WORLD HEALTH ORGANIZATION
REGIONAL OFFICE
FOR THE EASTERN MEDITERRANEAN

ORGANISATION MONDIALE DE LA SANTE
BUREAU REGIONAL
POUR LA MEDITERRANEE ORIENTALE

SEMINAR ON THE PROVISION OF HEALTH SERVICES FOR THE PRE-SCHOOL CHILD

EM/SEM.PROV.HS.PR.SCHL.CHLD./8a

13 July 1974

Mogadishu, 21 - 26 July 1974

ENGLISH ONLY

CONSTRAINTS AND CONSEQUENCES OF HEALTH CARE SYSTEMS AT THE PERIPHERAL LEVEL

by

Dr V. Mojekwu*
WHO Temporary Adviser

INTRODUCTION

This paper is presented in two unequal parts. The first part deals with the constraints and the second with the consequences of health care delivery at the periphery.

The pattern presented below is drawn from the writer's experience of Nigeria. Generalization applicable to other developing nations and particularly to the Eastern Mediterranean Region would perhaps be limited. The method of analysis adopted is similar to the one used during an evaluative study carried out in 1973 involving fifty health centres and maternity homes in the East Central State of Nigeria (Mojekwu, 1973).

Lastly, the words "nurse" or "midwife" have been used in exceptional circumstances where one or the other is actually meant. The term "Provider" of health care has been preferred and used, to include all groups of people who have some form of formal training in delivering health care. These groups include[1] professional and non-professional personnel. The term "Consumer" of health care has also been used to mean pre-school children who receive the care. The term "consumer" may sometimes refer to the mothers and guardians.

---

* Chief Nursing Officer, Ministry of Health and Social Welfare, Kano State, Nigeria

1 The reason for preferring this word is that the writer has not as yet found much difference in the care which the different levels of professionals give to the pre-school child at the periphery. Experience seems to show that the difference in their actions, where it exists, is a function of the money, material and manpower provided rather than of the skills which the health workers learnt in their respective professional schools.

PART ONE

BACKGROUND

Because of the wish to use for reference the peripheral health care systems in Nigeria, it is believed that it is pertinent at this point to describe briefly their organization. We may first look at the different categories of health workers employed in the delivery of health care.

Categories of health workers found in the periphery

In rural areas of Nigeria, three categories of health staff look after the health of the pre-school child. These are the health sister, the midwife and the community nurse.

1. The health sister is a female health worker with full secondary school education (11-12 years) followed by professional education in nursing, midwifery, and public health nursing. Even though her secondary school education might have been received in Nigeria, invariably her professional education, particularly in public health nursing, has been received overseas, usually in England. The health sister's function in the rural areas is primarily supervisory. She is generally in charge of one or more of the rural health institutions, such as health centres, maternity homes, maternal and child health (MCH) clinics, and dispensaries. (These health institutions are described below). The usual number of health institutions under a sister's jurisdiction in Nigeria varies from about three to fifteen.

Although the health sister is expected to visit all of the health institutions under her charge regularly, in some instances this is rarely done. In some rural communities, these institutions are close together hence cause little or no supervisory problems. There are, however, many institutions which are so dispersed that the gross monthly mileage could be as much as 2,000 by the time the health sister visits each of her health institutions. Obviously, such a distance is an impediment to daily or even weekly visits. In this study, the reasons given by the sisters themselves for the lack of supervision are:

Lack of official vehicle for transportation;

Lack of loans to purchase own vehicle;

Lack of petrol allowance, even when a vehicle is purchased by the health sister herself;

Bad roads;

Inadequate monthly mileage allowance by the ministry;

Unnecessary official visits to headquarters for trivial reasons.

2. The midwife is a female health worker with approximately eight years of education, followed by professional qualification in midwifery. Midwifery training institutions are located at Government, mission and private hospitals in Nigeria. These institutions train two different grades of midwives. Recently, however, the Midwives Board of Nigeria has eliminated, by upgrading, the lower grade of midwifery in all the States of the Federation.

Most of the midwives are employed by local governments or missions, but are supervised by the health sisters who are all employed by the Ministry of Health. The function of the midwife is to attend to mothers ante-natally, post-natally, during parturition, and also to look after the health of the children. In practice, most of them deliver babies, and only a few take care of the mother and child as well.

3. The community nurse is a female health worker and, like the midwife, has eight years of education. Her training in a recognized Nigerian institution varies in length, depending on whether she is already a qualified midwife or not. As her professional title implies, she is prepared to carry out preventive rather than curative measures among the rural community.

All three categories of health personnel work individually or in groups, depending on the types of health institution in which they are employed.

Peripheral health care systems

Three main services - curative, maternal and child health, and preventive - are available to the rural child. These services are generally available in four different health insitutions: the curative services in dispensaries, the maternal and child health services in maternity homes and in MCH clinics, and the preventive services in health offices. In some rural communities, one or more of such services are available in a health centre.

1. The dispensary is the "front line" health care unit providing curative services to the whole community for patients of all ages. Minor ailments, such as fevers, coughs and ulcers, are diagnosed and drugs are prescribed and dispensed. The dispensary assistant[1], rather than a nurse or midwife, is the primary health worker who functions in this setting.

2. The maternal and child health clinic contains facilities for the care of the mother and child on an out-patient basis. Clinics such as ante-natal, post-natal, infant welfare and immunization are held on specified days of the week. The health sister and the community nurse are the health personnel who function in this setting.

3. The maternity homes contain MCH clinics as well as facilities for confinement. They are found in both urban and rural areas. The health personnel who function in this setting are the midwife and the community nurse.

4. The health offices contain the administrative machinery of the Health Division and also house the public health inspector and the health overseer, who together provide primary environmental sanitation services for all members of the community.

5. A health centre, according to Fendall (1966) "is a unit which provides a family with all the health services it requires, other than those which can only be provided in a hospital..... When well developed, a health centre provides general out-patient services and limited domiciliary care of the sick it provides clinics for ante-natal and post-natal mothers, school children and the "under fives", while in addition to these there is usually a midwifery unit within the centre itself. It also provides environmental health services and gives advice and guidance on home living conditions, water supplies and

---

[1] Even though the dispensary assistant looks after anyone who comes for health care, including the pre-school child, he was not included among the categories of nursing staff described on page 2 because he is not a nurse. However, like the midwife, the dispensary assistant, who is usually a man, has only eight years of primary education, followed by professional preparation in a recognized training institution in Nigeria. The dispensary assistant, this primary health care worker, is trained by medical doctors to provide curative services to the whole community. He is prepared to diagnose and treat disease and also to prescribe and dispense drugs. He sees himself as a curative agent.

sanitation..... Above all, and at every possible opportunity, a health centre educates the individual, the family and through them the community it serves. It strives also to obtain the active participation of the community in its health promoting activities".

At present the quality of services provided by health centres in Nigeria varies widely. A few, such as the Asa, are well organized, equipped, and complete with a functioning dispensary, MCH clinic, maternity home and health office. This health office had, unlike the majority, a supply of stationery for collecting epidemiological data, a typewriter and a typist. In the maternity home, patients had bedsheets and mattresses. This health centre, in the writer's opinion, was functional.

The majority of the health centres could, however, be described as dysfunctional. In contrast to Asa, they are fragmented, disorganized, irrationally built and lacking most of the essential equipment and personnel. There is usually no provision for health offices on the premises and when one (in the form of a very small room) does exist there is no stationery to collect epidemiological data and no writing materials. For example, one health centre had two buildings which are physically separated by a busy highway. The dispensary assistant is located in one building and the midwife in the other. Each has a separate store, each runs his or her own clinic, and generally does not communicate with the other. In another health centre, both the midwife and the dispensary assistant were away for two days on "official business". The untrained attendant was left to cope with deliveries. There was no ergometrine! (Apparently, the law does not allow the untrained attendant to touch the key of the drug cupboard in the absence of the midwife). Development of more efficient administration in such health centres has been hampered by the indecision of the Ministry of Health as to who among the three categories of rural health workers is to be in charge during the absence of the supervising health sister, who generally resides in a city miles away.

THE OBJECTIVE OF THE PERIPHERAL SYSTEMS

One re-occurring objective of the peripheral systems, as stated by the Government, is to give complete health care to all children free of charge, irrespective of where they may live. This implies that the Government is concerned with the promotion of health and with lowering the pre-school child mortality and morbidity. Therefore anything that stands in the way of giving complete health care constitutes a constraint.

Regardless of the Government's intent, the writer believes that, for a child to achieve complete health, that child should not be separated from its mother. Both mother and child in the writer's view, form a vital family unit on which all health systems for the pre-school child should be based.

The writer believes also that no peripheral health care system for the pre-school child should be static. The system must be mobile. It must "reach out" to the child in order to see, feel, and understand all the problems affecting him.

CONSTRAINTS IN THE PERIPHERAL SYSTEM

Five broad groups of constraints are identified. These are those imposed by:

(a) the employer
(b) the organization
(c) the "provider"
(d) other Governmental agencies
(e) specific socio-cultural milieu

A. Constraints imposed by the employer

1. The Ministry of Health may have stated objectives outlined above but often lacks the infrastructure necessary for meeting these objectives. For example, if a programme is to provide for a comprehensive immunization scheme, unless there are adequate stocks of triple vaccine, BCG and oral polio, for ready utilization at a convenient storage centre, timely and adequate immunization of the pre-school child may never be fulfilled.

2. Apart from inadequate stock of drugs and vaccines, the employer frequently does not provide enough suitable equipment. It is not unusual to discover that some village health centres have no stove for sterilizing syringes and needles and when a stove is available, there may not be sufficient kerosene. Besides, common soap is frequently out of stock. If there is no soap and water, very few "providers", if any, would bother to examine the child. The treatment in this case, is based solely on what the mother says.

3. Another constraint imposed by the employer is insufficient living accommodation for all of its staff. Granted there are many village huts available but these do not appear to suit the tastes of most "providers".

4. The health sister is taught to practise "out reach", as it is assumed to be one of the surest ways of reaching the "unreachables" - the unmarried mother, the malnourished child whose mother is chronically sick and the child with tuberculosis whose mother is in purdah. Yet, as we have seen in the Nigerian situation described above, some health sisters have no official transport nor any transport allowance in a community where public transportation does not exist. As a result, visiting is impossible and after a period the visiting skill as well as "the reluctant", "the hopeless" and "the disadvantaged" children are completely ignored.

5. The buildings for health units are generally so poorly designed that the flow of children through them takes ages. The buildings are of poor design because the midwife or nurse who works in these buildings and is conversant with the requirements is ignored during the planning stages.

6. One other important member of the health team who is usually ignored during the planning of a health centre is the opinion leader[1] in the local community. Some rather expensive health centres are built but not fully

---

[1] Opinion leaders are men and women in the village whose opinions are respected by the villagers as a whole. They may be politicians, market women, native therapists, rich businessmen, chiefs, school teachers, local midwives, or the oldest persons in the village. This paper recognizes that there may be two or even three factions, each hating the other.

utilized because they do not always serve the health needs of the local people as viewed by the opinion leaders. These opinion leaders frequently become embittered (Foster, 1952; Simmons, 1955 and 1960; Oberg, 1955; Khalil, 1960) and may therefore constitute a serious obstacle to the effective utilization of the health centre services.

7. The employer's means of meeting its objective may be inappropriate. For example, in a community where 50 per cent of the children die of predominantly preventable diseases before they are five years old, and where the illiteracy rate is still very high in rural communities, more and more hospitals are in the process of being built. Given the economic reality, it is not likely that the "provider" can reach all the children with a health care system that is based on hospitals.

8. A constraint which the employer also imposes on the health care system at the periphery is the absence of refresher courses for the "providers". It is generally accepted that knowledge, once acquired, does not remain with us for ever. It is only by continuing education that the "providers" can ensure that their education and practices are relevant to the health needs of the community they are serving. Yet employers do not invest in refresher courses for their staff and particularly for those dedicated but ill-prepared "providers" in the rural areas.

9. In addition to absence of planned refresher courses, the Government has allowed the existence of a system in which "prevention" is separated from "curative" health care, a relic of the colonial era which is ineffective as a system of health care delivery to pre-school children in rural communities. It is ineffective because there are very few diseases of this age group which are strictly preventive or curative. This type of system encourages no feed-back between its components. The members of one group, as noted earlier, do not know the capabilities of the members in other groups and therefore do not solicit their help. Duplication, waste and gaps in health care systems are not uncommon.

10. Lastly, and perhaps most important of all, the Ministry of Health lacks an effective executive capacity. Executive capacity implies the existence of personalized organs able to innovate in executing broad policy decisions. For

instance, in the absence of an effective executive capacity the money voted for health care is not all used up because there is no-one to draw up an acceptable proposal. And although such bodies as UNESCO, UNICEF and WHO are willing to help, their services are not always solicited, for the same reason.

B. Constraints Imposed by the Organization of the System Itself

Even where the Government has the right policy and the appropriate priority; even when the executive capacity of the Ministry of Health is supportive of optimum health care delivery; even when the staff accepts the local traditions etc., - if the organization of the system is clumsy, it constitutes a constraint. This may be illustrated as follows:

1. The system of filing cards is clumsy and invariably results in unavailability of the cards when required. As a consequence, continuity is lost and in a community where the literacy rate is low, the mother may not know the importance of explaining to the "provider" the past history of the child and the treatment which was given. This could be the genesis of the increasing incidence of drug resistance in our communities.

2. Several activities are carried out in the rural health institutions. All these activities are supposed to lower the mortality and morbidity of the pre-school children. However, no reliable system of evaluation is employed. Most rural health personnel equate progress by the increase in attendance. The "providers" ritualistically weigh all children who attend clinics. Even though studies by Morley and others have shown that an idea of the prevalence of PCM can be obtained from an appraisal of the weight deficit in pre-school children, the organization is such that no time is spent in such appraisal. Individuals are weighed but no analysis of the community's weights is attempted. Attendance is therefore not a sensitive indicator for progress. There are other sociological reasons why people attend clinics.

3. Other health workers equate progress by the number of BCG vaccines given. Cognizance is not taken of the number of unnecessary repeaters and the fictitious names in the registers.

4. Lastly, the organization lays emphasis on single-purpose, non-coordinated and expensive mass campaigns and health actions against specific communicable diseases. A multidisciplinary approach based on a comprehensive care system

that would utilize the available resources (manpower, money and materials) would be more effective. Our present system of delivering care to the rural communities lacks comprehensiveness.

C. Constraints Imposed by the "Provider"

1. The main constraint which the health personnel imposes on the system is the inadequate basic educational preparation. This makes it difficult for a health worker to comprehend completely what is taught at the training school and forces the teachers to use a didactic method of teaching and more specifically a method of dictating notes. The effect of dictating notes is that the poorer student commits these to memory, regurgitates them on examination but finds application and adaptation in the field situation an impossible task. Furthermore, she makes no attempt to read professional journals* with a view to keeping up-to-date with new ideas and/or refreshing her memory on old methods which have proved effective.

As a result, the health worker uses only a few skills which, when analyzed, are not aimed at lowering either the morcality or the morbidity of pre-school children (Mojekwu, 1973). Secondly, whenever new ideas are discussed she finds them puzzling because of her ignorance and is therefore unable to use them.

2. Granted that the nurse's basic educational endowment constitutes a constraint on the system, the doctor's inadequate professional preparation could be a more serious constraint. For example, a medical officer is supposed to be in charge of a whole district, supervising dispensaries, health centres, district hospitals as well as any environmental sanitation or disease control programmes which may be in progress. Most of these medical officers are not interested in public health, and so neglect the education of the mother and the education of the health workers working under them.

3. Marriage, coupled with raising of a family, makes deployment of personnel difficult and results in the chronic shortage of both male and female staff in the rural areas. For the few who are willing to work in the rural areas, lack of understanding of the local culture, unwillingless to accept the norms of that culture and/or inability to adapt and participate in the social activities of the locality constitute a constraint and make the "provider" an ineffective agent of change.

---

*One must admit that these reading materials are not usually made available in the rural areas by the employer.

D. Constraints Imposed by other Governmental Agencies

1. All "providers" of health care, particularly nurses and doctors, demand a basic standard of social amenities such as housing, usable roads, public transportation, fast and reliable means of communication, electricity, safe water supply, and schools for their children. All these are available only in the cities. Unless these are also available in rural areas the "providers" will continue refusing to be posted to rural communities, thus chronic shortage of staff will continue with detrimental effect on the consumers. Fendall (1968) believes that "to attempt to persuade, induce, coerce and compel professionally trained personnel to accept positions (in rural communities) without supplying these measures is to ensure failure (of the system) and engender opposition". One component of this social environment which most "providers" complain of is lack of water. Without water, environmental and personal sanitation might defeat the curative or even the preventive objectives envisaged for the health activities of the pre-school child.

2. For complete coverage, mobile clinics are used to complement static health institutions. Unfortunately their effectiveness is markedly diminished because the roads are bad and bridges are frequently washed away by torrential rains, not to mention their exorbitant cost. In the long run, coverage, as a laudable objective, is never attained.

3. Furthermore, experience has shown that although nurses and midwives are taught to co-operate and collaborate with other groups such as the agricultural extension workers, village school teachers, community development workers etc., all these groups are officially on duty during the morning hours when each is too completely overwhelmed by its own specific problems to have time to meet. The only time they could meet is after official hours. This has proved generally impossible because workers prefer to use their free time for other pursuits than official business. Besides, no inducement, such as transport allowance, is given by any of the agencies.

E. Constraints Imposed by the Socio-cultural Milieu

It is not possible for the "providers" to detect ill health, estimate progress and assess nursing care effectively without an understanding of the socio-cultural factors that influence diseases, such as religion, level of education, or family structure, concept of disease, attitudes towards deaths,

perception of social and psychological distance, perception of an "important" event, meaning of time and others. The behaviour associated with these factors affects not only the consumers' ideas of health and disease (Read, 1948; Paul, 1955; Read, 1966) but even the food they eat (Foster, 1951; Jelliffe, 1956). This may be illustrated by a few examples from Nigeria.

1. Villagers may not seek help from the health centre personnel because of their perceived social and psychological distance. The perception may be real in the sense that some pertinent questions were not asked during the planning and operational stages of the health centre. To what extent did the planners consider the socio-cultural matrix of this community - the security as well as the lethargy inherent in old ways of living, the habitual health and hygiene practices which perpetuate communicable diseases, the existence of ideological barriers to communication of new ideas and acceptance of new services? (Read,1966). It is much more usual for planners to ask a technical question (WHO, Tech. Rep. Ser. No. 137) which really has no meaning to the villagers and sometimes makes them suspicious that "these people are poisoning the water". (Paul, 1955).

2. Another instance of lack of awareness of cultural conditions is that tradionally all-important events like deaths, births, marriages, return of a son from overseas, baptism, installation of chiefs, district heads and emirs, are all made joyous occasions with drums, dancing, eating, drinking, rituals and players. It is frequently a time when animists, Moslems and Christians, Roman Catholics and Anglicans, young and old, Christian priests, pagan priests and mallams meet and forget their differences temporarily. Unfortunately, the doctor's or nurse's foreign education may mean that he/she ignores or forgets this customary form of introducing an important event, like the opening of a health centre. It is, therefore, not surprising that villagers do not see the health centre as an important part of their culture and therefore may not use it effectively.

3. In the Hausa-Fulani culture of Nigeria where pre-school child mortality is high, the women feel it is unlucky to speak of dead children, to count the living and in particular to mention the name of the first son. As a result, collection of statistics particularly by non-natives and worse still placing any faith on those so collected,constitute constraints on the systems, whereas use of opinion leaders may be the most reliable means of collecting data about the consumers.

4. Even though it is generally accepted that when the child visits the "provider" the mother should be present, this is not always possible in some Nigerian cultures where women are in purdah. This brings up the need for child caretakers who usually give a history that is entirely different from what one observes when the child is stripped naked. The presence of the mother helps the "provider" better to appreciate the family history, as well as the history of the present ill health. Better appreciation by the "provider" helps to improve co-operation in the care and in more realistic health education. All these benefits are lost when the mother traditionally stays home.

5. Assuming thatthe "provider" has gained insight into the socio-cultural practices, it is still necessary to reorient her education to enable her objectively to compare these practices with her own[1]. Her education is not oriented towards differentiating the beneficial ones which she should ignore, the uncertain ones to be left alone until she has more information and last, the harmful ones which should occupy a great part of her communication with the community members. To alter the harmful ones, the more appropriate method would be friendly persuasion of groups or individuals and demonstration of workable alternatives within the cultural framework of the original. (Williams and Jelliffe, 1972).

---

[1]This exercise is necessary because people generally do not realize or accept that their own customs and practices are not necessarily the only ones in the world nor the right ones. Also, though village A's cultural patterns may be seen by the inhabitants of village B as containing both rational and irrational elements, they are never seen as such by the inhabitants of village A. To them, their cultural patterns are always rational.

The current system tends to teach the "provider" that the consumer is generally "difficult" and needs to be "babied". The suggested method above will prepare the "provider"to look at his own culture more objectively and to accept, without condescension, those which differ from it.

Unfortunately, the curricula for the "providers" lack most of these socio-cultural elements. And even when some of these elements are taught, the method used is didactic, lacking intention for local adaptation. For example, the consumer has traditionally gone to a native healer who is supposed to cure and prevent all ills. Yet, the scientific setting in which we work, rather than capitalizing on this cultural practice, requires the consumer to consult several members of the "provider" team. Since poor communication still exists among the "provider" team, it is not surprising that the consumer sometimes goes away dissatisfied, with no improvement at all in his health status.

PART TWO

CONSEQUENCES OF HEALTH CARE SYSTEMS

In the first part of this paper an attempt is made to describe the barriers (constraints) on the "path" of the Nigerian health care systems at the periphery. This part of the paper will try to forecast "what would happen if all these barriers were miraculously removed".

If the constraints were removed, the health care system available to the rural pre-school child would be efficient. The likely consequences of such an efficient system would be such that the rural mother would have a better understanding of Child Care, Family Health and Environmental Sanitation, just to mention a few items.

The result would be that mothers in the rural area would now be considered to be enlightened and happy. This state of well-being will include improved health of her children, who now will survive the usual death toll. As these children grow into men and women they eventually multiply. In a population with a sustained average fertility, more children will be born each year. Because growth increases exponentially, it quickly generates immense numbers.

These large numbers will need food, schools, health services, jobs and other social services. One question comes to mind. Is there any country whose resources are so limitless that it will provide equal opportunity for each individual to realize his potential? The writer does not know of any and her guess is that there is none.

It would appear that if the growth trends in our population continue unchecked without commensurate increase in food production and natural resources, the limits of growth will be reached. The most probable result will be a decline in development with attendant decline in population. We shall therefore have succeeded not only in wiping out disease but also in wiping out ourselves. If this occurs, such a health care system could be described as a failure.

This failure is likely to occur because we tend to examine single components of the rural health problem without realizing that the whole environment is always the sum total of its component parts and that changes in one part require change in other parts. Thus, the social, political, and economic side-effects of health care systems must always be anticipated and if possible forestalled when planning health delivery systems for rural communities. There are three ways out of this dilemma that are suggested.

The first way out is through education - both general and personalized education. Assuming that one can learn from history, we could accept McKeown's assertion that in England and Wales, a reduction of the birth rate occurred when a certain stage of literacy was reached and that nowhere in the world has reduction preceded it (McKeown, 1965). Unfortunately, this method demands time and money - two vital factors which developing nations do not have.

The second way out is to adopt an all-out war against the population explosion and use all the available media to motivate and educate mothers, husbands and school children about family planning. For a predominantly illiterate population such as exists in rural Nigeria, this method is likely to prove ineffective, especially when a high premium is still placed on "having babies".

The third way, which the writer prefers, is to provide health care with a strong health education component, that will emphasize child spacing. This type of integrated system can be worked out in what the writer has chosen to call a "functional health centre" because it contains all the elements which a village woman would need routinely in her normal daily life. It contains such facilities as water, "gossip" centre together with sewing facilities to keep the women occupied while waiting for treatment. It also contains a model

farm from which mothers can learn principles of spacing crops and good animal husbandry. The advantage of such an establishment is that the mother does not feel that she must come for any special event but rather for a social involvement which is more related to our cultural milieu than to the present well-structured system.

SUMMARY

Some of the constraints which prevent the full realization of the Government's objective of providing a complete health coverage for the pre-school child at the periphery have been delineated. It has been shown that these constraints are themselves in-built into the existing health care delivery system's infrastructures and organization. This is because basically the health care system is not organized and does not grow to suit the socio-cultural milieu of the consumers.

Another factor restraining the effectivity of the system is the education and attitudes of the "providers" who work within a social environment that is negative to providing and receiving health care satisfactorily.

Besides the material means necessary to remove the constraints, executive capacity to implement objectives of the system has to be provided for by health planners. A reorientation of planners to adjust the system to remove the constraint appears to be the ultimate solution to the problem of high mortality and morbidity of the pre-school child.

However, if all the constraints were removed then we would have a healthier life, free from squalor, disease, and death. However, this would result in rapidly increasing population. The vast "numbers" would not be contained by our present economic status, hence a catastrophe would result.

Health care systems must therefore be organized to change natality behaviour through education, at the same time that the general health of the population is being improved. Planning a suitable health care system should therefore include strong provisions for health education in child spacing.

REFERENCES

Bryant, John, Health and the Developing World, Ithaca: Cornell University Press, 1969.

Dadgar, M., and Saroukhanian, G., "The Health Corps in Iran: An Approach to Better Distribution of Health Resources in Remote Areas", Teamwork for World Health, A Ciba Foundation Symposium, Gordon Wolstenholme and Maeve O'Connor (eds.), London: J. and A. Churchill, 1971.

Fendall, N.K.E., "The Health Centre" in Medical Care in Developing Countries, Maurice King (ed.), Nairobi: Oxford University Press, 1966.

Fisek, Nusret H., "An Example of an Integrated Approach to Health Care: The Turkish National Health Services", Teamwork for World Health, A Ciba Foundation Symposium, Gordon Wolstenholme and Maeve O'Connor (eds.), London: J. and A. Churchill, 1971.

Foster, G.M., A Cross-Cultural Analysis of a Technical Aid Program, Washington, D.C.: Smithsonian Institute, 1951, Mimeograph.

Foster, G.M. "Relationships Between Theoretical and Applied Anthropology: A Public Health Program Analysis", Human Organization, III, No.3:5 - 16, 1952.

Horn, J.S., "Experiments in Expanding the Rural Health Service in People's China", Teamwork for World Health, A Ciba Foundation Symposium, Gordon Wolstenholme and Maeve O'Connor (eds.), London: J. & A. Churchill, 1971.

Jelliffe, D.B., "Cultural Variation and the Practical Paediatrician", Journal of Paediatrics, XLIX, 1956.

Khalil, A., "Is Health More Important than Camels?", Health Education Journal, XVIII, 33 - 36, 1960.

McKeown, Thomas, "Medicine and World Population", in Public Health and Population Change, Mindel C. Sheps and Joanne Clare Ridley (eds.), University of Pittsburgh Press, 1965.

Meadows, Donella H. et.al, The Limits to Growth, A report for the Club of Rome's Project on the Predicament of Mankind: Universe Books, New York, 1972.

Mojekwu, V.I. "Education and Training Implications of a New Rural Health Care Delivery System", A Qualifying Paper, Center for the Study of Education and Development, Harvard University, Boston, 1971.

Mojekwu, V.I. "Educational Planning for the Training of Rural Health Workers for Children Under Five Years in Nigeria: A Method and a Model", An unpublished Doctoral Thesis, Harvard University, Boston, 1973.

Oberg, K., and J.A. Rios, "A Community Improvement Project in Brazil", Health, Culture, and Community, B.D. Paul (ed), New York: Russell Sage Foundation. 1955.

Paul, B.D., Health, Culture and Community, New York: Russell Sage Foundation, 1955.

Read, M., "Attitudes Towards Health and Disease Among Preliterate Peoples", Health Education Journal, VI, 166, 1948.

Read, M., Culture, Health and Disease, London: Tavistock Publications, 1966.

Sheps, Mindel C. and Ridley, Jeanne Clare, (eds.) Public Health and Population Change: University of Pittsburgh Press, 1965.

Simmons, O.G., "The Clinical Team in a Chilean Health Center", Health, Culture and Community, B.D. Paul (ed.), New York: Russell Sage Foundation, 1955.

Simmons, O.G., "Popular and Modern Medicine in Mestizo Communities of Coastal Peru and Chile", Sociological Studies of Health and Sickness, D. Apple (ed.) New York: McGraw-Hill Book Company, 1960.

Williams, C.D., and Jelliffe, D.B.: Mother and Child Health: Delivering the Services, London: Oxford University Press, 1972.

World Health Organization, Measurements of Levels of Health, Tech. Report Series, No.137, Geneva, 1957.