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HEALTH CARE DESIGN: MIDDLE EAST RURAL AREAS

by

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A Master's thesis submitted in partial
fulfilment of the requirements for the
award of the Master of Philosophy degree
of the Loughborough University of Technology

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To my Mother and Father

A C K N O W L E D G E M E N T

I should especially like to thank my tutor, Mr Mike Hall, for his help and guidance.

I would also like to mention here my gratitude to my brother, Mohammad and my relatives, Mohammad Mansour and Abdulsalam Hasr for their financial help.

Also, my special thanks to Professor Musa Abu Zerka and Dr. Salim Khuraisha for conducting the questionnaires on my behalf.

Last, but not least, I thank my wife for her patience and my baby daughter, Maram, for putting up with delayed feeding during the typing.

A B S T R A C T

Health Care Design, Rural Areas, Middle East

A study of health care problems in developing countries in particular the Middle East. It concerns child health care and the inability of rural people especially mothers to understand instructions for the application of medicines.* Other problems incorporated are:- high infant mortality, lack of adequate health care facilities, high illiteracy and ignorance of the importance of hygiene.

As a result of my questionnaire to medical students in Jordan,* the extent to which they are trained to cope with child health care and health problems of rural areas was revealed.

Another questionnaire aimed at female University students* revealed their attitudes towards pregnancy and child health care.

Bearing in mind the nature of the Middle Eastern patient, I have adopted a visual design for reading medicine instructions which is very easy to understand and overcomes any language or literacy problems.

* Data is available on a diskette.

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INTRODUCTION

More than 4,000 million people live on our planet today.

Of these, 3,000 million live in the developing countries; and out of this number only about 20% - perhaps 600 million - have access to official health services. This means that about 2,500 million persons have no possibility of obtaining the health care they need.

Between 50-70 million persons live in the desert in severe weather conditions faced with starvation and death. They constantly have to change their encampments, they have virtually no access to any of the health services. Among all the World's forgotten peoples in terms of health and education, the bedouins are the most deprived. The situation today is that these people are trapped in the vicious circle of poverty, malnutrition, disease and despair that saps their energy, reduces their work capacity and limits their ability to plan for the future. For the most part they live in the rural areas and urban slums. The depth of their deprivation can be expressed by a few statistics.

Whereas the average life expectancy at birth is about 70-75 years in developed countries, it is only about 45-55 in most developing countries.

Of every thousand (1,000) children born into the least developed countries, 200 die within a year, another 100 die before the age of five and only 500 survive to the age of forty.

So long as the parents experience the death of their first children, they continue to bring more into the world facing the same diseases

and the same environmental health hazards.

The common illnesses of third world countries especially the Middle East have been persistently and repeatedly referred to as "Tropical diseases". Though some pathogenic micro-organisms do require a tropical climate to exist, most morbidity and mortality by the prevailing poverty and illiteracy, not the climate. The vast bulk of these diseases fall under two main headings:-

- a) Nutritional diseases
- b) Communicable diseases, include any diseases which can be passed on from one person to another, mostly by direct contact or through air or water. The most frequently occurring and widespread diseases in the group are measles, tuberculosis, gastro-enteritis, pneumonia, malaria, typhoid and cholera.

CHAPTER ONE

Population of third World

Population of Third World

In most developing countries the structure of the population is entirely different from that in the more developed countries. In the former, the population under fifteen years of age takes up 40-50% of the total as compared with approximately 15% in the latter. Approximately one half of all deaths occur in the under five age group. The infant mortality rate, the best overall indicator of the health status of a population is anything up to 300 per 1000 live births in third world countries as opposed to 16% live births in the United Kingdom. Therefore it can be seen that mortality falls upon the babies and young children.

The underlying causes, plus the factors which aggravate and facilitate the transmission of the diseases include:-

- a) lack of plentiful cleaned water supply;
- b) unbalanced diet;
- c) inadequate or overcrowded housing;
- d) inefficient or lack of waste disposal systems;
- e) poor hygiene;
- f) high fertility;
- g) very low literacy.

Health care units in operation in the third world countries are often:-

- a) unevenly distributed;
- b) tending to perpetuate dependency;
- c) inappropriate for the disease patterns and population structure of the country.

Although three quarters of the population in most developing countries live in rural areas, three quarters of the medical care is in urban areas where most of the doctors live. Three quarters of deaths can be prevented at low cost,⁽¹⁾ cost will of course vary from one country to another but to take one example: In 1975 in Tanzania the costs to educate and train:-

a) one medical doctor	:	£14,000
b) one medical assistant	:	£880
c) one rural medical aid	:	£425

One can train eight medical assistants and sixteen rural medical aids for the price of training one doctor.

In Syria for example, 45% of the health clinics are located in Damascus and Alepo. The population per hospital bed of the rural areas of Al-Hasakeh or Al-Rakka is one tenth of that in Damascus.⁽²⁾

In Jordan 71% of the hospital beds are located in the Capital, Amman.⁽³⁾ Similarly in the Middle Eastern countries, nearly three quarters of the health clinics and centres are located in and around the capital cities and the rest in the rural areas but total numbers are inadequate resulting in insufficient rural access.⁽⁴⁾

Shortages and maldistribution of some categories of health personnel characterise Middle Eastern countries. Laboratory facilities and technicians are generally in short supply. Cultural and traditions require that women be attended only by females yet all countries in the region have a critical shortage of female health personnel. Although equal rights for women was established long ago, do women really enjoy equality there

or is it just a myth? For those women who belong to educated urban families equality is close to reality. They have almost the same privileges and opportunities as men from birth onwards. But these women amount to a handful in Jordan and other countries such as Egypt, Syria, Saudi Arabia etc. And even for them equality is not absolute, inspite of the changes for the better.

The male is still regarded as more desirable than and superior to the female. This is mainly due to custom, belief and tradition.

Traditionally the son is the potential wage-earner, the supporter in old age and builder of the family, for he often brings a dowry into the home and continues to be a member of it after marriage. After marriage the women become part of another family and cannot be depended upon for support. Obviously these considerations make males more desirable than females. From the questionnaire which was conducted on the author's behalf by Professor Musa Abu Zarka, 88 out of 100 female University students said they would prefer to have a son rather than a daughter when they are married. (see App.C.7).

Even today the birth of a female child is not rejoiced over but is rather a cause of sorrow and anxiety in rural areas, whereas the birth of a male child is an occasion of much delight and rejoicing. With the birth begins preferential treatment for a son as regards diet, education, career and so on.

There is a sign of the neglect of females at all ages, from birth

to death, women are more exposed to malnutrition than men are. Among many population groups, infant mortality among girl babies is higher (App.C.10). Out of the 38 who said that their families had experienced an infant death, 25 deaths were females. Could it be higher among female infants because of the neglect and the fact that, when food is scarce, boys get more than their share at the expense of the girls? So these future mothers suffer from high morbidity and mortality rates because of cultural reasons. Due to the fact that sons are favoured with regard to education and career opportunities, there are very few educated women working in the health field and yet these people do not allow male health workers to attend their females. In Syria, 65% of the midwives practise in Damascus leaving only 300 midwives to serve the rest of the country. In the People's Democratic Republic of Yemen, 73% of physicians practise in Aden and in Jordan 76% practise in Amman.⁽⁵⁾ Tables 1 and 2 indicate the variations in the region of the availability of health facilities and personnel.⁽⁶⁾

Like most developing countries, Jordan health care is largely limited to urban areas where there are doctors, pharmacists and hospitals while the majority of the people living in suburban and rural areas remain more or less neglected.

According to the recently published World Health Statistics Annual 1980 "Health Personnel and Hospital Establishment", there were some 3.3 million doctors in the world in 1977.⁽⁷⁾ If those physicians were distributed among the world's four billion inhabitants the MD-to-population ratio would be 80 doctors per 100,000 people. Or stated

COUNTRY	POPULATION	PHYSICIANS	POPULATION PER PHYSICIAN RATE PER 10,000	
EGYPT	38,741,000	35,489	9.16	1,092
IRAN	31,955,000	12,430	4.0	2,570
IRAQ	12,330,000	5,584	4.53	2,208
JORDAN	2,234,000	2,175	9.7	1,026
MOROCCO	18,945,000	1,606	0.90	11,101
OMAN	791,000	0,414	5.3	1,911
S. ARABIA	9,522,000	5,650	4.88	2,048
SOMALIA	3,003,000	0,193	0.90	11,101
SUDAN	16,950,000	1,944	1.15	8,720
SYRIA	7,840,000	3,119	3.98	2,514
TUNISIA	5,737,000	1,196	2.08	4,797
YEMEN	5,650,000	0,448	0.80	12,612

Table 1. Number of Medical density of selected Middle Eastern and Muslim African Countries.

COUNTRY	HOSPITAL BEDS "TOTAL"	GOVERNMENT BEDS	PRIVATE BEDS	POPULATION PER BED
EGYPT	78,994	75,264	3,730	514
IRAQ	24,717	24,351	0,366	506
IRAN	49,194	41,823	7,371	927
JORDAN	2,270	1,455	0,815	1,536
MOROCCO	11,365	U	U	1,667
OMAN	1,393	U	U	570
S. ARABIA	11,794	10,803	0,936	989
SUDAN	16,931	16,742	0,189	1,013
SYRIA	8,151	6,634	1,517	1,180
YEMEN	2,799	U	U	2,020

Table 2. Population per hospital bed
in selected Middle Eastern and Muslim
African Countries.

differently, one doctor for 1,250 persons, such however is not the case as table 3 indicates:-

- * The MD-to-population ratio is 13 per 100,000 for Africa or one physician for 5,434 people.
- * It is 35 per 100,000 for Asia, or one for 2,877 people (but some parts of Asia are more badly affected than the others).
- * It is 181 physicians per 100,000 for Europe, or one doctor per 552 people.

	MD Per 100,000	Population Per MD
WORLD	30,8	1,237
AFRICA	13,4	5,434
ASIA	34,8	2,877
AMERICA	163,9	0,592
EUROPE	181,2	0,552
OCEANIA	150,7	0,664
U.S.S.R.	346,4	0,289

Table 3. MD-to-population ratio in the world.

By studying the health statistics from Jordan it appears to be that high cases of deaths occur between the ages of 0-4 years and the major causes of death are:-

- * diarrhoeal diseases
- * tuberculosis

- * pneumonia
- * malaria
- * poor hygiene and
- * poor maternal and child care

Most of the above diseases if not all can be prevented, eliminated or adequately treated by introducing health education on oral hydration treatment of diarrhoea in children, health education of hygiene and maternal child care, encouragement of breast feeding.

Breast milk is the perfect food for newborn babies. It is nature's way of ensuring a sound healthy start to life and it meets most the natural needs of the baby safely and adequately. There is no better food for infants. It is unique because it also provides the baby with defences that protect against many of the illnesses of early infancy. In the process of breast feeding there is a healthy child/mother relationship which is useful in developing good social habits.

Aside from the health advantages, breast milk also has other values. It requires no preparation and is always available at the right temperature, it avoids complicated sterilisation of bottles and saves time and money. But the most important, it also helps parents to space pregnancy. 48% of the female university students in Jordan said that ideally they would have a space of 2 years between each pregnancy (see App. C6) and 40 per cent would like a three year space, if this message is to be conveyed to illiterate mothers and females which is over 45 per cent of the population, the problem of having large families will be eliminated in the near future. This will help to achieve better hygiene and better maternity and health care. 46 females out of 70 who preferred breast feeding

(App.C8a) said the reasons they would choose to breast feed are:-

- * Allah said so in the Holy Koran;
- * breast milk is best for the baby;
- * it protects the baby against illnesses;
- * very nutritious for the baby;
- * rich in necessary elements.

The survey therefore reveals that educated women of the Middle East know what is beneficial and what is not for the infants. Unless this education spreads to the other 45% illiterate women who have large families, the problem will remain beyond the year 2000.

Of course by the time the child is 3-6 months and over the mother's milk alone will not be adequate so that supplemental feeding will be needed.

"Bottle feeding is very dangerous and in the village situation it should be banned outright. The village mother does not know how to use it (the bottle) properly. The bottle is not cleaned properly, the water isn't boiled, and sometimes the feed contains too much sugar."(8)

Many would probably disagree with Dr. Samba about banning the bottle outright. They would argue that these mothers should be educated and taught how to use the bottle properly as the problem should be solved and not ignored.

On 25th October 1982 the author spoke to Dr. B. Ahmed at Loughborough hospital, he pointed out the "bottle feeding" dangers and how illiteracy makes women unaware of the problems. Women should be encouraged to breast feed for up to one year and told of its many advantages. At the same time they could be taught about bottle

feeding and how to sterilise equipment. They should be instructed to mix feeds correctly. It is most important that they should understand why these cautionary measures are so important and the serious consequences that could arise by not adhering to them.

CHAPTER TWO

Rural Life in the Middle East

Rural Life in the Middle East

Usually each rural village has its own drinking well but the inadequate water supply is contaminated by fly-attracting refuse that lies in the streets. Besides being used for drinking, washing and cooking the well serves as a swimming pool for the children and therefore exposes them to bilharsia. The animals live very close to the people, in some cases in the same house adding to the contamination by attracting flies and other insects.

In the houses, the water is stored in zeers (large pitchers) that often harbour germs of diseases. It is not easy for these people to change this primitive storage system which they inherited from earlier generations.

Also village people believe in:-

- * Traditional healers;
- * Beliefs and practices relating to pregnancy;
- * Beliefs and practices relating to delivery;
- * The people's view of their own health.

A typical village in the Middle Eastern rural areas comprises a mosque, a few houses and sometimes a school. There are rarely health facilities available when needed and no resident health worker to dispense simple medicine and dress wounds.

In villages where schools do exist, children attend until twelve years of age after which they are compelled to walk approximately ten miles daily to the nearest high school. This means that

females have very little chance of education.

Rural villages in Jordan and the rest of the Middle East countries take the form of a small to medium sized agricultural village. They are characterised by a high degree of conservatism and an authority structure firmly rooted in kinship and lineage. Although contact in rural areas is occurring, significant levels of isolation and distrust of outsiders remain prevalent among most members of small communities.

The health unit visits villages once a week and in some cases once a fortnight. In Oman for example, the consulting room sometimes is simply a cluster of mats spread out under a tree; sometimes nothing more than the shade of the Land Rover.

People of rural areas still need to be convinced that mumps is not the action of the Jinni (demons). The Jinni are often held responsible for a lot of other illnesses such as an old man lying on a hospital bed, in whom the doctors suspect advanced cancer.

The Governments in the Middle East should step up educational measures to make people more aware of:-

- * family health;
- * food safety;
- * adequate water supply;
- * adequate waste disposal;
- * childhood immunisation.

Rural and city-dwellers are suffering needlessly through ignorance

of these health safeguards and a few efforts if any, are being made to provide more educational inducement to family health. The Governments should spread the health message to every household, find out who will be the tool for this message and who are the leaders to whom the people run for advice and council.

In every society there exist methods by which information is communicated to the people, such as television, radio, libraries. In the Middle East rural areas this is not the case. The channels of communication are only by means of:-

- a) the homes of community leaders where people gather for up-to-date information on various topics;
- b) conversation of women at the village well and during social visits or while doing field work;
- c) news and views exchanged during religious festivals;
- d) key persons such as the teacher or the headman
- e) conversation of men during work;
- f) a village storyteller or reader.

a) Community Leaders

Community leaders are people who hold and can exercise power in society. They have the capability of influencing the behaviour of others either formally or informally. In fact their influence is so great that they have sometimes been called "gatekeepers" to action. They control to a large extent, the breadth and depth of social, economic, political and cultural change in a society.

There are two types of community leaders in the Middle East:-

- * formal leaders (including amirs, sheriffs and

municipal leaders) who hold the power defined by the general authority in the country;

- * informal leaders (religious, academic and household) who exercise influence in decision making.

But in addition to the leaders there are the people themselves, they must participate and should have a part in making decisions.

Obtaining the participation of the people in planning what should be done is emphasised because the scientists of human behaviour have established that people will do things that most closely satisfy their needs in life as they see them. In other words, people will choose to do things they want to do. When people have a part in planning the ways in which they can solve a problem, they are much more likely to carry out the planned action.⁽⁹⁾

c) Religious people and heads of families

Religious people have a strong influence and people believe that they know what is good for the community. They are well respected and obeyed. In each family the grandfather is revered and so too is the grandmother who is very important to the young girl with a new baby. She will listen more readily to the advice of her grandmother than of her own mother. If all join forces and turn attention to prevention, problems can be solved more easily, as with prevention they have a good chance of success.

The people should awaken the authorities to their problems and find out:-

- 1) What health problems they (the people) recognise;

- 2) What health problems they are interested in;
- 3) How much they already know;
- 4) What the usual channels of communication are;
- 5) What social, cultural and other influences are operating;
- 6) What the resources are that could contribute.

The authorities should also create a desire for change by:-

- 1) Awaking the people to their problems;
- 2) Obtaining the participation of the people;
- 3) Ascertaining what informational materials are likely to be used and how they are to be used;
- 4) Finding out what the criteria of progress is to be;
- 5) Determining which decisions can be left to the people themselves.

One of the typical problems in the Middle East and 3rd World countries is high mortality amongst children aged between 0-4 years. This is often due to the poor personal and household hygiene habits of the mothers. The problem can be reduced in the long run if the primary health care is taught to mothers and grandmothers, older children, fathers and the responsible people in the community. By training these important people, establishing them in a center which is supervised by authority but run by the people themselves, as they trust each other more than they would an outsider. This would also create some form of employment in the village.

If the people who have influence in the family are trained effectively in health matters their knowledge could prevent most cases of diseases, infection, malnutrition and unwanted pregnancies.

CHAPTER THREE

Worldwide Health

Worldwide Health

Eight hundred million (800,000,000) people in the world are destitute. This is the most pressing human and political problem of the century. Much has been said and written about it, very little has been done about it. The gap between the international rhetoric and what happens in the lives of these people will apparently run into the 1980's and 1990's without being reduced unless something is done about it quickly. World Bank figures show these people as representing 40% of the developing world populace. More than half of them to be found in rural areas of the developing countries. These people suffer from poor health and poor nutrition which increase infant mortality which encourages more births; lack of knowledge worsens nutrition and health; ill-health introduces malnutrition, lack of piped water breeds disease, close births present health risks for mothers and their children.

What can be done to help? The best solution of course is comprehensive primary health care defined at the World Health Organisation held at Alma Ata in 1978 as:-

"The attainment by all people's of the World by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. Primary Health Care includes at least:- Education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and basic sanitation, maternal and child health care, including family planning, immunisation against infectious diseases; prevention and control of local diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs."(10)

The goal set at Alma Ata is above reproach, yet its very scope makes it unattainable because of the cost and numbers of trained personnel required.

Indeed, the World Bank has estimated that it would cost billions of dollars to provide minimal basic (not comprehensive) health services by the year 2000 to all developing countries.

The Bank's president, Robert McNamara offered this prognosis in his Annual Report in 1978:-

"Even if the projected and optimistic growth rates in the developing countries are achieved, some 600 million individuals at the end of the century will remain trapped in absolute poverty. Absolute poverty is a condition of life so characterised by malnutrition, illiteracy, disease, high infant mortality and low life expectancy as to be beneath any reasonable definition of human decency."(11)

Looking at the population estimate to mid-1980's and life expectancy at birth in the world (table 4), the life expectancy is 72 years at birth in developed countries, meanwhile it is only 53 years in the less developed countries...

REGION/COUNTRY	POPULATION ESTIMATES (in millions)	LIFE EXPECTANCY AT BIRTH (in years)
WORLD	4,585	60
DEVELOPED	1,152	72
LESS DEVELOPED	3,433	57
LESS DEVELOPED (excl. China)	2,433	53

Table 4. Population estimates, mid 1980's (in millions)(12) and L.E.B. in years(13)

By taking a closer look at Middle Eastern Islamic countries (table 5), the average life expectancy at birth is 52.3 years compared with 75 years in Europe (table 6).

COUNTRY	P.E. (in millions)	L.E.B. (in years)
EGYPT	44.8	55
IRAQ	14.0	55
IRAN	41.2	58
JORDAN	3.5	60
OMAN	0.9	47
S. ARABIA	11.1	53
SUDAN	19.9	46
SYRIA	9.7	64
YEMEN	5.5	41
YEMEN DEMOCRATIC	2.0	44

Table 5. Population estimates in millions, mid 1930's and life expectancy at birth in years in selected Islamic countries.

COUNTRY	P.E. (in millions)	L.E.B. (in years)
BELGIUM	9.9	73
DENMARK	5.1	74
FINLAND	4.8	73
ICELAND	0.2	76
NORWAY	4.1	75
SWEDEN	8.3	75
UNITED KINGDOM	56.1	73

Table 6. Population estimates in millions mid 1980's and life expectancy at birth in years in selected European countries.

So, to improve the chances that new-born infants will survive; that they will go to schools and learn to read; that they will live longer than their parents; that they will spend those years in healthier and more hopeful communities than today, authorities should start now by concentrating on health education of:-

- 1) Health care behaviour;
- 2) Family health:-
 - a) maternal and child care,
 - b) family planning,
 - c) new-born.
- 3) Nutrition;
- 4) Environmental hazards.

Health Care Behaviour:

In many countries, two different medical systems exist:

- a) the traditional system, consisting of tradition, herbalists and midwives; and
- b) the modern system consisting of doctors, nurses and clinics. (14)

Every community possesses its own health knowledge and behaviour attitudes which pass on from generation to generation. These elements are interwoven in the mould of cultural pattern.

The people living in rural areas of the Middle East countries tend to be more religious than those in the cities and they acknowledge three general categories of factors to which illness may be attributed:-

- a) Allah
- b) Impersonal hazards (environmental-social behaviour)
- c) Personal attack:
 - * Jinn (demons)
 - * Sihir (kind of witchcraft-magic)

a) Allah

To say that an illness is attributable to Allah is merely to acknowledge His omnipotence. Allah is the ultimate source of everything. Consequently, Allah is the source of illness or misfortune and also for any cure or getting out of difficulties.

The curing of illness is also seen as being in Allah's hands. The acknowledgement of Allah's omnipotence is the basis of the healing powers of the various remedies based on the Koran which are supplied by Koranic scholars.

b) Environment

Certain specific environments or localities are recognised as being especially hazardous. The most significant of those dangerous environments are those frequented by Jinn, particularly graveyards, doorways, caves and secluded places.

Social Behaviour

Inappropriate personal behaviour may include any act which is unislamic. Swearing a false oath on the Koran may bring almost any type of misfortune or bad health. Most people believe in traditional remedies which consist of:-

- 1) Herbal remedies
- 2) Koranic remedies

1) Herbal Remedies

Medicine composed entirely or primarily of plant materials. The ingredients are boiled and the juice drunk. Herbal remedies are taken regularly for the purpose of health maintenance. Indeed, the author's father still takes these remedies regularly!

2) Koranic Remedies

These are usually obtained from the Hajjab or Fattah (fortune predictor) whose specialised knowledge of the Koran enables him to select the most appropriate passages. One of the most common forms is the Hijab which is a triangular cloth or leather pouch containing folded pieces of paper on which koranic verses have been written. Infants and young children wear them around the neck for protection against diseases, bad luck and the prevention of misfortune. Another type of Hijab is put in water then the resulting solution is drunk or thrown by the door step, this is used for love or hatred and to stop

the Jinn from coming in. Jinn causes many different illnesses such as insanity. If a person is insane that means he is possessed by a jinni and since it is believed that jinn have "personalities" it is possible to communicate and to reason with them. The Hajjab (Koranic scholar) will be brought to cure the insane person.

CHAPTER FOUR

Family Health

Family Health

The percentage of child population under the age of 5 years in the Middle East countries is 18.20 percent.⁽¹⁵⁾ The percentage of population under the age of 15 years is 45-51 percent (Table 7).

COUNTRY	PERCENTAGE UNDER AGE OF 15	PERCENTAGE UNDER AGE OF 5
IRAQ	49	19
IRAN	44	16
JORDAN	51	19
LIBYA	49	20
OMAN	48	13
S. ARABIA	45	19
SYRIA	48	20
YEMEN	45	17
YEMEN/DEMOCRATIC	46	20

Table 7. Percentage of child population in selected Middle Eastern Countries.

With the mothers and children making up a full 70% of the Middle East population, health work in the area should be focussed on the family as a unit of care. The main objectives are to reduce infant and maternal mortality, still critically high in large rural areas of the Middle East (Table 8); to

REGION OR COUNTRY	INFANT MORTALITY RATE PER 1000	CHILD DEATH RATE PER 1000
DEVELOPED	20	1
LESS DEVELOPED (excl. China)	108	15
EGYPT	103	15
IRAN	108	12
IRAQ	78	16
JORDAN	69	10
OMAN	128	U
S. ARABIA	114	19
SYRIA	62	7
YEMEN	162	41
YEMEN DEMOCRATIC	146	34

Table 8. Child deaths
 Infant Mortality Rate (under 1 year)⁽¹⁶⁾ and
 Child Death Rate (age 1-4years) per 1000.⁽¹⁷⁾

stimulate great acceptance of family planning practices; to solve problems of malnutrition through the use of locally available foodstuffs with emphasis on protein-rich weaning products; promote education at the family level in the basic requirements of healthy living. Governments and medical establishments should - as stated earlier - provide more educational inducement to family health care,

family planning and pregnancy spacing.

Family planning and pregnancy spacing can benefit not only the health of the mothers and their children but also to the family's well being as a whole. It is not merely a birth control approach, it is also the appropriate spacing of child births, their timing in such a way that children are received at the least risk to any mothers' life or their newborn babies.

The New-Born

Studies that have been carried out in some of the Middle Eastern countries have shown that the chances of survival of the new-born are closely tied up with such factors as maternal malnutrition, short pregnancy intervals and low birth weight.⁵ Birth rate is significantly lower in the Middle East countries than U.S.A. and Europe. But this could be changed by:-

- a) improved nutritional status of women;
- b) wider spacing of pregnancies;
- c) the discouragement of early marriage;
- d) better care of "at risk" pregnancies.

All the above factors are expected to have a progressive impact on birth weight and perinatal mortality.

Any child's health and growth in his early months neatly reflect the degree to which breast feeding prevails a widely observed trend in developing areas of the world including the Middle East. This practice is however declining in many urban communities as a result of changing social values and misleading adverts by manufacturers of baby foods. Appendix C8 shows that fourteen out

of the hundred female university students said that they would bottle feed their babies and a further sixteen students weren't sure how they would choose to feed. This 30 per cent seems especially high amongst educated females. City mothers often believe that nursing their babies ties them down, spoils their appearance (App.C85), 42.9 per cent of the females who said they will use powdered milk said they will do so in order to keep an attractive body. Such attitudes are misguided say childhealth experts.

The fats in the mother's milk are more easily absorbed in the babies digestive tract. This is particularly vital in the case of prematurely born infants who are often unable to digest fats readily. Human milk also contains more cholesterol than many synthetic preparations. As a protection against infections, nursing is especially beneficial. Breast milk contains antibodies to various bacteria and breast fed children are less likely to develop severe and potentially fatal diarrhoea and some other diseases. Mothers should be strongly urged to go back to infant breast feeding. It should be encouraged by forbidding grossly misleading adverts of powdered milk products and providing sensible motherhood education on the health of their children and nutrition.

Nutrition and health of children

Two particular kinds of nutritional risks are most important for the health of children in developing countries. First, is the risk imposed by inappropriate early infant feeding. Mother's milk is clearly the only appropriate method of infant feeding in most developing countries and most mothers, whether well or ill, well

nourished or malnourished have adequate supplies of milk to nourish their infants for the first several months of life.

In developing countries when mothers do not breast feed babies, the infants are exposed to several sorts of risks: Infants lose the protection of antibodies in human milk. Also, infants are exposed to additional risks of contaminated food by the ignorance of inappropriate preparation of artificial milk products (or other supplementary food) and the poor sanitary conditions under which they are stored as discussed in chapter one of this thesis.

The second period of great nutritional risk for children is the age of weaning when additional food is generally needed. Nutritional risk is increased at this time for two reasons:

- a) Breast feeding if continued as the only source of nourishment is sufficient for adequate growth up to four months.
- b) Even when a child is given supplemented foods they may be inadequate and/or inappropriate. Total calorie and protein intake may be insufficient for health and growth.

Prolonged breast feeding confers advantages not only in growth and protection from illness but during illness as well. It has been shown in Bangladesh⁽¹⁸⁾ that continued breast feeding of a child during acute diarrhoea protects the child against overall reduction of calorie and protein consumption.

There are social variables that relate nutrition to the health of

the children. As stated earlier, in most areas of the rural third world countries a strong son preference by parents neglect female children⁽¹⁹⁾ and for that reason there is no exact data about infant deaths as people tend not to report females as much as male infants. From the hundred females questioned in Jordan University 38 of them had experienced the death of an infant brother or sister and 25 out of the 38 were female infants!

Environmental Hazards

In relation to the environmental hazards and ignorance about food items , it must also be emphasised that in the rural areas, communal and traditional ways of life help to spread illness within the community. Illiterate families contract many of these illnesses; many of them live in the rural and outlying districts. Health hazards loom large among the populace. Within these communities kinship ties are strongly emphasised. Once ancestry is one blood; the extended family members share common facilities. They drink and eat from the same bowl. Any person therefore who contracts an infectious and/or communicable disease can easily transmit the causative organism to other members of the extended family. Therefore, as a result of the communal way of life and lack of health education, the spread of disease is easily transmitted in the rural areas. It seems very clear that the rural areas have been neglected and that the preventive emphasis on health has not been taken seriously. Even in the urban areas, among literate people, it is difficult to estimate how far removed they are from this social causation disease.

Treating an infectious disease directly is a high priority in any

developing country but the tendency to emphasise the curative at the expense of the preventive can be considered serious. It is serious in the sense that Middle East rural communities need:-

- a) drains;
- b) better water supplies;
- c) more approved public lavatories;
- d) animal refuse to be collected and not to be left neglected in the alleys along with waste disposal which is generally crude and dangerous to community health;
- e) improved hygiene in the market places.

In addition to the environmental hazards, other factors to be considered are the poor distribution of doctors and other health workers and the location of medical centres (app.C14). Fifty five people out of the hundred questioned said that the nearest hospital is 10-20 miles away from their homes and only 30 live within ten miles or less. This is a handicap in meeting the health care needs of the people. It is true that the urban population is growing at a rapid pace and therefore it is logical to find that hospitals and other major medical services tend to concentrate in the urban areas. It is most usual to find that doctors are attracted to these hospitals, only 3 out of 100 medical students would like to work in rural areas (app.B16). Could it be that doctors are attracted to urban areas because of the availability of services, facilities and colleague relationships. An indication of this urban attraction of medical people is supported by the fact that while only 30-40 per cent of the Middle East live in the urban areas, over 70 per cent of the doctors practice in the urban centres. Consequently, as in many countries, while health facilities are better distributed in relation to the population, there is still a need for health

facilities and services in the rural areas. As long as freedom of the professional prevails and so long as the authorities do not provide direct incentives to get health facilities into the rural areas, the maldistribution is likely to persist

CHAPTER FIVE

Education

Education

Worldwide, the illiterate population is rising. Between 1950 and 1970 the number of illiterate adults (15 years and over) rose from 700 to 783 million and current estimates put the future at over 800 million. This means that approximately 30 per cent of the world population is illiterate. In 1960, 58 per cent of illiterates were women, by 1970, the proportion increased to 60 per cent and the actual number of illiterate women rose by 40 million.⁽²⁰⁾ According to United Nation's figures, in developing countries two out of every five adults and one of every two women are illiterate. In several countries the adult illiteracy rates exceed 75 per cent.⁽²¹⁾ The highest per centage of illiteracy is in the Third World.

Looking at Jordan's education (which has, the authority says, reached its peak) the illiteracy rate in the population of 15 year olds and over is:-

Male	:	18%
Female	:	45%

These figures show that half of the female population or one in two women is illiterate. Unless the medical authorities provide health care education to those mothers in a way they will understand, the illiteracy and infant deaths will continue to increase and the health for all will never bereached in the year 2000 as required by the Alma Ata Conference. The authorities in those countries must concentrate on:

- 1) Health education for mothers.
- 2) Health care for children (0-4 years)

1) Health Education for mothers:

Health education by midwives (in the home) visits:-

- a) during the whole pregnancy and delivery and after the birth and to keep a constant watch over the child and the mother especially nutrition education during the weaning period.
- b) to provide the poor families with free medicine and nutritional food to infants after 6 months (as this is a dangerous age when the child leaves the mother's milk).
- c) to reduce the number of home births in the rural areas and avoid complications by having a permanent trained midwife alongside the traditional one, or give training to the traditional midwife especially in nutrition and personal hygiene.

2) Health Care for Children (0 - 4 years)

- a) to provide milk and nutritional substance to all the children of this age free of charge.
- b) health education to mothers and mothers-to-be once a week at least at the Centre or during home visits.
- c) immunisation in advance and not when disease spreads.

In the year 1976 the Jordanian Government adopted a plan which they called "The Five Year Development Plan 1976-1980".⁽²²⁾ The five year plan stated the following five targets for the health sector which would be reached by the end of the plan:-

- 1) the reinforcement and the expansion of health services with concentration on maternal and child care;
- 2) to put first aid within everyone's reach;
- 3) to raise the health service level in the rural areas and connect it with the urban health service to reach the health for all;
- 4) the expansion and improvement of the existing treatment in hospitals and centres;
- 5) the regulation of medicine.

The statistical figures of 1978 show a 4.6 per cent rise in the registered number of newly pregnant women, at the same time, there was a drop of 4.8 per cent in the number of trained midwives. Maternity educational lessons and educational films decreased by 2.0 per cent and 51.2 per cent respectively as Table 9 shows.

			1 9 7 8		
	1977	1978	Decrease/ Increase %	Capital City of Amman	Rest of the Country
Registered number of newly pregnant women	16,311	17,060	4.6	6,403	10,657
Number of midwives who were trained at the Centre	189	180	-4.8	180	U
Maternity Educational Lessons	8,085	7,929	-2.0	4,379	3,550
Maternity Educational Films	43	21	-51.2	21	NONE
Home Births	2,681	3,011	12.3	966	2,045
Visits to pregnant women and those who have just given birth	26,213	28,236	7.7	11,377	16,589
Home Visits to infants	26,025	28,916	11.1	11,001	17,915

Table 9. Maternity and Child Health Service in 1978
in comparison with that in 1977.

In the year 1980 which is the final year of the Plan, figures show that there was a decline of 18.2 per cent in the number of trained midwives and a decline of 7.0 - 8.1 per cent in the number of home visits to pregnant mothers and their infants compared with the previous year (Table 10).

1 9 8 0					
	1979	1980	Increase/ Decrease %	Capital City of Amman	Rest of the Country
Registered number of newly pregnant women	17,073	19,622	15.0	7,980	11,642
Number of midwives who were trained at the Centre	226	185	-18.2	135	U
Maternity Educational lessons	8,961	8,246	-8.0	4,305	3,941
Maternity Educational films	2	14	600	12	2
Home births	3,010	2,508	-16.7	335	2,123
Visits to pregnant women and those who have just given birth	28,244	26,976	-7.0	7,595	18,681
Home visits to infants	28,102	25,836	-8.1	6,457	19,379

Table 10. Maternity and child health service in 1980 with comparison to 1979.

The question to ask is "What did the health sector achieve from the Five Year Development Plan?" Table 11 shows the results for the most important factor which is maternity and child health care.

	1977	1980	Total Increase or decrease in %
Registered number of newly pregnant women	16,311	19,622	20.3
Number of midwives who were trained	139	185	-2.1
Maternity educational lessons	8,035	8,246	2.0
Maternity educational films	43	14	-67.5
Home births	2,681	2,508	-6.5
Home visits to pregnant women and those who have just given birth	26,213 28,236(1973)	26,276 26,276	0.2 -7.0
Home visits to infants	26,026 28,916(1978)	25,836 25,836	-0.7 -10.7

Table 11. Maternity and child health service in the five year development plan (1976-1980) in the Kingdom of Jordan.

These depressing figures show that the health situation is no better than when the Development Plan began. Home visits to pregnant mothers and their infants decreased by as much as 10 per cent. Midwives training dropped by 2.1 per cent, meanwhile the newly registered pregnant women increased by 20 per cent. Assuming the rate will continue as steadily as this in the years 1977-80 it seems less midwives will be trained and therefore there will be 19.1 per cent midwives trained in the year 2000 compared with 1980. However, there will be a 304 per cent increase in pregnancy during the same year. Unless action is taken now by controlling pregnancy and educating mothers, the situation will be worse in 20 years time. Also, illiteracy amongst mothers which is currently 45 per cent will increase due to the decrease in health educational lessons and films. Some health personnel may argue that educational films are shown via the television but unfortunately only 30 per cent of the rural people own televisions! The above figures could probably be reduced more easily in large cities but the problem remains in other parts of the country where there was 4.0 per cent increase in pregnant women in 1980, Table 12 shows an estimate of these statistics for the year 2000.

By the end of 1980 the Government in Jordan had adopted a new five year plan 1981-86 which contained exclusive hope for expansion. The figures at the end of 1981 - which was the first year of the plan - reveals that there were only 233 midwives in the whole of Jordan.⁽²³⁾ Only 155 of the midwives (Table 13) work in the Ministry of Health hospitals and 22 with the army (Royal Medical Services), leaving 61 midwives working in private hospitals that charge high fees which very few people can afford. With 233 midwives only, this being an

	1980	2000	Total Increase or decrease %
Registered number of newly pregnant women	19,622	79,331	304.5
Number of trained midwives	135	149	-19.1
Maternity educational films	14	0.38	-93.1
Home visits to infants	25,836	8,331	-67.8

Table 12. Maternity and child health care in the year 2000 in comparison with 1980. "Author's estimates based on the per centage of 1977-80".

	Ministry of Health	Army	Private Hospitals	Total
Midwives	155	22	61	238
Nurses	262	312	342	916

Table 13. Number of midwives and nurses in Jordan in 1981.

average of 2.3 per cent per 1000 live births! This decrease in the number of midwives is an obvious hindrance for the expansion of maternal and child health care services.

At the end of the first year of the Five Year Plan 1981-86, the health education for mothers has decreased by 0.04 per cent as Table 14 shows.

	1980	1981	Decrease or Increase
Educational lessons for mothers	8,246	8,243	- 0,04
Home visits to pregnant women	26,276	22,285	- 15,2
Home visits to infants	25,836	23,906	- 7,5

Table 14. Maternity and child health care in 1981 in comparison with 1980.

To achieve health for all by the year 2000 and to secure a healthy life for the new-born generation, educational lessons should be increased as should home visits to the expecting mothers and young infants because of the high percentage of death. Infant death is 7 per cent⁽²⁴⁾ and this is a high percentage for a society of which 19 per cent of its population is under the age of 5 years and 51 per cent under the age of 15 years. Infant death percentage is higher among the rest of Middle East communities (table 15).

Before setting plans and target for the survival of the 21,004 new-born babies registered in Jordan in 1982 to live a life span of 70 years plus instead of 55 years currently expected, provision should be made for them to live in healthy developed communities with well situated health centres and hospitals to give immunisation and treatment in the quickest possible way. The education of mothers is also of paramount importance.

COUNTRY	YEAR	LIVE BIRTH RATE	TOTAL DEATH RATE	INFANT DEATH RATE
JORDAN	1979-81	50	8.5	70
EGYPT	1979	41	11	84.5
IRAQ	1970-75	47.4	14.6	U
MOROCCO	1970-75	46.8	15.7	149
S. ARABIA	1970-75	49.5	20.2	U
SYRIA	1977	45.8	8.7	86
SUDAN	1970-75	45.8	20.2	93.6
YEMEN (DEMOCRATIC)	1970-75	48.2	23.1	U

Table 15. Live birth and Infant death rate in selected Middle Eastern countries. (Rate per 1000).

CHAPTER SIX

Community Development

Community Development

To raise the community health standards and to solve most - if not all - of the problems the solution is to have a national household survey to determine:-

- * needs for health services;
- * suitable locations (depending on population and distance to the surrounding villages);
- * the nature and size of services currently in use;
- * the extent to which the existing services meet the real needs of the Community;
- * the nature of the Centres to be established;
- * the size and density of the population and its distribution;
- * the expected population growth in the coming 20 years.

If the authorities and health personnel of the Middle East step up action now before it is too late, problems will be solved and disease will be eliminated if not prevented.

To prove the above solution and to find some of the problems rural people face, the author compiled a questionnaire and it was conducted on his behalf by Mr. H. Ugaily, who told the author that both formal and informal leaders of the communities emphasised the need for a higher degree of health service at the local level. The questionnaire was conducted and was given to senior members of families in random rural villages and bedouin tribes on the border of Jordan and S. Arabia during Mr Ugaily's travells in the area. Complete details of statistics in Appendix A. The questionnaire resulted in the assessment of:-

- * the people's perception of needs for each type of health service offered and,
- * the actual needs that exist for health service.

In addition, the questionnaire results in:-

- * the need for new and different types of health services;
- * public awareness of health service availability;
- * the types of health problems faced by the people;
- * the inconvenience of health service locations;
- * the degree of trust and acceptance of outsiders who may come to the community to work in the health service;
- * the network of existing health services in the area and their success in meeting health service needs;
- * the level of advancement of transportation and communication with the community;
- * the amount of time doctors spend with their patients;
- * failure to differentiate between two or more types of drug;
- * inability of patients to follow drug instructions due to high illiteracy: e.g. how much to take and how often.
- * the instructions are complicated and not clear;
- * people's preference for a doctor who speaks their language;
- * people's dissatisfaction with the mobile health units and their preference for permanent health clinics;
- * lack of health facilities such as health centres and health workers and transportation to hospitals which are often at least 20 miles away and to which the sick are compelled to walk;
- * the need for more education about immunisation, hygiene and prevention of illness;
- * the use of the sun and shadows by most rural people

for knowing the time of day.

The author was told the small communities and bedouins are prepared to settle down in and around places chosen by the authorities so that facilities will be available to them when needed. One bedouin said that he had left Badyah (nomadism) to live in a new life that he was promised and, sadly he has been waiting since 1976 to receive a piece of land to build upon in order to shelter his wife, three daughters and four sons.

This suggests that the bedouins and people living in remote rural villages are ready and willing to change their style of life for the better of their communities but the authorities are not fulfilling their promises quickly enough and these people are still living in tents, cooking on wood fires and their standard of life has deteriorated because all members of the family have to live in the same tent with their livestock!

The author's questionnaire completed in these areas also revealed:-

- * most doctors are ex-patriates and the only way to communicate with patients is by signals. This makes the patients unsure about medicines given to them and the importance of taking the correct quantities at specified times of day.
- * it is very embarrassing for the people to remove any of their clothes for a doctor's examination or even for an X-ray.

The author was told that a man had asked for medicine to treat his child who, according to his own diagnosis was suffering from diarrhoea and even so, he failed to bring his child with him. Another incident is that of

a young boy who came asking for black cream for his father's cut finger. The child insisted upon having only black cream and no other.

- * Arabic medicine prevails and is still very popular amongst rural people;
- * people are more relaxed with a doctor from their own cultural background;
- * doctors don't have the authority or even the facilities to operate upon patients. The only facilities available are for first aid and patients are sent to the nearest hospital which, is often at least 40 miles away with awkward travelling conditions;
- * there are no pharmacies to dispense prescriptions given to patients;
- * in some remote places, doctors only visit there in cases of emergency.

Though the questionnaire was not a national survey and only one hundred people were approached in different areas, the results are frightening:-

1) At least 63 per cent (App.A1) of the people had a health problem within one year and were very concerned about it. The people complained that often there was no health worker near to whom they could consult about their health problems (App.B3). On the occasions when health workers were available they could only be approached during official Government times, usually 8.00 am to 2.00 pm. 92 per cent of the rural villagers said that they would approach the health worker only as a second option to speak about their problems.

2) 73 per cent who have had to stay in hospital were dissatisfied with the treatment they'd received (App.A24). This made them wary of going into hospital again. They would not advise others to go to hospital.

This could influence the rest of the community and therefore authorities should act straight away by:-

- * advertisements about the benefit of health to the people;
- * volunteers from the community to spread the health message.

3) Everyone questioned agreed that the location of their nearest health clinic is inconvenient. In many cases the nearest one is an hour's walking distance away and for 67 per cent, more than two hours walking distance (App.B26). Consequently, many sick people were compelled to walk long distances for treatment and their conditions could possibly deteriorate on the journey.

4) The mobile units visit them once a week and the author was told that even the newly established villages did not have a health centre available. Patients are taken not less than 20 miles to the nearest health clinic but still complained about the short amount of time doctors spent with them inspite of the long distances travelled.

5) Villagers were clearly dissatisfied with the long distances they had to travel to reach the clinics and said they would prefer a permanently situated clinic. They could then visit it when necessary and not have to wait for a mobile clinic to visit them occasionally.

6) A very high proportion of the people questioned said they'd taken pain relievers or cough medicine but none of them had ever been given vitamin pills or, in the case of women, the birth pill(App.31a,b,c & d).

- 7) Over 77 per cent did not know how to use the drugs given to them. They took drugs when they felt they needed them or if and when they remembered to take them.
- 8) 34 per cent of people have difficulty with medical instructions, the main problem being that they didn't know how often to take the drugs or indeed, what amount they should take. Also, they could not differentiate between two and more types of drug. (App.A33,34,35 & 36)
- 9) If patients did not feel the medicine benefit them immediately, 93 per cent said they would stop taking it. (App. A37)
- 10) Over 60 per cent of them were illiterate and they depend on the sun for knowing the time, 85 per cent (App. A38) admitted that they use sun shades for the time.
- 11) People seem to believe that doctors cannot prevent diseases and only Allah has the power to do so. But with proper advice and guidance and by using Allah's words from the Koran, that it is He who gave the knowledge and He who ordered that this knowledge be used for people's well being, the trust between the people and health personnel will be regained.
- 12) All of the people questioned said they would prefer to be treated by a doctor of their own nationality but if this is not possible, someone with the same language and culture.
- 13) People would not like to be trained as health workers, but they


are prepared to go to health education classes in their spare time (App. A41b).

Unless health personnel are prepared to step up their action by conducting surveys, concentrating on existing health problems, improving upon health education for mothers and organising the local communities by giving them responsibility for their own health, these problems will remain with them and possibly create even more diseases.

The purpose of organising community participation of health is to provide health care to all households and to provide health care facilities close enough to homes to ensure that people will use them. It is not possible to develop communities by following the Western designs, or by translating Western books and leaflets about health. This is because Eastern and Western countries' living environments and even government attitudes are so different. There is nothing to be gained from distributing pamphlets and brochures to people who cannot read. On the other hand, face to face communication can be a very effective communication tool, but it is completely dependent upon the knowledge base, attitudes, personality and time constraints of the person providing the information to the audience.

The design of leaflets suitable for distribution to the illiterate rural communities needs very careful consideration. The designer should come from one of the Middle Eastern cultures and know and understand the beliefs and ways of the people. He should also know how to communicate ideas and concepts through symbols and hieroglyphs in a way which will interest the young mothers.

Personal contact or talks by local medics, nurses or midwives can be very effective, but needs reinforcing with good pamphlets that can be kept by those that attend. Usually the medical people have too little time to check whether their talk has been understood. Often these medical workers are overworked, underpaid and either unable or unwilling to spend enough time to ensure that his/her verbal message was properly understood. Complete details about Western designs not understood by Middle Eastern people are in Appendix D, which shows that these leaflets are designed for Western or educated people of the Middle East. It is not easy for an illiterate person to know from these pamphlets the quantities and time that medicine should be taken. For example, the pamphlets were designed to read from left to right which is not suitable for the Middle Eastern reader who reads the opposite way.

Because so many people in the rural areas are illiterate, a better idea is to put the health message in a visual form as well as verbal. The visual form by means of posters and picture pamphlets, should be tested by illiterate villagers to make sure they understand and stimulate the right response. One of the problems with the present system is that the doses are marked by one stroke for each pill. Thus: /// means, one tablet to be taken three times a day and // // // means two tablets, three times a day. In case of liquid medicine, spoons are drawn upon the instructions, thus:  means, one spoon, three times a day.⁽²⁵⁾ How can illiterate people understand that this symbol // // // means two tablets to be taken three times a day and not just six tablets a day.

I propose a visual form of instruction showing the number of tablets

or spoonfulls of medicine to be taken be drawn alongside a diagram of the time of th day at which they should be taken.

People in rural areas of the Middle East countries, as the survey revealed, tell the time by means of the sun. Therefore, a diagram showing the sun and shadow would indicate the time of day the medicine should be taken and, how much to take.

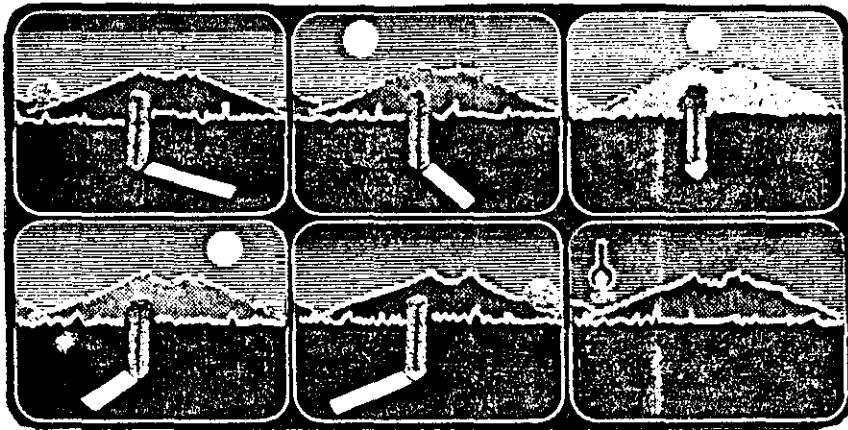


Diagram 1. Instructing people of times of day.

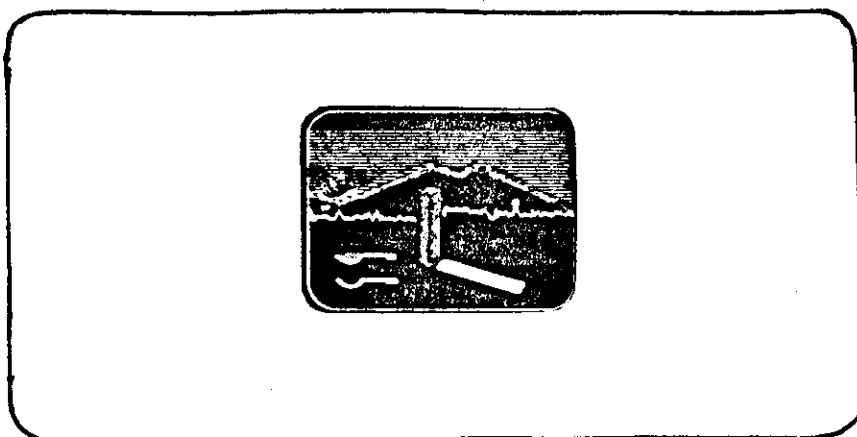


Diagram 2. Instructing patients to
take 2 spoons once a day.

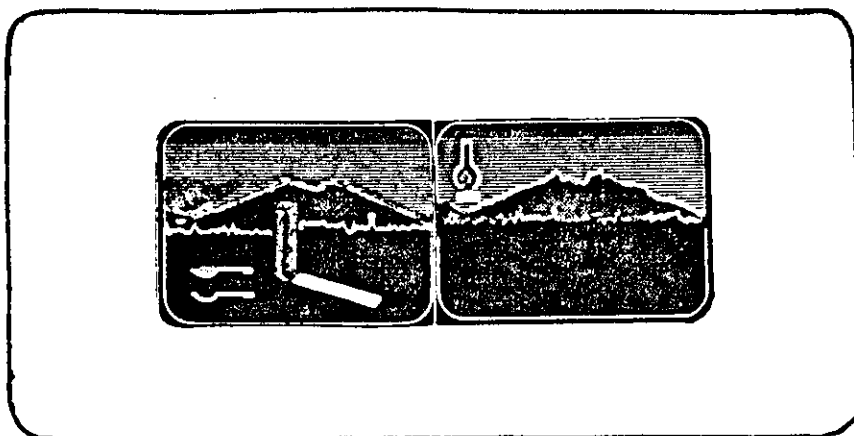


Diagram 3. Instructing patients to
take 2 spoons twice a day.

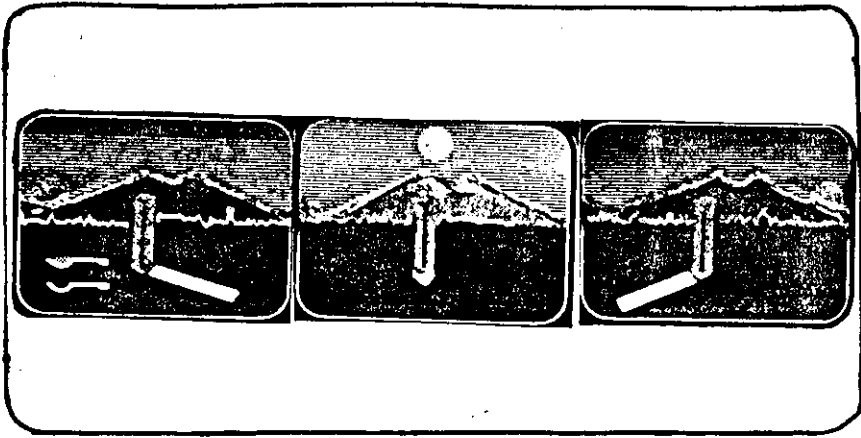


Diagram 4. Instructing patients to
take 2 spoons three times a day.

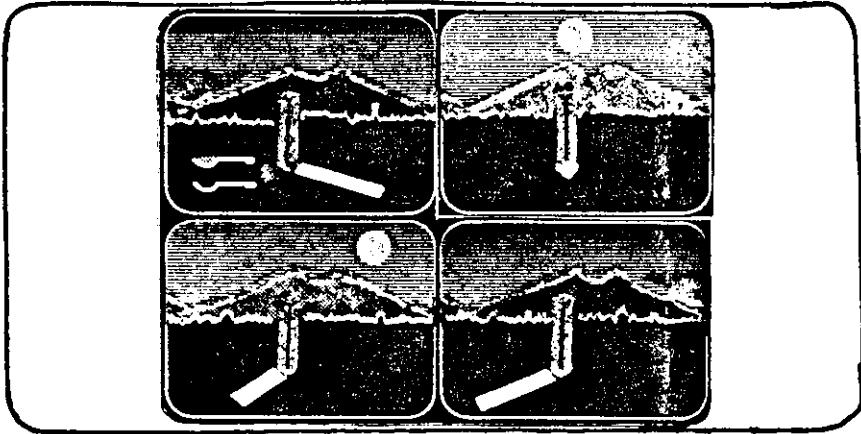


Diagram 5. Instructing patients to
take 2 spoons four times a day.

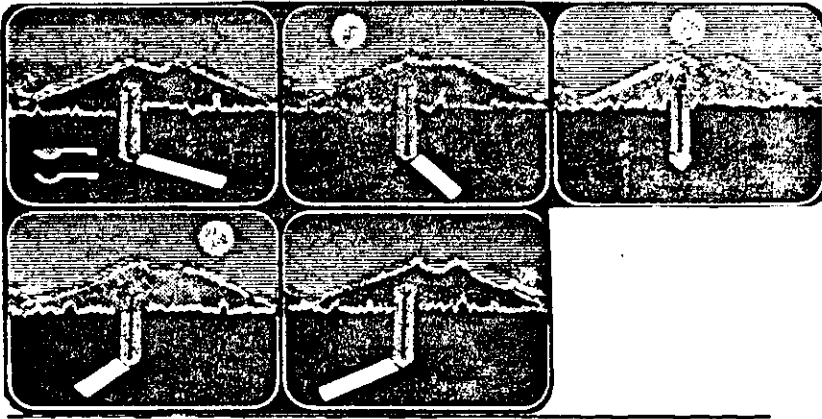


Diagram 6. Instructing patients to
take 2 spoons five times a day.

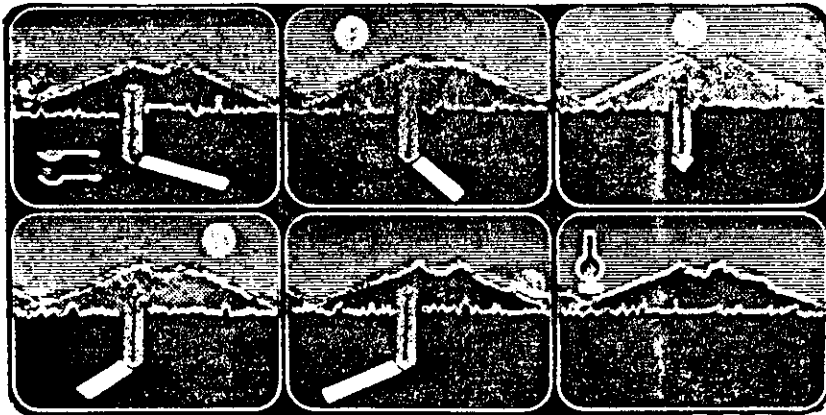


Diagram 7. Instructing patients to
take 2 spoons six times a day.

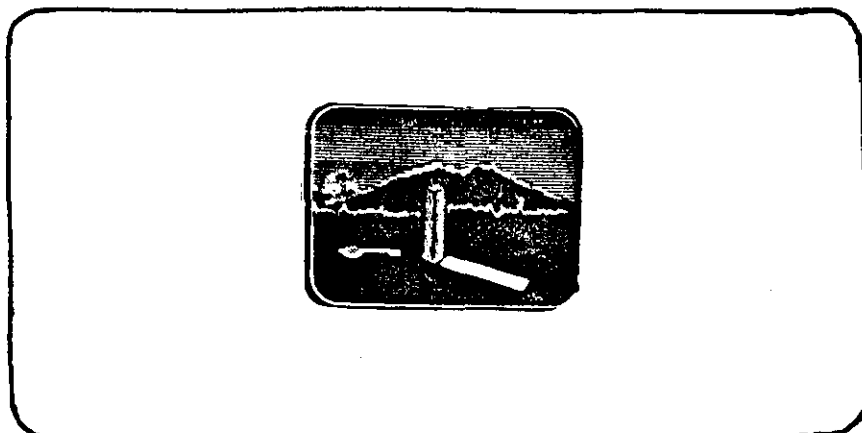


Diagram 8. Instructing patients to
take 1 spoon once a day.

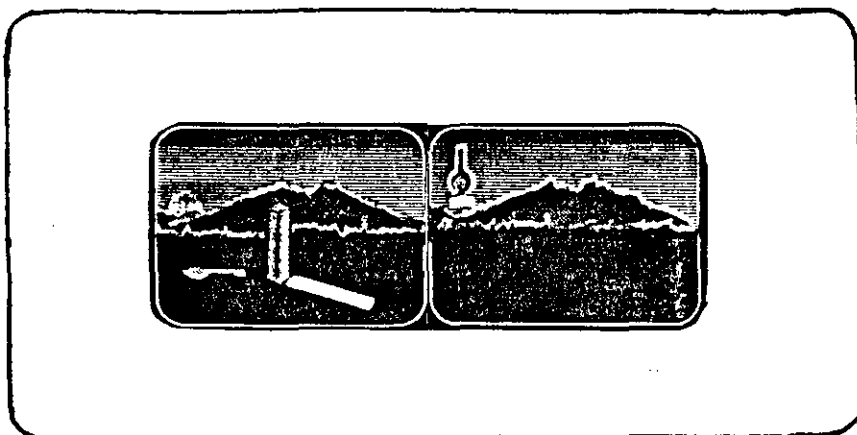


Diagram 9. Instructing patients to
take 1 spoon twice a day.

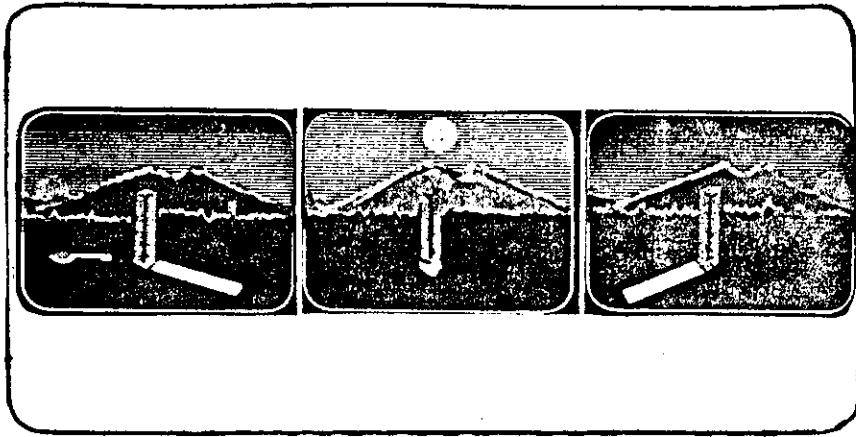


Diagram 10. Instructing patients to
take 1 spoon three times a day.

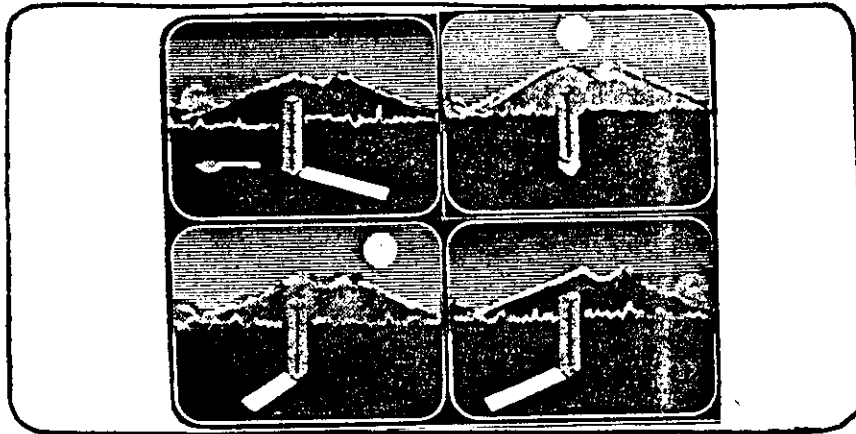


Diagram 11. Instructing patients to
take 1 spoon 4 times a day.

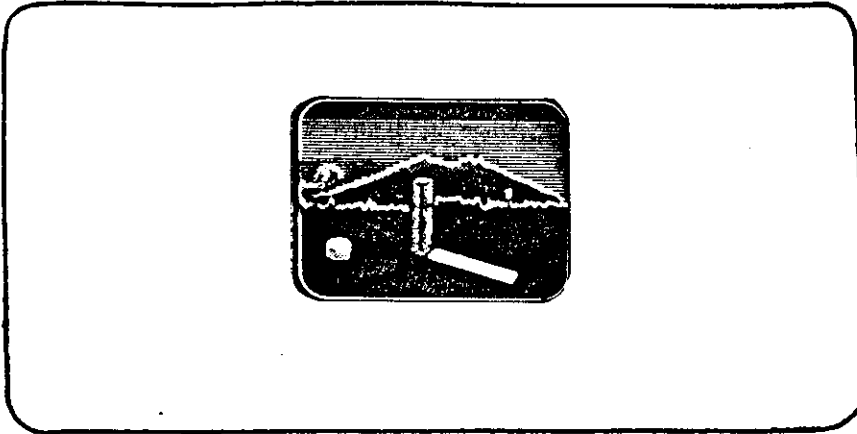


Diagram 12. Instructing patients to
take 1 tablet once a day.

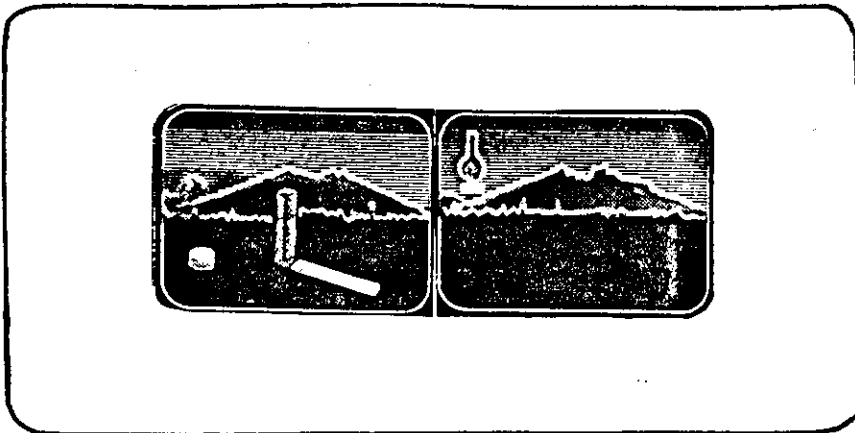


Diagram 13. Instructing patients to
take 1 tablet twice a day.

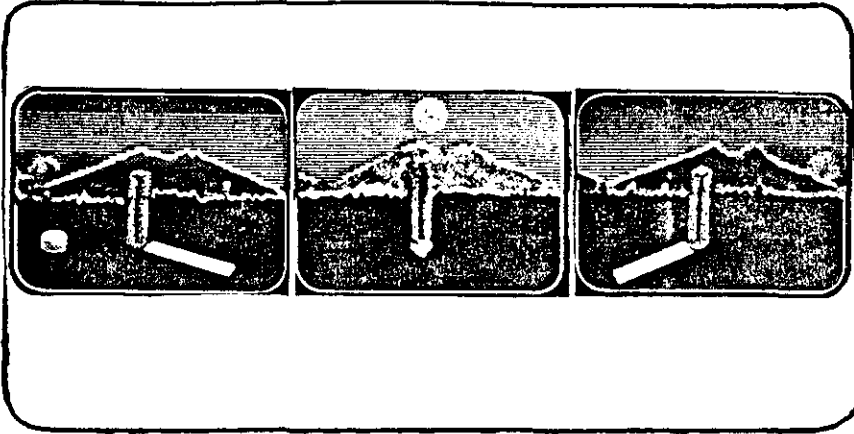


Diagram 14. . Instructing patients to
take 1 tablet three times a day.

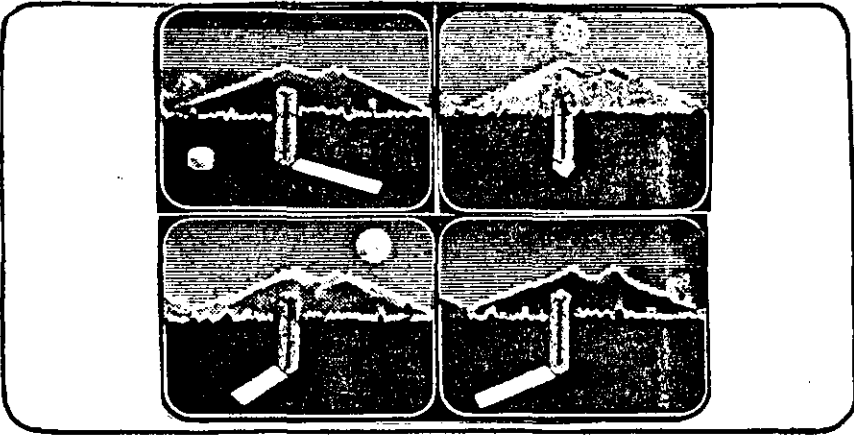


Diagram 15. Instructing patients to
take 1 tablet four times a day.

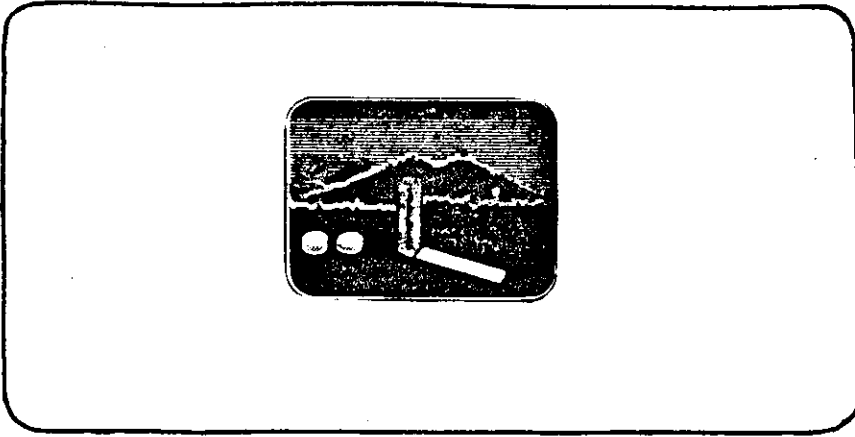


Diagram 16. Instructing patients to
take two tablets once a day.

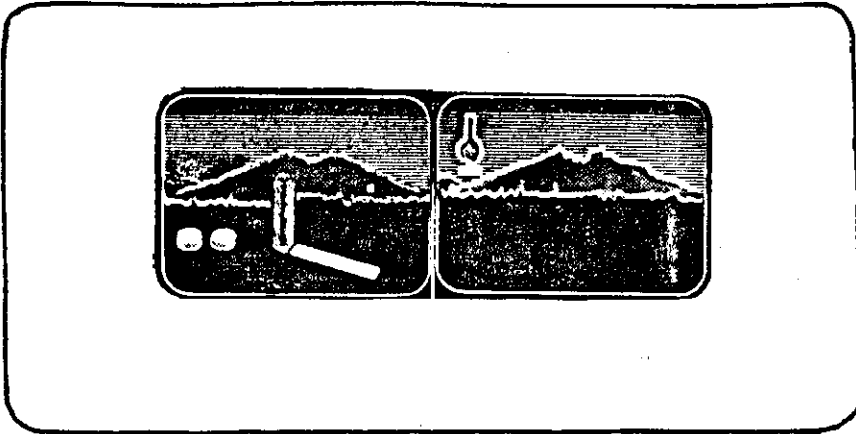


Diagram 17. Instructing patients to
take two tablets twice a day.

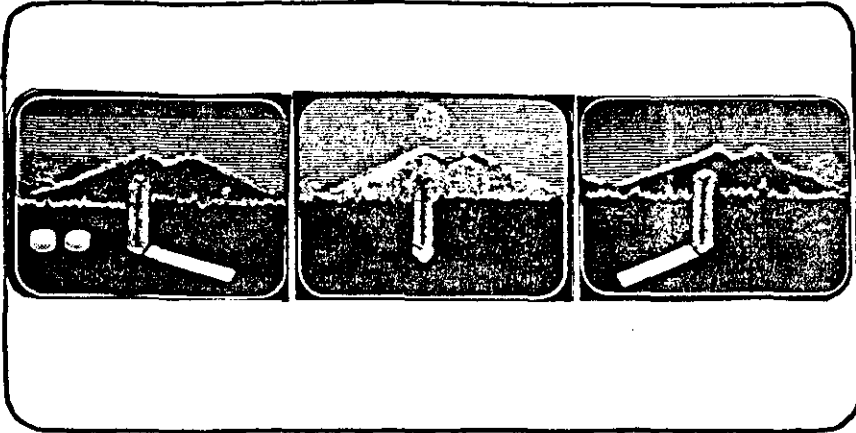


Diagram 18. Instructing patients to
take 2 tablets three times a day.

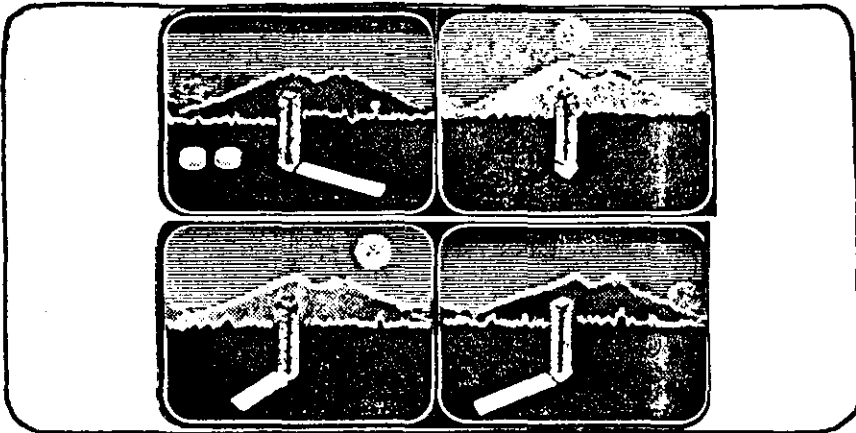


Diagram 19. Instructing patients to
take 2 tablets four times a day.

The new visual form could be printed on paper and given with the medicine or as a ready-made self adhesive label which the chemist could peel off and stick onto the bottle or box of medicine. An alternative method could be to silk screen print onto cotton cloth. Silk screen printing has the great advantage that the cloth is easily obtainable, durable and cheap. One screen gives hundreds of prints at very low cost and almost all materials can be found locally.

CONCLUSION

Throughout this research many problems have come to light that can and must be remedied quickly. These problems include the:-

- * lack of plentiful cleaned water supply;
- * inadequate or overcrowded housing;
- * poor hygiene;
- * high fertility;
- * very low literacy;
- * high mortality rates amongst infants;
- * shortage of medical staff in rural areas;
- * unfair distribution of health centres in the Country as a whole;
- * ignorance of communities about their health;
- * mis-use of medicine;
- * rapid growth of population.

Authorities in the Middle East should compile questionnaires and extensive surveys to ascertain peoples' needs. Included in these surveys should be a question about the recommendation of services the people themselves would like to see implemented. The objectives of the study should be to determine:-

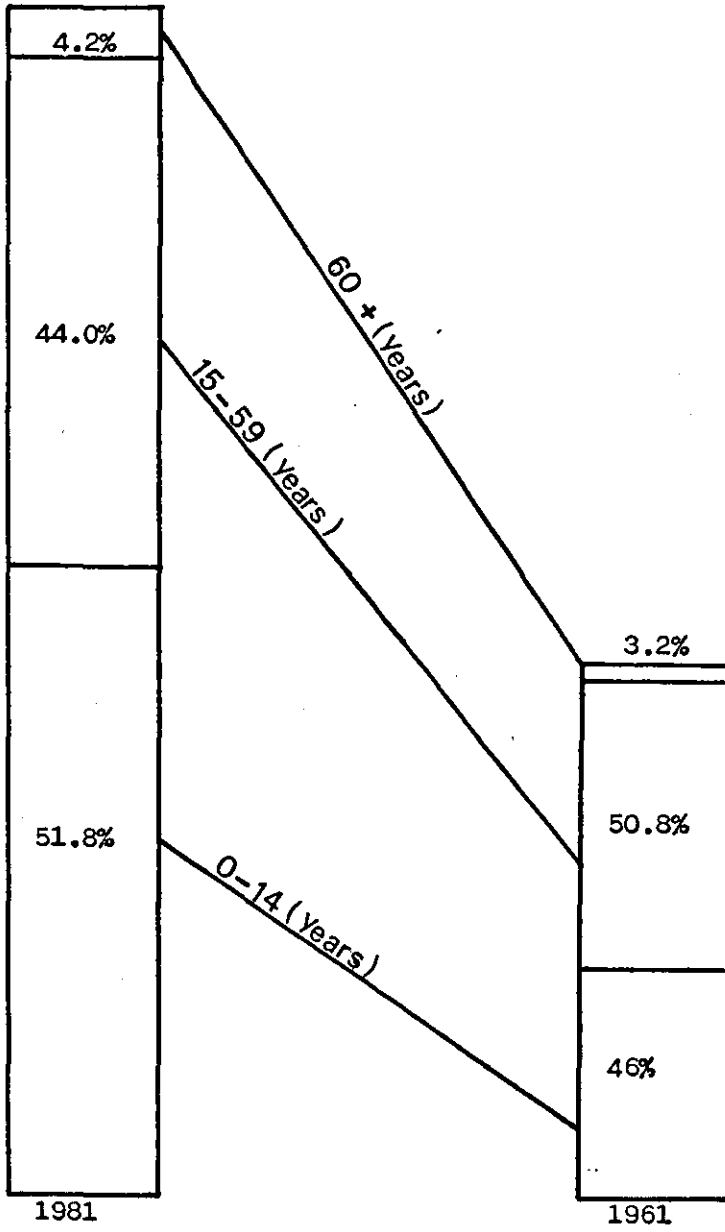
- * suitable locations for establishing the type of health Centre required;
- * the number and kind of beneficiaries served by each Centre;
- * the expected growth rate of communities;
- * the type, structure, distance, distribution of population and, birth and death rate;
- * the activity zone of these Centres from the geographical and human aspect.

Achievement of the study will be reached by:-

- * maintaining the religious and moral goals of Islam;
- * developing human resources by education and training to raise the standard of health in all rural areas;
- * development of present health services should be designed to suit rural people's needs;

In the year 1961 the population in Jordan was 901,000. In 1981 it had reached 2,322,000 which means the population had increased by 107.7% in twenty years. Some of the reasons for this increase are: high fertility and high birth rate. Assuming this increase will continue at the same rate for the next twenty years, the population will reach 4,822,794. Sadly, inspite of the size of the population the situation regarding health services will be the same if not worse by the year 2000. Pregnancy will increase to as high as 300 per cent in the year 2000 and trained midwives will have decreased by -19.1 per cent if the trend continues as steadily as that of the period 1979-1980.

Infant mortality is 7 per cent and this is a very high percentage in a country of which 19.3 per cent of its population is under the age of 5 and 51.8 per cent under the age of 15 years. Only 37.2 per cent of the population is between the ages of 20-50 and over!



Population percentage according to ages.

Estimates* of population by age
for the year 1981

Age	Total	%
0-4	447,773	19.3
5-9	407,946	17.6
10-14	345,714	14.9
15-19	155,379	11.0
20-24	168,377	7.2
25-29	117,440	5.1
30-34	111,392	4.8
35-39	104,621	4.5
40-44	95,524	4.1
45-49	73,522	3.2
50-54	55,415	2.4
55-59	41,096	1.7
60+	98,101	4.2
TOTAL AGES	2,322,300	100%

* Estimates were based on 1979 statistics
(Annual Statistical Report, Ministry of
Health , Jordan, 1981).

To reduce the mortality and to reach health for all in the year 2000, action should be taken now before it is too late to:-

- * control pregnancy;
- * prevent early marriages;
- * raise the number of trained midwives;
- * increase maternity educational lessons;
- * increase maternity and child educational films;
- * reduce home births in the rural areas;
- * increase home visits to pregnant mothers and infants;

Government officials should join in with the community leaders who can exert influence in the community on daily activity and social programmes. Such individuals can play an important role in making actions legitimate. Their opinion and support are, therefore, crucial to the successful implementation of health service plans and education.

Communities have structural arrangements and boundaries whereby the process and lines of authority and communication within and outside the social system are regulated. The social structure of the community for example determines who communicates with whom and under what circumstances. It also confers social legitimacy on an institution and defines its civic value to the population.

The level of education in a community is a key indicator. The education level amongst Middle Eastern women is very low especially in rural areas. School leaving age should be not less than sixteen years for both sexes. The author recommends a new type of service

as outlined below:-

* Motherhood and child health care project (in conjunction with community development centres). Motherhood and child health care projects should be added to the Centres. These projects will offer services to mothers and their children up to the age of six years, expectant women and women about to be married. Classes should be taught in such areas as perinatal care, child raising, nutrition, hygiene, breast feeding and its benefits and most important of all, reading and writing.

* Mobile units should be established to remote rural areas where services are not currently available. Each Unit should be a Centre on wheels. They should be fully equipped and staffed. The Units should stay in each village as long as necessary to serve the local population until the permanent Centre is implemented.

* Girls Care classes which would offer teaching and guidance to young women on health and hygiene.

As the survey revealed (App B) training institutions in the Middle East areas have been made along the same lines as those in the developed world. Their teaching patterns are geared more towards curative care than prevention at the community level. Students are unconsciously led to see their patients simply as objects for their therapeutic purposes.

Due to the fact that medical schools are largely located in major urban centres, very few students have any significant contact with

rural people who need greater care and have fewer or no health facilities at all. Students should choose the medical profession not simply to fulfill their families' wishes but because of their own dedication. Also, students should not emigrate for higher wages before serving the rural communities for some time. The author's recommendation to the medical educators and medical establishments in the Middle East is to:-

- * include more teaching time about common diseases;
- * ensure that students are competent in problem solving;
- * include more training in the community in their programme of studies. This will ensure that students are well trained to treat the masses and not just individuals;
- * include extensive rural area training in their training programme.

Accordingly, every effort should be made to achieve health for all, involving both health and non-health personnel in the delivery of health care throughout the area.

As a small contribution to the implementation of health care in the rural areas of the Middle East and third World countries, the author has designed a method of following simple drug and medicine instructions for illiterate people. This has been clearly outlined in Chapter Six. In the meantime however, help must be given to the people presently suffering under appalling conditions.

People of third world countries should draw attention to the grave injustice of the maldistribution of health services. Pressure has

to be brought to bear upon Government and health officials to look at the seriousness of the many prevailing problems.

Finally, development of present health services and the newly implemented ones should be designed to solve health problems and not political ones.

FOOTNOTES

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10. WHO. Declaration of Alma Ata (Report of International Conference on Primary Health Care, Alma Ata, U.S.S.R., Sept. 6-12, 1978.
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13. Data from the United Nation Demographic Year Book 1979. The United Nation Population Division's 1978 Assessment. Generally data refer to some points in the late 1970's. Expectation of life is the average number of years a newborn can be expected to live under present mortality rate.
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ABBREVIATIONS

C.D.R.	Child Death Rate
C.R.L.	Cholera Research Laboratory
I.C.D.D.R.	International center for Diarrhoeal Disease Research
I.M.R.	Infant Mortality Rate
L.E.B.	Life Expectency at Birth
M.D.	Medical Doctor
M.O.H.	Ministry of Health
M.E.	Middle East
P.E.	Population Estimates
T.B.	Tuberculosis
U.N.	United Nation
U.N.D.	United nation Division
W.B.	World Bank
W.H.O.	World Health Organization

APPENDIX A

QUESTIONNAIRE FOR INHABITANTS OF RANDOM
RURAL VILLAGES OF JORDAN AND SAUDI ARABIA

Compiled by Musa Khalailah
Postgraduate Research Student
Loughborough University of Technology
Loughborough, Great Britain

NB/ Questions requiring longer answers may be answered
in Arabic where necessary. Please tick appropriate
answer =

1. Have you had any health problem within the last ? . .

1 - 3 months	1
3 - 6 months	2
6 - 1 year	3
1 year and over	4

2. Can you explain what the problem was?
.....

3. At its worst, did this bother you? . . .

A great deal	1
Hardly at all	2
Not at all	3
Don't know	4

4. At its worst, did it hurt or pain you?

A Great deal	1
Hardly at all	2
Not at all	3
Don't know	4

5. Were you concerned or worried about this?

A great deal	1
Hardly at all	2
Not at all	3
Don't know	4

6. Did you talk to someone about this?

No	0
Yes	1

7. If yes, who was it you talked to?

Head of the Family	1
Tribe Leader	2
Traditional healer	3
Health worker	4
Someone else	5

7a) If someone else, who was it?

8. What was the main reason you didn't talk to your health worker?

- It is too far to walk 1
- It was too much trouble 2
- There is no health worker 3
- For other reasons 4

8a) What was your reason?

.....
.....

9. If there is a health worker based in your village would he/she be your to talk to?

- First choice 1
- Second choice 2
- Don't know 3

10. Within the last 12 months were you admitted to a hospital?

- No 0
- Yes 1

10a) How many times?

10b) How many nights were you there during

11. The most recent admission nights

12. The time before that nights

13. The time before that nights

14. The time before that nights

15. Can you remember the admission date?

- No 0
- Yes 1

month.....day.....year

16. How did you travel to the hospital?

.....

17. What was the main reason for admission?

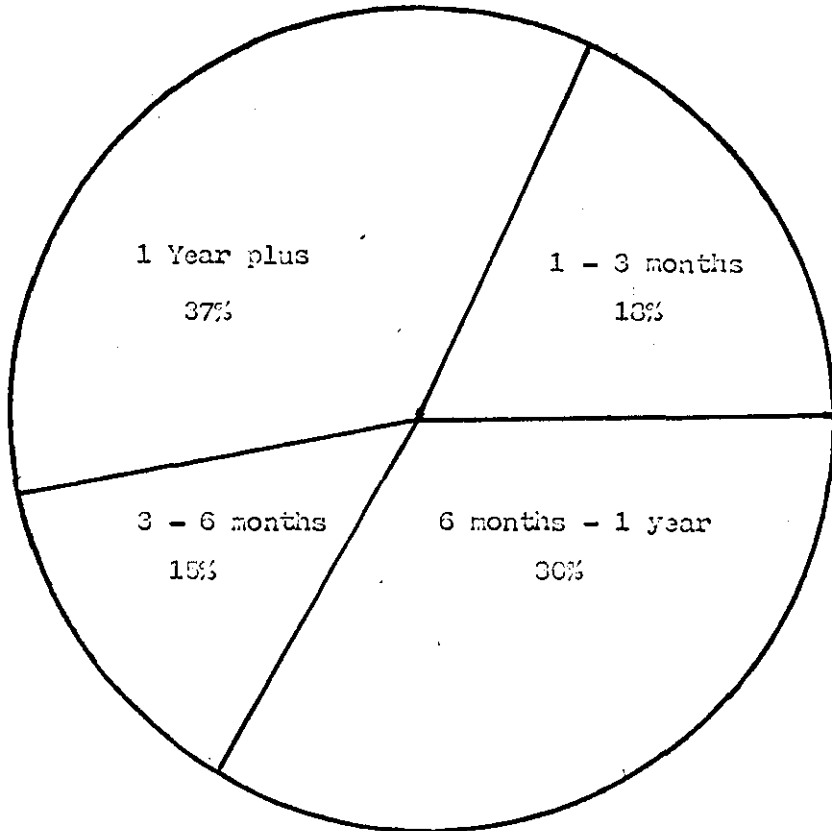
- Sickness, illness, injury 1
- To have tests made 2
- To give birth 3
- Other reasons 4

18. At the time of admission were you in pain?
- | | |
|---------------|---|
| A great deal | 1 |
| Hardly at all | 2 |
| Not at all | 3 |
| Don't know | 4 |
19. At that time, were you concerned or worried about it?
- | | |
|---------------|---|
| A great deal | 1 |
| Hardly at all | 2 |
| Not at all | 3 |
| Don't know | 4 |
20. After arrangements were made did you go?
- | | |
|-----|------------|
| NO | 0 |
| Yes | 1 Go to 21 |
- 20a) What was the reason?
-
21. After arrangements were made, how long did you wait?
- | | |
|---|---|
| More than one day but within a week | 1 |
| More than one week but within one month | 2 |
| More than one month but within three months | 3 |
| More than three months | 4 |
| Still waiting | 5 |
- 21a) How long have you been waiting?
-
22. Who suggested that you go to the hospital?
- | | |
|--------------------|---|
| No one | 1 |
| Husband/Wife | 2 |
| Traditional healer | 3 |
| Health worker | 4 |
| Someone else | 5 |
- 22a) Who was it?
23. After the hospital discharged you, did you ...
- | | |
|----------------------------------|---|
| Feel better | 1 |
| Still feel as before | 2 |
| Didn't get what you had expected | 3 |
| Don't know | 4 |

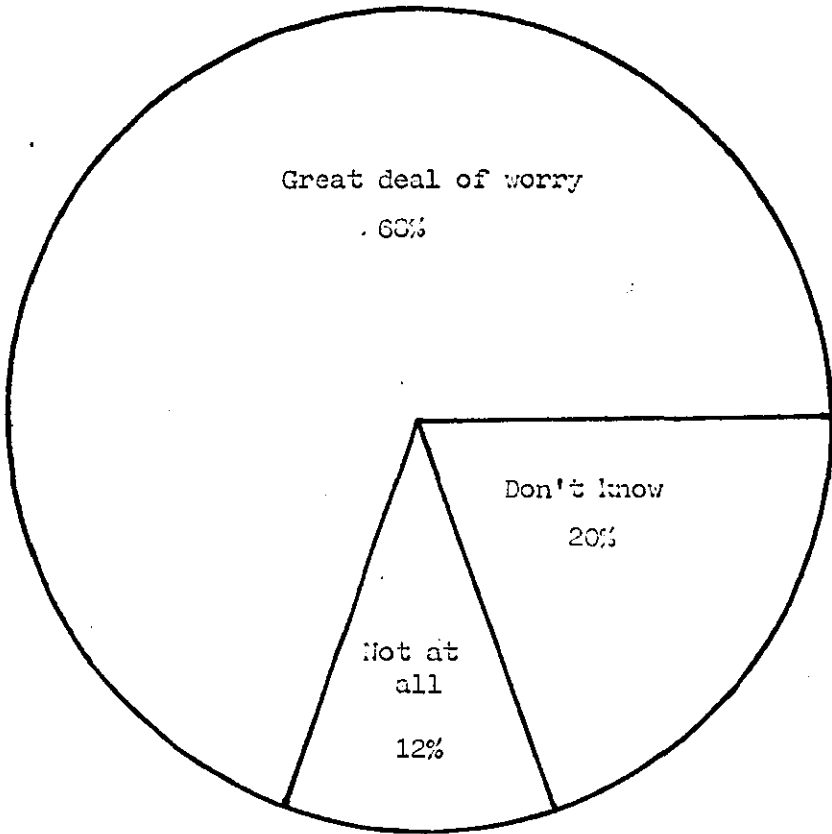
24. If it is important for you to go to the hospital, would you go again?
- | | |
|-----|------------|
| No | 0 |
| Yes | 1 Go to 25 |
- 24a) Would you advise others to go?
- | | |
|-----|------------|
| No | 0 |
| Yes | 1 Go to 25 |
- 24b) Why not?
-
-
25. If there was a Health Centre would you visit when you need advice?
- | | |
|-----|---|
| No | 0 |
| Yes | 1 |
26. How long does it usually take you to get there?
- | | |
|------------------|---|
| Less than 1 hour | 1 |
| More than 1 hour | 2 |
| Don't know | 3 |
27. Is the location convenient or inconvenient?
- | | |
|--------------|---|
| Convenient | 1 |
| Inconvenient | 2 |
| Don't know | 3 |
28. Does a mobile unit come here?
- | | |
|--------------|---|
| Once a week | 1 |
| Twice a week | 2 |
| Once a month | 3 |
| Never | 4 |
29. In your family, who takes responsibility for the rest of the family's health?
-
30. When did any one in the family have an immunisation or vaccination to prevent illnesses?
- | | |
|-------------------------|---|
| Less than 12 months ago | 1 |
| More than 12 months ago | 2 |
| Never | 3 |
| Don't know | 4 |

31.	Have you taken any of the following medicine, pills?	<u>No</u>	<u>Yes</u>	<u>How many kinds?</u>
	a) pain relievers	0	1	
	b) cough medicines	0	1	
	c) Vitamins	0	1	
	d) Birth control pills (women)	0	1	
	e) Diarrhoea pills	0	1	
32.	Do you know how to use these drugs?			
		No		0
		Yes		1 Go to 33
32a)	You don't know how to use them because:-			
33.	You have difficulty with medicine instructions?			
		No		0
		Yes		1
34.	Find it difficult to know how often they should be taken?			
		No		0
		Yes		1
35.	Don't know how much to take each time?			
		No		0
		Yes		1
36.	When prescribed more than one medicine you find it difficult to differentiate between them?			
		No		0
		Yes		1
37.	If you do not feel the benefit of the medicine immediately do you.. ?			
		Stop taking it		1
		Continue taking it		2
38.	How do you tell the time?			
		Sun shades		1
		Watches		2
		Other		3
39.	Do you believe doctors can prevent diseases?			
		No		0
		Yes		1 Go to 40
39a)	Why not?			
			

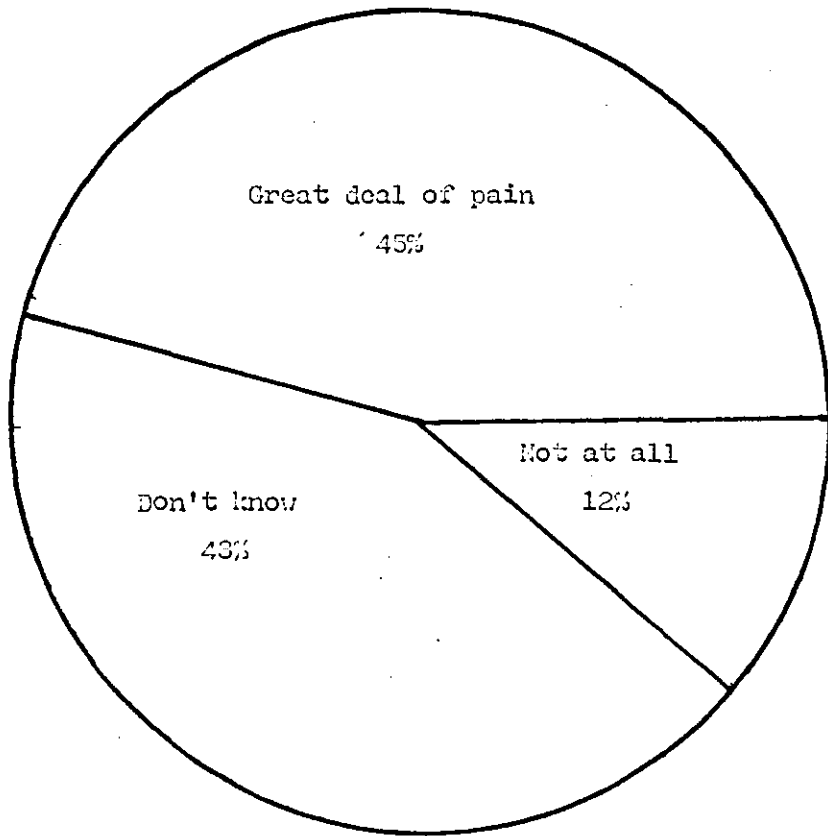
40. Would you prefer someone you know to treat you?
- | | |
|-------------------|---|
| No | 0 |
| Yes | 1 |
| It doesn't matter | 2 |
41. Would you like to be trained as a Health Worker?
- | | |
|-----|------------|
| No | 0 |
| Yes | 1 Go to 42 |
- 41a) Why Not ?
-
- 41b) Would you like to attend for health education in your spare time (for your own benefit)?
- | | |
|-----|---|
| No | 0 |
| Yes | 1 |
42. When you visit the clinic does the doctor spend enough time with you or not?
- | | |
|---------------------|---|
| Enough | 1 |
| Not enough | 2 |
| Don't know | 3 |
| Don't have a clinic | 4 |
43. When the mobile unit visits does the doctor spend?
- | | |
|--------------------------|---|
| Enough time with you | 1 |
| Not enough time with you | 2 |
| Don't know | 3 |
44. In your opinion, are you satisfied or dissatisfied with the mobile unit?
- | | |
|--------------|---|
| Satisfied | 1 |
| Dissatisfied | 2 |
| Don't know | 3 |
-



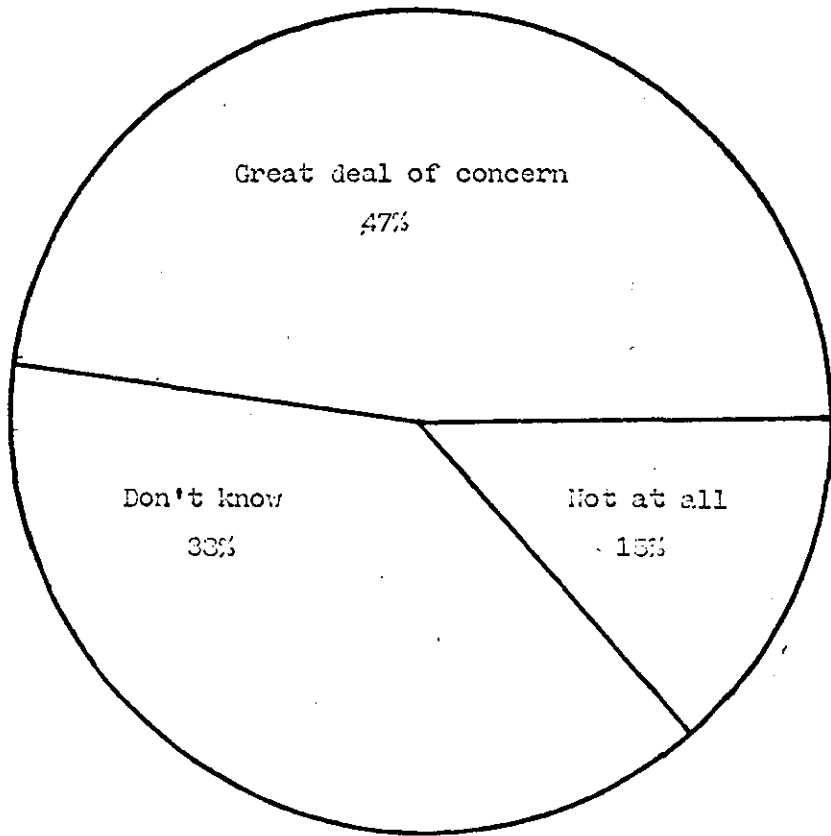
App. A-1. If they have any problems within the periods shown.



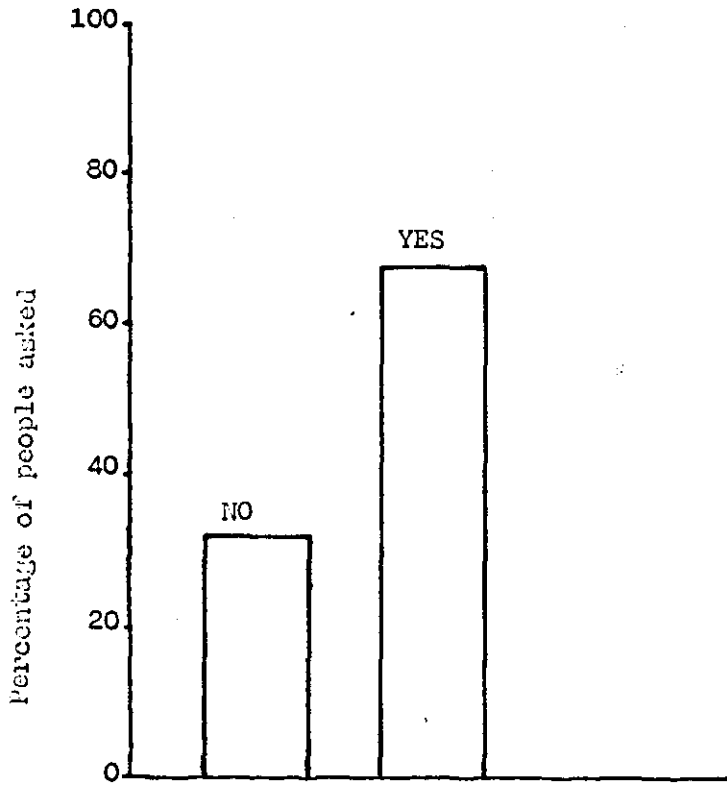
App.A-3. Whether the problem was a worry to them.



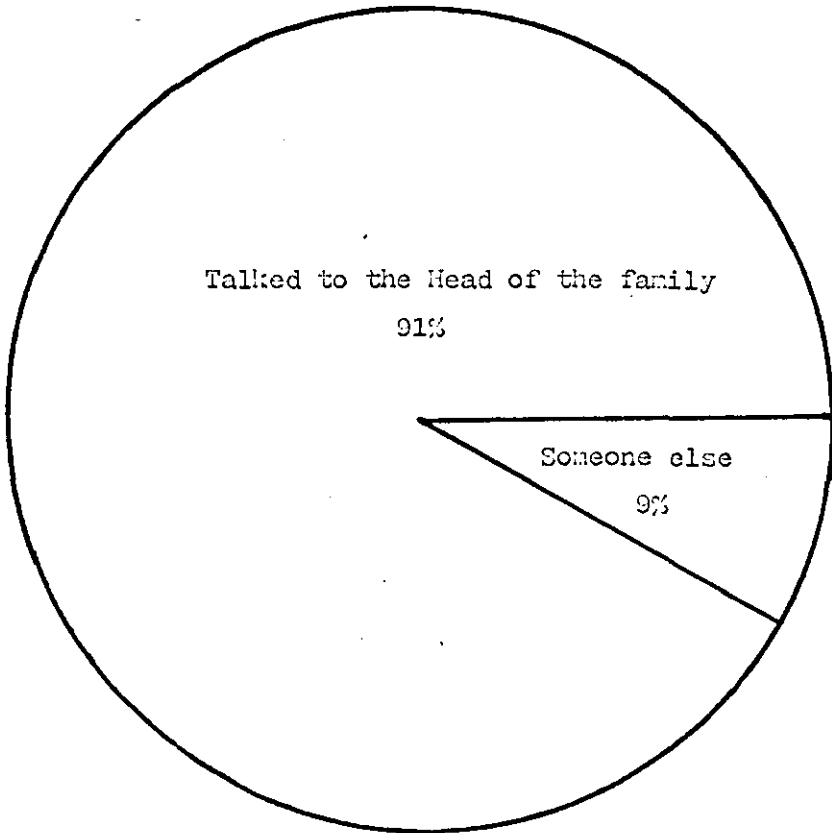
App. A.4. Whether the problem caused pain



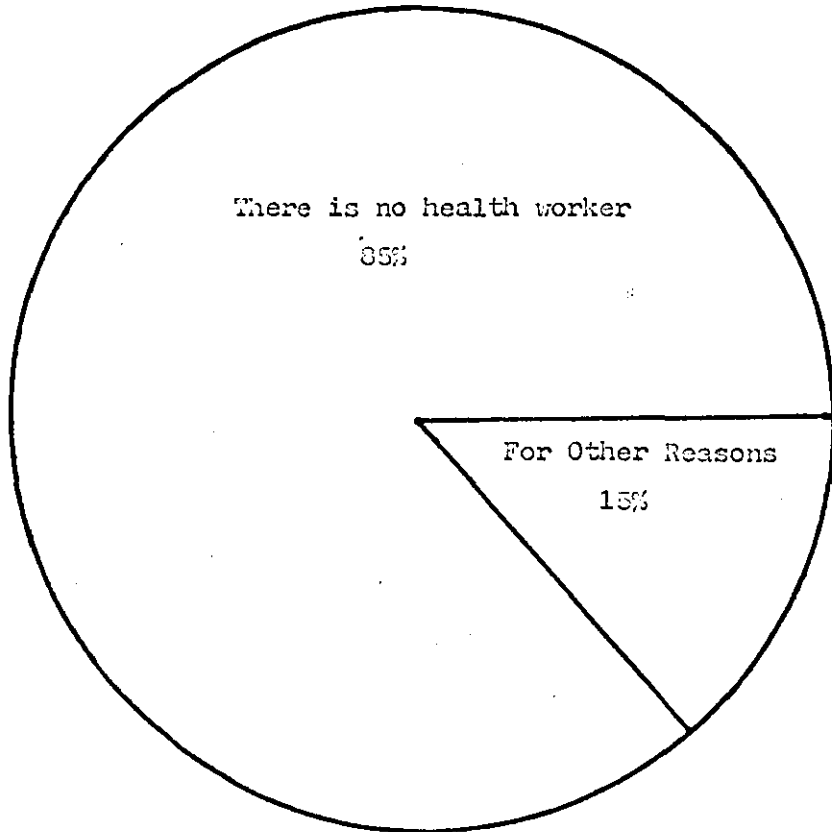
App. A.5. Amount of concern about the gain



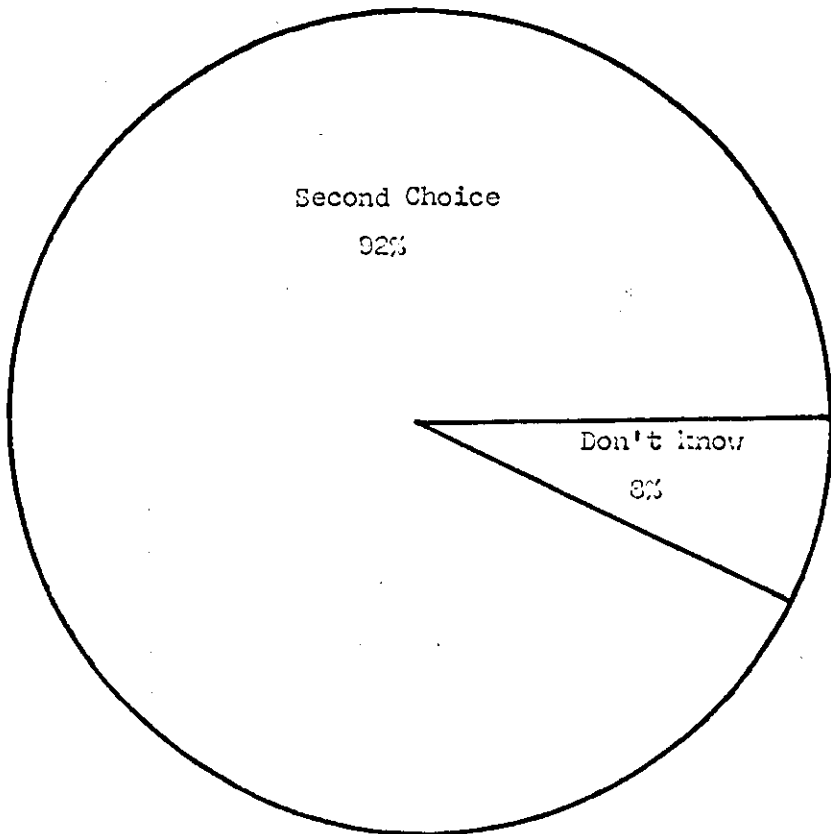
App.A.6. No. of people who consulted anyone about their problem.



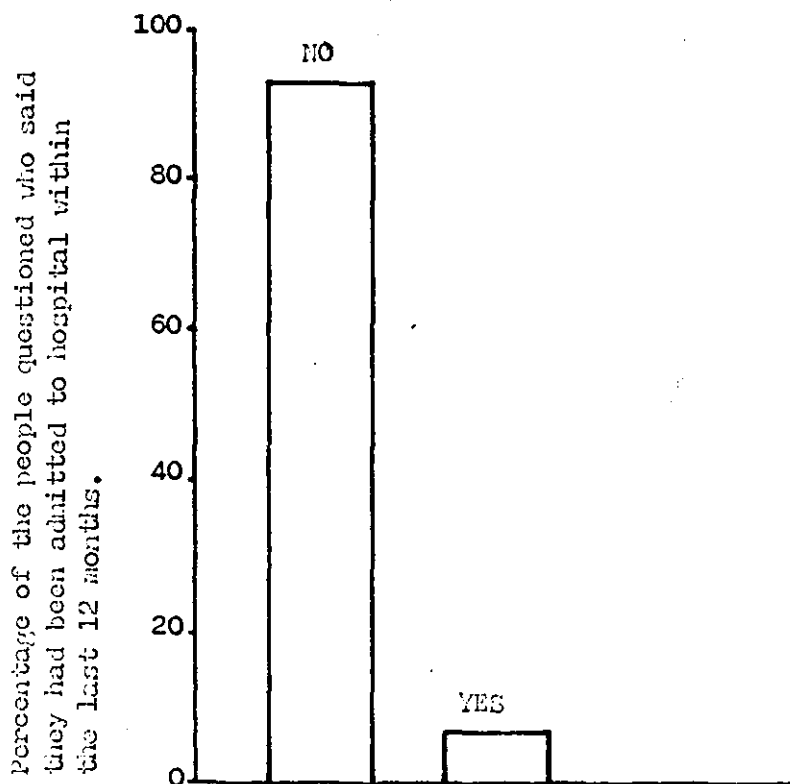
App.A.7. To whom did they talk?



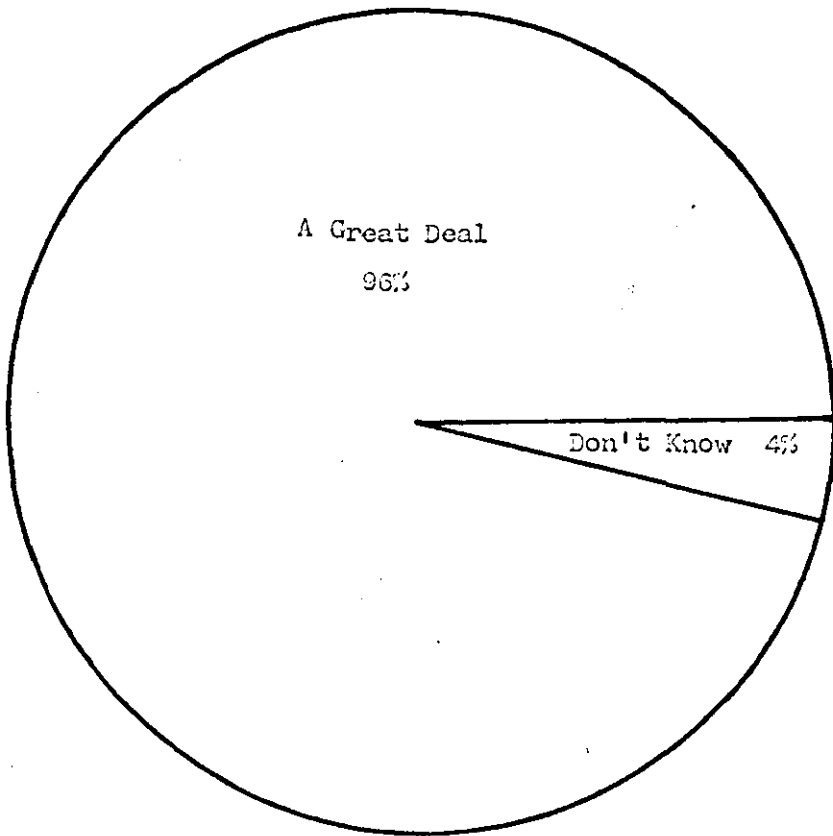
App. A.3. The reason for not talking to a health worker.



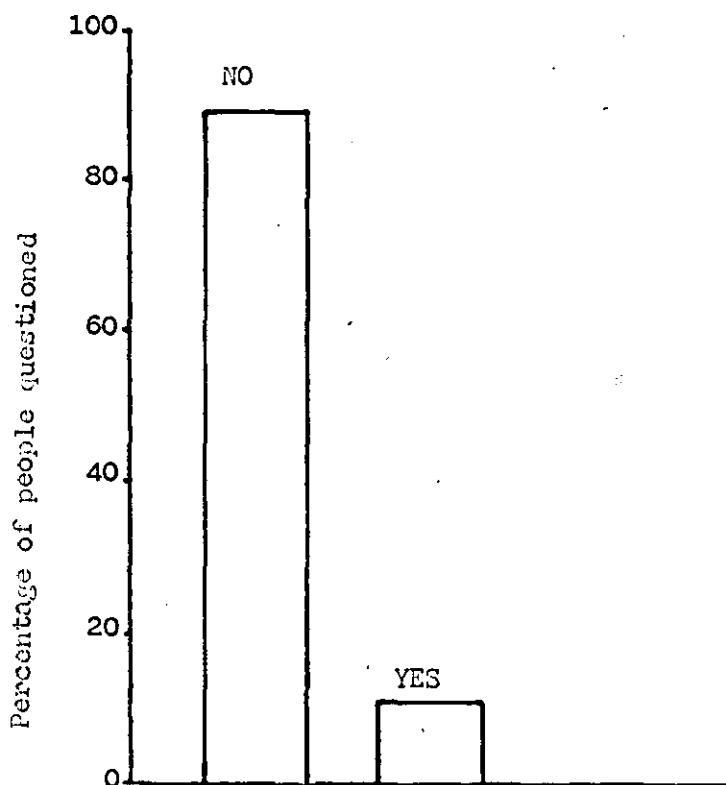
App. A.9. Which choice would the health worker be (if there was one present).



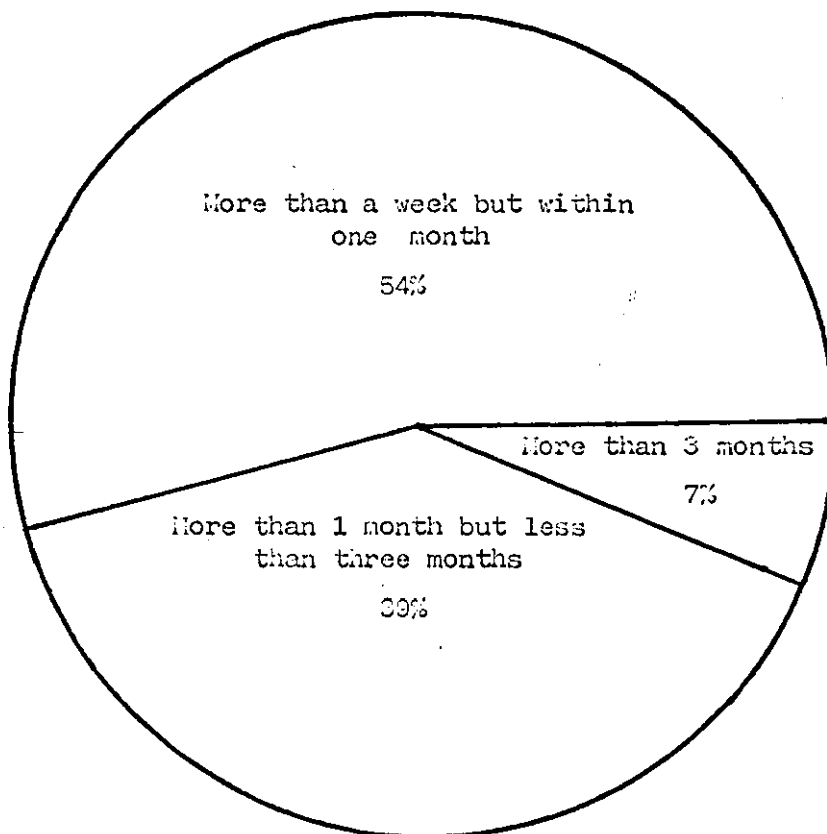
App. A.10. Admission to hospital within the last 12 months.



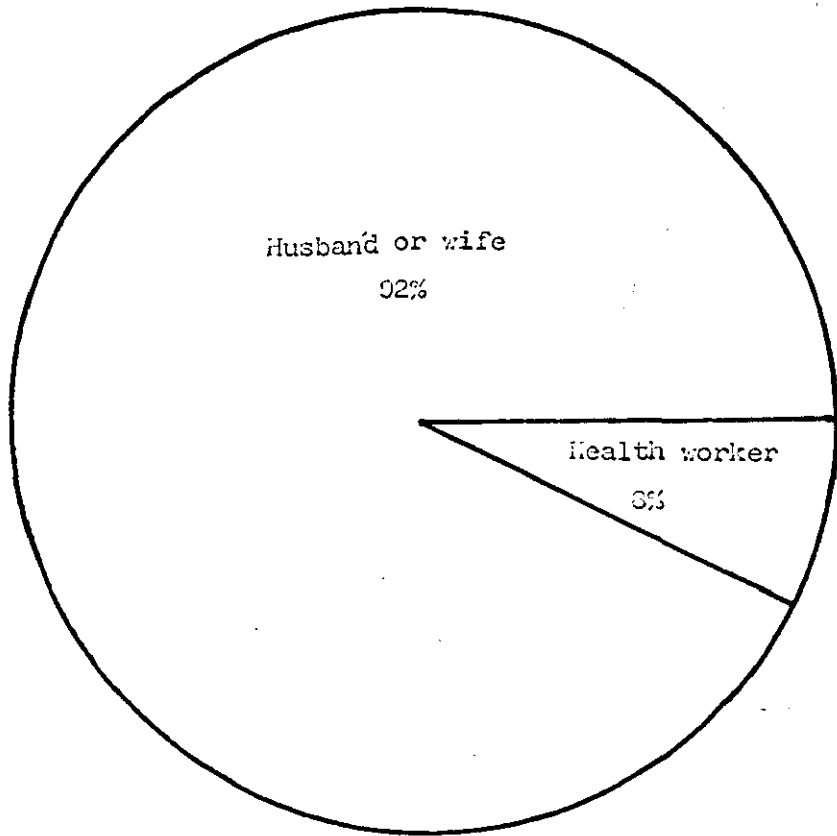
App. A.10. Concern upon admission to hospital.



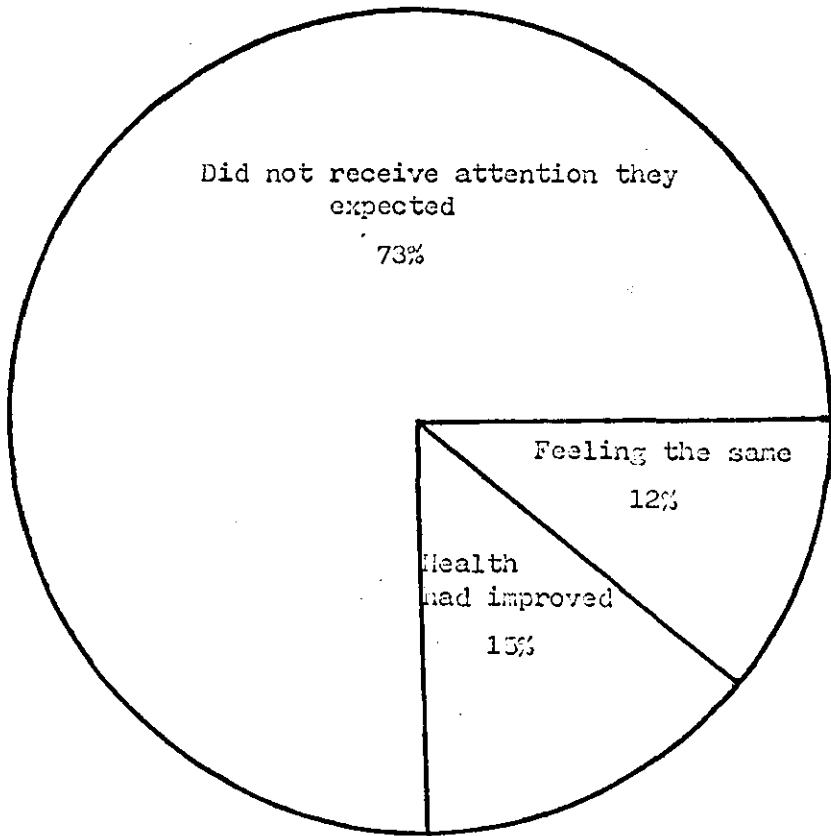
App. A.20 Amount of people who went to hospital after arrangements were made.



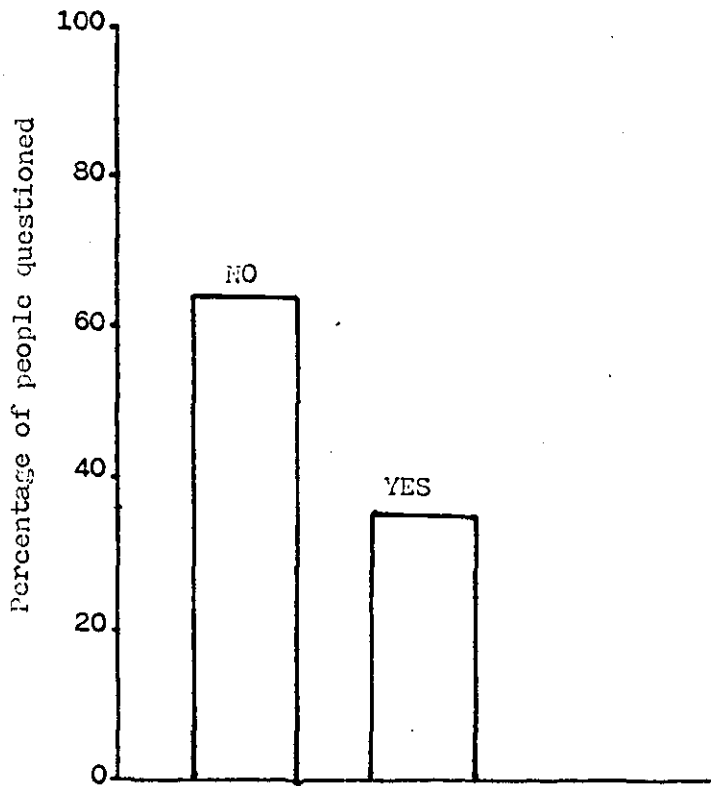
App. A.21. Length of waiting time after arrangements had been made.



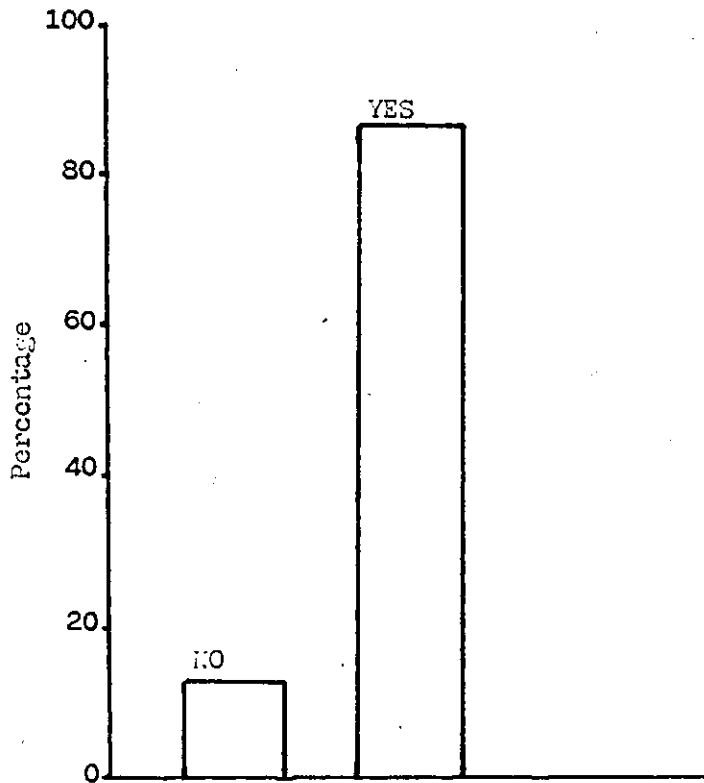
App. A.22. People who advised them to attend hospital.



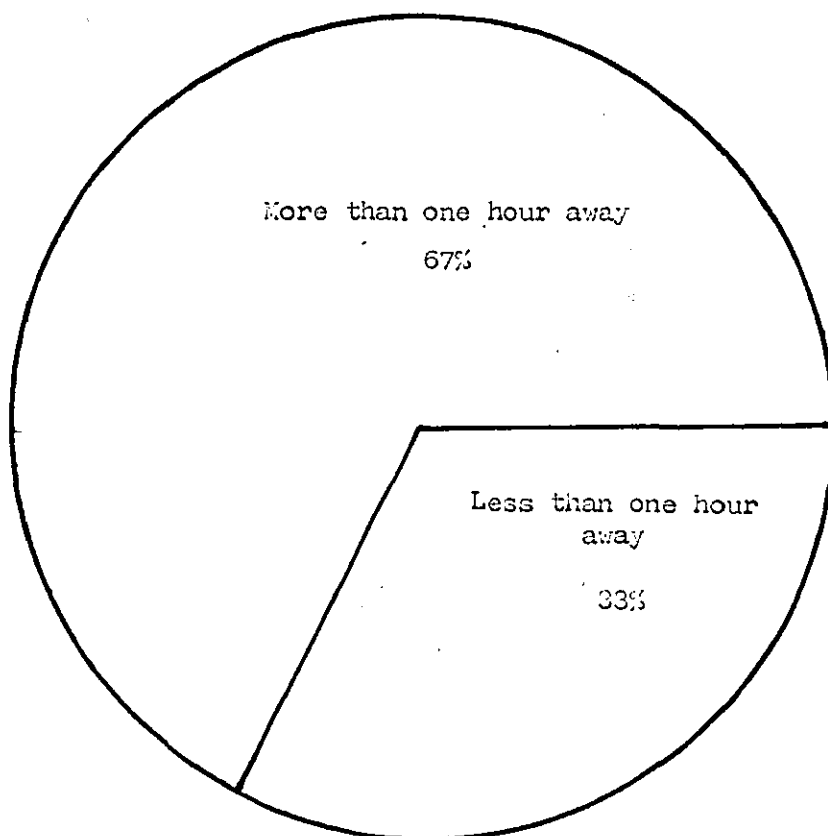
App. A.23. People's feelings after discharge from hospital.



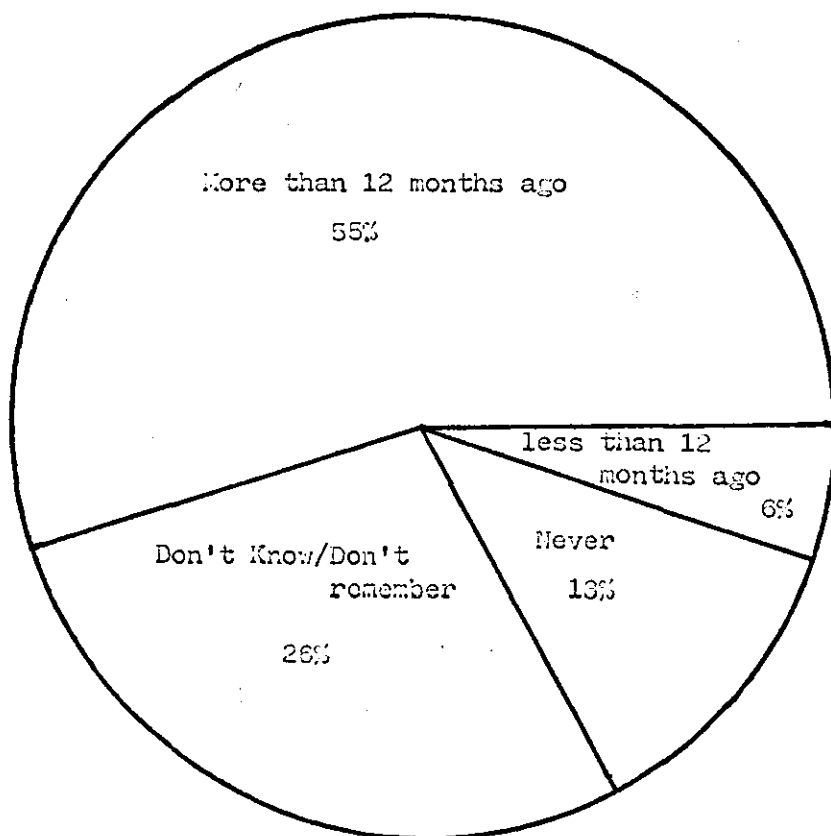
App. A.24. Opinion as to whether people would return to hospital if necessary.



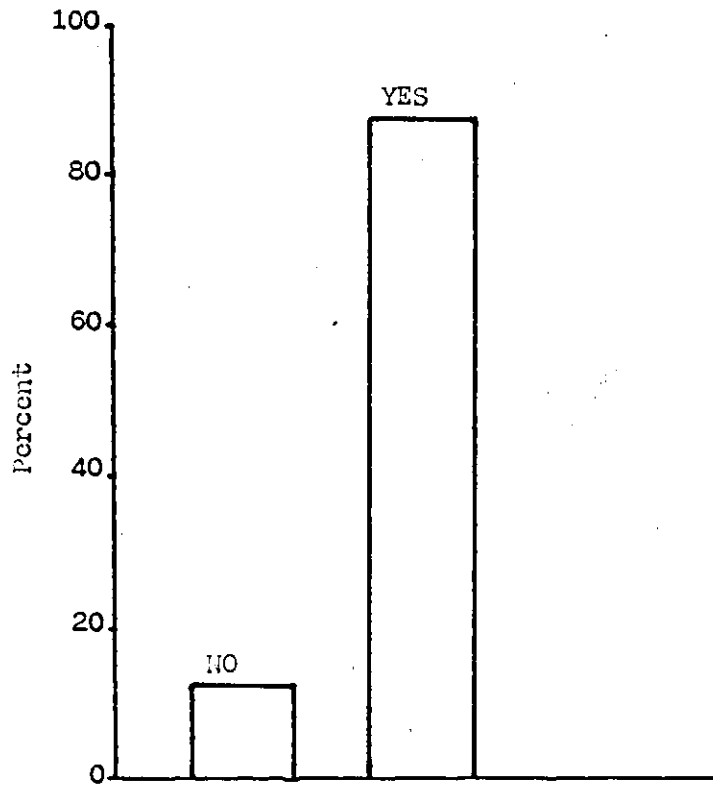
App. A.25. Percentage of people who would use the Health Centre if one was available.



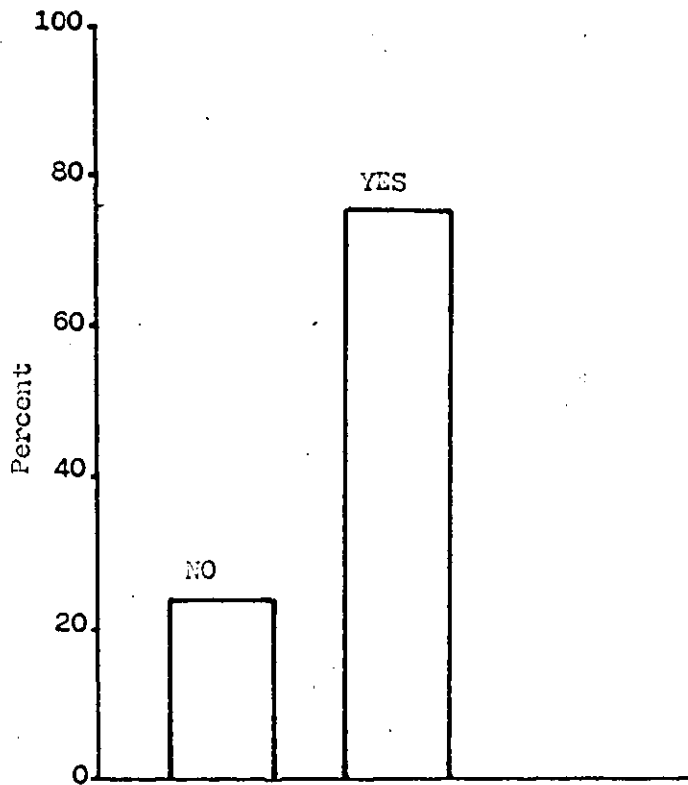
App. A.26. Convenience of location of Health Centre



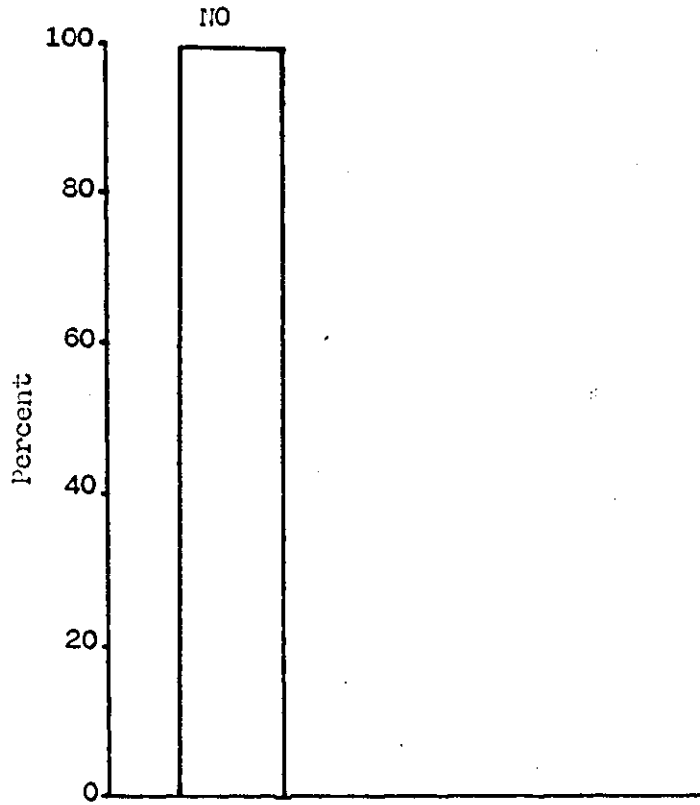
App. A.30. Last time any immunisation was given to any member of the family.



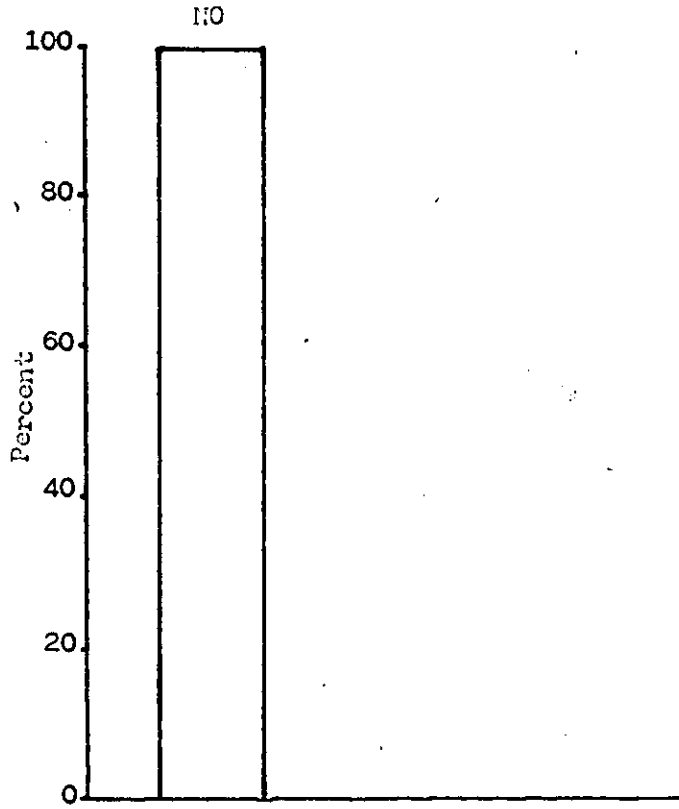
App. A.31a. People who have taken any pain relievers.



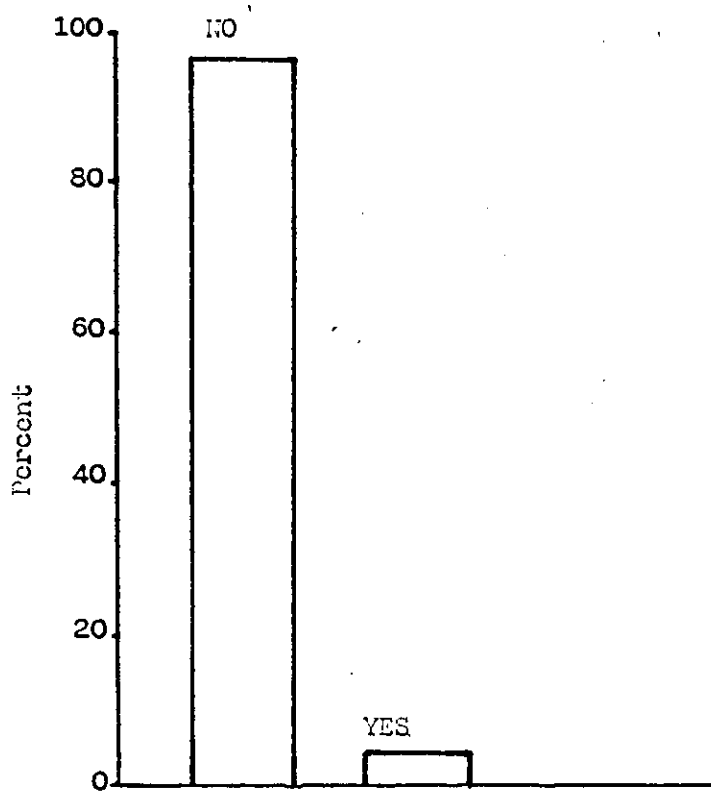
App. A.31b. No. of people who have taken cough medicine.



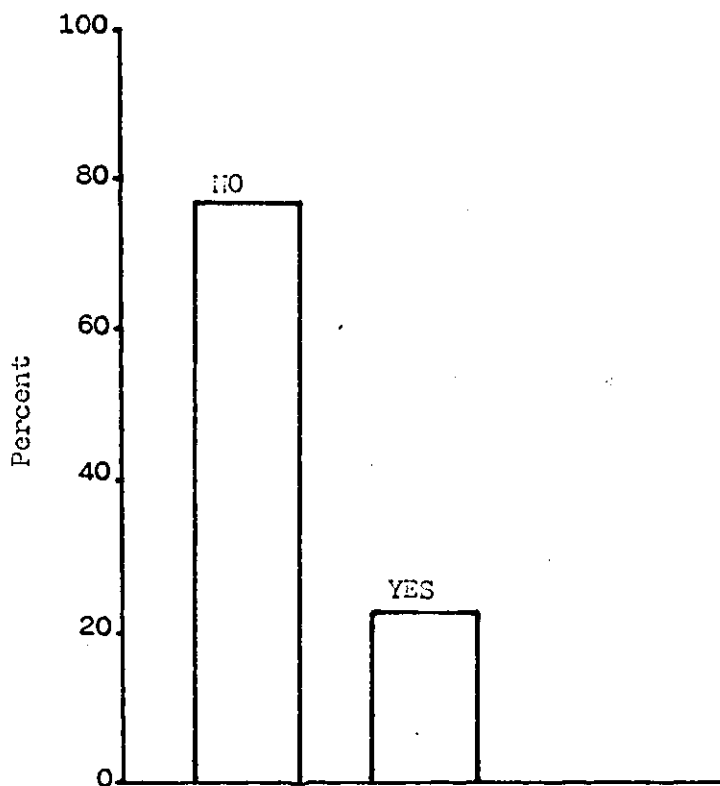
App. A.31c. No. of people who have taken any vitamin pills.



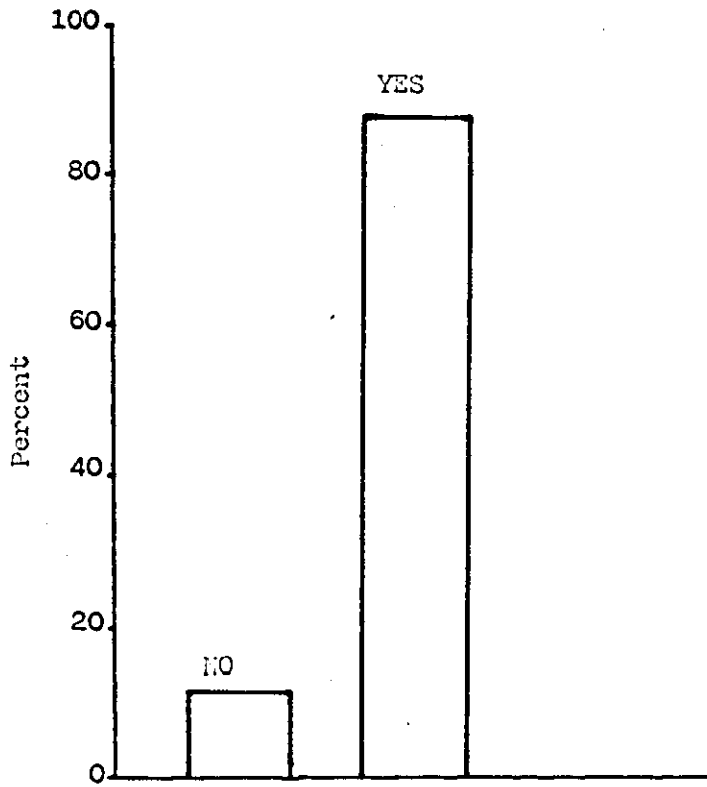
App. A.31d. Women who have taken birth control pills.



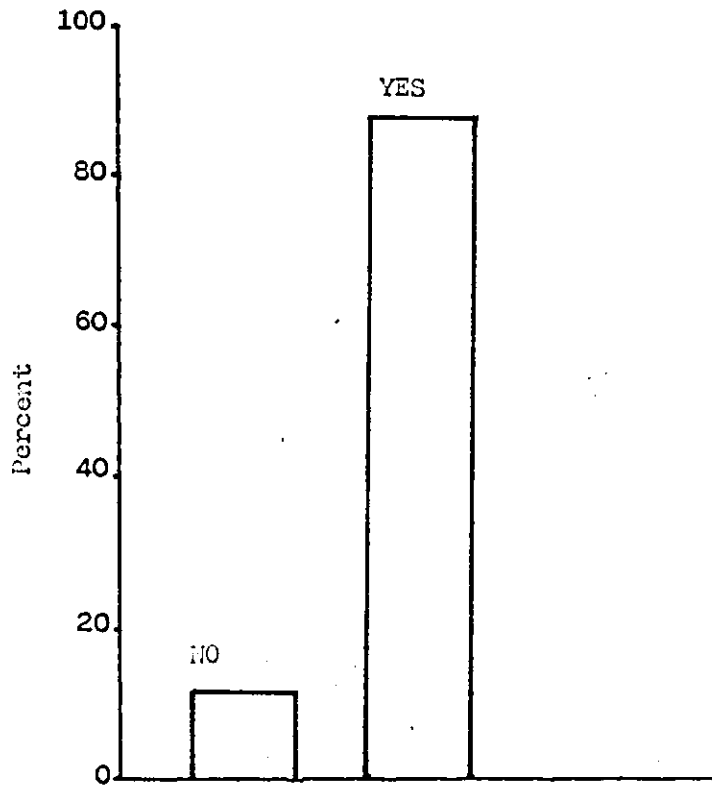
App. A.31e. People who have taken pills for diarrhoea.



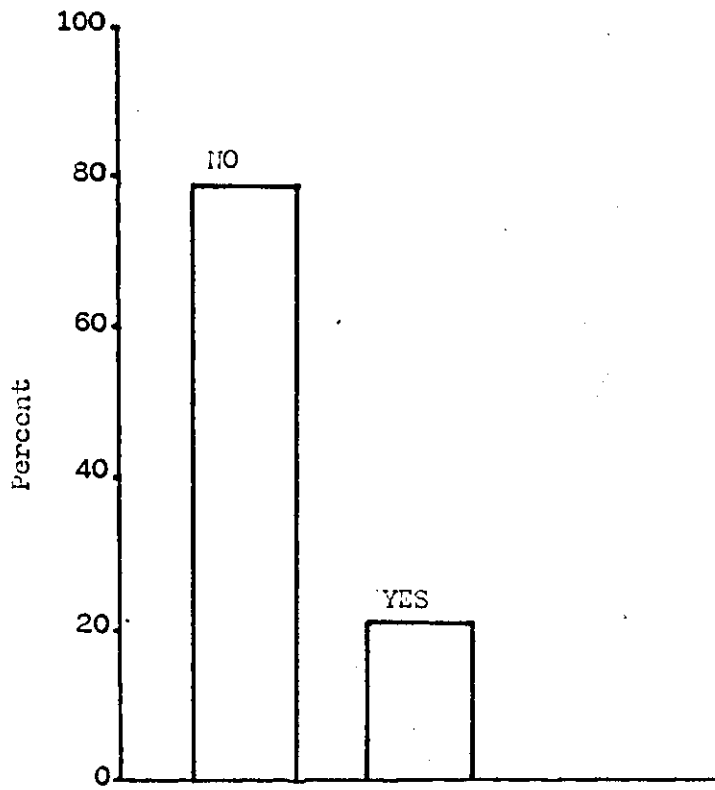
App. A.32. People who know how to use the drugs they are given.



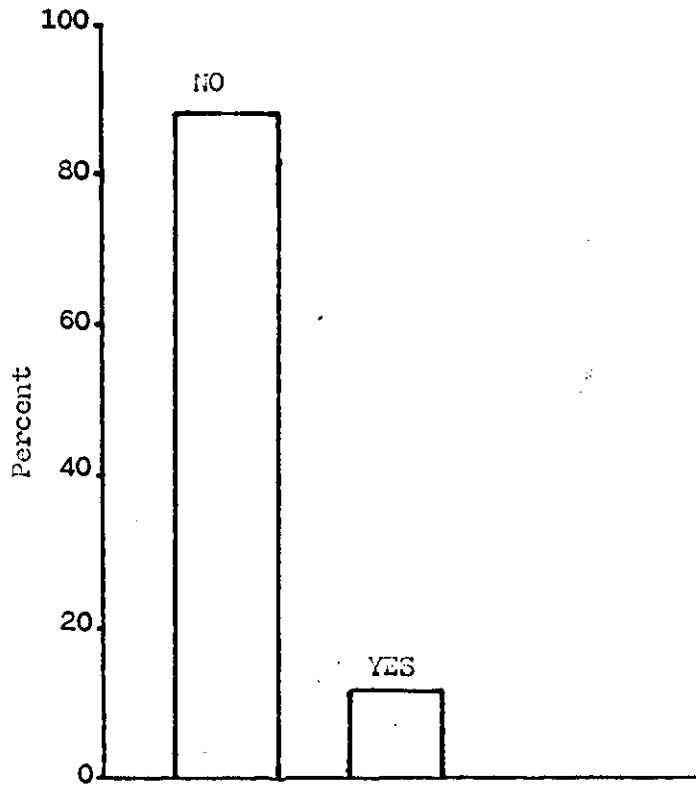
App. A. 33. People who have difficulty with medicine instructions.



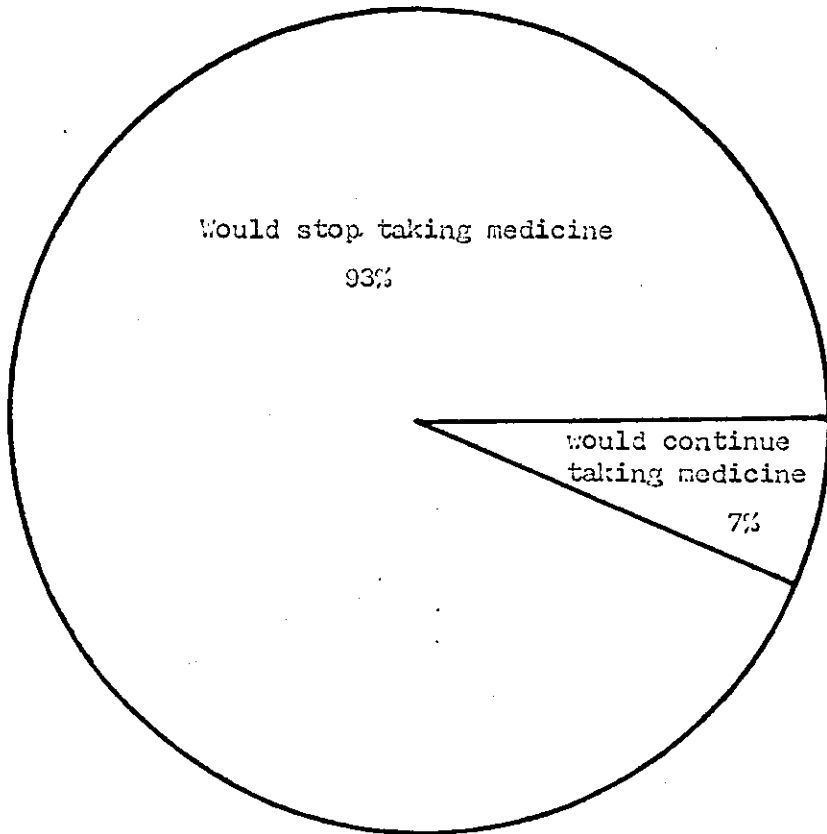
App. A.34. Difficulty in knowing how often to take medicines.



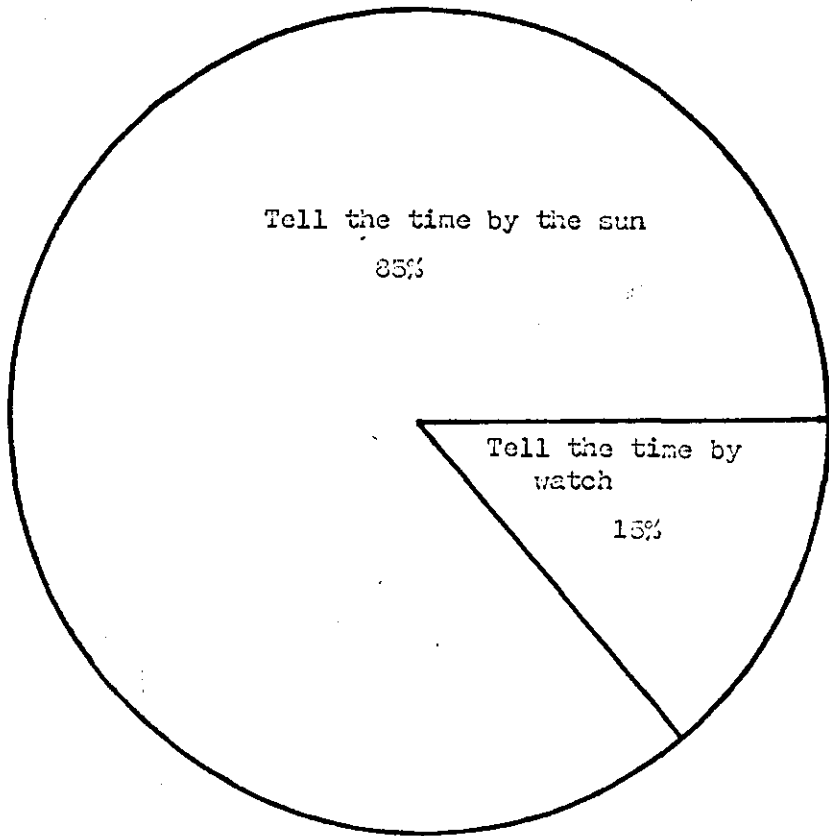
App. A.35. No. of people who know how much medicine to take.



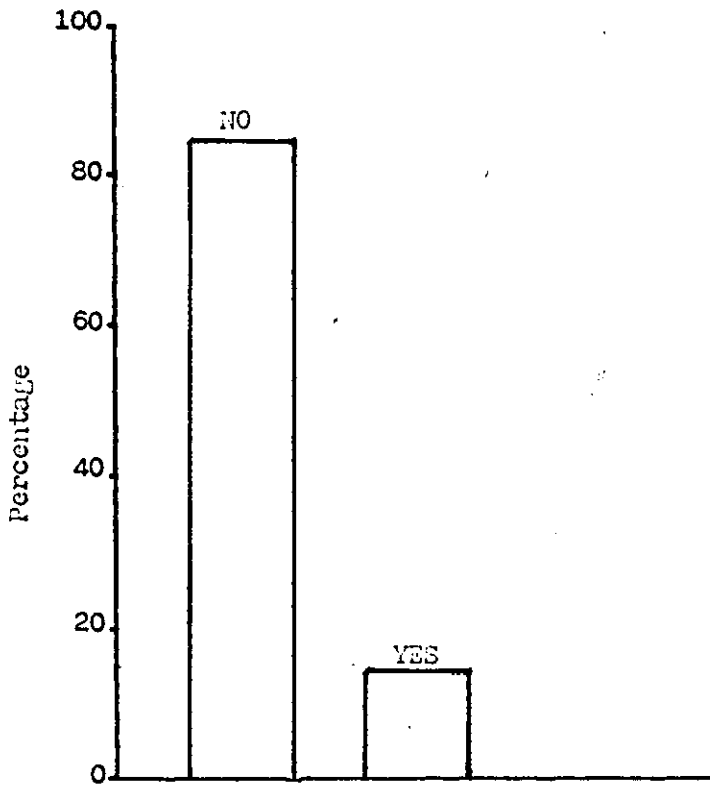
App. A.36. People who can differentiate between two or more types of drug.



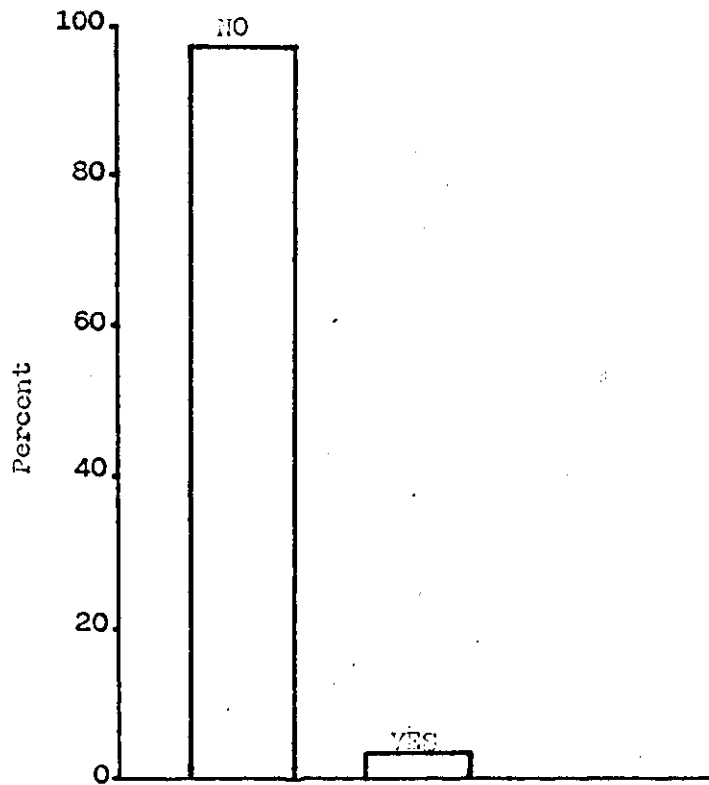
App. A.37 Indication of how many people would stop taking medication if they did not feel an immediate improvement.



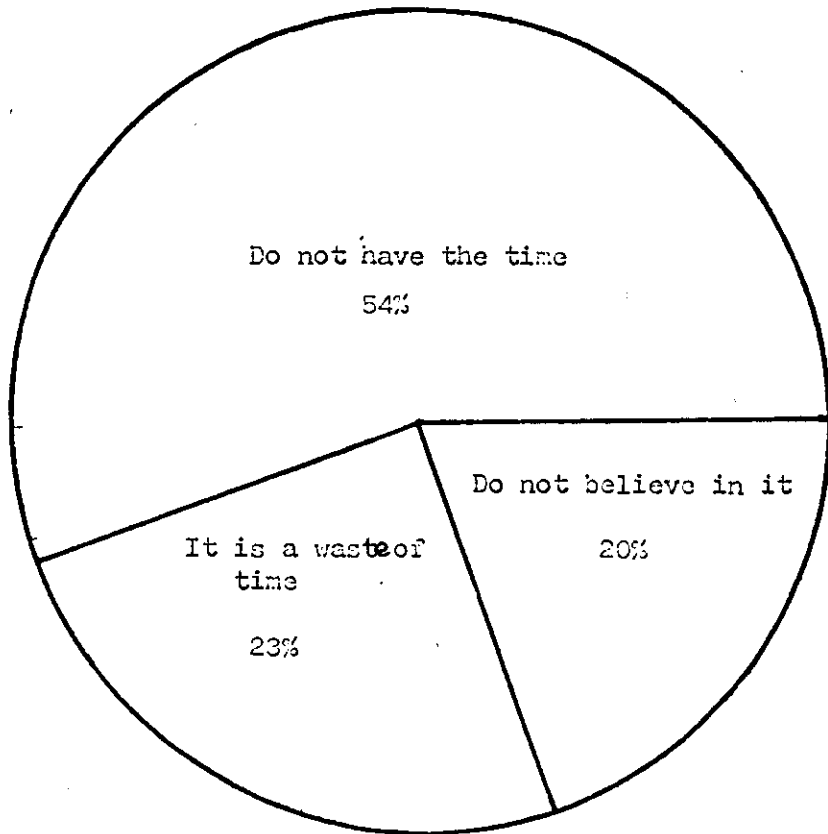
App. A.33. How people tell the time



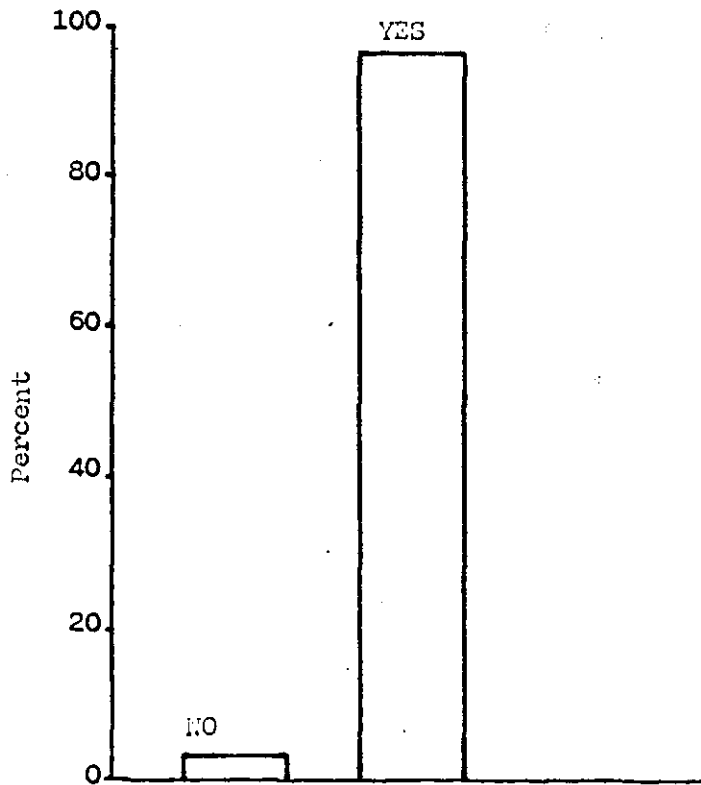
App. A.39. Whether people believe that doctors can prevent diseases.



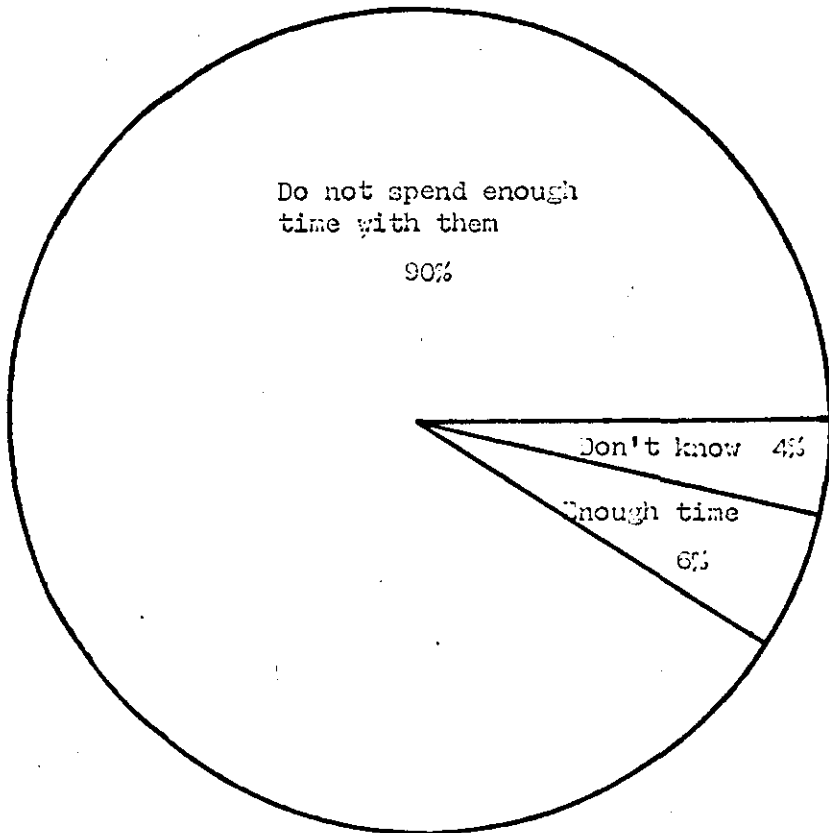
App. A.41. Would people like to be trained as health workers?



App. A.41a. Reasons why people do not want to be trained as health workers.



App. A. 41b. Amount of people who would like to attend Health Education classes in their spare time.



App. A.42. Whether or not doctors spend enough time with patients.

APPENDIX B

This questionnaire was conducted at the Faculty of Medicine, University of Jordan, Amman, Jordan. It was conducted on the Author's behalf by Dr. Saliem Khuraisheh. Fifty out of the hundred students who completed the questionnaires will graduate next year and the other fifty graduated this year, 1983. The questionnaire was compiled and conducted to determine the views and attitudes of those medical professionals and to find out more about their training and problems faced by them in the rural areas. Complete detail statistics of this questionnaire are presented in this appendix. Also, a computer disc containing all of the data is available.

The questionnaire resulted in the assessment of:-

- 1) The widespread unsuitability of many training curricula when set against the health problems that matter most is prompting far-sighted educational leaders to adopt radically new approaches to health science teaching in the Middle East. It seems training institutions in the area have been largely modelled on those patterns that are still heavily in favour of curative care of the individual to the neglect of prevention at the community level. The mere absorption of medical facts leads the students to see the patient as nothing else than a complex object that exists for therapeutic purposes. Mainly located in urban areas, none of these schools provide significant student contact with rural people who have greatest health care needs and the fewest health care facilities.
- 2) Doctors who emerge are mostly fitted to practice urban medicine with immediate access to a large hospital and not

totally dedicated to the profession but merely fulfilling the wishes of their families or to ensure a secure and financially rewarding position in life. As a result, as question 2 (app.B2) of this survey shows, only 18 per cent of the students took to the profession of their own choosing. It is no wonder that the people who live in rural areas of the Middle East do not trust their medics and therefore prefer their own old cultural remedies.

3) Medical students prefer to study medicine abroad, 77 per cent of them preferred to study Western medicine (App.B3), 63 per cent prefer the West because:-

- * better facilities;
- * quality of teaching;
- * more experience.

But, according to the W.H.O. reports, the Western type of education is not suitable for the developing countries of the Middle East. Western education is based on the primary of doctors, hospitals and high technology care. It has proved largely irrelevant to their health problems, leaving countless people without care. Yet, 47 per cent of medical students think Western medicine is appropriate to their rural areas.

4) 95 per cent have witnessed a birth (App.B5), but 42 per cent of the 95 resulted in a complicated birth, unfortunately, none of the students involved gave any explanation as to the result of the complications.

5) Only one medical student had delivered a baby and conducted

a post-natal check up. Medical students should start by seeing a baby born, but they also should work with the family and keep a check on them.

6) Students should demand more field training to be provided; and to be taken out of the medical school environment into areas where the problems exist and not restricted to where the problems are only talked about. No one knows what reception these demands would receive from the "Medical establishment" but at least it would create trust between people and their medical professionals.

7) Medical students have no contact whatsoever with rural people and their problems, or with the bedouins. Only 2 per cent had visited the nomads and these two medical students were in fact born there.

3) Medical students admit they would not know the problems of the rural people unless they worked with them (App.B14), 97 per cent of the students admitted this.

9) Of the fifty medical students who graduated this year, and the fifty who will graduate next year, 1984, only 3 students said they would like to work in the rural areas.

10) Only four students have had a field training with health workers (App. B17), but the remaining 96 who had had no field training said that:-

* their programme of studies didn't have field training;

- * their programme of studies did not have the time for that type of training.
- * the students themselves have no choice.

11) Medical students and graduates argue that they:-

- * spent enough time with their patients;
- * learnt to diagnose correctly;
- * can make decisions that may affect patients' lives;
- * can make correct prognosis and prescribe or carry out suitable therapy and
- * can treat 80 per cent plus of man's illnesses.

12) Governments and educators should develop and re-design their training curricula to suit their unique needs and circumstances.

QUESTIONNAIRE FOR MEDICAL STUDENTS OF JORDAN UNIVERSITY

Compiled by Musa Khalailah
Postgraduate Research Student
Loughborough University of Technology
Loughborough, Great Britain.

NB/ Questions requiring longer answers may be answered in Arabic where necessary. Please tick appropriate answer = ✓

1. Which year are you pursuing?year 1

2. Why did you choose the Medical profession?

..... Because of a secured future 1

..... My family wished it 2

I don't know 3

Other reason 4
(specify below)

.....
.....
.....

3. If you had the choice, would you go abroad to study medicine?

No 0

Yes 1

3a) Why would you prefer to study abroad?

Better facilities 1

Quality of teaching 2

More experience 3

Other reason 4

.....
.....
.....

4. Do you think Western Medicine would be appropriate in your rural areas?

No 0

Yes 1

4a) Why?

.....
.....

5. Have you ever witnessed a still birth? No 0 go to 7

Yes 1 ←

5a) Were there any complications? No 0 go to 7
Yes 1

6. Was the result of the above complications:-
Death of mother 1 go to 6a
Death of child 2 go to 6b
Death of both 3 go to 6c
Other 4

.....
..... go to 7

6a) What was the cause of the mother's death?
.....
..... go to 7

6b) What was the cause of the child's death? Prenatal 1
Don't know 2
Other reasons 3
.....
..... go to 7

6c) What was the cause of both deaths?
.....
.....

7. Have you delivered a baby? No 0 go to 12
Yes 1 ←

7a) Was it a:- Normal Delivery 1 go to 11
breech delivery 2 go to 8
caesarean delivery 3 go to 9

8. Did the breech delivery result in the death of:-
mother 1
child 2
mother and child 3
No death 4

9. Did the caesarean delivery result in the death of:-
- mother 1
 - child 2
 - mother and child 3
 - no death
10. After mother and baby left hospital would you say that you visited them?
- Regularly 1
 - Occasionally 2
 - Once or twice 3
 - Never 4
11. After the child's birth did you conduct a postnatal check up?
- No 0
 - Yes 1 go to 12
- 11a) Why not?
12. Do you have any contact with rural people?
- No 0
 - Yes 1
13. Have you visited Al-Badiyah?(the nomad tribes)
- No 0
 - Yes 1 ←
- 13a) What were the health problems you faced during your visit?

.....

.....
14. Do you think you know the rural people's problems without working with them?
- No 0
 - Yes 1
15. During your programme of studies do you think you spent enough time with patients?
- No 0
 - Yes 1 go to 16
- 15a) Why not?
-
-

Rural areas	1	go to 16a
Urban areas	2	go to 16b
Abroad	3	go to 16c
I have no choice	4	go to 16d
Don't know	5	go to 17

16a) I prefer to practice in rural areas because

.....

16b) I prefer to practice in Urban areas because

.....

16c) I prefer to go abroad because

.....

16d) If you had the choice would you prefer to practice in?

Rural areas	1
Urban areas	2
Abroad	3

17. During your training did you have any field training with other health workers?

No	0	go to 17t
Yes	1	

17a) Approximately how many times?	1 - 5 times	1
	5 - 10 times	2
	more than 10 times	3

17b) Why not?

.....

.....

18. During your studies do you think you learnt how to diagnose correctly?

No	0	
Yes	1	go to 19

18a) Why not?

.....

.....

19. During your studies have you been taught how to take decisions that may affect your patients' future?

No	0	
Yes	1	go to 20

19a) Why not?

.....

.....

20. During your studies did you learn to make correct prognoses and carry out suitable therapy?

No	0	
Yes	1	go to 21

20a) Why not?

.....

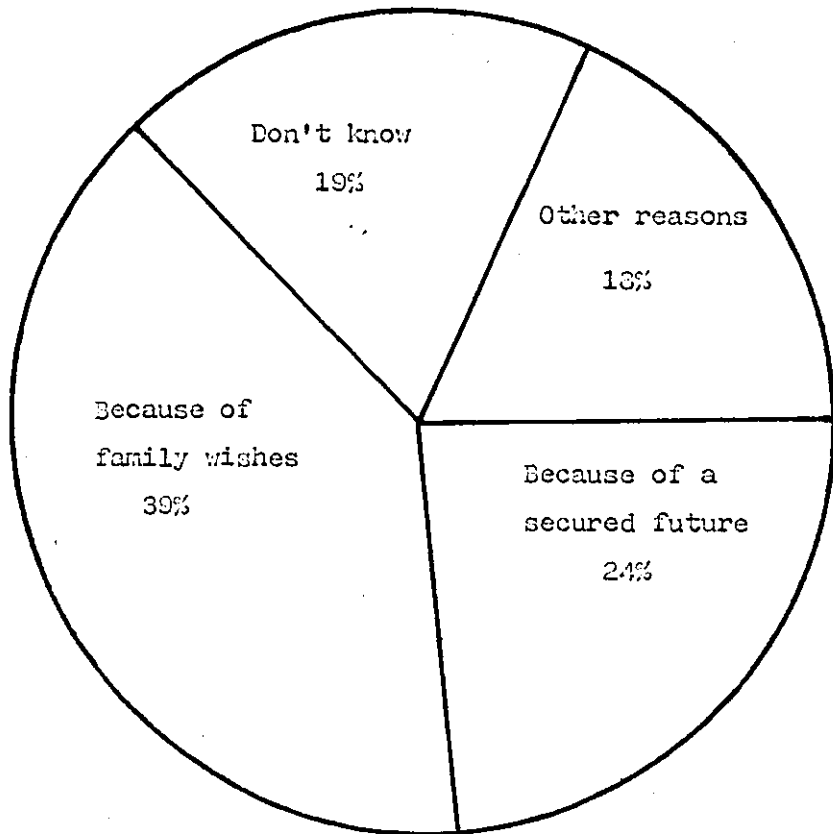
.....

21. What percentage of illnesses would you say that you are well trained to treat?

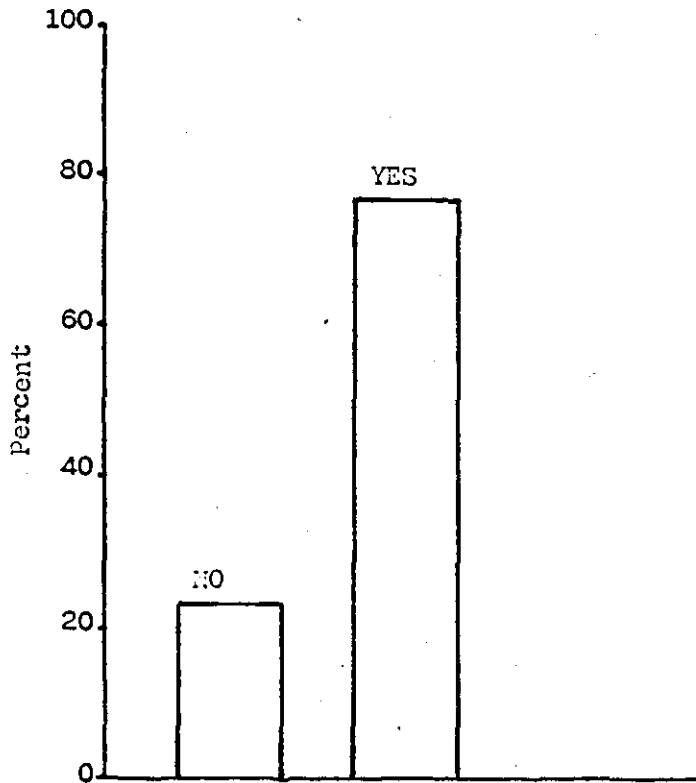
1 - 20%	1
20 - 40%	2
40 - 60%	3
60 - 80%	4
80% plus	5

IF YOU HAVE ANY FURTHER COMMENTS ABOUT ANY OF THE ABOVE QUESTIONS OR ABOUT HEALTH CARE IN GENERAL IN RURAL AREAS OF THE MIDDLE EAST, PLEASE APPEND BELOW.

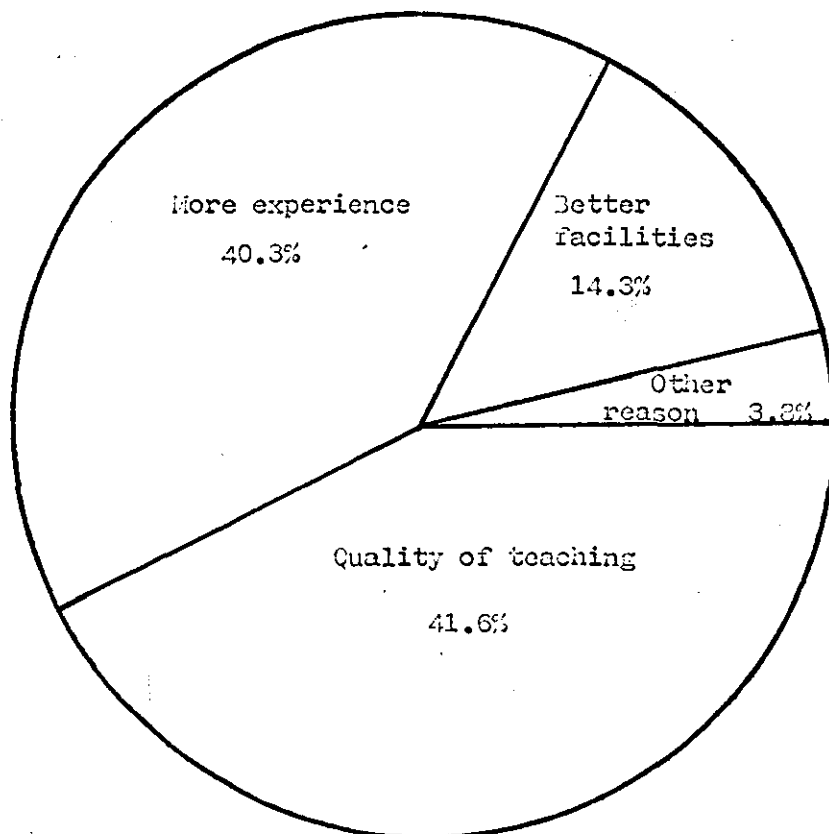
THANK YOU VERY MUCH FOR YOUR CO-OPERATION.



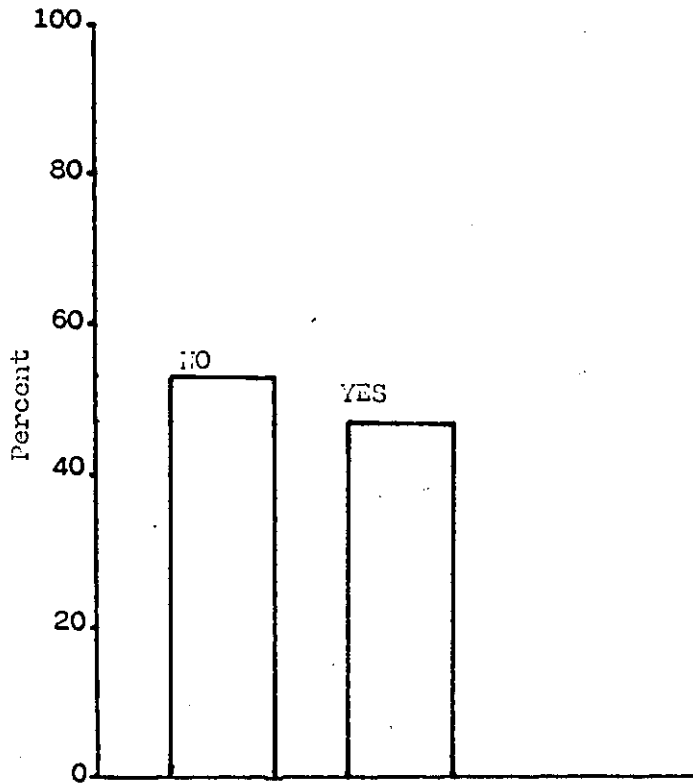
App. B.2. Why students chose the medical profession.



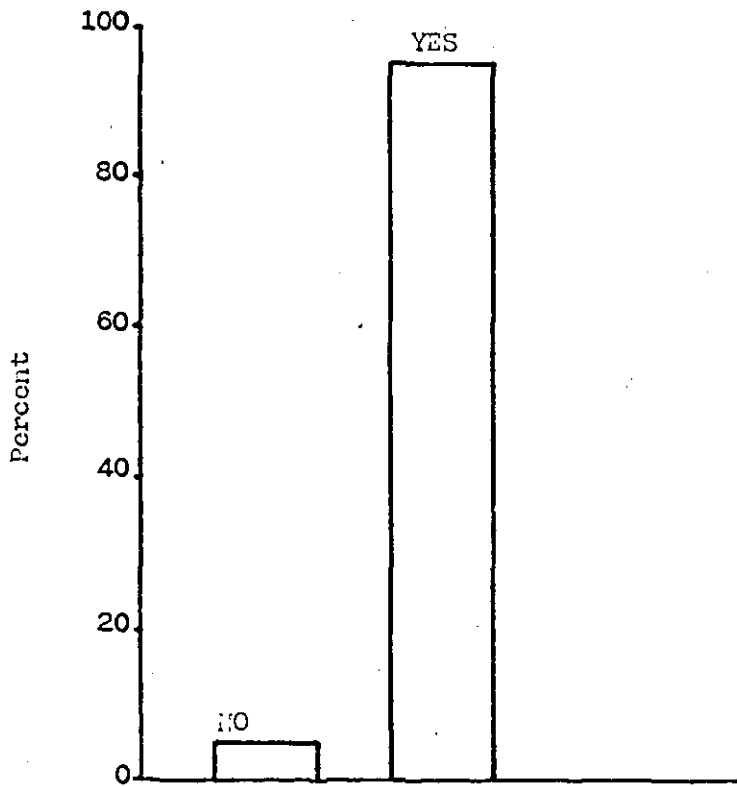
App. B.3. Amount of students who, given a choice, would study abroad.



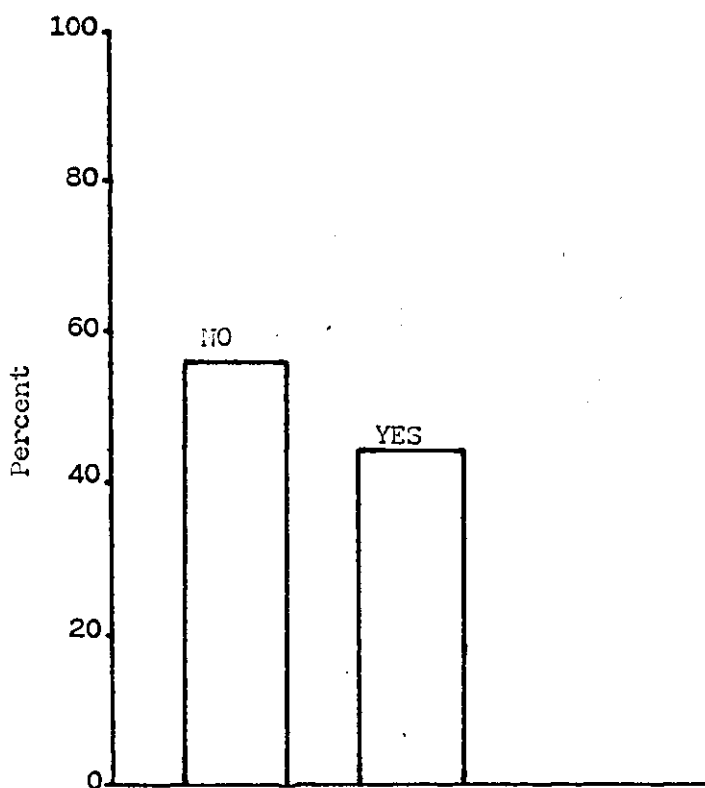
App. B.3a. Reasons why students would like to study abroad.



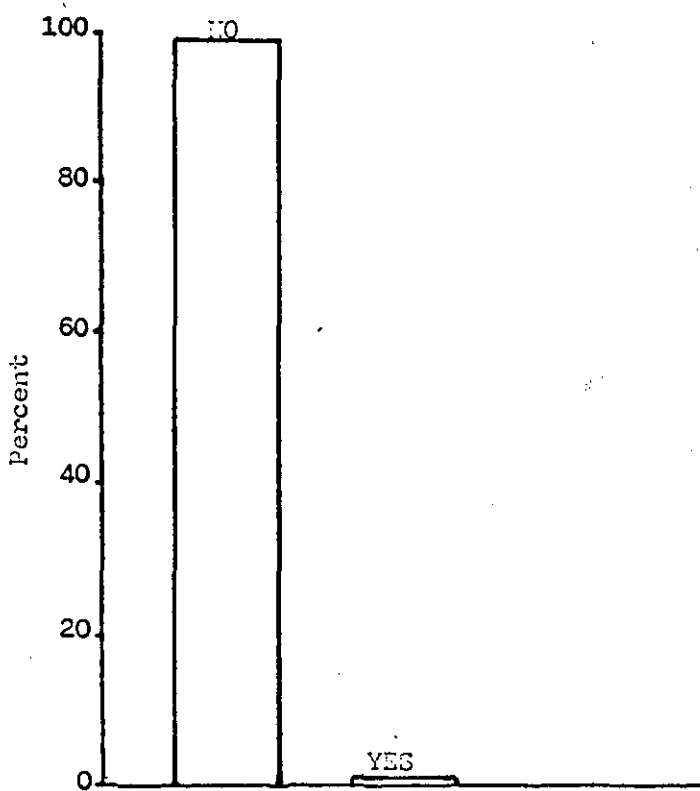
App. B.4 Medical students' opinion as to whether Western medicine is appropriate in the Middle East rural areas.



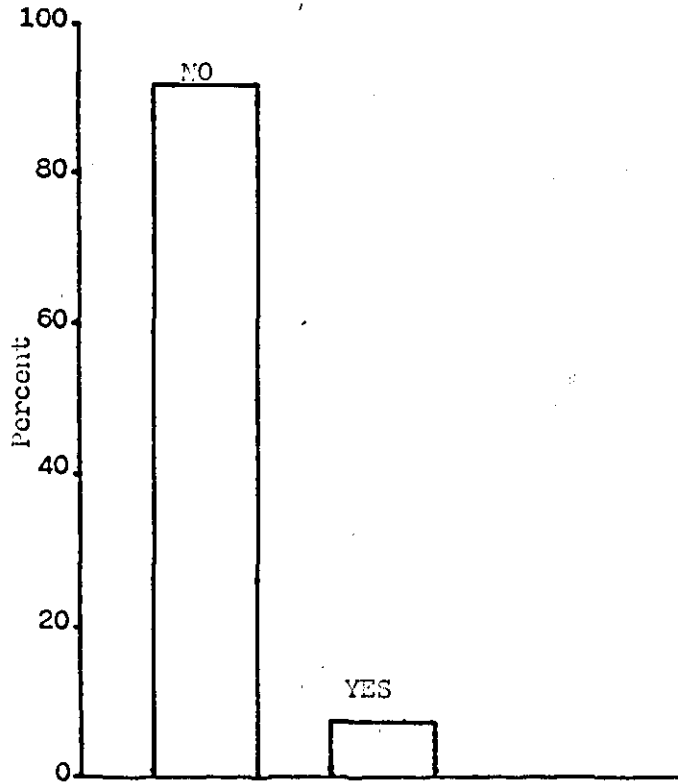
App. B.5. No. of students who have witnessed a birth.



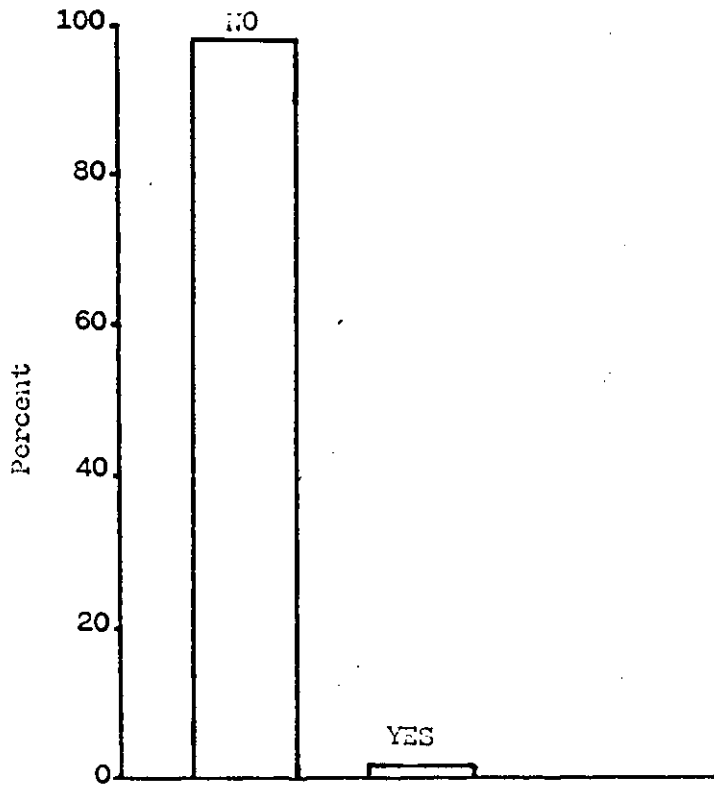
App. B.5a. No. of students who witnessed complications at a birth.



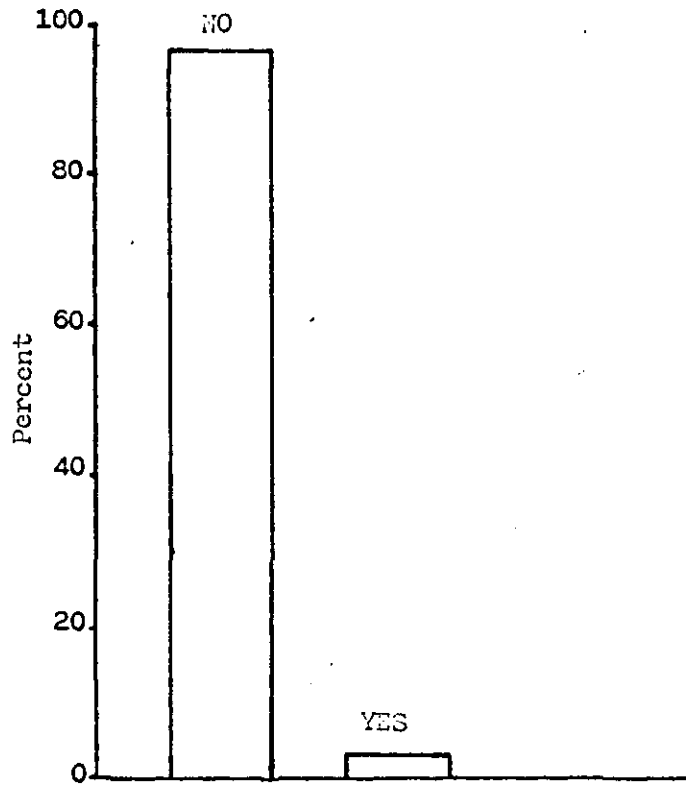
App. B.7. Amount of students who have delivered a baby.



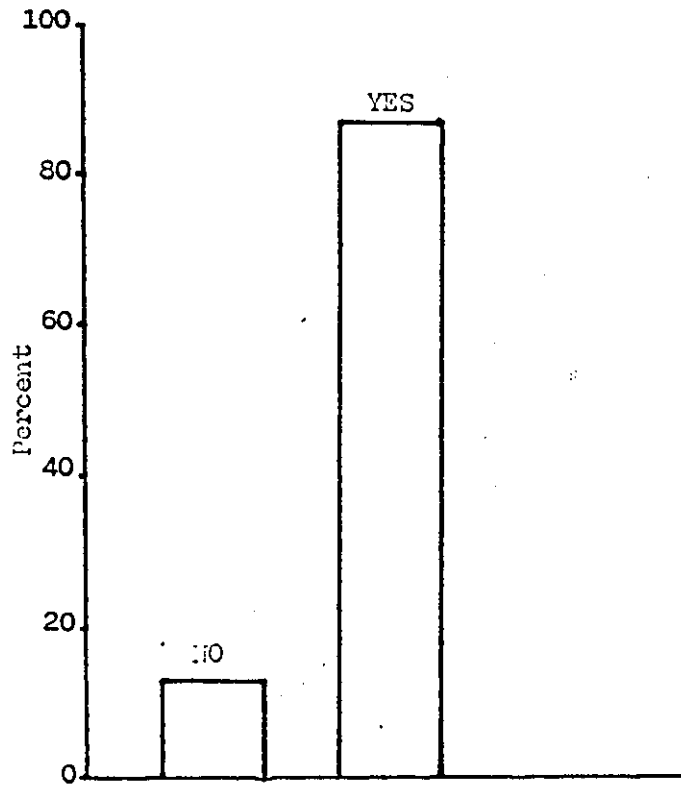
App. B.7. No. of students who have had any contact with rural people during their studies.



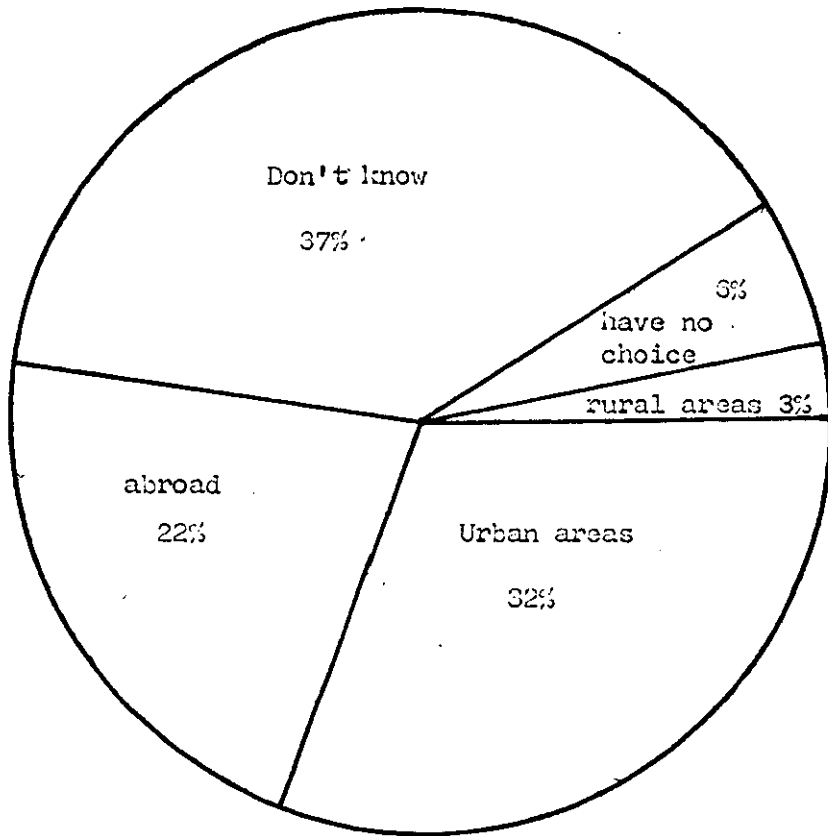
App. B.13. No. of students who have visited the nomads.



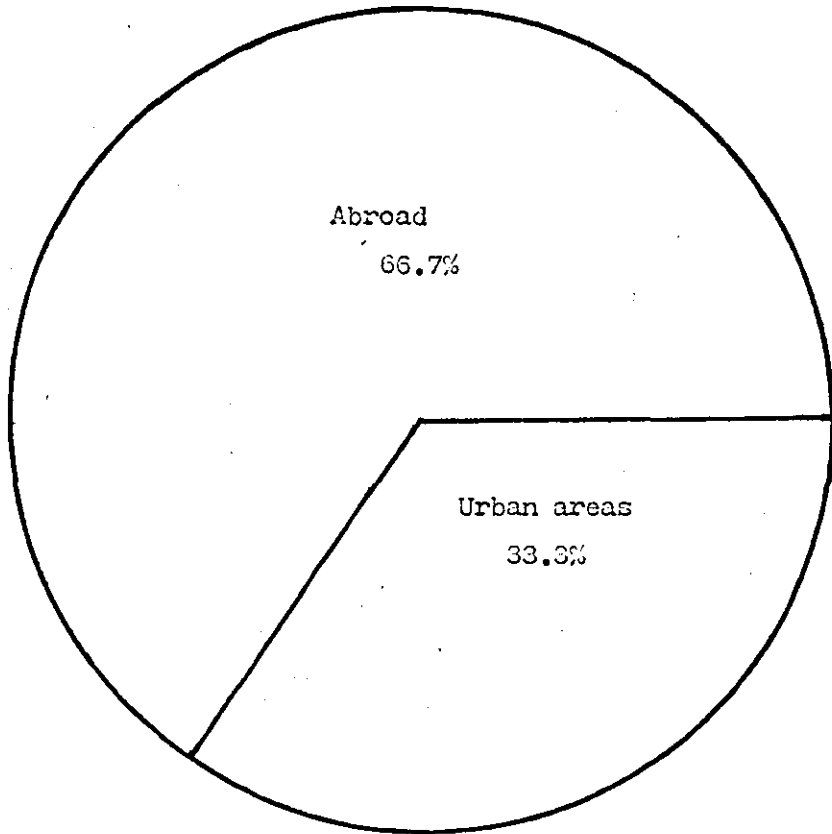
App. B.13. Amount of students who feel they do know of the rural people's problems without having worked with them.



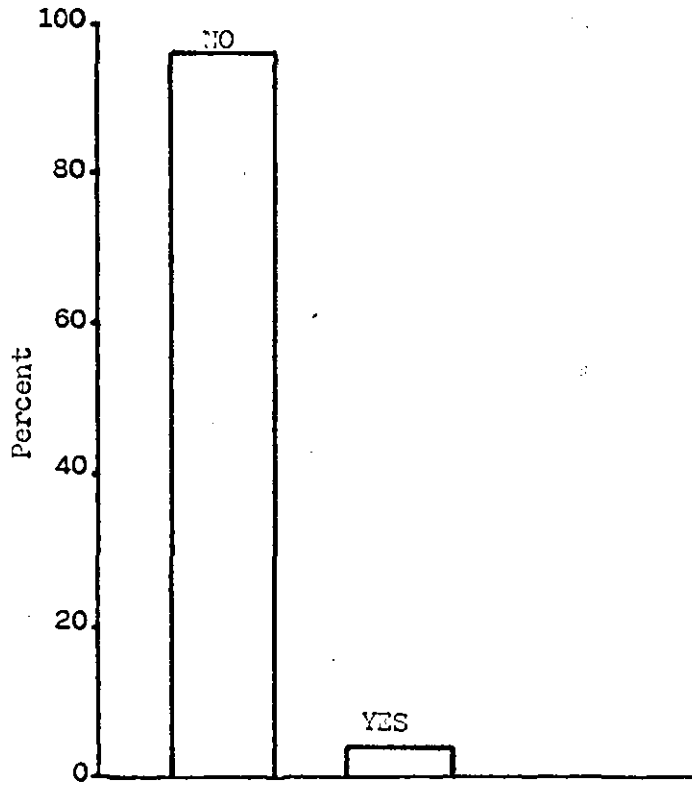
App. 2.15. Opinion of students as to whether they spent enough time with patients.



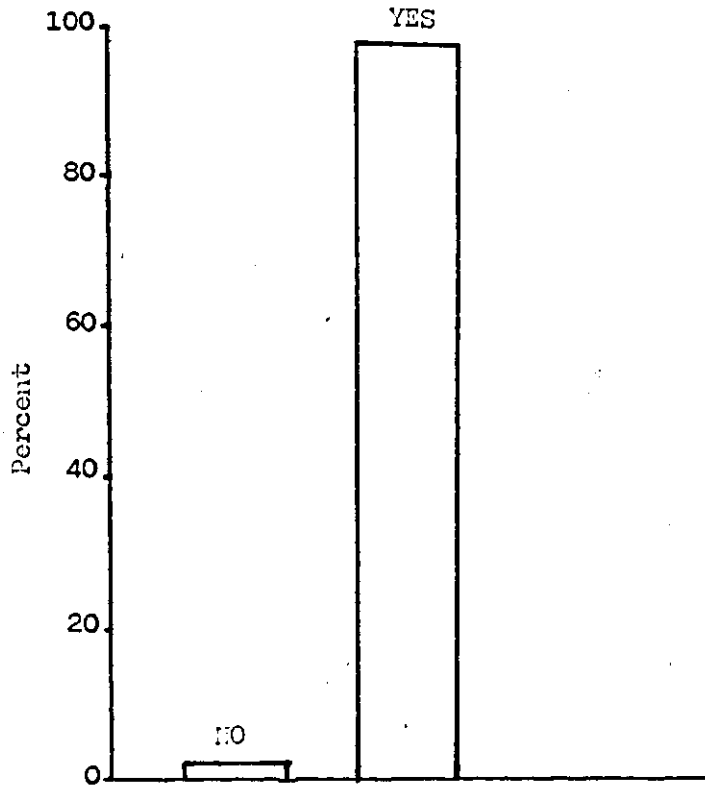
App. B.16. Percentage of students' choice as to area preferred for practicing after graduation.



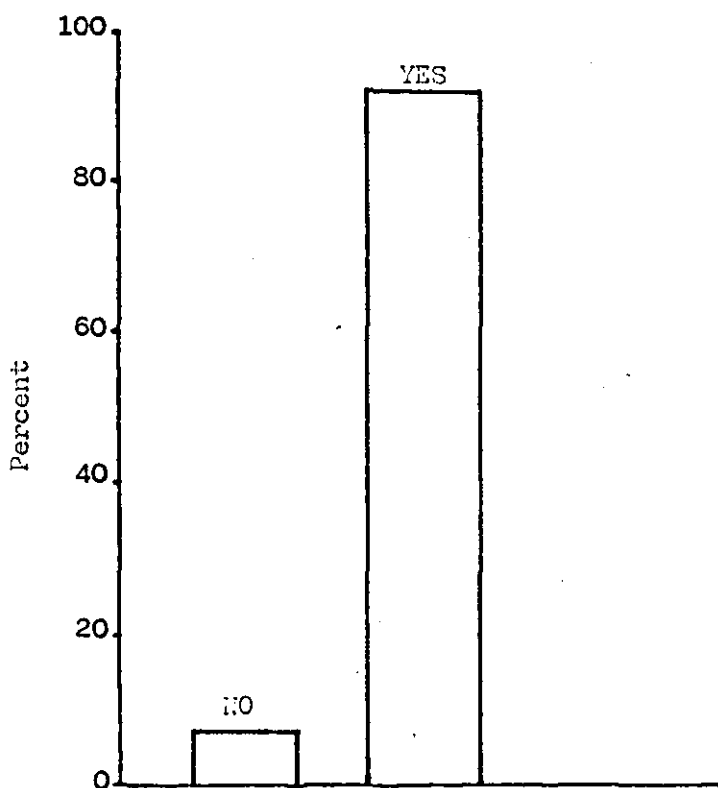
App. B.16d. Preferred area of practice of students who have no choice.



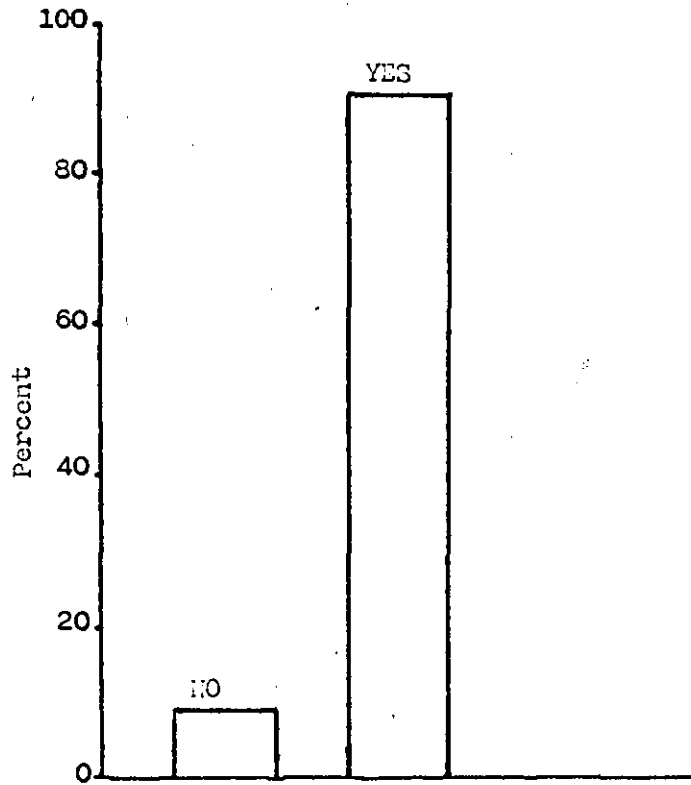
App. B.17. No. of students who have had field training with a health worker during their studies.



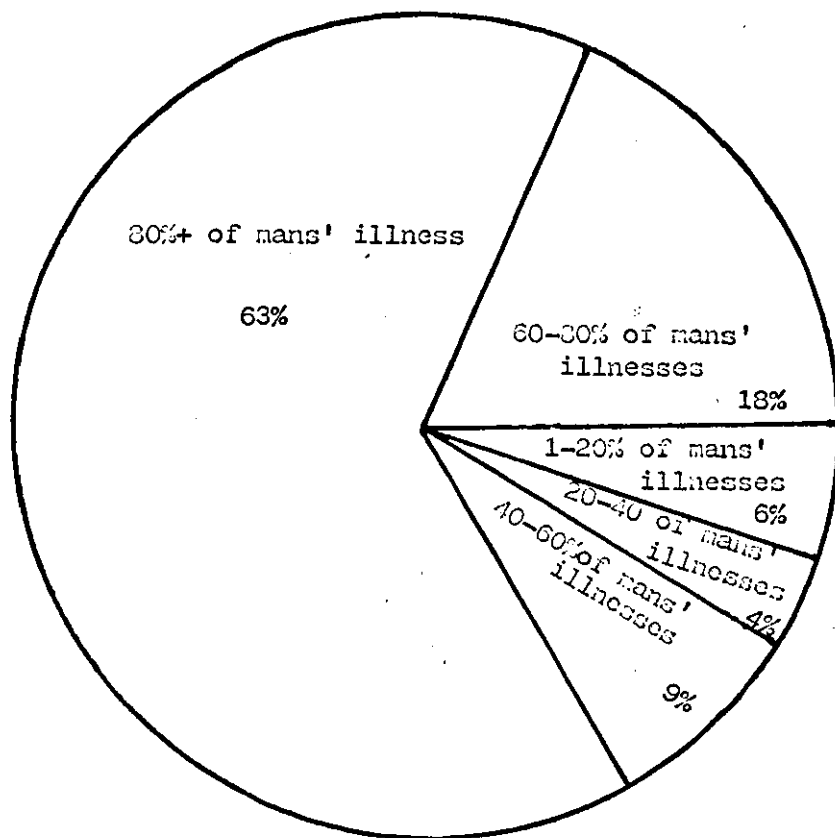
App. B.13 Opinion of students as to whether they learnt to diagnose correctly during their studies.



App. B.19. No. of students who feel that they were taught to make decisions which may affect a patient's future or community.



App. 3.20. No. of students who had learnt to make a correct prognosis and carry out suitable therapy.



App. B.21. Percentage of mans' illnesses which students' felt they were able to treat.

APPENDIX C

This questionnaire was conducted at the University of Jordan, Amman, Jordan. It was conducted on the author's behalf by Professor Musa Abu Zerka and Dr. Khuraisheh. This questionnaire is aimed only at female students as they are the fortunate ones who have reached this education level. The questionnaire was compiled and conducted to find out the views and attitudes of educated females towards health, to ascertain how much they know about health and whether they will keep the traditions of their parents and illiterate people or whether they will have a changed future community.

The questionnaire resulted in the assessment of the following facts:-

1) Of the hundred questioned only 2 females derived from a small family (App. C2), 62 per cent said that their families are an average family and included up to 8 or 9 persons in each family. 36 per cent said that they are from large families consisting of 10 persons and over.

2) 34 females said that they would like to have a large family when they marry inspite of the problems their society faces and inspite of their education, they are stil aiming for large families and following their traditions.

3) Once they have married, (App.C6), 48 per cent said they would have two year pregnancy spacing and 12 per cent will have a one year space only, but 40 per cent said they would have at least four years in between each pregnancy. Hopefully, these 40 will spread the message around to the illiterate mothers.

4) On the subject of child sex preference, education makes no difference as 83 per cent said they would prefer to have a

son (App.C7). This deep rooted problem still prevails even amongst educated people of the Middle East. They are still dependent on boys for the future as for the reasons discussed at the beginning of this thesis.

5) On the question of feeding, 70 per cent will breast feed their babies as they feel breast milk is best for babies. When asked why breast milk is best, 46 per cent said it was because Allah had said so in his Holy Book. A result such as this will help the health authorities in the rural areas to breast feed their babies as they are great believers in the Koran, moreso than City people.

6) Only 14 per cent said they will bottle feed thir babies and the reasons for this are that it takes less time, to keep their appearance attractive. This is doubtless a Western influence which has been brought to the developing Countries.

7) Not less than 33 per cent said their families had experienced a child death of a brother or sister, this is a very high percentage in a Country such as Jordan where, 51 per cent of its population is under the age of 15 years old.

8) Most deaths occurred in the "under two years" age group. This is obvious proof of the need for help in this age group and yet the Authorities have not included it in their development plans.

9) Out of 33 child deaths, 21 said that their brother and sisters could have still been alive today if:-

- * the hospital was nearer;
- * a doctor had been available at the time of death;

10) Around 55 per cent live where the nearest hospital is between 10-20 km and 15 per cent within 20 km or more. These are

village distances around the Capital City but what about other rural villages?

QUESTIONNAIRE FOR FEMALE STUDENTS OF JORDAN UNIVERSITY

Compiled by Musa Khalailah
Post Graduate Research Student
Loughborough University of Technology
Loughborough, Great Britain.

NB/ Questions requiring longer answers may be answered in Arabic where necessary. Please tick appropriate answers = ✓

* Which year are you currently pursuing?year

1. Where were you born? 1
2. Would you say that your family is a:- large family 1
average family 2
small family 3
3. How many persons are in your family? 1
4. What are their ages, starting with the eldest?
..... 1 2 3 4 5 6
..... 7 8 9 10 11 12
5. When you are married would you like to have a:- large family 1 go to 5
small family 2 ←

↳5a) Why?
.....
.....

5b) Why a large family?
.....
.....

6. When you are married, do you hope to have your children:-
one every year 1
one every two years 2
long spacing pregnancies 3 ←

↳6a) How long in between? years 1

7. Which would you prefer? A son 1
A Daughter 2 go to 7

7a) I would prefer a son because
.....

7b) I would prefer a daughter because
.....

	powdered milk	2	go to 8
	Don't know	3	go to 9
8a)	I would breast feed my baby because, my mother did so	1	
	no preparation is necessary	2	
	other reason	3	

.....

8b)	I would feed my baby with powdered milk because:		
	To keep my body attractive	1	
	Have no time to breast feed	2	
	Other reasons	3	

.....

9.	Has your family experienced any child deaths?		
	No	0	go to 1
	Yes	1	

▶9a) Relationship of child to you?

10.	What sex was the child?		
	Boy	1	
	Girl	2	

11. How old exactly was he/she? years months

12.	Do you know the cause of his/her death?		
	No	0	
	Yes	1	

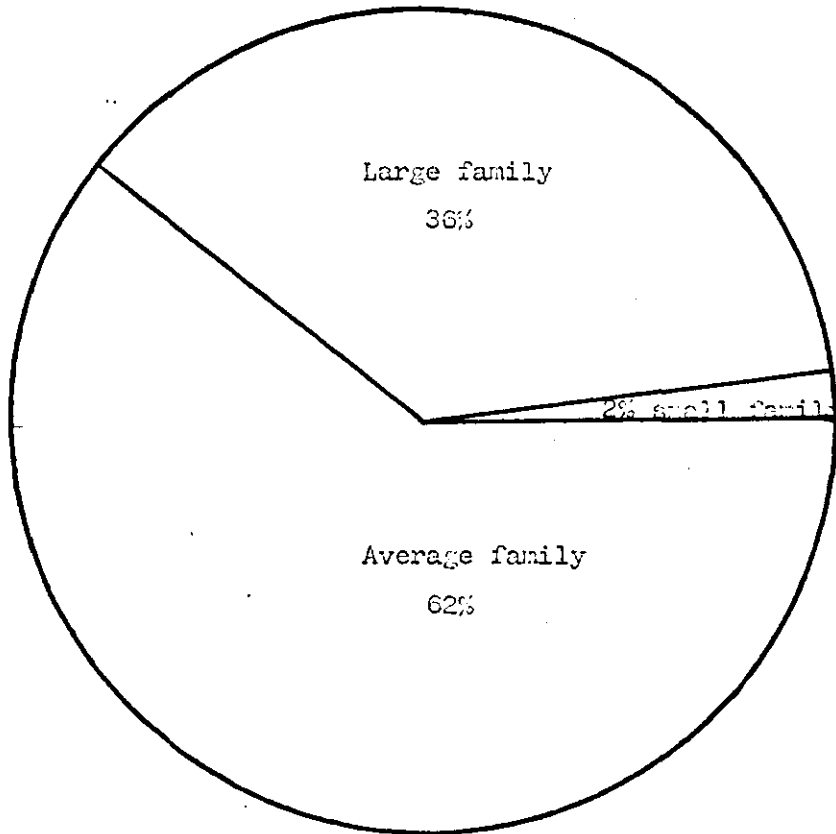
▶12a) What was the cause?

13.	Can you think of any way in which this child could have been saved?		
	No	0	
	Yes	1	

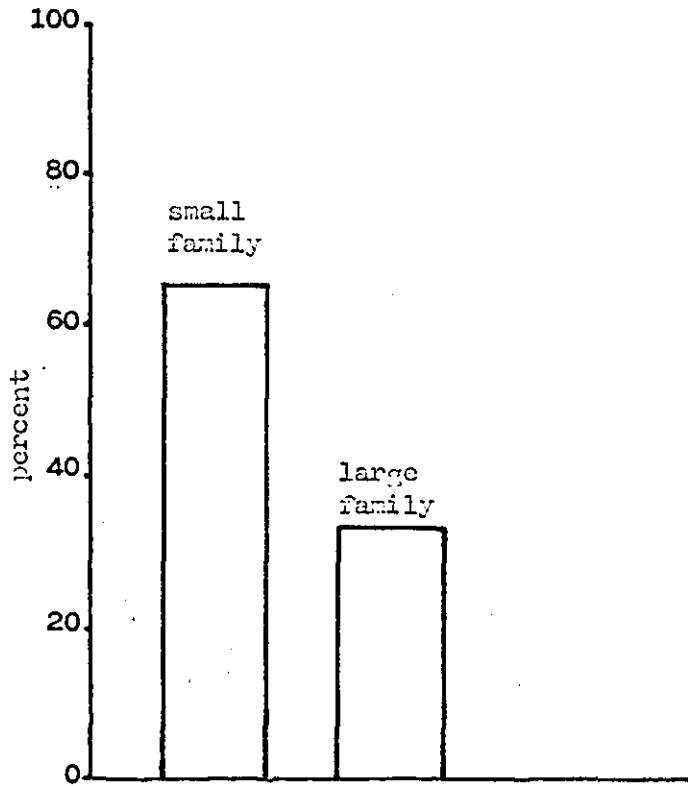
▶13a) Give details

14.	How far is the nearest hospital from your family home?		
	1 - 10 Km	1	
	10 - 20 Km	2	
	Over 20 Km	3	

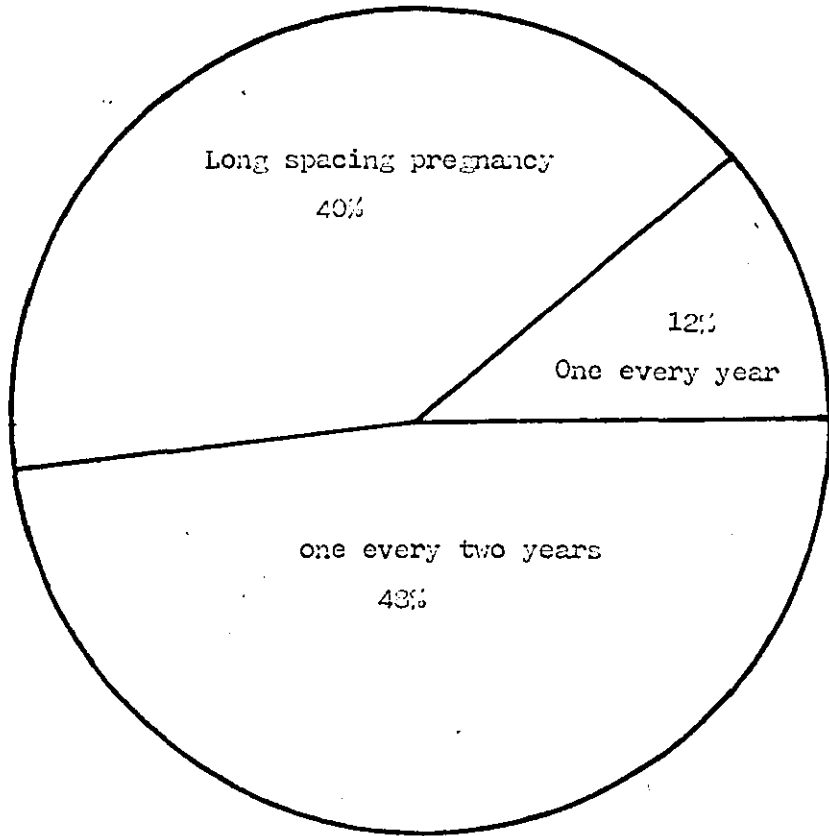
THANK YOU VERY MUCH FOR YOUR CO-OPERATION.



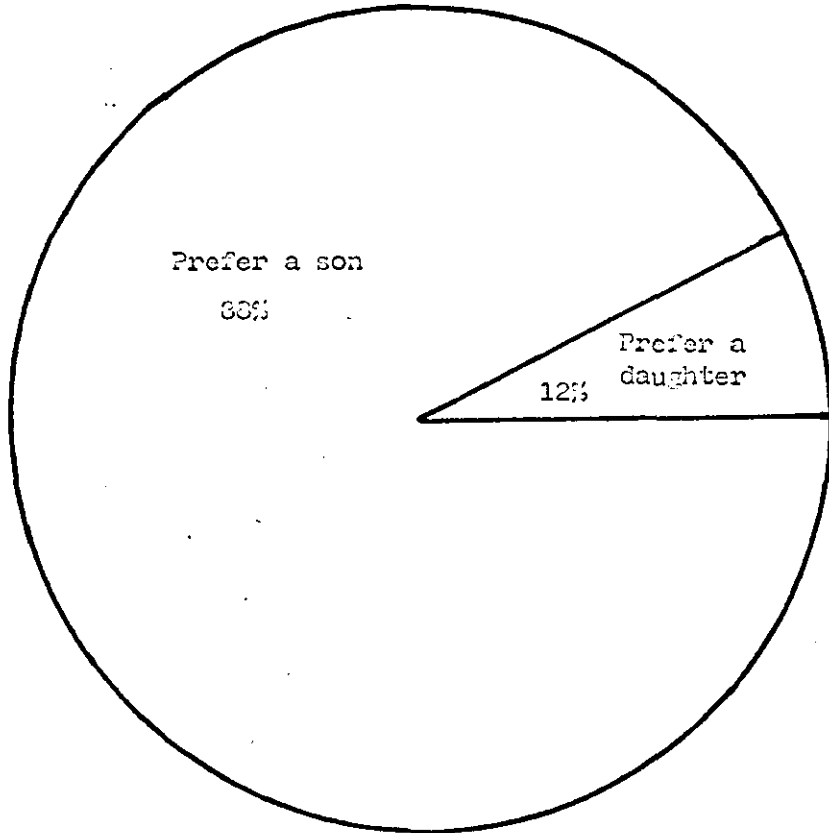
App. C.2. Size of female students' families.



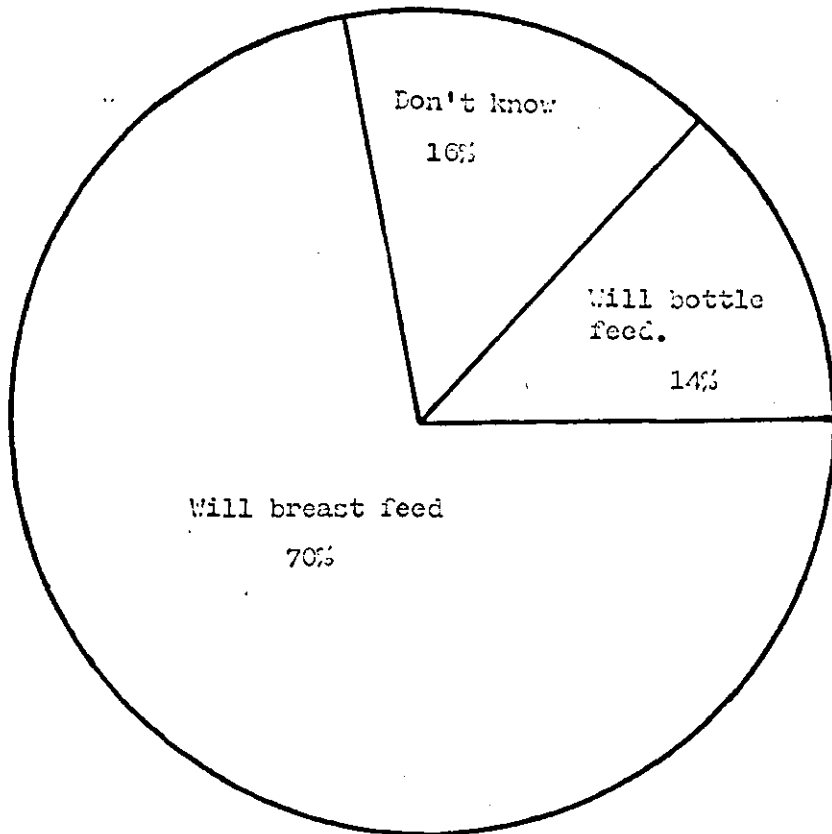
App. C.5. Size of family preferred by female students.



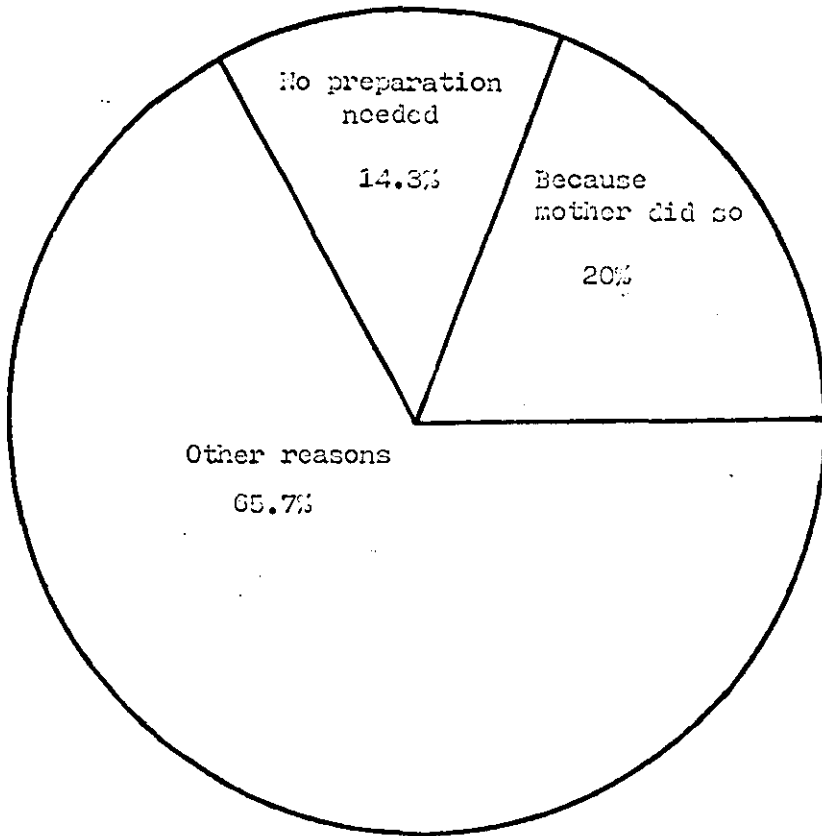
App. C.6. Frequency of pregnancies preferred by female students.



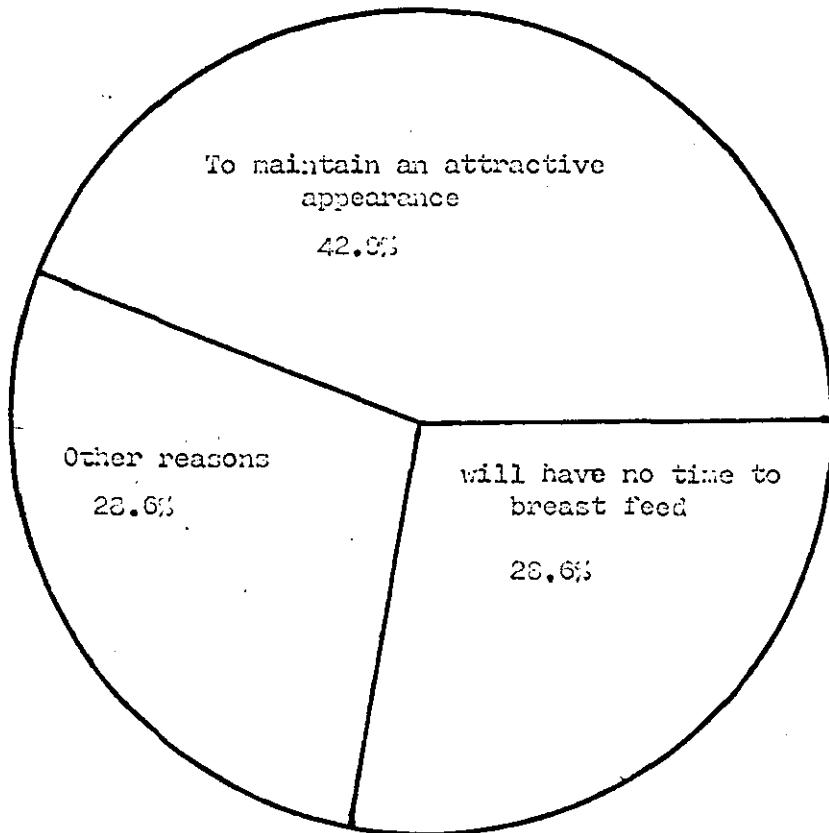
App. C.7. Preference of female students for sons and daughters.



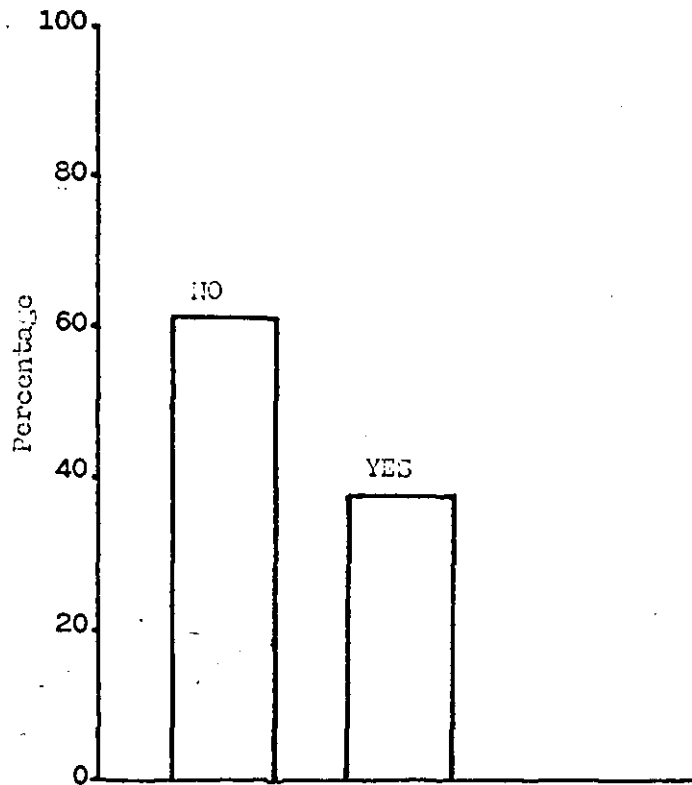
App. C.S. Methods of feeding babies to be adopted by female students.



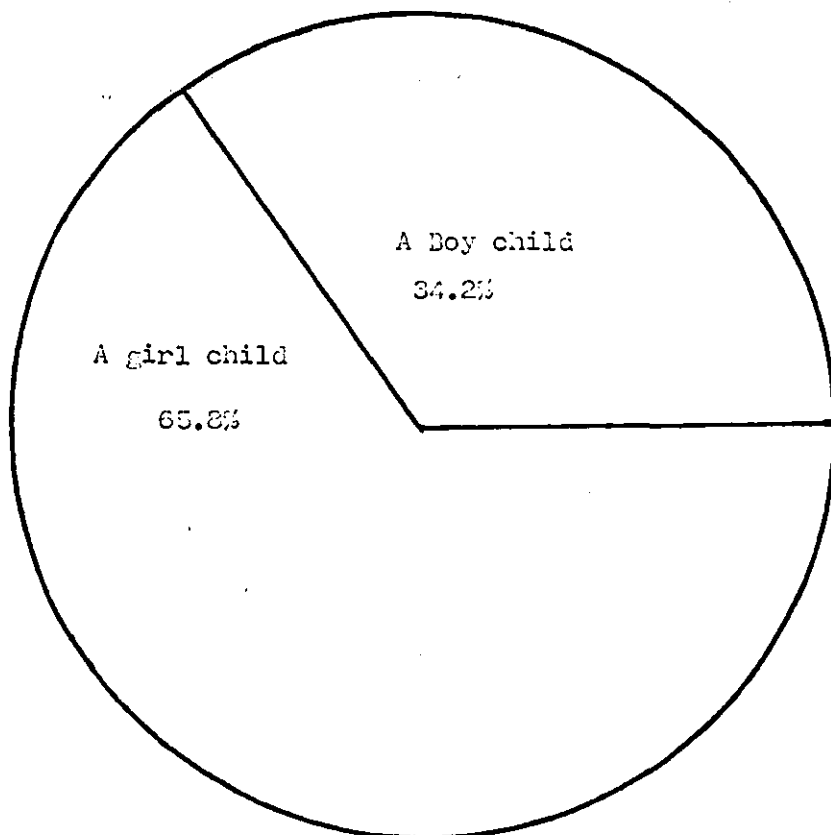
Appendix C.8a. Percentage of reasons for preferring breast feeding.



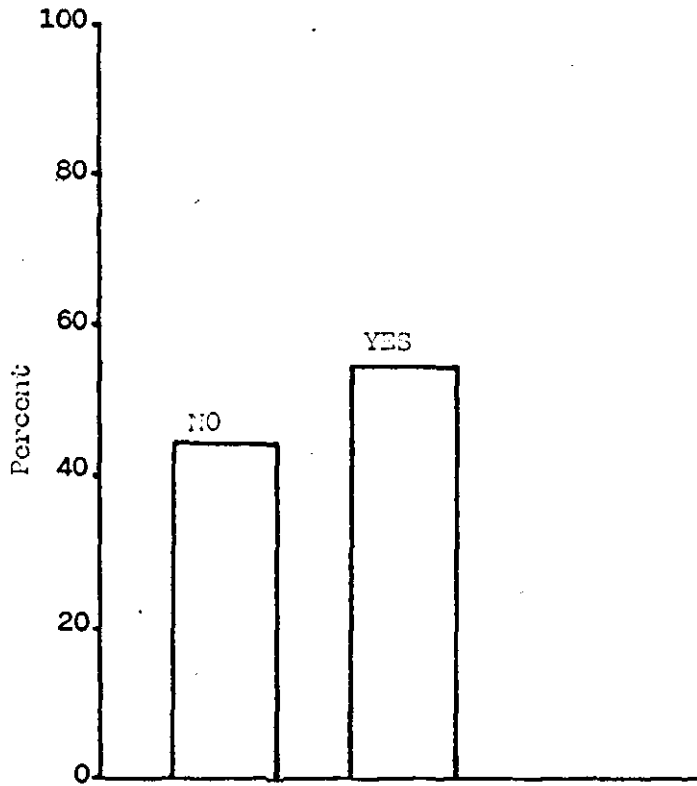
App. C.8b. Percentage of reasons for not breastfeeding.



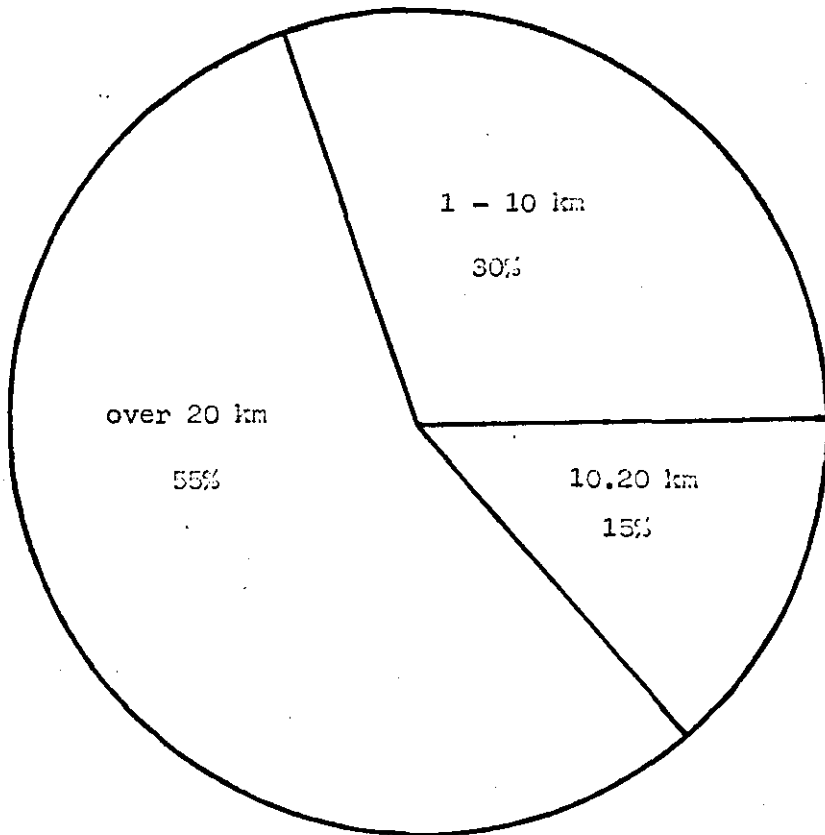
App. C.9. Female students whose families had experienced a child death.



App. C.10. Percentage showing sex of children that have died in female students' families.



App. C.13. Female students' opinion as to whether the child could possibly have been saved.



App. C.14. Showing distances of nearest hospital to female students' homes.

APPENDIX D

On 17th January 1983 after a meeting with Mr Tim Wright, Marketing Manager of Fisons Pharmaceuticals, Loughborough, I learned that there is a very high percentage of asthma in the Middle East. He informed me that Fisons had just launched their latest design in the area (Intal Spinhaler) for the prophylaxis of the asthmatic attacks.

Mr Wright said that doctors and pharmacists cannot make understood the verbal message given on the pamphlet accompanying the Intal Spinhaler. I was shown the leaflets which were designed to support the product and Mr Wright stressed to me how difficult it was to make people understand about when to take drugs and how much to take. I pointed out to Mr Wright that the leaflets should have a visual diagram to show the quantity and the time at which to take it because a visual method of instruction is:

- * practical
- * feasible;
- * effective.

One study in Nepal showed that even crude drawing can be useful as a reminder of a message already conveyed by person-to-person contact.⁽²⁶⁾

I also pointed out the illiteracy problem of which he was aware, especially that 45 per cent of women are illiterate. It is not easy for them to remember everything the doctor tells them or to judge time. Since visual methods are very effective and since pictures can be in many places at once and a health worker or medical professional cannot pictures can be profitably used to reinforce instructions such as:-

- * when to take the drugs;
- * how many times to take them during a day;
- * how much to be taken each time.

As a person originating from the Middle East, I was brought up in a village where at least 70 per cent of the people are illiterate. I know the problems faced by them and their needs. I explained this to Mr Wright who gave me the current Fisons leaflets and asked if I could return a suitable design for this type of society bearing in mind the importance of the time and quantity problem.

On 18th March 1983 I offered the re-designed leaflets which are universal but with the Middle East in mind. It is a visual design with written information incorporated. It explains and solves the time problem plus the quantity of medication to be taken each time. I tested the finished designs upon the minority of Middle Eastern women living in Loughborough and Cardiff, South Wales. In Cardiff there are approximately 3,000 Yemanese people who have settled there.

Of the people upon whom the leaflets were tested were:-

- * 59 per cent illiterate
- * 30 per cent semi-illiterate
- * educated

The test results were shocking as 30 per cent of the women knew at a glance from the visual design the purpose the medicine was intended. With a longer time to study the pictures, 57 per cent knew what the medicine was for, 70 percent knew how to take it and 80 per cent knew the time to take it and the quantity to take.

Mr Wright was very impressed with the new leaflets and especially the new visual diagrams which are useful for any type of medicine. A letter from Mr Wright, on 13 June 1983 supports and explains how suitable the new design is for Middle Eastern countries and even for developed countries.

تعليمات استخدام

انتال

أداة الاستنشاق

الذئاء



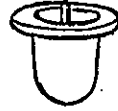
Body

المروحة



Propeller

جهاز الفم والحوار



Mouthpiece

Instructions for use

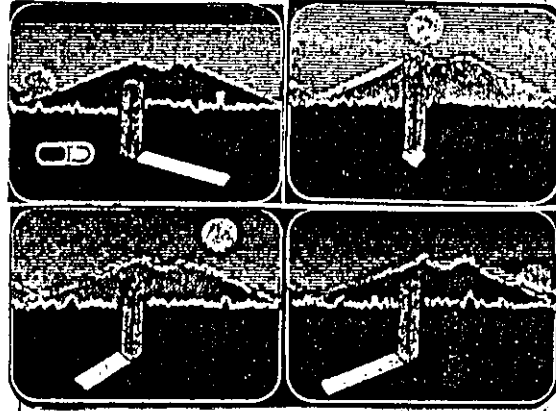
Intal®

Spinhaler®

ملاحظات إضافية :

- من المهم أن تحافظ على استخدامك لجهاز استنشاق « سبينهالر » بانتظام حتى وإذا شعرت بأنك بصحة جيدة . فأخذك لتقليل من إنتال كل يوم بانتظام وبالطريقة السليمة قد يوفر عليك كثيراً من نوبات الربو .

- إذا تراكم مسحوق على الدافع ولي داخل جهاز « سبينهالر » عليك أن تفصل كافة أجزاء الجهاز بالماء الدافئ وتجفيفها بصورة جيدة .



Extra Notes

1. It is important to keep taking your Intal regularly, even when you feel well. A little time each day spent on taking Intal regularly and correctly will save you from many unpleasant attacks of asthma.
2. If powder builds up on the propeller and inside the Spinhaler, wash all parts in warm water and then dry very thoroughly.

لغة إضافية - Other Languages

Name :

الاسم :

Next Appt.

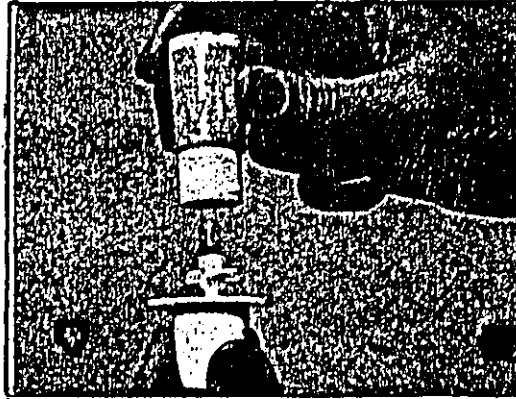
الموعد القادم :

Other Languages

Re-designed pamphlet for the Intal Spinhaler.
This enables Middle Eastern and any other Language which reads from right to left and for all other languages which read from left to right. Also it solves the problem of time of day.

1. Put the yellow end of the Spincap into the propellor cup. Assemble the Spinhaler.

French , German ,
Greek , etc...



١ - ضع النهاية الصفراء من « سينيكاب » في القدرح
الدافع الموجود في جهاز استنشاق
« سينيهالر » .

فارسية - Persian ,
عبرية - الخ... Hebrew , etc...

2. Slide the grey sleeve down, then up — once only.



٣ - إدرع الكم الأسطواني الرمادي إلى أسفل ومن
ثم إلى أعلى مرة واحدة فقط .

3. Exhale — tilt your head back, put the Spinhaler in your mouth and breathe in deeply through it.



٤ - أخرج هواء الزفير مع إمالة الرأس إلى الخلف
ثم ضع جهاز استنشاق « سينيهالر » في فمك
وتنشق بعمق من خلاله .

Notes

Important to keep taking Intal regularly, even when you feel well. A little time each day spent on taking Intal regularly and correctly will save you from many unpleasant attacks of asthma. Powder builds up on the propellor and inside the Spinhaler, wash all parts in warm water and then dry very thoroughly.

ملاحظات إضافية :

- من المهم أن تحافظ على استخدامك لـ « سينهالر » بانتظام حتى وإذا شعرت جيدة . فأخذك لقليل من إنتال كل يوم وبالطريقة السليمة قد يوفر عليك كثير الربو .

- إذا تراكم مسحوق على الدافع وفي داخل « سينهالر » عليك أن تنسل كافة أجزاء بالماء الدافئ وتحقيفها بصورة جيدة .

Name:

الاسم :

Next Appointment:

الموعد القادم :

Instructions for use

Intal®

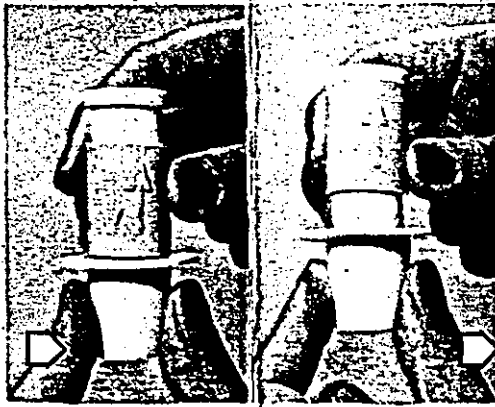
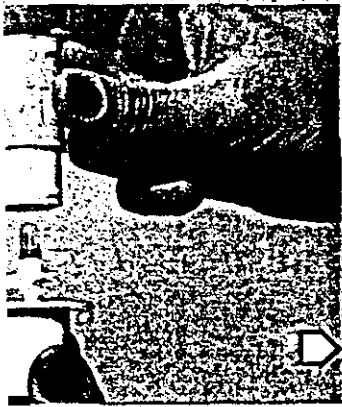
Spinhaler®

تعليمات الاستخدام :

Slide the yellow end of the cap into the propellor. Assemble the Spinhaler.

2. Slide the grey sleeve down, then up — once only.

3. Exhale — tilt your head back, put the Spinhaler in your mouth and breathe in deeply through it.



- ضع النهاية الصفراء من « سينتاك » الدافع الموجود في جهاز استنشاق « سينهالر » .

- ادفع الكم الأسطواني الرمادي إلى أسفل ومن ثم إلى أعلى مرة واحدة فقط .

- اخرج هواء الزفير مع إمالة الرأس إلى الخلف ثم ضع جهاز استنشاق « سينهالر » في فمك وتنشق بعمق من خلاله .

FISON'S

Pharmaceuticals

DJEC/WPD/5078G/ljs

13 June 1983

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Divisional Headquarters

Dear Mr Khaileh

I would like to take this opportunity to thank you for the interesting and informative discussions we had relating to your thesis. Your ideas on communicating medical information to patients in the Middle East are of particular interest to us as a company committed to developing and improving Middle Eastern health care.

As our medical literature for the forthcoming year has already been planned, it is not, as we discussed, possible to utilise your ideas directly. However, we would like to make the following comments.

- (a) Bearing in mind the nature of the Arab patient, your suggestions seem both practical and readily understandable.
- (b) The pictorial approach you have adopted overcomes any language or literacy problems and would appear to be ideally suited to both developing and underdeveloped countries.
- (c) There is a definite need for this type of thinking in helping the medical profession to achieve maximum therapeutic benefit from any given therapy.

As discussed we are not in a position to enter into a commercial relationship with you, however, we do feel that your ideas do merit further development and we wish you every success in implementing them in the future.

Thank you for your time spent in liaising with us. I sincerely believe that by pursuing these ideas you will achieve deserved success in your thesis.

Yours sincerely



D J E Candlish
Senior Promotions Executive

Early Research - Identification of the Problem

I think it necessary to state briefly how this project arose.

As a qualified product designer trained in Great Britain but born in the Middle East, I was interested to use my abilities to satisfy the needs of my less fortunate countrymen. Knowing the problems of inadequate medical services it seemed logical to look in this area for a particular problem situation to solve.

Early ideas that were considered were too sophisticated and Western in approach. Initially a dispenser for medical pills, powders, creams and liquids for home use appeared desirable with an in-built timing device. Work was carried out on this for some time but it soon became obvious that environmental considerations (poor electrical supply - lack of knowledge of appliances) made it impracticable.

A simple solution for identifying time and quantities of medical doses became the central problem for illiterate people. This solution had to be cheap to produce locally and related to different products. Time was spent examining various avenues and the final solution was identified as best produced in graphic form. Various designs were prepared and a simplified graphic background was produced to suit the time element with doses identified by straightforward symbols. The survey outlined in the main thesis supported the need for this work.

Time is important in Middle Eastern Society for prayer, meal times as well as medicinal dosage times so that a method of recognising these particular times would be valuable. Also poor people do not have clocks or watches so the sun seemed the most appropriate method for rural people. It is envisaged that posters and wall charts, pamphlets and even postage stamps could carry the time symbol which would quickly interest and educate rural people of all ages efficiently.

Currently work is now being done to produce similar educational material for identifying time for young children for prayer.

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