%)
Not sure	14 (16.7%)	25 (16.7%)
Conditional no	14 (16.7%)	25 (16.7%)
Definitely no	0	3 (2%)
Not answered	0	4 (2.7%)
Already served	1 (1.2%)	2 (1.3%)
Foreign student	5 (6%)	2 (1.3%)

Table 7. Responses to value statements about health services

Statement	Pre-clinical training	Post-clinical training
Doctors should not abandon the rural areas to less well-trained workers		
Agree	77 (91.7%)	137 (91.3%)
Not sure	6 (7.1%)	7 (4.7%)
Disagree	1 (1.2%)	4 (2.7%)
A well-trained doctor should function well with a minimum of modern equipment (improved following training, $P = 0.002$)		
Agree	47 (56%)	111 (74%)
Not sure	9 (10.7%)	8 (5.3%)
Disagree	28 (33.3%)	31 (20.7%)
Doctors' place and type of work (speciality) should be determined by the overall need for service (improved following training, $P = 0.06$)		
Agree	70 (83.3%)	135 (90%)
Not sure	9 (10.7%)	9 (6%)
Disagree	5 (6.0%)	5 (3.3%)

significance. On the whole females were less favourable to rural practice than males and most of them were brought up in urban centres.

Discussion

The overall positive attitude of the students in this study towards rural practice (57%) is consistent with the findings of the previous studies by Morgan and Ransome-Kuti in 1973, 58% [1]; Erinoso in 1977, 2.6% [2]; and Brieger in 1979, 63.4% [3]. In keeping with the findings of Brieger, 39% of the students also showed a commitment to over 1 year of rural service [3].

Apart from city up-bringing and future life plan several other factors were elicited in this study. Both city up-bringing and future life plan adversely influenced the attitude towards rural practice. Future life plans included marriage considerations in females and plans for specialization in areas other than general medical practice and community medicine. Public attitude to, and appreciation of, the rural practitioner was also an important factor in the students' attitude to rural practice.

Professional exposure was the next high ranking factor influencing the attitudes towards rural practice, but the influences were not statistically significant as shown in the results

before and after the study. Training in community medicine with its rural posting, general practice posting in peripheral hospitals, and aspects of training in paediatrics were the professional exposures that positively influenced these attitudes. They would therefore seem to be the postings to be strengthened if it is desired to influence these attitudes during the training of Nigerian medical students. However, there is also a need to have these centres run properly, as poor running of these centres produced negative effects on the students' attitudes towards rural practice. It is noteworthy that the current modifications in the University of Lagos medical school curriculum is in this direction.

In view of the influence of rural upbringing on the attitude of the students towards rural practice, it is advisable as Brieger [3] has already suggested, to consider measures aimed at improving admission from rural areas into the medical schools. Two strategies worth considering are the strengthening of the teaching of sciences in rural secondary schools, and preferentially lower admission grades for students from rural areas.

It is worrying to note that of the responses to the three value statements, the one with the least favourable response is that well-trained doctors should be able to function adequately with a minimum of modern equipment. Such a belief in technological medicine needs to be overcome in developing countries as it will be some time before it will be possible to afford this equipment in all Nigerian health centres and hospitals — even in the teaching hospitals! Such a belief is an obvious deterrent to any desire to work in the rural areas which are least likely to acquire this equipment. This therefore calls for emphasis in clinical skills in the training of the students and its pre-eminent reckoning in the final examination of the students.

The positive attitude to rural service as well as to the NYSC is encouraging in view of the existing fear that the service will not attract enough participants if it is made voluntary. This finding is important in view of the high level of resistance to the NYSC despite the fact that at present it is compulsory. The findings of this study also suggest that an alternative voluntary NYSC programme is likely to succeed in attracting enough participants if the programme is better organized following the reduction in the number of participants that will follow such a conversion.

Postgraduate training in community medicine and general medical practice, improved in such a way as to make them more attractive, will most probably increase the number of Nigerian doctors who will enter the programmes and hence increase the number of Nigerian doctors who will practise in rural areas as suggested by the results of this study. Undergraduate training in these fields positively influenced the students' attitude towards rural practice. Ajao has observed that postgraduate training in general medical practice in one of the peripheral hospitals influenced the attitude to, and services of the doctors in, rural medical practice [4]. This observation is in agreement with our present suggestion.

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