Chapter 3

KENYA: THE AFRICAN MEDICAL RESEARCH FOUNDATION DISTANCE EDUCATION PROJECT

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1 INTRODUCTION

This study documents the experience of the Distance Education Project of the African Medical Research Foundation (AMREF), Kenya Country Office.

1.1 Socio-economic context

The Republic of Kenya is situated in East Africa. It occupies an area of 582,646 square kilometres and has a population of around 28 million people.

In most African countries, human resource development is seen not as the desired outcome of economic development strategies, but as the very means of development. Non-formal continuing education is an essential part of human resource development. However, the introduction of Structural Adjustment Programmes (SAPs) in the 1980s, in an effort to reverse sub-Saharan Africa's economic decline, has had some disastrous effects. SAPs traditionally accord low priority to sectors such as health and education. This inevitably weakens the capacity of people to engage in socio-economic recovery and development (Barratt Brown, 1995).

A typical SAP of the World Bank includes measures to minimise government expenditure and economic intervention by reducing public ownership, subsidies and regulation. This has inevitably led to a decline in the extent and quality of education and healthcare (UNCTAD, 1993-4 Report). Institutions have decayed, infant mortality rates are raised and nutritional levels have worsened as a result of drastic reductions in social expenditure. Literacy rates, life expectancy and employment in the formal

Table 1: Selected socio-economic and demographic indicators for Kenya

Infant mortality rate <5yrs	90%
Children <5yrs with nutritional deficiencies	71%
Adult literacy rate	male 72%; female 44%
Population with income below $1 per day	50%
Life expectancy at birth	54 years
Per cent of population urbanised	30%

(Based on data from **State of the world's children report 1998**) (UNICEF, 1998)

economy have remained stagnant or even declined (Sandbrook, 1994).

In this climate of economic hardship, distance education provides a cost-effective alternative to conventional education and training because small numbers of trained teachers can often reach thousands of people.

1.2 About AMREF

AMREF is an independent, non-profit organisation founded in 1957. It is one of the few international non-governmental organisations (NGOs) based in Africa, with headquarters in Nairobi, Kenya.

The organisation maintains country offices in Kenya, Tanzania, Uganda and South Africa and field offices in Rwanda and Somalia. Although AMREF has no plans to expand into more parts of Africa, it continues to share its expertise with countries outside its traditional working area so that governments, donors and NGOs can benefit from its experience.

The activities of AMREF are structured into five programme areas, which reflect the organisation's main priorities. These are:

- Sexual and Reproductive Health
- Child and Adolescent Health and Development
- Environmental Health
- Health Policies and Systems Reform
- Clinical Services and Emergency Response.

1.3 AMREF's Distance Education Project

The Distance Education Project of AMREF, previously known as the Distance Teaching Unit, is one of the projects of the Kenya Country Office of AMREF. A Project Manager who is directly responsible to the Kenya Country Office Director heads it. There is an Assistant Project Manager (an Education Officer), an Audio Studio Technician, a Clerk and a Secretary. Six part-time Tutors who mark the assignments and write radio programmes and printed materials for the correspondence course assist this core team. For this purpose, these part-time Tutors have been trained at writers' workshops. Previously, there had also been a Radio Programme Producer and an Administrator/Editor.

The Distance Education Project focuses on workers who have little or no access to any other form of continuing education. (Brye et al, 1990). As a result, their medical skills and capabilities often deteriorate, which inevitably leads to poor service delivery.

1.3.1 History of the project

AMREF started a Continuing Education Programme in 1979. Three districts were identified for the programme. After a period of three years, an evaluation of the entire programme was carried out, and it was found that the programme had reached only 46 per cent of health workers in those three districts.

AMREF, therefore, decided to change its strategy. A Distance Education Pilot Project was set up in an attempt to find out whether:

- health workers would be able to learn through distance education (DE) methods
- health workers would personally enrol in DE courses
- the Ministry of Health would accept DE as a strategy for providing continuing education.

By the end of the first year, 200 individuals had already applied for the course. The first course to be offered was Communicable Diseases, which was seen to be most relevant to the majority of health workers at the time.

2 LITERATURE REVIEW

The Distance Education Project of AMREF has been evaluated four times: Rotem et al (1989); Mburu (1989); Brye et al (1990); and Nyonyintono and Mungai (1993).

Rotem recommended that AMREF should concentrate on the technical development and provision of distance education. The report also notes that the rapid expansion of the population leads to an increase in the demand for healthcare services. This inevitably strains the resources of the public healthcare sector and leads to serious problems in the management and delivery of services, resulting in inefficient maintenance of facilities and essential resources such as vehicles and medical centres. Rotem (1989) also recommended renovation of training centres and provision of adequate facilities for demonstrations and clinical teaching for various sections of health workers.

Mburu (1989) recommended that:

- a core of regular course writers should be identified and assisted in each country
- courses should be restricted to the suitable cadre, which may mean more courses for different cadres – that is, learners should move from lower to higher levels of learning
- older, less educated lower cadres should be encouraged to enrol in correspondence courses
- the courses should be advertised more widely in the districts with less than average enrolment as such districts are probably the more disadvantaged
- a systematically organised learning needs assessment should be used to determine the type and level of courses
- the next phase of the programme should include enhanced advocacy with the government in order to bring recognition for distance teaching as a method of career development.

The evaluation report by Brye et al (1990) was specifically concerned with two programmes supported by a four-year USAID matching grant, namely Health Planning and Management and Distance Teaching. The recommendations made concerning the administration and course management of the then Distance Teaching Unit were to:

- expand the promotion and publicity of distance learning through student advocacy, the designation of personnel at key health institutions to inform potential participants of course offerings, radio programmes, and other resources
- continue to monitor the production and distribution of course materials, manuals and textbooks to assure availability to students on a timely basis
- continue to explore formal recognition for distance teaching and related continuing education activities through affiliations with national and regional educational and training institutions
- continue to assess target audiences for distance teaching courses to validate the appropriateness of content and level of difficulty for the wide range of health workers currently enrolled, and develop new distance teaching courses to meet identified needs
- improve physical facilities for distance teaching centres to organise, store, and secure distance learning materials and equipment.

The report also made recommendations in the areas of distance teaching methods used, training and supervision of tutors, expansion of the distance teaching programme and monitoring and evaluation of the programme.

Nyonyintono and Mungai (1993) evaluate the impact of the then Distance Teaching Unit (DTU) and recommend that:

- the DTU should explore ways of decentralising some of its activities so as to minimise some of the delays
- innovative mailing networks should be explored and used where the regular postal services are too slow
- ways should be found to motivate female and older health workers to participate in distance education as they form a large number of the target group
- impact evaluation at the level of practitioner performance and beneficiaries of health care should be carried out to complete the total evaluation of the impact of the DE programme
- the DTU should study the suggestions for improvement that have been made by the respondents to the study and follow-up all of them
- the DTU should take the initiative in finding out what is holding back recognition of the DE certificate and find ways to overcome whatever problems exist
- further funding should be sought to expand the programme so as to increase coverage, develop more targeted courses, organise more face-to-face practical sessions, develop and produce audio cassettes to supplement the radio programmes and produce audio cassettes for specific skills training
- investments should be made in a better computer system and personnel for student records, and this information should be updated regularly.

Nyonyintono and Mungai (1993) also note that:

- distance education enables uninterrupted service delivery as the student learns and has positive outcomes
- knowledge, skills and attitudes towards healthcare have improved as a result of DE courses
- DE courses also improve the attitude towards work, colleagues, patients and health of communities where learners work.

Concerning the radio programmes, the researchers observe that radio reaches a wide audience and is therefore a practical alternative for rural areas. Over 70 per cent of health workers in one sample were shown to listen to the radio, but not on a regular basis (Nyonyintono and Mungai, 1993). However, it is necessary to establish methods of encouraging the target audience to listen more frequently.

3 METHODOLOGY

The study used conventional methods of data collection, including quantitative and qualitative techniques.

Staff and learners of the DEP included:

- 3,267 active learners
- 1,249 dormant learners
- supervisors at the learners' places of work
- staff managers of the programme
- policy makers
- six part-time tutors.

From these, a random sample of 418 active and 108 dormant learners was selected by computer. 86 supervisors were randomly selected, based on addresses received from hospitals and health centres where AMREF learners worked. All staff managers, policy members and tutors were included in the sample. Table 2 shows the data collection techniques used for each category.

Table 2: Data collection techniques used per category of respondents

	Active learners	Dormant learners	Super-visors	Policy makers	Staff managers	Part-time tutors
Questionnaire administered by researcher	28	8	0	0	0	0
Questionnaire administered by the CEO	36	0	0	0	0	0
Questionnaire mailed by researcher	214	100	86	0	0	0
Questionnaire mailed by AMREF with assignments	140	0	0	0	0	0
Interview	28	8	0	2	3	4
Observation	28	8	0	0	0	0

Mailed questionnaires were sent to active and dormant learners from all parts of the country. Learner observation and interviews were done in three divisions of Nakuru District, Rift Valley Province. Other interviews were conducted in Nairobi.

Data was also collected from secondary sources, including project reports, evaluation studies, proposals to funding agencies and statistical data from project documentation.

4 PROJECT DESCRIPTION

4.1 Goals and objectives

The goal of the AMREF Distance Education Project is to improve the health of people in the rural areas of Eastern Africa, through establishing and extending sustainable distance education services throughout the region.

The objectives of this project are to:

- initiate, develop and offer correspondence courses to update the knowledge and skills of health workers on the job
- provide continuing medical and health education to all cadres of health workers through a variety of media
- establish distance education support systems
- demonstrate the acceptability and cost effectiveness of distance education as a method of continuing medical education. (AMREF Training Department, 1983).

4.2 Programmes of the Distance Education Project

The AMREF Distance Education Project runs two programmes. The first one is a distance education course offered through printed materials. The second one consists of two radio series: one directed at the general public and the second one for health workers.

When the DE programme began in 1980, the Distance Teaching Unit offered six courses that were developed at writers' workshops. Currently, AMREF runs nine correspondence courses and a weekly radio programme. One more correspondence course (on immunisation) has recently been started. These correspondence courses and radio programmes are summarised in Table 3.

Table 3: Correspondence courses and radio programmes offered by AMREF

Correspondence courses	Radio programme series
1. Child Health	1. Antenatal Care
2. Communicable Diseases	2. Cardiovascular Diseases
3. Environmental Health	3. Common Accidents
4. Family Planning	4. Community Health
5. Mental Health	5. Control of Diarrhoeal Diseases
6. Gynaecology and Obstetrics	6. Dental Health
7. Helping Mothers Breastfeed	7. Diabetes
8. Medicine (Non-communicable Diseases in Adults)	8. Diseases of the Joints and Soft Tissue
9. Community Health	9. Ear, Nose and Throat Conditions
10. Immunisation	10. Environmental Health
	11. Eye Conditions
	12. Family Planning
	13. Growth Monitoring
	14. HIV/AIDS
	15. Immunisation
	16. Mental Health
	17. Nutrition
	18. Peptic Ulcer Diseases
	19. Selected Common Medical Conditions
	20. Sexually Transmitted Diseases

4.3 Correspondence courses

The medium of instruction for the correspondence courses is specially prepared printed materials. The print-based courses are of two types. The first type of course is based on AMREF manuals and often refers learners to read the manual during the course. The second type is self-contained and does not rely on any reference manual.

Originally, AMREF used standard medical manuals in its DE courses. These were, however, found to contain information in a format that could not easily be understood by low- and middle-level health workers. For this reason, therefore, AMREF prepared guidebooks based on these manuals which were easier to understand and were used in conjunction with the manuals. During the course of the programmes, some of the guidebooks have been revised several times. Many of the reference manuals are now out of print and often have to be imported, which is uneconomical. As a result, AMREF began to develop a series of self-contained units. This reduced the need for reference manuals, and the units are now being used in the second type of print-based course. Both types of courses are divided into units. Each unit is made up of a study guide, an assignment and sometimes a hand-out carrying important information missing from the reference manual. The number of units ranges from seven (Helping Mothers Breastfeed) to 16 (Community Health and Medicine). Most courses have 10-11 units.

4.3.1 Target population

The target population for AMREF courses consists of approximately 40,000 health workers such as enrolled community nurses, clinical officers and public health technicians. These health professionals work in all parts of Kenya and are located in both rural and urban dispensaries, district hospitals and clinics. They are the immediate beneficiaries as their knowledge, skills and attitudes are improved and they are better able to provide services and increase their efficiency. The ultimate beneficiaries, of course, are the predominantly rural and poor urban populations who are provided with improved health care services. Table 4 gives information on learner enrolment by cadre from 1.1.1980 to 11.3.1999.

Table 4: Learner enrolment by cadre (cumulative figures)

Cadre	Number of learners enrolled	Active	Dormant	Completed
Diploma in rural development	29	14	2	13
Community health field worker	91	55	14	22
Clinical officer	468	201	91	176
Dental technician	20	8	2	10
Enrolled community nurse	3,718	1,555	558	1,604
Family health field educator	84	27	23	34
Kenya registered nurse	743	332	133	278
Laboratory technician	355	160	51	144
Doctor/lecturer	7	2	5	0
Nutrition field worker	63	27	10	26
Occupational therapist	102	39	18	45
Patient attendant	545	224	75	245
Pharmacy attendant	46	22	12	12
Primary health care	4	2	1	1
Public health officer	89	38	16	35
Public health technician	1,416	462	207	747
Physiotherapist	55	27	10	18
Radiographer	35	17	5	13
Demographer	5	3	1	1
Statistical clerk	91	43	9	39
Social worker	24	9	6	9
TOTAL	7,990	3,267	1,249	3,472

4.3.2 Admission criteria for correspondence courses

The correspondence courses are open for admission to any health worker currently employed in the health service. There are no restrictions relating to the grade or kind of medical qualification. However, applicants are expected to have at least two years experience in the field.

4.4 Radio courses

AMREF currently runs two radio courses:

- Health is Life
- Doctor AMREF.

The main purpose of Health is Life is to update the knowledge, skills and attitudes of health workers. It is not part of the correspondence courses, although it offers some topics that could be useful to learners enrolled for courses covering a similar area. The series of programmes which make up the course are aired on the General Service of the Kenya Broadcasting Corporation every Sunday from 8-8.15p.m. There are 20 series, which are listed in Table 3.
Each series consists of a number of programmes. The shortest series has five programmes, while the longest (on Sexually Transmitted Diseases) has 24. Normally all programmes of the series are aired before a new series is started. However, sometimes a series may be interrupted for special reasons – for example, if there is an outbreak of an epidemic, or if there is a national event such as the immunisation week. In such cases, the topical events will be highlighted, after which the original series will be resumed. At the end of each programme, there is a brief assignment which some listeners complete and send to AMREF for comments.

Doctor AMREF is targeted at the general population. It is aired on the General Service of the Kenya Broadcasting Corporation on Saturdays from 8-8.15p.m.

4.5 Sources of funding

The AMREF Distance Education Project is almost entirely donor supported. The first donor to support the project was the Danish International Development Agency (DANIDA). The Swedish International Development Agency (SIDA) has provided continued funding for the programme, which was supplemented by donations from the United States Agency for International Development (USAID) for regional activities such as workshops. More recently, donations have also been received from Spain. In addition, AMREF has introduced a cost-sharing initiative where learners are expected to pay a standard amount of Kshs 1,000 per course.

4.6 National, regional and international partners

AMREF maintains a steady working relationship with the Kenyan Ministry of Health and its Continuing Education Department. Most of the tutors working with the Distance Education Project are recruited from the Medical Training College, which is a division of the Ministry. In addition, AMREF co-operates with the Kenya Broadcasting Corporation (KBC) in the production and presentation of its radio programmes, whose format is prepared in conjunction with the Kenya Institute of Education (KIE).

Regionally, AMREF has been instrumental in the foundation of medical DE programmes in Uganda, Tanzania, Zimbabwe, Ethiopia, Sudan and Botswana. It has also been involved in training programmes for writers in DE in many of these programmes.

Internationally, AMREF assisted with the establishment of a DE programme in the Solomon Islands. In addition, the institution

obtained its key database programme, which it uses to store and update all project records, from the Commonwealth of Learning in Vancouver, Canada. The International Extension College, Cambridge, UK, trained the staff of the Distance Education Project in methods of distance teaching.

5 MEASURING SUCCESS

5.1 Learner enrolment and retention rates

The data from the distance education project reveal some surprising findings. Based on the indicators for measuring success, it was determined that the number of learners taking AMREF courses has increased dramatically. Table 5 gives the breakdown of learner enrolment for each of these courses since the project started in 1980 to date.

As was stated earlier, in the first intake only 200 learners were enrolled. By the end of March 1999, AMREF had enrolled 7,991 learners; and by June 1999, the total enrolment had reached 8,047 of whom 6,004 (75 per cent) were men and 2,043 (25 per cent) women. The target population is approximately 40,000 health workers, working in different health facilities all over the country. Considering that these learners are not receiving any recognisable certificates, the number of learners enrolled for the courses is quite encouraging.

In terms of completion rates, Table 5 shows that 43.5 per cent have completed the course, while 40.9 per cent are still actively involved. Only 15.6 per cent have dropped out. When asked whether or not they would like to take another AMREF course, 73.1 per cent of the dormant learners answered 'yes' while only 3.8 per cent said 'no'. The remaining 23.1 per cent were not sure.

Table 5: Learner enrolment up to end March 1999 (Cumulative figures since 1980)

Course	Learners enrolled	Active	Dormant*	Completed
Child Health	1,044	388	189	467
Communicable Diseases	1,564	539	183	842
Environmental Health	424	107	31	286
Family Planning	174	68	30	76
Mental Health	258	105	23	130
Gynaecology & Obstetrics	1031	434	168	429
Helping Mothers Breastfeed	197	56	30	111
Medicine	1,279	712	219	348
Community Health	2,017	855	376	784
Immunisation	3	3	0	0
TOTAL	7,991	3,267	1,249	3,473

*A dormant learner is one who has not submitted an assignment for more than six months.

5.2 Relevance of the project

Most of the respondents (80.4 per cent) stated that the courses they were taking were directly related to their work. The remaining 19.6 per cent felt that the courses were not directly related to their line of work. Note, however, that some of the learners taking AMREF courses are **not** medically qualified. All AMREF courses have received very positive comments from the DE learners, including the following.

- The courses assisted me very much with my duties.
- The courses taught me a lot about new diseases which were not discussed in basic training.
- The courses were very convenient because I could do them at my own pace and time.
- The topics were well described and easy to understand.
- The courses helped ease the daily workload of managing patients.
- The courses helped me on new developments in the field.
- The study guides obtained with the courses were good for teaching others.

Table 6 gives a summary of comments by DE learners on the various courses offered.

Although none of the learners stated that the courses were not useful, there were several complaints and suggestions for improvement. Respondents stated that:

- some of the coursework was difficult to understand
- some topics were not dealt with in depth/ were too elementary
- more practical demonstrations were needed
- some topics needed clarification by the tutor
- AMREF should hold some residential sessions.

The most popular course among active learners was Community Health, with 21 respondents citing it as their number one preference. Their least popular course was Environmental Health, with only two respondents citing it as their number one choice. Amongst dormant learners, the most popular course was Gynaecology and Obstetrics (seven respondents) while the least popular was Mental Health (no respondents).

Tables 7 and 8 give a summary of preferred courses of both active and dormant learners.

Table 6: Respondents' comments on the AMREF courses (multiple responses)

Course	Very useful	Useful	Not useful
Child Health	18	5	0
Communicable Diseases	17	13	0
Environmental Health	5	4	0
Family Planning	5	4	0
Mental Health	2	6	0
Gynaecology andObstetrics	6	9	0
Helping Mothers Breastfeed	3	2	0
Medicine	15	7	0
Community Health	13	14	0

Table 7: Courses in order of preference as ranked by active learners

Course	Rank of course 1	2	3	4	5	6	7	8	9
Child Health	13	16	15	7	7	7	3	2	3
Communicable Diseases	14	18	12	9	7	4	2	1	0
Environmental Health	2	8	11	9	9	6	10	4	7
Family Planning	11	8	6	5	8	11	4	10	3
Mental Health	3	1	4	8	4	8	12	6	16
Gynaecology and Obstetrics	8	6	8	5	11	6	5	8	3
Helping Mothers Breastfeed	3	5	5	4	4	8	10	9	16
Medicine	17	10	0	11	5	6	5	3	9
Community Health	21	7	11	9	2	2	3	6	3

Table 8: Courses in order of preference as ranked by dormant learners

Course	Rank of course 1	2	3	4	5	6	7	8	9
Child Health	1	2	5	1	0	1	3	1	0
Communicable Diseases	5	3	1	1	1	2	3	2	0
Environmental Health	1	0	0	2	1	3	3	0	2
Family Planning	2	3	1	2	1	1	0	0	1
Mental Health	0	0	2	1	4	0	1	3	1
Gynaecology and Obstetrics	7	2	1	0	0	1	2	0	1
Helping Mothers Breastfeed	1	1	11	2	2	2	1	0	3
Medicine	4	3	0	4	1	2	1	2	0
Community Health	2	1	4	1	2	0	0	2	2

Table 9: Comments on layout of printed materials

n = 92 (multiple responses)

Style of unit	No response	Yes	No
Illustrations make the unit more interesting	27	63	2
Illustrations make it easier to understand the topic	25	67	0
Illustrations help you remember the information	28	63	1
Illustrations are suitable for health workers	28	64	0
Symbols used in the unit are good	26	66	0
Units are clearly written	26	63	3
Language used is too difficult	27	2	63
Technical terms have not been explained	25	0	67
Too much repetition	28	1	63
Some paragraphs are contradictory/illogical	28	0	64

Respondents also expressed satisfaction with the layout of the course materials. There were positive reactions to the illustrations, symbols and presentation style used in the correspondence units, as shown in Table 9.

The relevance of the AMREF courses is further stressed by an examination of responses from dormant learners. Only two respondents out of 26 stated that they had stopped doing the AMREF course because they were not pleased with its content or result. Of these two, one stated that she had stopped doing the course because she found the course content too difficult. The other respondent thought that the AMREF course provided formal upgrading and discontinued her studies when she realised it did not.

Of the remaining respondents, seven were continuing students with the AMREF programme. Five had temporarily discontinued their studies due to personal commitments, while one learner was unable to continue with the course due to financial constraints. One dormant learner had not followed through on his commitment to the course because it had taken over a year to receive the course material, while four learners were still waiting for a response to the last assignments they had sent in for marking. Finally, one student had stopped taking more AMREF courses because he had not yet received his certificate for the previous course he had done.

It can be concluded, therefore, that the majority of dormant learners (73 per cent of respondents) did not discontinue their studies because they were dissatisfied with the course content or felt that it was irrelevant to their work.

5.3 Demand for the project

The data showed that 56.5 per cent of the sample of active learners in the AMREF DE courses were aged 31-40, as were 16 of the 26 dormant learners. This gives us a total of 61.5 per cent of the sample population. The lowest number of learners was found in the 21-25 age bracket. Among active learners, only one per cent of the sample population fell into this bracket, while the dormant category registered 11.5 per cent of its sample population (which it

must be noted, however, was considerably smaller) in this bracket. Only one learner (dormant) below the age of 20 was registered. These findings imply that health workers who have been out of the educational system for a period of more than ten years appear to feel the strongest need for revision and updating of knowledge.

There was a larger percentage of male than female learners. Out of the 92 respondents in the active learner category, 58 were male and 34 were female. In the dormant learner category, the same trend was apparent. Out of 26 respondents, 17 were male and nine were female. 86.9 per cent of the active learners and 69.2 per cent of dormant learners were married. Eight active and seven dormant learners identified themselves as single, while a negligible number of respondents (four active and one dormant) classified themselves as single parents.

The majority of respondents had secondary school qualifications. Their professional qualifications varied from traditional birth attendants to Kenya Registered Nurses and clinical officers. In the active learner category, the most common professional qualification was Enrolled Community Health Nurse (ECHN) (27 respondents), closely followed by Kenya Enrolled Nurse (KEN) (15 respondents). In the dormant learner category, these were also the two most common professional qualifications, with nine ECHNs and three KENs.

The majority of health workers taking the AMREF DE course seem to be centred in public health facilities. In total (that is, both active and dormant learners) 85 out of a total sample population of 118 work in the public sector. Another 24 are based in private health facilities, with the remaining nine distributed among non-governmental organisations. 53.4 per cent of the respondents are based in hospitals; another 14.4 per cent are in clinics; 12.7 per cent work in health centres; while a further 7.6 per cent work in dispensaries.

The total number of districts represented in the study was 37. There was a fairly adequate

Table 10: Respondents' place of work

Workplace	Active learners (n=92)	Dormant learners (n=26)
Dispensary	8	1
Clinic	9	8
Health centre	14	1
Hospital	51	12
Community centre	0	1
Nursing home	0	1
Field project	1	1
Public health office	2	0
Medical training college	3	0
Not applicable	0	1
No response	4	0

Table 11: Frequency distribution of AMREF, MOH and other courses (multiple responses)

Institution	1 course	2 courses	3 courses	4 courses	5 courses	Over 5
AMREF	29	15	8	6	4	4
MOH	14	8	10	3	1	5
Other*	13	5	4	2	0	0

representation of rural areas and urban centres and areas that are traditionally classified as 'remote'.

An overall comparison with other continuing education courses currently on offer by a variety of organisations and institutions showed that, in spite of any criticisms, there was still high demand for AMREF courses. 29 active learners were taking at least one AMREF course as compared to 14 taking one course offered by the Ministry of Health (MOH) and 13 taking one course from any other* institution.

The researcher noted that there was an inverse relationship between the number of courses taken under AMREF and those taken under the MOH. Learners who took more courses under the auspices of the MOH tended to take fewer courses with AMREF and vice versa. In this respect, AMREF seems to be achieving its objective of reaching health workers least exposed to further training.

Table 11 shows a comparison between the frequency distribution of AMREF course learners and learners taking courses offered by the MOH and other institutions or organisations.

* For the purpose of this study 'other' will be used to refer to any institution that is not AMREF or the MOH. These include St. John Ambulance, Amani Counselling Centre, PCEA Kikuyu Hospital, AIC Kijabe Hospital, SIDA, University of Nairobi, Red Cross Society, Israel, Netherlands, Rotary Club etc.

5.4 Change of attitudes, practices and behaviour

75 per cent of active learners stated that they had benefited in their career development through the AMREF courses they had studied. In the dormant learner category, there was a similar response, with 73 per cent of respondents stating that their career development had benefited. The response pattern was also similar amongst those who stated their careers had not benefited from the AMREF course. 11.9 per cent of the former and 11.5 per cent of the latter stated that they had not found any improvements in their career after completing an AMREF course.

Amongst those in both categories who stated that their career development had benefited, the following reasons were cited. (Numbers of respondents in brackets.)

- The skills and knowledge I have acquired have improved my daily work and made it easier (35).
- I have been able to diversify my career through being exposed to different possibilities by AMREF courses (3).
- I was considered by the Public Health Co-ordinator to be one of the best managers because of my Community Health skills (1).
- I am able to attend to my patients with added confidence (13).
- I have added qualifications to my CV (3).

- I am getting more satisfaction out of my job now (2).
- I have been a source of information to my colleagues (4).
- I am reminded of essential knowledge that I had forgotten from my basic course (4).
- I have been able to get a better paid job (1).
- After my Community Health course I qualified to become a Registered Mediator with Lillian Foundation of Holland (1).
- It improved the way I attended to my patients, and I was consequently selected for a college admission (1).

The supervisors of staff taking the AMREF course said staff were 'more competent', 'more knowledgeable' offered 'improved patient care' and had 'improved interpersonal relationships and communication skills'. One supervisor remarked that staff in her institution who had completed the AMREF course had received high endorsements from their patients.

It should be noted that of the ten supervisor respondents, nine stated that they would like members of their staff to take an AMREF course. This was because they felt that:

- the courses offered were very applicable to the current working environment
- the courses updated their staff
- the courses improved the skills of their staff
- ultimately, the services offered by their institution were improved.

5.5 Cost-effectiveness of the project

When establishing a distance education system, the cost of the programme must be carefully planned for by considering the following cost factors.

- **Production**. This includes the cost of developing or adapting study materials such as print, video cassettes, audio cassettes, kits for practical work.
- **Transmission**. This means the cost of delivering study materials to the learners – for example, via radio or via the post office.
- **Maintenance**. This includes revision of materials and maintenance of necessary equipment.
- **Support**. This includes miscellaneous expenses needed for the programme to operate successfully, such as administrative costs (salaries of permanent and part-time staff).

Although the initial costs of starting up a distance education programme are high, the costs associated with conventional education are similarly high. On the other hand, the operational costs in distance learning tend to decrease with the increase in the numbers of distance learners and after the initial outlay for the production of learning materials.

In a study carried out by Development Solutions for Africa (1997), it was reported that in 1995/96 AMREF spent KSh 3,350,000 on their distance education project. Considering that in that year 391 learners completed the course, the average cost per learner was, therefore, approximately KSh 8,500. The report further suggests that since it takes about 40 days to complete an AMREF course, then the cost per head per day is approximately KSh 210.

The budget set aside for the distance education project of AMREF in 1997/98 was KSh 3,700,000 (Ministry of Health, 1997).

5.6 Status of the project

Several students stated that the AMREF DE courses had benefited their careers in terms of increased educational and professional opportunities. According to a policy maker

with the Division of Family Health, AMREF certificates, 'add weight to job interviews and influence them in the favour of certificate holders'. He also stated that some institutions, especially missions, recognise the AMREF certificate.

According to the Acting Director of the AMREF Country Office, the MOH has given AMREF the authorisation to administer DE courses and collaborates with AMREF at the district level. The certificates obtained on completion of the course are signed by the Manager for the Kenya National Continuing Education Programme, MOH and the Director of Training, AMREF. However, the certificate is still not recognised for automatic job promotion by the MOH.

5.7 Measures to sustain the project

The AMREF DE programme is primarily funded by donors. As a result of structural adjustment policies and economic recession in a number of countries, donor funding has been, and will continue to be, cut back to both government and non-governmental agencies and programmes. At the moment, the Programme Co-ordinators are never sure when donor funding will be withdrawn, because of the unstable economic situation in the region. Despite stressing the importance of distance education, the MOH does not offer any funding for the programme, although it channels to AMREF funds received from SIDA specifically earmarked for the distance education programme.

In anticipation of the funding problem, AMREF introduced cost-sharing measures in an effort to ensure the long-term sustainability of the DE project. Learners are now required to pay Kshs. 1,000 per course as well as provide postage stamps for submissions of their completed assignments. When asked to compare the cost of AMREF courses to that of courses currently on offer by other institutions, 40 respondents from the active learner category stated that, in their opinion, they were paying a fair amount. The following reasons were given.

- Even the lowest earning health worker can afford to pay Kshs 1,000 (US $15).
- AMREF gives learners a chance to pay in instalments which makes it easier.
- Generally, other courses on offer, especially medicine, are very expensive. AMREF is much cheaper by comparison.
- Taking into account the cost of materials and marking, the cost is very fair.
- I get materials which I can continuously refer to even after completing the course and a certificate.

Seven respondents stated the amount was too high. This was because previously the courses were free and many of the health workers found having to pay Kshs 1,000 a huge strain on their financial resources. Nine respondents said they felt the cost was too low and should be increased. The following reasons were given.

- The cost of living (and therefore printing, postage and so on) is now very high.
- The price charged is too low compared to the amount of course materials given.
- The materials given are well written and therefore more valuable.
- Other institutions, like mission colleges, charge up to Kshs 30,000 (US $460) per year.
- Since the course is so useful, the payment should be higher.

Table 12: Amount of fees learners are prepared to pay

Amount in Kshs (US $1 = Kshs 65)	Active learners (n=92)	Dormant learners (n=26)
Less than 200	4	0
1000	19	5
1000-1500	21	5
1500-2000	5	1
2000- 2500	0	0
2,500-3000	3	0
3,000-4000	1	0
10,000	3	0
Undecided	1	0
Not applicable	10	8
No response	25	7

Table 12 shows the amounts both active and dormant learners would be willing to pay for the courses.

Finally, according to the Distance Education Officer, AMREF, the institution plans to lobby the MOH to decentralise the DE programme to district level. At this level the Continuing Education Co-ordinators will be expected to run the programme. Meanwhile, the production of materials will remain AMREF's responsibility.

5.8 Comparative use of media: radio versus correspondence

23 per cent of the active learner sample population stated that they had **not** listened to any programme from the radio series. This finding corresponds with figures quoted by AMREF which states that, on average, 70 per cent of health workers listen to the radio programmes they produce. The most popular radio series among those who had listened to AMREF programmes was that on Sexually Transmitted Diseases and HIV/AIDS Control, with 18 respondents stating that they had listened to this programme. Other programme topics ranged from nutrition to drug dependence and abuse. Those respondents who did listen to radio series had a mostly positive response to the content and value of the programme. Reactions to the programme included the following.

- The programme taught me how to explain diseases in Kiswahili to patients.
- I learnt new methods of management.
- I learnt how to follow up cases.
- I learnt different approaches and techniques of family planning.
- I learnt about the transmission and management of communicable diseases.
- I learnt about the spread and control of diarrhoeal diseases in children.
- I learnt that STDs are directly/indirectly related to AIDS.
- I was updated on new methods in the medical field which I then applied at work
- The programme reinforced advice I gave to my patients who may have heard similar advice from doctors on the radio.

Table 13: AMREF radio series listener distribution (multiple responses)

Name of radio series	Number of listeners
STD and HIV/AIDS Control	18
Health is Life	10
Immunisation	6
Dr AMREF	6
Dental Health	5
Diseases of the Joints and Connective Tissues	4
You and Your Health	3
Diabetes	3
Communicable Diseases	3
Mental Health	3
Community Health	3
ENT	3
Breast Feeding	3
Control of Diarrhoeal Diseases	3
Medicine	2
Environmental Health	2
Tuberculosis	2
Anaemia	2
Cardiovascular Disease	2
Maternal Child Health	2
Antenatal Care	1
Eye Conditions	1
Drug Dependence/Abuse	1
Malaria	1
Inhaling Poison	1
Intestinal Worms	1
Depression	1
Meningitis	1
Daktariwa Redio	1
Paediatrics	1
Asthma	1
Nutrition	1
Non-Communicable Diseases	1
Hypertension	1
Do not listen to radio series	21

Table 14: Reasons respondents like the radio series (multiple responses)

Comments on radio series	No. of respondents
Increases general public awareness of diseases	6
Topics are well presented	6
Brief, clear and to the point	8
The message is real	1
Can listen and do other things simultaneously	1
Language used is simple	5
Programmes update the listener	3
Programmes are educational	5
It's like having personal contact with your tutor	5
The programmes are stimulating	2
Instant gratification	3
Enables revision especially if also doing correspondence course	3
Encourages private research	1

Table 15: Reasons respondents do not like the radio series (multiple responses)

Comments on radio series	No. of respondents
The programme is too short	20
Questions cannot be directed to the tutor/speaker	3
Points which are not understood cannot be repeated	2
Tutor cannot demonstrate	1
Some tutors are very fast and shallow in their lectures	5
Timing is inconvenient	8
Subject matter unsuitable for young children. Deters those with families	1
Programmes are not systematically organised. Tend to cover a variety of topics in one series	1
As a parent I am too busy to listen to the radio	1
Programmes are not consistently repeated	3
There is no monitoring/follow-up of answers sent to the programme	1

One respondent stated that the programme had taught him 'nothing new', while another said it was difficult to learn by listening to the radio, since 'at that time there is disturbance with the children and it is time to guide them with their studies'. Despite the fact that most respondents stated that they had indeed learnt a lot from the radio programmes, there were

mixed reactions to the presentation of programmes and effectiveness of the radio as a tool of distance education. Tables 14 and 15 give a brief summary of both positive and negative reactions to the radio series among active and dormant learners.

Respondents, therefore, had mixed reactions to the use of radio as a tool of DE. However, a large number of learners saw the integral value of the radio programmes. Eight respondents said that the programmes were brief, clear and to the point. Five said that listening to the radio programme was like having personal contact with your tutor.

Learners gave several reasons for wanting to take the course through both radio and printed materials. These included the following. (Numbers of respondents in brackets.)

- I can listen to the radio and remind myself of what I cannot recall through print (6).
- We learn 80 per cent from seeing and hearing, which means the use of both print and radio is best (1).
- If it is only done through the radio, I may not be available during broadcasting. But with print also, I can refer to the materials for what I missed (5).
- I can hear, read and answer (1).
- If you are taught over the radio, and then attempt the printed material, you will learn more easily (2).
- The repetition (radio) and illustration (print) will provide double help (1).
- If I don't understand the print materials when I read them, I'll understand the topic when I hear it on the radio (11).

The final comment, which was made by the majority of respondents, ties in with a comment made by a policy maker in an interview, who stated that 'radio lessons are also positive because in some cases people understand better when they hear than when they read'.

6 OBSERVATIONS AND CONCLUSIONS

6.1 Enrolment numbers

The number of learners enrolled for the AMREF distance education courses is quite encouraging, especially considering that the certificates issued are not recognised by the Ministry of Health for automatic promotion. A look of the geographic distribution of learners shows that they come from all provinces of the

Table 16: Respondents' choice of media (n = 92)

Preferred media	No. of respondents
Radio only	0
Printed materials	21
Radio and printed materials	39
Television	1
Television and printed materials	5
Radio, television and printed materials	6
No response	15
Not applicable	5

country. A closer look, however, reveals that learners seem to come in clusters from certain areas, especially where there is a larger healthcare facility. This suggests that information on the availability of AMREF courses is obtained by word of mouth rather than by an effort to advertise the project in areas with low enrolment.

6.2 Relevant qualifications

The data showed that the majority of learners have relevant qualifications and experience. However, the researcher noted that despite the fact that AMREF states one of the necessary qualifications for learners on the DE course as being 'basic medical training' a number of respondents did not list medical training as being amongst their qualifications. The study recorded one BEd (Arts), one accountant/computer, one sales/marketing, one institutional management, one copy typist, one trained soldier, one Diploma in Social Work, one untrained nurse and one boiler operator. This is perhaps due to the fact that candidates are not required to enclose photocopies of their professional certificates with their applications.

6.3 Relevance of the project

While the majority of learners stated that they find the courses relevant to their work, almost 20 per cent indicated that the course they are taking is not directly related to their work. Granted that some of the learners are not professionally qualified and are taking the course out of personal interest, one should ask the question, 'Why should a health care worker study a medical course that is not directly related to their work?' The answer perhaps lies in a closer examination of the list of courses offered by AMREF.

If, for example, a nurse working in a mental care facility completes the one course offered in her area of work, what is the next related course she could take? Or if a paediatric nurse completes the course on child health, she, similarly does not have another choice of a course in her area. Therefore, they opt to take any other course that might present some interest to them with the hope that they may get a better chance to move to a different ward, especially if they are in a large hospital.

In a list of recommendations submitted to the researcher by respondents, 30 per cent of respondents stated that AMREF courses should be upgraded, recognised by employers and educational institutions and considered for promotions. If the courses offered by AMREF were aimed at a particular category of health worker and were structured so as to start from the basic training level, bringing the learner up to a higher level through a series of related courses, perhaps there would be a stronger case for recognition of the certificates. When planning an education programme, it is important to see it as a continuing programme, bringing a learner from a lower level to a higher level of learning.

There was also an apparent contradiction between respondents who found certain topics too difficult while others said they found those topics shallow. This is because some learners did not have the necessary professional qualifications for the course they were taking, and gaps in their basic knowledge prevented them from understanding the subject matter. On the other hand, others were overqualified and found the materials to be a repetition of what they did at their training institute.

6.4 Usefulness of the project

The respondents noted an increase in knowledge and acquired a variety of skills as a result of the completion of the AMREF course(s). Generally, learners learned about new medical conditions, especially in the area of sexually transmitted diseases (STDs), gained new skills in physical examination, refreshed their knowledge in areas previously studied

and noted an increase in confidence in the workplace.

6.5 Learner support

One of the most common complaints among correspondence learners was that it took too long for course materials to be received after registration for a course. Once assignments had been completed and returned to the AMREF centre, it also took a long time for grades to be submitted to the learner. 11 respondents stated that it took up to one month to receive course materials once they had registered for the course, while four respondents said in their case it had taken two months. Two respondents stated it had taken over four months to receive their course materials. The majority (nine) stated that it took up to two months for receipt of their grades after submission of assignments.

Several of the dormant learners stopped doing AMREF courses because of the delay in receiving their course materials and grades. Several complained that they did not receive their certificates on completion of the course.

In addition, most active correspondence learners had not had an opportunity to meet with their tutors. 55 learners from the sample population stated that they had never met their tutors. Only 24 respondents had ever met their tutors. 25 respondents said they would like to meet their tutors every three months while 14 respondents said they would prefer to arrange meetings with their tutors once a month. Four respondents said they had never even heard from their tutors let alone met them. The largest number of respondents (14) heard from their tutors once a month followed by (13) who heard from their tutors once every three months (when they received their marked assignments).

For distance learners who study alone, it is important to establish a system of quick response, and promote a caring attitude to encourage learners to complete their studies. This is even more important where face-to-face sessions have been discontinued.

6.6 Radio programmes

The radio programme seems to fulfil in many learners their need for instant gratification in terms of knowledge gained and for more regular contact with a tutor. The correspondence course, meanwhile, fulfils learners' needs for consistency and the ability to conduct in-depth studies at their own pace This explains why 42.4 per cent of active learners said that they would prefer to take the course they were currently studying through both radio and printed materials.

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