

## Evaluation of Health Education in a Tanzanian Leprosy Scheme<sup>1</sup>

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Health education campaigns are gradually becoming a common feature of leprosy schemes in East Africa, particularly in those projects which concentrate on outpatient services in dispensaries and mobile stations rather than on treatment in leprosy settlements. However, leprosy officers have adopted different approaches to suit local conditions. Thus, the Geita District Leprosy Scheme, Tanzania, embarked on an intensive health education campaign for the leprosy patients as well as the general public, by making use of the existing political system of ten house cell-leaders which provides an excellent local framework for cooperation in case-finding and case-holding.

The present study was undertaken with the aim of assessing the health education campaign carried out by the Geita Leprosy Scheme among different groups of the population such as village leaders, school-children and the general public. However, since no baseline data had been collected before the start of the scheme, no evaluation could take place in the sense of measuring changes in the attitudes or habits of the population over a certain time span. Instead, it was decided to attempt a comparative study of three separate administrative areas of Geita district which had been exposed to different intensities of health education.

From the information obtained it was hoped that recommendations for improvement in methods could be made.

### EDUCATIONAL SCHEME

**Geita District Leprosy Scheme.** Geita district is situated on the southern shore of Lake Victoria in Tanzania in the western

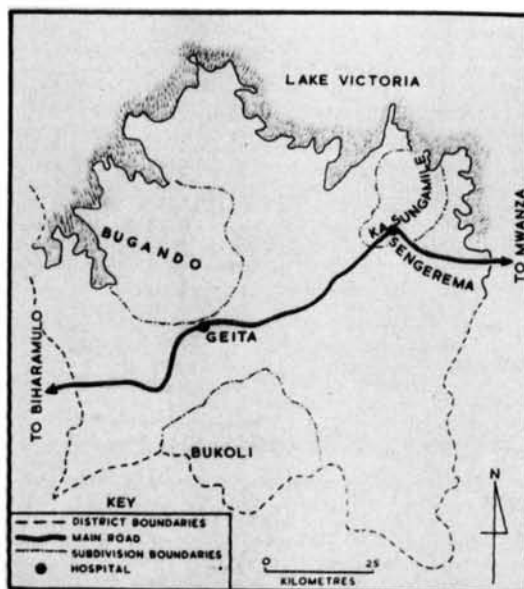


FIG. 1. Map of Geita district.

part of Mwanza region. It is comprised of 3,500 square miles with over 400,000 inhabitants. The area is known for its accelerating increase in population because of immigration in the past thirty years.

The people are agriculturalists and cattle holders and live scattered over the land. There are few real centers of population. The most important activity is the cultivation of cotton which is developing gradually under the encouragement of the cooperative movement.

The Geita Leprosy Scheme began in March 1966 as a pilot-scheme under the German Leprosy Relief Association and in association with the local authority after being approved by the Tanzania Ministry of Health. Its main objective is adequate treatment of all potentially infectious leprosy patients in all medical units, hospitals, health centers and dispensaries, whether run by the government or voluntary organizations. Primary attention is paid to early

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diagnosis, and treatment is provided for all skin diseases. Thus, the scheme is supposed to function also as a preventive service, radiating from Sengerema (mission) Hospital and based on the existing rural health services.

The main activities of the Geita Leprosy Scheme can be briefly described as follows:

1. Treatment of (self-reporting) outpatients in 35 established medical centers including hospitals, health centers and dispensaries and at 42 "mango tree stations,"<sup>3</sup> together providing total coverage of the area. All these stations are visited by the medical officer or a specially trained medical auxiliary once every four weeks.
2. Treatment of inpatients in the department of skin diseases of Sengerema Hospital.
3. Case-holding. Special "health home-visitors" have been trained and charged with the task of visiting schools to check on the treatment of pupils, and also of tracing defaulters.
4. Case-finding, by means of regular school surveys and home visits.
5. Surveys amongst the general population to establish the prevalence rate of leprosy in defined areas.
6. Educational activities such as on-the-job training of auxiliary staff for leprosy projects in other regions, public health education programs, discussions with doctors and medical students studying the organization of a leprosy scheme.
7. Other activities such as simple rehabilitation and welfare work.
8. Assistance to mass BCG vaccination campaigns, carried out by the regional tuberculosis scheme.

**The health education campaign of the scheme.** The health education activities in all primary schools of the district date back to June 1966, when the first school survey was carried out. Talks, mixed with discussion, are given to the school children either by the health home-visitors or one of the teachers after being briefed by the Leprosy Scheme. Usually these lectures are given

once every two years to pupils in standard V, VI and VII, in connection with the regular school survey for case-finding.

The health education campaign for the general public was launched as a supplementary effort of the Geita Leprosy Scheme in mid-1969, except in the southwestern part of the district where it began late in 1970 (about five months before this investigation was done). Before that time the general public had been reached only directly and incidentally, because information on the scheme's objectives and program had been directed mainly to the appropriate key-men in the local communities.

The campaign is carried out mainly by four trained fieldworkers called "health home-visitors," each in charge of a section covering approximately one quarter of the district's population. These fieldworkers, who all completed standard VII and subsequently gained experience in practical nursing before being selected, received special training for one and a half to two and a half years. They are taught the basic principles of diagnosis, treatment and control of leprosy and tuberculosis. They are also introduced to important aspects of local public health problems, including health administration, political structures and mass communication. Since mid-1970 case-holding and case-finding activities at the district level of the Geita Leprosy Scheme and the Lake Victoria TB Scheme have been combined. Thus, the health home-visitors are dealing with tuberculosis as well as with leprosy.

Health education for the general public is directed to different groups of the population and on various occasions:

- 1) during opportune community meetings;
- 2) as part of the regular program of adult education;
- 3) amongst the ten-cell leaders, individually or collectively, integrated with the case-holding and case-finding activities of the health home-visitors.

A health education session provides a general introduction about leprosy as a health problem followed by a free discussion on this subject. After this the staff

<sup>3</sup> Roadside halts en route.

members of the scheme give additional information about leprosy, its cause and its symptoms, how it is spread and how it can be cured, and finally about the social problems involved. This explanation is followed by discussion on these specific aspects. After summarizing the main points of discussion the session is closed. Thus, throughout health education much emphasis is placed on discussion with the audience.

**The areas selected for evaluation.** In the district three different areas were chosen for this evaluation on the basis of the varying intensity of the health education campaign (Fig. 1). Additionally, in each area one village, having an administrative center, a dispensary and a primary school in the vicinity, was selected. The latter two institutions are included in the regular visits of the scheme.

**Kasungamile.** Here the health education program had been carried out continuously from the very beginning. The center chosen in this area was Nyantakubwa village, nine miles from Sengerema with a population of slightly over 2,100 distributed in 330 households (1967 census).

**Bugando.** An area where health education talks had been given only incidentally. The center chosen for study was Nyamboge village. It has 1,460 inhabitants living in 237 households.

**Bukoli.** An area in the southwestern part of the district where at the time of this study, supplementary health education activities had been introduced recently. The locality selected was Ihega village having a population of 840 in 158 households.

**People investigated and methods of inquiry.** Since health education was directed to different groups of the population, the following categories of respondents were included:

1. A sample of the adult population, particularly the head of the household or his wife.
2. A sample of village leaders.
3. Standard VII students from primary schools in the respective villages.

Due to limited funds 40 respondents from the adult population, 10 from the village leaders and all standard VII children in the schools were selected. The

adult population was sampled in a systematic way, using a complete list of ten-cell leaders in the selected areas. At least one family was chosen from each ten-cell unit so that the sample population would be representative of each area. The interviewers were instructed to select leaders in the fields of administration, politics, education and religion.

The local leaders and the adult population were questioned by means of an interview which was conducted during February and March, 1971. At the same time schoolchildren were asked to complete a written questionnaire covering similar subjects.

**Social characteristics of the respondents.**  
*Age distribution.* No significant differences in age distribution were observed between the selected age groups in each of the three subdivisions. Taking adults and leaders together, 45% to 50% were 40 years and over.

*Sex distribution.* In all categories of respondents the males outnumbered the females in all three subdivisions. The excess of males amongst schoolchildren in the study follows a general pattern in primary schools throughout Tanzania.

*Standard of education.* The schoolchildren were selected from standard VII. At present 40% to 50% of the children in Geita district go to school.

About 40% to 50% of the leaders had received no formal education, whereas this percentage for the adult population sample varied between 55% and 75%. In the latter group the level of education was highest in Kasungamile subdivision, followed by Bugando. Bukoli has the highest number of people without any formal education.

*Tribe.* The tribal composition showed marked differences between the three areas. The majority of the respondents in Kasungamile were Sukuma, who are the main inhabitants of the district. In Bukoli the main groups were Sukuma, Sumbwa, Rongo and Nyamwezi, whereas in Bugando most respondents were Sukuma, Zinza or Rongo. In all subdivisions and particularly in Bugando, which is known for its large number of immigrants in recent years, other tribal groups were also represented.

*Village leaders.* The village leaders selected included ten-cell leaders, teachers, catechists, and representatives of the traditional village community such as medicine men and respected members of the old men and women societies.

### RESULTS

**The cause of leprosy.** A wide variety of factors were thought to be the cause of leprosy among which the following predominate:

1. Certain bacteria, "vijidudu,"<sup>4</sup> and physical contact including sexual intercourse. This concept was held by 25% to 30% of all respondents.
2. Heredity, expressed as the belief that leprosy tends to occur more frequently in certain families, was held by slightly over 25% of the people.
3. Witchcraft is another prevalent belief, particularly in the Bukoli and Bugando subdivisions. Amongst the Sukuma several diseases are believed to be caused by witchcraft originating with people who want to cause disaster to the victim. The type of witchcraft and related procedure differs for several diseases. In the case of leprosy, the witch spreads a mixture of plants on the victim's bed.
4. Indirect contact with a leprosy patient: by wearing his shoes; by stepping on his urine, excreta or sputum; by inhaling the breath of a patient; by bathing in a ditch used by a patient for bathing. It was also mentioned that one can get leprosy by eating together, drinking together and sleeping in the same house.
5. In general, the number of respondents who claimed to have no knowledge about the cause of leprosy amounted to about 15% which is relatively small as compared to the 40% recorded in a recent study amongst leprosy patients in Ethiopia (<sup>3</sup>).

Apart from these main categories several others, such as drinking dirty water or eating bad food, in other words poor standards of hygiene, were thought to be the cause of leprosy.

It was also mentioned that leprosy is caused by adultery. For example, some respondents stated that when a person is infected, but had no record of leprosy in his ancestry, then it is quite obvious that the victim is an illegitimate child of a person who is either infected himself or who belongs to the family of a leprosy patient.

The general description above does not take into account the sometimes very marked differences which were observed when comparing similar categories of respondents between the three areas or different categories of respondents within the same area.

In each subdivision there were significant differences in opinion between the school children on one hand and the adult population sample and leaders on the other. The majority of the schoolchildren expressed the modern view of leprosy as being caused by certain bacteria and by physical contact with a patient, whereas the adult population and the leaders associated leprosy more frequently with such factors as heredity, witchcraft, indirect contact with a leprosy patient or poor standards of hygiene. The attitudes of the latter categories of respondents may be described as tradition-oriented.

Kasungamile subdivision took the lead in showing the most modern view, and Bugando subdivision in showing the most traditional. For example, the number of schoolchildren who believed that leprosy is caused by bacteria and by physical contact with a leprosy patient was highest in Kasungamile subdivision and lowest in Bugando. On the other hand, factors such as witchcraft and indirect contact, indicating a more traditional attitude, were mentioned by both the adult population sample and the schoolchildren more often in Bugando than in Kasungamile subdivision. In Bugando and Bukoli subdivisions witchcraft in particular was held responsible for leprosy by up to 20% of the population.

**The type of leprosy treatment considered effective.** During the health education talks the public is informed that leprosy cannot be cured by native medicine and that proper treatment, though it may take a long

<sup>4</sup> "Vijidudu," a Swahili word for bacteria.



time, can only be given at a modern medical center.

The respondents were asked whether they felt the disease could be cured once it had affected a person, and in what way. Almost all thought that the disease could be cured. However, people in the three areas differed, though not very markedly, in their ideas concerning the type of treatment to be sought. For example, modern treatment was suggested by more than three quarters of all respondents, and by 85% in Kasungamile and 80% in Bugando subdivision.

On the other hand, traditional treatment by the use of native medicine was mentioned more frequently in Bugando and Bukoli (by about 15%) than in Kasungamile subdivision (12%). Leaders supporting traditional treatment were found only in Bugando division. Similar differences in opinion concerning modern and traditional treatment were not met amongst schoolchildren in the three areas. Over 95% said that they were in favor of modern treatment only.

It can be concluded that, though the number of people supporting traditional causes of leprosy is rather high, only a small minority supports traditional treatment.

It was frequently stated that formerly patients had no alternative but to go for native treatment, but that presently they could best be cured in hospitals. It was also mentioned that leprosy due to infection or to heredity could be cured by modern treatment. However, quite a number of respondents believed that leprosy, if caused by witchcraft, could only be treated by traditional doctors.

Others mentioned that leprosy could only be cured if the patient was brought to the hospital in time and if not already disfigured. Some believed that even when a patient was cured, the signs of leprosy would remain.

A few words may be said about treatment of leprosy by traditional medicine. A recent investigation amongst leprosy defaulters showed that over 10% had turned to native treatment, after prematurely stopping the treatment provided by the health

scheme <sup>(1)</sup>. However, though the number of local practitioners is high, particularly amongst the Sukuma, there is no specific tradition amongst them in treating leprosy patients.

On the other hand, it was learned that certain home treatments used to be administered by parents in the family, possibly in order to prevent the outside world from knowing about the disease in the family. It is well-known that leprosy patients and their families try to hide the disease as long as possible.

**The prevention of leprosy.** Asked to state what they could do to prevent leprosy from afflicting them or their children, people most frequently mentioned the following broad categories of actions:

1. By avoiding physical contact with the infected patient, mentioned by about 20% to 30% of all respondents, though by fewer people in Bukoli and Bugando subdivisions than in Kasungamile. Schoolchildren of all three areas showed higher percentages than leaders and the adult population sample, but the differences between Kasungamile subdivision and the Bukoli and Bugando subdivisions remained.
2. By going for early medical examination and treatment in cases where the symptoms of the disease are noticed, particularly amongst children (20% to 25% of all respondents). Again, the percentages were lowest in Bugando and Bukoli subdivisions. Schoolchildren showed high percentages in all three areas.
3. By not sharing food and drink with the leprosy patient or by not using his garments, an opinion reflecting the more traditional attitude. This type of answer was given most frequently in Bugando subdivision, both amongst adults and schoolchildren.

In general, the number of people who did not know leprosy could be prevented was quite high (up to 30% in Kasungamile and Bukoli subdivisions). However, the number of schoolchildren denying any knowledge about the prevention of leprosy was very low.

The idea that nothing can be done at all to prevent people from becoming infected by the disease was supported by a small minority only, the highest number being recorded in Bugando subdivision.

It can be concluded that though many people think about the cause of leprosy in a rather traditional way, quite a number show a modern attitude when it comes to treatment and prevention.

**Social contact with leprosy patients.** In many societies those infected with leprosy are subject to isolation and even deprivation. However, in the areas studied the attitude of the people towards leprosy patients is rather benevolent, and leprosy seldom leads to complete segregation of patients from their families or villages. In fact, most of the afflicted are accepted as members of the community and some of those under treatment by the Geita Leprosy Scheme are even local politicians.

Nevertheless, leprosy carries a definite stigma resulting in certain restrictions in social relations to which the leprosy patient is bound <sup>(2)</sup>. For example, patients with clear signs of leprosy will have less chance of getting married. According to Sukuma custom, people dying with leprosy used to be buried outside the compound of the family and not inside as was the normal case. Leprosy patients in the destitute camp of Misungwi, about 45 km south of Mwanza, complain of the reluctance of car owners, who often refuse to bring leprosy patients to the hospital even when offered a fee.

In the health education campaign it is stressed that there is no need to isolate the patient provided certain basic rules of hygiene are maintained, and that there is no reason to discontinue marriage to a leprosy patient. In order to get a better understanding of the peoples' attitudes towards the patient's social position we inquired whether the family of a leprosy patient should allow him or her to eat together, to sleep in the same house and to marry. The questions were put in this order since these possibilities of social contact were considered to represent an increasing intensity of social relations. Thus, it was hoped to measure what may be called the degree of

discrimination against leprosy patients. It was expected that the discriminatory feelings, if any, would be most intense with respect to marriage and least with respect to the sharing of meals. The main findings were as follows:

1. In all three areas unexpected as well as contradictory opinions were found in the population sample as compared to the school children. Whereas the vast majority of adult respondents claimed to have no objections to a leprosy patient sharing food and sleeping together with his family, or to his marriage, most of the schoolchildren in all three subdivisions appeared to oppose these ideas. This reaction of schoolchildren stood in contrast to their otherwise relatively modern attitude.
2. In the three different subdivisions contrasting opinions were expressed amongst the adult respondents. For example, the least opposition towards allowing a leprosy patient to share meals and to sleep with the members of the family was found in Bukoli subdivision, the strongest opposition in Bugando. Bukoli showed the strongest opposition in regards to the marriage of a leprosy patient, whereas the least opposition was recorded in Kasungamile. The findings in Bukoli apparently reflect the tribal origins of the respondents. However, similar differences were not found among the schoolchildren in the three areas.
3. Another interesting and unexpected observation was that, in general, the opposition tended to decrease with the increasing intimacy of social relations. Whereas marriage with a leprosy patient was expected to encounter relatively more opposition than the sharing of food or bedroom, the contrary was found in all three areas, indicating the moderate discriminatory attitude towards leprosy patients.
4. The data concerning marriage as mentioned under 1 and 2 may also explain the differences in opinion regarding a fourth question as to

whether marriage of a leprosy patient had to be discontinued, either by himself or his partner. The highest negative response to this suggestion was recorded in Kasungamile, the lowest in Bukoli subdivision. Among schoolchildren the highest percentage against the suggestion was observed in Kasungamile and in Bugando.

### DISCUSSION

The present study records some attitudes towards leprosy as observed amongst village leaders, schoolchildren, and a sample of the adult population in three different areas of Geita district after a health campaign was carried out. It did not take into account leprosy patients themselves. Also no evaluation was done with respect to the effectiveness of the various methods of health education used. Finally, the findings should be regarded as a sample of the opinions of respondents rather than as a study of their actual behavior.

Schoolchildren and the adult population, including leaders, expressed different attitudes towards leprosy. These differences can be attributed to the varying standards of education of the respondents. As such, the data from the schoolchildren are encouraging since they often reflect a modern view of leprosy. They also show the significance of formal education as a basic factor in detribalization.

However, a difficulty arises in trying to explain the differing attitudes of schoolchildren and the adult population regarding social contacts with leprosy patients. It appears that the two categories of respondents gave contrasting answers both regarding the biological and the social aspects of the disease. A likely explanation for the children's attitude is the fact that, as a result of education as to the cause of leprosy, they identify it as an infectious disease which can be prevented by avoiding social contacts with the patients. Another illustrative example of attitudes derived from health education is that of the sellers at the Sengerema market who, after a health education session by the Geita Leprosy Scheme some years ago, for the first time in Sengerema's history urged their

colleagues suffering from leprosy not to enter the market again. Therefore, health authorities certainly have to realize the possible adverse effects of talks on leprosy.

There were differences revealed in attitudes between the various administrative areas in the district particularly between Kasungamile, on one hand, and Bugando and Bukoli on the other. According to modern views of leprosy the results in Kasungamile subdivision can be considered most encouraging. They clearly suggest that a more favorable attitude can be found when health education has been carried out quite intensively. In this connection, however, the specific position of Bugando subdivision should be pointed out more clearly. It represents an area which, in general, shows a more traditional attitude towards leprosy than Bukoli, despite the fact that the health education campaign has been more intensive in the former area. Also, our respondents in Bugando have a higher level of education as compared to Bukoli. Therefore, the different attitudes between the various categories of respondents and the various administrative areas cannot only be attributed to the differences in standard of education and the intensity of the health education campaign.

Another factor responsible for the different attitudes of the respondents in Bugando subdivision is their tribal composition. All respondents of the Luo and the Regi tribes were living in Bugando, and the majority of Jita and Zinza respondents were also from Bugando. These tribes may express a more traditional view towards leprosy.

Comparison of the findings in Bugando and Bukoli subdivisions on one hand and Kasungamile subdivision on the other shows that health education activities, if carried out incidentally or irregularly, are of little benefit. Moreover, the effectiveness of such a campaign can be diminished or even negated by factors such as tribal attitudes.

The results at Kasungamile, in contrast, show the value of an intensive health education campaign. Nevertheless, though the findings on Kasungamile are encouraging, they can hardly be called very successful, particularly in the light of the high costs of

staff and equipment. In order to be successful such campaigns should be carried out for a longer period of at least five years. The findings in Kasungamile, where the conditions were relatively favorable, also indicate that new methods of health education should be developed whereby more attention is paid to traditional institutions, e.g., the traditional village organizations of the Sukuma, then to the newer structures such as the ten-cell units and the schools.

The scheme's educational activities at schools are a very valuable approach. However, in view of the negative consequences of some of the information given on leprosy, it appears advisable to review the contents of presentations, particularly regarding the "biological" knowledge about the disease as related to its social implications. The school health education program clearly does not have an immediate effect on the public. The schoolchildren's knowledge, it seems, does not affect their parents. Educational efforts should therefore approach the latter group either separately or together with the children at school sessions.

Unlike the school health education program, the curative activities of the program appear to have an important educational effect on the general public. Therefore priority should be given to this aspect of public health services before investing in supplementary health education activities.

### SUMMARY

A study was made of a five year leprosy educational scheme involving different population groups in Tanzania. It was concluded that health education activities, if carried out incidentally or irregularly, are of little benefit and may be negated by tribal attitudes. Even in the most successful areas where conditions were relatively favorable it is necessary to pay more attention to traditional institutions and structures and to tailor the educational efforts more closely to these patterns. An incidental reverse effect was noted in schoolchildren who, being taught that leprosy was contagious, concluded that they should avoid all persons with leprosy.

### RESUMEN

Se estudió un plan educativo sobre lepra, de cinco años de duración, que incluía diferentes grupos de población en Tanzania. Se llegó a la conclusión que las actividades de educación sanitaria, si se llevan a cabo en forma ocasional o irregular son de escaso beneficio, y pueden ser negativizadas por actitudes tribales. Aún en las áreas donde se obtuvo mayor éxito, en las cuales las condiciones eran relativamente favorables, fué necesario prestar gran atención a las instituciones y estructuras tradicionales, y ajustar los esfuerzos educativos lo más estrechamente posible a estos patrones. En niños de edad escolar se observó un efecto secundario contrario a los objetivos que se perseguían, ya que al enseñarles que la lepra es contagiosa, ellos llegaron a la conclusión de que debían evitar a todas las personas que tuvieran la enfermedad.

### RÉSUMÉ

On a procédé en Tanzanie à une étude d'un projet d'éducation dans le domaine de la lèpre, poursuivi pendant cinq ans, et s'adressant à différents groupes de population. On en conclut que les activités d'éducation sanitaire lorsqu'elles sont menées de façon occasionnelle ou irrégulière, comportent peu d'avantages et qu'elles peuvent être compromises par des attitudes ethniques négatives. Même dans les régions où cette campagne a rencontré le plus de succès, les conditions y étant relativement favorables, il est nécessaire d'accorder d'avantage d'attention aux institutions et aux structures traditionnelles, et d'adapter plus étroitement à des profils culturels les efforts menés dans le domaine de l'éducation. Un effet négatif s'est, à l'occasion, produit, lorsque des écoliers auxquels on avait enseigné que la lèpre était contagieuse, en ont conclu qu'ils devaient désormais éviter tous contacts avec des malades atteints de la maladie.

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