MEDICAL PRACTICE

Outside Europe

Diseases in the Tropics: A Confrontation in an African Rural Practice

W. Z. CONCO

British Medical Journal, 1973, 3, 331-333

"Many diseases are rare or unknown in all less-developed communities and common in all economically developed countries. . . . The most significant factor is the manner in which all these diseases tend to increase in frequency . . . a gradation of the prevalence . . . according to the extent to which Western customs, especially dietary habits, have been adopted."—Burkitt.¹

Summary

Recent claims that "diseases of Western civilization" are rare in rural African communities may not be justified. African peasants have a high pain threshold; many attend traditional healers rather than Western-trained doctors; and their language contains no words to express the descriptive terms used in Western medicine for the symptoms and clinical features of these diseases.

Introduction

Comparative geographical epidemiology is useful in suggesting hypotheses about the cause of certain diseases, but epidemiological observations are often based on personal experience rather than formal scientific study. In developing countries there are many difficulties in medical communication, including distance and economic, sociocultural, psychosocial, and linguistic barriers. The problem, perhaps, is not so much that certain diseases do not affect these rural populations as that

difficulties of effective communication may be exerting weight on the proverbial iceberg so that it sinks.

As pointed out by Sartwell,² a communication problem is inherent in epidemiological studies. Measurements of morbidity, prevalence and incidence, and mortality rates form the main data of epidemiology; but whether the study is prospective and population-based, retrospective, or a cross-sectional survey, consisting of the application of diagnostic procedures to members of a population to detect cases, there is always a communication factor, as so well stated by Burton:³

"In order to reach a chosen group of the population we need to know the communication patterns used by that group and, if possible, the importance the group attaches to particular modes of communication. . . . Those we wish to reach are often the most inaccessible."

Defects in Surveys

Sartwell² identified three major defects and limitations of surveys. The population is rarely representative, since some individuals are unwilling to participate or are simply unavailable; cases identified in a survey are a biased sample, since the most chronic cases stand the greatest chance of inclusion; and, finally, cases receiving treatment elsewhere are usually not included in a survey. In developing countries a large proportion of patients (if not the majority) receive medical care from traditional healers because of various obstacles to attendance at a clinic, hospital, or health centre (if these facilities are there at all).

Most studies on the prevalence of ischaemic heart disease in Southern Africa⁴⁻⁷ have taken the view summarized by Schrire:⁵ "It has long been observed that a profound racial difference in the prevalence of heart disease existed in Southern Africa."

The major criticism of these prevalence studies is that while they are informed conjectures they are not at all representative

Clarke Institute of Psychiatry, Toronto, Ontario
W. Z. CONCO, M.B., D.T.M. & H., Resident in Psychiatry

of the population surveyed. They do not take into account the African rural peasants, who have so many communication barriers to consulting a Western doctor. Ischaemic heart disease does occur in the African.⁹⁻¹³ Even in the remote rural areas I saw Africans not only with coronary heart disease but also with nearly 58% of the conditions listed by Burkitt¹ and 66% of those listed by Gelfand¹⁴ as rare; and I had no specialized diagnostic facilities such as x-rays or E.C.G.s. I could not afford these and my patients were poor.

Sudden death from coronary artery disease is reported as relatively rare in the African,¹⁵⁻¹⁷ but Wood¹⁸ estimates that 10% of all patients who survive long enough to be admitted die of ventricular fibrillation. Moreover, Yater *et al.*¹⁹ reported in a series of 866 cases that 16% died at once and another 10% within 15 minutes, and none of these cases would have time to be admitted; and in rural Africa they are not even reported to the coroner. In the rural populations of Africa generally deaths are not registered at all.

The relation between a disease—for example, coronary heart disease—and an attribute such as chest pain was shown schematically by Sartwell.² The most important factors influencing results in this scheme are communication factors accentuating the attribute or obscuring it. Individuals may be divided into those with low pain tolerance (whites) and those with high pain tolerance (rural Africans). If whites and urban Africans with a changing pattern of disease, as observed by Bremmer,²⁰ say, have a low pain tolerance they will have a high incidence and a high attack rate. Conversely, persons with a "less characteristic"²¹ or a high pain tolerance (rural Africans) will fall into a group not having the attribute, giving a low incidence and a low attack rate.

In summary, then, it is possible that the apparent rarity of some diseases in tropical countries may be due to fundamental communication problems; that the incidence of geographically related diseases is "apparent" in areas where communications are known to be poor with none or inadequate health services, in men, money, and materials; that the remarkable chronological relation to the process of economic development is perhaps a product of improved communications in most dimensions, social, educational, cultural, etc.; and that the logic of epidemiological design entails, a priori, communication factors in the studies of incidence and prevalence.

Problems of Medical Communication

Understanding of the problems of communication in the rural African setting may be helped by the concept I have identified of four universes, adopting the first three from a format of essentialism from Popper.²²

Universe of Essential Reality—the rural populations in Africa and diseases in their natural geographical environment; an aspect under the general communication problem.

Universe of Observable Phenomena—(a) what we observe as medical practitioners, public health administrators, medical research scientists, and epidemiologists; (b) what the people living in these geographical rural areas observe in their various capacities in the traditional set-up: ordinary individuals, traditional doctors.

Universe of Descriptive Language or Symbolic Representation—(a) the descriptive language of scientific medicine and other symbolic representations; (b) the descriptive language and symbolic representations of traditional African medicine (see table III).

Universe of Theoretical Formulations.—The medical scientist aims at finding a true theory or description of disease patterns which will also be an explanation of observable facts: (a) the theoretical formulations of scientific medicine; (b) the theoretical formulations of African traditional medical beliefs and practices.

The interrelationship of the four universes, as it were, forms a circle of communications as shown in diagram.

LANGUAGE USED

My experiences²³ in simple general practice among rural Africans (mainly Zulus) in South Africa, where medical communication was in the Zulu language, led me to describe a pattern of the language of disease used and a theory underlying the practice of a system of traditional medicine. The theory recognizes two forms of disease: natural, ordinary diseases of common causation, and unnatural diseases of anthropomorphic causation where there is a background of religious beliefs. Natural, ordinary, and common diseases are generally accepted as within the province of the Western doctor, whereas unnatural diseases form the preserve of the traditional doctors. Western doctors are believed to know nothing about unnaturally caused diseases, known as "African diseases," and they therefore may never see some of these cases. Elsewhere^{24, 25} I pointed out that various health agencies are invariably dealing with "selected populations" from the general population; that such a selection is in terms of people's beliefs and that the population may be divided into three groups: (1) hospital, clinic, health centre oriented; (2) traditional doctor oriented; and (3) certain religious populations who believe in divine faith healing and are in neither of the first two groups. Even the group 1 patients come and go, raising problems of non-cooperation.

Communication is essentially the art of using symbols to inform, to formulate, or to express; and the form and structure of language and its manipulation may disclose fundamental limitations in medical communications with rural, non-literate populations.

TABLE I—Proportion of English Medical Terms capable of Translation into Zulu

System	Total No. of English Terms	Possible Translations into Zulu		Exact Translations into Zulu	
		No.	%	No.	%
Obstetrics	30	26	86.6	13	43.3
Alimentary	100	54	54.0	31	31.0
Infectious diseases and locomotion	60	33	55.0	18	30.0
Genitourinary	52	23	44.2	12	23.0
Respiratory	56	23	41.0	7	12.5
Cardiovascular	90	21	23.3	6	6.6
Disorders of metabolism ..	11	3	27.2	0	0
All Systems	399	183	45.8	87	21.8

In table I, I have summarized the degree of translatability of scientific medical English terms to Zulu, according to various systems, as a measure of communication. The possible or loose translations may, of course, represent subjective or conventional connotations as used by individual translators in a particular area. Exact translations require that the two terms correspond over the whole range of properties or attributes possessed by the concepts to which the terms are applied.

Table I shows that the cardiovascular system has a communication potential of 6%. In practice I found it extremely difficult to convey the notion of a failing heart and high blood pressure though I tried all tricks of translation. The implica-

tions of this observation are (1) that African Zulu medicine has no clear concepts or precise terms for the anatomy or physiology of the cardiovascular system; (2) that Zulu descriptive terms of cardiac phenomena may therefore refer vaguely to subjective symptoms generally referred to the chest; "ihlaba" = stabbing

TABLE II—Meanings of Conventional Zulu Terms

Conventional Zulu Terms	Possible Translation	Conventional English Terms
Mkhuhlane		Ordinary common ailment
Ithwabe		Hiccough
Umpenge, unkonkonko		Whooping cough
Amankiwane, uzagiga		Mumps
Inyoni	Bird; caused by birds	
Inyamazane	Neonatal condition	
Impehlwa		Plantar warts
Isilumo		Dysmenorrhoea
Ukhwekhwe		Scabies
Isifubo somoya		Asthma
Inyongo		Bile
Isifuba sedliso	Biliousness, dizziness, dyspnoea, headaches	
Isithuthwane	Chronic chest condition	
Idilwane		Pulmonary T.B.
Idolobha		Epilepsy
Isisu segazi		Worms
Isilonda	Town disease	Veneral disease
Isiyezi, isanxi		Dysentery
Ukuhlahlala ingozi		Sore or wound
Iphika		Dizziness
		Trephining the skull
		Dyspnoea

TABLE III—Possible Meanings of Zulu Terms for which there are no Exact Translations

Umbhulelo, umeqo	..	Something crossed
Ipuleti	..	The plate
Isipoliyane	..	Mental disease made by Africans
Isihlungu	..	Medicine to treat snake bite
Intelezi	..	Medicine to strengthen armies
Ubulawu	..	Medicine to make person attractive
Intando	..	Love charm
Isiphonso	..	Some love charming
Umlhola	..	An unnatural occurrence
Isichitho	..	Medicine destroying love
Isibunge	..	Medicine burnt to attract customers
Ikhubalo	..	Some medicine or men's disease
Umsukulo	..	Medicine applied to crops
Ukubethela	..	Preventing agents of disease or lightning
Isitolomu	..	Medicine affecting children, giving rise to convulsions
Umatotsoti	..	A tsotsi demon
Ukwethwasa	..	Training as a diviner
Iqondo	..	Dreaded men's disease (moral)
Umkhovu	..	Short demon; male with tongue cut
Umkhondo	..	"Trail disease"

TABLE IV—Possible Zulu Translations of English Terms for which there are no Exact Translations

Acute respiratory disease	..	..	..	..	..	Mkhuhlane
Infectious hepatitis	..	..	..	..	..	"
Streptococcal infections	..	..	..	..	..	"
Pneumococcal pneumonia	..	..	..	..	..	"
Meningococcal meningitis	..	..	..	..	..	"
Salmonella infections	..	..	..	..	..	"
Shigella infections	..	..	..	..	..	"
Rickettsial infections	..	..	..	..	..	"
Protozoal infections	..	..	..	..	..	"
Arthropod-borne virus infections	..	..	..	..	..	"
African trypanosomiasis	..	..	..	..	..	"
Leishmaniasis	..	..	..	..	..	"
Filariasis	..	..	..	..	..	"
Histoplasmosis	..	..	..	..	..	"
Coccidioidomycosis	..	..	..	..	..	"
Toxoplasmosis	..	..	..	..	..	"
Brucellosis	..	..	..	..	..	"
Leptospirosis	..	..	..	..	..	"
Plague	..	..	..	..	..	"
Burkitt's list (except obesity)	..	..	..	..	..	Various terms
Gelfand's list	..	..	..	..	..	Various terms

pain, "Isibhobo" = constant pain, and sometimes the patient may present with "inyongo", the bile syndrome²⁶; and (3) that patients with mild ischaemic heart disease or silent myocardial infarction are not only likely to be missed but they may never even visit a Western doctor, and, moreover, the rurals generally have a very high pain tolerance.

Three patterns of communication in the universe of descriptive language and symbolic representation are summarized in tables II-IV, showing various degrees or depths of meaningful translation in English and Zulu. These patterns are as follows.

(1) A conventional language of disease, as shown in table II, where measles, whooping cough, worms, epilepsy, etc. are conventional terms used in any society in talk about these generally known conditions. We are not likely to miss these.

(2) A scientific language of disease, as shown in table IV, where there is a barrier or gap to effective communication; in this category fall Burkitt's¹ and Gelfand's¹⁴ lists. Infectious fevers are summarily referred to as "mkhuhlane" in Zulu.

(3) An unscientific language of disease and symbolic representations of African traditional medicine, as shown in table III, where Zulu medical terms have a subjective, connotative meaning, as used by traditional doctors and their clients.

Finally, as so well pointed by Newell and Wessen,²⁷ the general principle being stressed here is that research on the epidemiology and control of disease depends on an intimate knowledge of the interaction patterns and life styles of affected populations, including their vital statistics.

References

- Burkitt, D. P., *Lancet*, 1970, 2, 1237.
- Sartwell, P. E., in *Preventive Medicine and Public Health*, ed. K. Maxcy and M. Rosenau, 9th edn. New York, Appleton-Century-Crofts, 1965.
- Burton, J., in *Theory and Practice of Public Health*, ed. W. Hobson, 3rd edn. London, Oxford University Press, 1969.
- Bronte-Stewart, B., et al., *Lancet*, 1955, 2, 1103.
- Brock, J. F., and Bronte-Stewart, B., *Minnesota Medicine*, 1955, 38, 852.
- Vogel, L., and Schrire, V., *Lancet*, 1955, 2, 1108.
- Bronte-Stewart, B., et al., *British Medical Journal*, 1962, 1, 1646.
- Schrire, V., *South African Medical Journal*, 1971, 45, 634.
- Davies, J. N. P., *East African Medical Journal*, 1948, 25, 454.
- Elliott, G. A., *Minerva Medica*, 1953, 1, 465.
- Eddington, G. M., *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 1954, 48, 419.
- Schwartz, M. B., Schamroth, L., and Seftel, H. C., *Medical Proceedings*, 1958, 4, 275.
- Brock, J. F., and Gordon, H., *Postgraduate Medical Journal*, 1959, 35, 223.
- Gelfand, M., *The Sick African: a Clinical Study*, 3rd edn. Johannesburg and Cape Town, Juta, 1957.
- Schrire, V., I Congresso Internazionale su genesi della morte improvvisa e terapia di rionimazione, 1969, Florence.
- Kalichurum, S., *South African Medical Journal*, 1969, 43, 250.
- Hannah, J. B., *South African Medical Journal*, 1958, 4, 1.
- Wood, Paul, *Diseases of the Heart and Circulation*, 3rd edn. London, Eyre and Spottiswoode, 1968.
- Yater, W. M. et al., *American Heart Journal*, 1948, 36, 334, 481, 683.
- Bremmer, C. G., *South African Journal of Surgery*, 1971, 9, 127.
- South African Medical Journal*, 1972, 46, 1.
- Popper, K. R., *Conjectures and Refutations: The Growth of Scientific Knowledge*, 3rd edn. London, Routledge and Kegan Paul, 1969.
- Conco, W. Z., *Social Science and Medicine*, 1972, 6, 283.
- Conco, W. Z., *Developpement and Civilisations*, Nos. 45/46, September-December 1971. Paris.
- Conco, W. Z., African Bantu beliefs and their importance in health and disease. D.T.P.H. dissertation, London School of Hygiene and Tropical Medicine, London University, July 1970.
- Conco, W. Z., Theory and practice of traditional medicine among Africans in South Africa and problems of communication: a study in behavioural medicine. M.D. thesis submitted to University of the Witwatersrand, Johannesburg, July 1972.
- Newell, K. W., and Wessen, A. F., *Developpement and Civilisations*, special issue, Nos. 45/46, September-December 1971. Paris.