

THE LEVEL OF SELF PERCEIVED MORBIDITY AMONG ADULTS AND ITS  
IMPLICATIONS FOR HOUSEHOLDS AND COMMUNITIES IN  
DAR ES SALAAM, TANZANIA

By

Dr. Raphael Bagula Makuna Kalinga  
Dip Pharm Sc ( Dar), MD (Moscow)

A Dissertation Submitted in Partial Fulfilment of the  
Requirements for the Degree of Master of Medicine  
(Community Health) of the University of Dar es Salaam  
October 1996

Sign. .... *Tkha* .....

Date: *7 November, 1996*

Supervisor  
T.K. KABALIMU  
LECTURER  
MD (Livov), M.Med. Comm. Health (Dar)



## ABSTRACT

A cross-sectional, community based health survey was conducted in an urban population of Dar es Salaam between April and May, 1995. The aim of this study was to determine the level of self-perceived morbidity (acute or chronic ill-health conditions and disabilities) among the general population.

A total of 4126 adults aged fifteen years and more were interviewed using a questionnaire that had been developed for this purpose. Detailed household level information was collected on demography, morbidity and hospital utilization patterns.

A cross-sectional, community based health survey was conducted in an urban population of Dar es Salaam between April and May, 1995. The aim of this study was to determine the level of self-perceived morbidity (acute, chronic ill-health conditions and disabilities) among the general population. Results showed that the total overall prevalence of self-perceived acute, chronic ill-health conditions and disabilities were 33.5% (1384/4126), 38.5% (1588/4126) and 26.8% (1107/4126) respectively. Approximately (60.2%) of the household members who had developed ill-health during the two weeks before the interview sought health care from modern medical services. However, of those interviewed 1.3% consulted traditional healers, 24.7% performed self treatment, 0.6% consulted primary health care workers and 13.2% did not consult any health care services.

A cross-sectional, community based health survey was conducted in an urban population of Dar es Salaam between April and May, 1995. The aim of this study was to determine the level of self-perceived morbidity (acute, chronic ill-health conditions and disabilities) among the general population.



Multiple logistic regression analysis showed that age, sex, level of education, marital status and household size were significantly associated with self-perceived morbidity.

It was therefore concluded that self-perceived morbidity prevailing among adults in Dar es Salaam during the time of this study was significantly high.

It is recommended that the findings of this study should be used to design a follow-up study to determine true diagnoses of those who perceived themselves as having ill-health conditions/diseases for validation.

This study determined the level of self perceived morbidity in an urban area of Dar es Salaam. In order to obtain a more meaningful and comparable data on self-perceived ill-health it is recommended that a similar study be carried out in the other urban and rural areas of this country. It is also recommended that during allocation of resources Policy Makers or Health Planners should take into consideration the fact that self-perceived morbidity is very high among adults in the general population and should cater for their health needs accordingly .

## TABLE OF CONTENTS

Item	Page
Abstract . . . . .	ii
List of Abbreviations . . . . .	viii
Acknowledgements . . . . .	ix
Declaration . . . . .	xii
Copyright . . . . .	xiii
<b>1.0 INTRODUCTION AND LITERATURE REVIEW</b>	
1.1 Introduction . . . . .	1
1.2 Statement of the Problem and Rationale . . . . .	4
1.3 Literature Review . . . . .	12
1.4 Study Hypotheses . . . . .	28
1.5 Study Objectives . . . . .	29
<b>2.0 METHODOLOGY</b>	
2.1 Background Information . . . . .	30
2.2 Description of the Study Area . . . . .	33
2.3 Target Population . . . . .	38
2.4 Study Design and Study Population . . . . .	38
2.5 Sample Size Estimation . . . . .	40
2.6 Procedure . . . . .	43
2.7 Methods . . . . .	43
2.8 Data Collection . . . . .	45
2.8.1 Manpower . . . . .	46



2.9	Interview . . . . .	46
2.10	Data Processing, Cleaning and Analysis . . . . .	48
2.11	Variables Studied . . . . .	50
2.12	Definition of Terms Used . . . . .	52
<b>3.0</b>	<b>RESULTS</b>	
3.1	General Description . . . . .	57
3.2	Socio-Demographic Characteristics of Study Population . . . . .	58
3.3	Prevalence of Self-Perceived (Acute illnesses, Chronic Diseases and Disability, (Unprompted Symptoms/Conditions/Diseases) . . . . .	64
3.4	Relationship of ill-health Perception with Socio-Demographic Characteristics . . . . .	79
3.5	Multivariate Analysis . . . . .	86
<b>4.0</b>	<b>DISCUSSION</b>	
4.1	General Discussion . . . . .	91
4.2	Unprompted and Prompted Symptoms/Conditions/ Diseases (Acute Morbidity) . . . . .	95
4.3	Chronic Conditions/Diseases/Symptoms . . . . .	99
4.4	Health Care Facilities Utilization . . . . .	101
4.5	Disability . . . . .	103

4.6	Implications of self-perceived morbidity for households and communities . . . . .	105
4.7	Health Policy Implications of Ill-Health Findings . . . . .	108
4.8	Implications of findings for further research	110
4.9	Study Limitation . . . . .	111
<b>5.0</b>	<b>CONCLUSION AND RECOMMENDATION</b>	
5.1	Conclusion . . . . .	114
5.2	Recommendations . . . . .	118
<b>6.0</b>	<b>REFERENCES</b> . . . . .	120
<b>7.0</b>	<b>APPENDICES</b> . . . . .	129
Appendix 1:	Questionnaire English Version . . . . .	129
Appendix 2:	Questionnaire SWAHILI version . . . . .	136
Appendix 3:	Proposed and presumed criteria for Establishment of cases . . . . .	144
Appendix 4:	Problem Encountered during data collection . . . . .	145
Appendix 5:	Numbers of males and Females of all ages in each tawi under surveillance . . . . .	147
Appendix 6:	Number of males and females aged less than 15 years in each tawi under surveillance . . . . .	148



Appendix 7: Organization and access to health services by community in Tanzania . . .	149
Appendix 8: Organization structure of Ministry of Health in Tanzania . . . . .	150
Appendix 9: (MAPS)	
1. The Map of Tanzania . . . . .	151
2. The Map of Dar-esSalaam showing urban wards . . . . .	152
3. The Map of surveillance areas in Dar-es-Salaam . . . . .	153
3a. Ilala branch . . . . .	154
3b. Keko branch . . . . .	155
3c. Chang'ombe branch . . . . .	156
3d. Shaurimoyo branch . . . . .	157
3e. Mtoni Relini . . . . .	158
3f. Mtoni SabaSaba . . . . .	159
Appendix 10: Classification of surveyed symptom/conditions . . . . .	160

## LIST OF ABBREVIATIONS

WHO	= World Health Organization
DUHP	= Dar es Salaam Urban Health Project
MOH	= Ministry of Health
AIDS	= Acquired Immune Deficiency Syndrome
URT	= United Republic of Tanzania
MMC	= Muhimbili Medical Centre
CD	= City Director
TPHA	= Tanzania Public Health Association
HC	= Health Center
KAP	= Knowledge, Attitude and Practice
AMMP	= Adult Morbidity and Mortality Project
Hb	= Haemoglobin
ARI	= Acute Respiratory Infection
ORS	= Odds Ratio
RMO	= Regional Medical Officer
DMO	= District Medical Officer
SPSS	= Statistical Package for Social Sciences



**ACKNOWLEDGEMENTS**

This report is an outcome of three years exposure to a community health program.

I wish to thank all the Academic staff of the Departments of Parasitology and Entomology, Behavioural Sciences, Epidemiology and Biostatistics, Department of Community Health of the Institute of Public Health; last but not least, the Department of Microbiology and Immunology.

I take this opportunity to express my sincere gratitude first to my supervisors Dr. T.K. Kabalimu of the Community Health Department, the late Prof. D.G. McLarty of the Internal Medicine Department and also the Manager of Adult Morbidity Mortality Project for their great dedication, interest and commitment in providing invaluable professional advice and guidance in writing this dissertation. I have benefited immensely from their constructive criticisms and guidance. I am also indebted to Prof. Karim Hirji, Mr. Makwaya C. and Ms. C.S. Moshiro for their help in statistical analysis.

I am also thankful to Dr. P.M. Kilima the Co-Manager Dar es Salaam Urban Health project for his advice during my one year course-work in effects of cost sharing to health facility

attendances and Dr. D. Gasarasi, Co-ordinator of Postgraduate courses at the Institute of Public Health for her encouragement during the research proposal preparation stage.

The study was conducted in the context of the on going Adult Morbidity and Mortality and the Dar es Salaam Urban Health projects. Special thanks go to all workers of the Adult Morbidity and Mortality Project (AMMP) and the Dar es Salaam Urban Health Projects (DUHP) for their patience and cooperation.

This acknowledgement would be incomplete without mentioning Ms. Mary Lewanga (Data collection supervisor AMMP), Mr. Dave Whiting (Data Manager AMMP), Dr. Kaspar Wyss of DUHP, Dr. D.M. Mtasiwa (DMO of Ilala) for their advice during the survey and others on whom my shuttling to see interviewees depended.

I am also greatly indebted to AMMP and DUHP, for providing a substantial research grant in support of this work without which completion of the study would have been difficult. In this regard I wish also to thank the Ministry of Health (my sponsor), the Faculty of Medicine, University of



Dar es Salaam for administrative support and the Muhimbili Medical Center (my employer).

I am very obliged to Ms M. Kessy who typed this dissertation and for the final secretarial services. Last, but not least, I wish to extend my grateful, sincere and heartfelt gratitude to my wife Joyce, for her immeasurable assistance and encouragement, and to my three sons; John, Joseph and Peter, and daughter Mhigo Mgonanzi for tolerating my long absence from home while in class or in the field.

I wish to acknowledge the contribution of my classmate Dr. D.S. Tarimo who was my closest friend and advisor. I take this opportunity to acknowledge with great appreciation the moral support from my parents.

Finally I am especially appreciative of the cooperation I received from the studied sample, who are the subjects of this study. To all I say thank you.

DECLARATION

I, Dr. R.B. Kalinga hereby declare that this dissertation is my original work and has never been submitted in any form, for a diploma or degree in any other University.

Candidate's Signature:  ..... Date: 6 November, 1996

**COPYRIGHT**

All rights reserved. No part of this dissertation may be reproduced or transmitted in any form or by any means: electronic or mechanical, including photocopying; recording or any information storage and retrieval system, without prior written consent from the author or the University of Dar es Salaam in that behalf.



## CHAPTER ONE

## 1.0 INTRODUCTION

Estimating the health status of the general population has never been an easy task in either epidemiological or sociological research. One of the main problems is that most symptoms of ill-health are not brought to the attention of medical professionals (Kroeger, 1985). In the 1960's Wadsworth and his colleague discovered that 95% of their sample experienced health complaints in two weeks preceding the interview; but only 20% of the respondents saw a physicians for these complaints. Unreported health problems consist mainly of minor every day illnesses like headaches, fatigue and the common cold, although some serious conditions also remain unreported.

Adults in most parts of the developing world are highly affected by a large number of ill-health conditions and untimely death in relation to the remainder of the population (Feachem et al., 1992). While this fact was known and realized probably for as long as modern medicine exists the estimate of ill-health level, causes and resultant untimely death became a subject of widespread investigations only relatively recently (Feachem, 1991; Over et al., 1992;

Bradley et al.,1992; Bonte et al., Castro et al., 1978; Sullivan, et al.,1990;Timaeus,1988, Petit et al.,1992; Remme et al.,1993; Anonymous, MMWR.,1986 and Murray et al.,1992.

In Several documented, as well as the larger number of current studies and surveys it is noted that the emphasis on health care now started to shift from the curative, individual patient-oriented service based largely on patient perceived needs, as widely propagated by both the government and mission services in the earlier half of this century; to community-oriented and community-based epidemiological investigations for self-perceived morbidity and magnitude of ill-health problems (Phillips et al.,1992 and Belcher,1976).

Self-perceived morbidity statistics provide a picture of the amount of ill-health, disability and injury within a population. In addition, the use of interviews technique as sole data collection methods implies that self-reported or perceived health and ill-health are studied instead of the more "objective" morbidity measures, that is: medically diagnosed diseases. As pointed out by Watson and Pennebaker (1989) in their study, self report measures of health can better estimate the true morbidity.



Self reported ill-health, reflects subjects' perceptions of, and interpretations about, their physical state (Krueger, 1957). However, self perceived morbidity as health measures are shown to be strongly and consistently influenced by psychological variables (Watson, 1989) rather than ill-health. Moreover, illness behaviour refers to a person's perception of symptoms, assessment of their importance and readiness to take health actions.

In his series of sociological studies (Mechanic, 1980) documented that the self perceived ill-health conditions is above all a social phenomenon, for an individual for better expression of her/his feeling in relation to ill-health experienced, than observed morbidity.

To date, adults comprise more than half of the population of the developing world, numbering about 2.05 billion in 1985 or 56 percent of the population. However, the number is expected to increase (Feachem et al., 1992). In Sub-Saharan Africa region 49% of the population are adults (Feachem et al., 1992).

Adults comprise the majority of the labour force, and the ill-health or death of adults generally has deleterious



effects on economic productivity. The losses are probably substantial though difficult to measure because they are often obscured and deflected. Adults are the ones on whom other family members depend.

In 1988 the World Bank committee on adults health held in Washington, discussed the neglected issues of adult ill-health and conditions that kill them. It was stressed that the picture of adult health can be sketched only vaguely, and is least clear for mortality in poor countries, and morbidity in both rich and poor countries, (Phillips et al., 1992 and WHO, 1991).

There is conclusive evidence that despite efforts by the government and the private sector to expand health services in Dar es Salaam and the country as a whole, thousands of people still do not attend health facilities when they are sick (Dar es Salaam Urban Health Project Report 1994, Unpublished and Rutayungulwa, 1992).

## **1.2 Statement of the Problem and Rationale**

### **1.2.1 Statement of the Problem**

Greenhill and Singh (1965) in their studies on estimation of disease load in the population using data from National

Statistic and general practice studies, found that there was a considerable amount of undetected ill-health which results in a gap between recorded morbidity prevalence and true prevalence of disease in the community.

Over the past 30 years, the focus of intellectual and research activity on international public health has been in two distinct areas, tropical diseases and the health of children (Tarimo, 1991; Kirkwood, 1994; Kjellstrom, 1992 and Greenwood et al., 1990). However, a large and obvious gap remains namely adult health problems that are perceived by community and are not well addressed (Murray et al., 1994).

Although the vital registration and statistical systems of Sub-Saharan Africa have been improved and expanded in recent decades, only a small minority of vital events are recorded in most countries (Feachem et al., 1992). Data on deployment of health resources and the impact of different interventions are also deficient. Community based studies in which an entire community, not individuals, is studied can potentially overcome or at least ameliorate these differences.

Sick adults relatively consume a very substantial proportion of health sector resources in developing countries (Feachem



et al.,1992). Yet the magnitude of their health problems remains poorly understood. Reliable and comparable data are even more scarce for adult morbidity in Tanzania (Magari,et al.,1991).

Available data by the Ministry of Health about morbidity distribution shows that the top nine conditions/diseases contributing to morbidity among all age groups from health facilities attendance data(in parentheses) are as follows: Malaria (24%), diarrhoea diseases (9.3%), upper respiratory infections (8.3%), eye diseases/conditions (6.3%), pneumonia (5.1%), skin diseases (3.7%), intestinal worms (2.5%), anaemia (2.2%), accidents and injuries (0.8%), symptoms and ill-defined diagnoses (11.4%) and while other diagnoses 24.3% (Health Statistics Abstract MOH, 1994).

This information based on hospital data is not enough to give a conclusion about distribution of morbidities in the community, as it is health facility based, hence it does not include other conditions prevalent in the community which are self perceived as health problems.

Health services based data are useful but are not representative of those who do not use those services.



Percentages of outpatient attendance are based on health facility records and tend to reflect more severe episodes of diseases. In general they are not representative of the community as a whole because the availability, accessibility, and utilization of the health services vary among sub groups of the population ( Kilima et al., 1994; Greenwood et al.,1990 and Titmus et al.,1964).

The two years (1992-94) government health facilities annual attendance observation in Dar es Salaam, found a reduction in attendance of sick people. However, it is not clear so far whether the proportion of sick population of Dar es Salaam reduced from general annual health facility attendances data are remaining unserved as others believe?. If this is true, then the consequences will be an increased unrecorded number of sick people in the community, more days of suffering, and even deaths. The number of people remaining without treatment in the community will increase reservoirs especially if it is infectious and consequently increase the risk of infection to the other members of community.

It can be contemplated that, due to better provision of Preventive Health Care delivery by the DUHP the annual health facility attendances have decreased. However, this is not

possible within such a short time (1992 to 1994); as it is very unlikely for disease determinants to change that fast. However, various literature sources (Mujinja, 1990 and Waddington, 1989) have shown that improvement of health services, increases the hospital attendances. We can confidently say that the drop in attendance rate is probably a mechanism of coping with the effects of the recently introduced user charges, or other undefined factors which are addressed through this study.

A sizeable proportion of the morbidities affecting the Dar es Salaam residents are preventable through proper sanitation and environmental management. Estimates of the numbers of people lacking access to safe and sufficient water supplies, and adequate sanitation may provide information on the numbers of people likely to fall sick from water-related diseases (WHO, 1988). In Dar es Salaam around 79.5% of the population are using pit latrines or other forms of excreta disposal systems, while 59.6% of the population are using piped water outside their houses (Health Statistics Abstract MOH, 1994). Safe and especially sufficient water supplies and adequate sanitation can reduce morbidity for different diseases/conditions (WHO, 1988). However, Dar es Salaam population is experiencing a constant shortage of water as



well as inadequate sanitation facilities, hence morbidity distribution is probably high. All this suggest that morbidity in Dar es Salaam is expectedly high.

For this reason, it is important to determine the level of self-perceived morbidity among adults and their implications for households and communities.

#### **1.2.2 Rationale of the Study**

Health facility attendance data on morbidities and other health related conditions/diseases/symptoms collected by Urban Health Project and Health Department of City Council from (1992 to 1994, Unpublished) showed that there was significant reduction of annual attendance rate of the sick persons in Dar es Salaam health facility (DUHP, 1994 Unpublished).

It is not known so far where those sick persons of Dar es salaam region who dropped from health facilities attendance go, and factors associated with this health seeking behavioural change. This study aimed at finding what is happening in the community regarding self-perceived morbidity and utilization of available health services and to suggest



priority areas for research and to point to some hopeful avenues for Policy Makers action.

To date, there is hardly any study that has examined the community self-perceived morbidities, and their implications for households and communities in Dar es Salaam. It was therefore imperative to carry out a study, to find out the magnitude of leading self-perceived conditions/diseases/symptoms at community level. The paucity of data on distribution and pattern of diseases/ill-health conditions in the community of Dar es Salaam, especially among adults necessitated this study (Health Statistics Abstract MOH, 1994).

The ever changing life styles of communities, poor sanitation, the emergence of new diseases like AIDS, and their complications or changes in relative prevalence of existing diseases/conditions, and the differing public health importance of various diseases in Urban Dar es Salaam made it necessary to have this community based study. The information from this study would give a work load of diseases in the community. Moreover, it will also give information on health in general and health care which is not available or cannot be obtained from routine hospital data. This will improve the

country's ability to meet the health needs of its communities.

In their studies and reviews by Hibbard, (1989); Horden, (1954) and Mizrahi (1976), they found that there was imbalance between hospital and community morbidity data. They also concluded that self-perceived morbidity may have an influence in the choice of health care services and that may result in delays to go to hospitals, severe morbidity and death. This may create some difficulties in planning and resource allocation. Hence, there was a need to determine the level of self-perceived morbidity at the community level.

Finally, it is envisaged that the information from the question about self-perceived symptoms/conditions/diseases will help to direct a further study into diagnoses of the most common illnesses perceived in the community, whereby standardized techniques can be used to measure relevant parameters of health and will help to formulate a health policy of adult population.



### 1.3 Literature Review

#### 1.3.1 The Global Situation of Morbidity

Available literature shows evidence of declining utilization of health facilities especially amongst the poor and that there is considerable sacrifice made by households when user charges are introduced, (Waddington, 1989; Litvack, 1993 and Abel-Smith et al., 1992). However, health facility attendances data tend to be drawn from certain subsections of the community and do not represent the most severe illnesses (Feachem et al., 1992; Abraham, 1980 and Greenwood, 1990).

Household surveys on self-perceived ill-health have been performed in a number of countries, with the lead being taken in the developed world during the second quarter of the century. India was the first developing country to attempt household morbidity surveys and the methods applied there have since been used in some other countries (Kroeger et al., 1983). Kroeger reviewed morbidity surveys: 13 in Asia, 12 in Africa, and 8 in Latin America, and the review by Ross et al., 1986 adds one more similar study from Bolivia. All the studies mentioned above determined self-perceived morbidity and revealed with significant difference between perceived, existing and hospital recorded morbidities.



Although the number of countries performing household health surveys is increasing, there is a lack of standardization of techniques making comparison of the results of different surveys difficult (Kroeger et al., 1983). Although the details of the techniques vary, there is general argument or discussion about the major topics or questions that are covered. Most household surveys ask questions about self-perceived morbidities and what actions were taken in response to morbidity and the health services utilized.

While it would be extremely desirable to be able to determine from a household survey prevalence rates for specific illness by making a medical diagnosis for each encounter, it would not be possible to standardize the procedure involved due to too much variation between observers (Cochrane et al., cited by Feachem, (1992)). In a study to see if there is direct relation between decreased access to medical care and decreased health status, (Arthur et al., 1984) it was concluded that the use of fees for treatment should reduce the amount of service demanded.

As pointed out elsewhere (Whitchfield, 1982) health facilities morbidity data, do not reflect the true morbidity in the community. This may result into inadequacies for allocation of resources.

A study conducted by Horden (1954) in Glasgow to assess the prevalence of symptoms in the community revealed that many of the symptoms being brought to light were minor illnesses not referred to any professional opinion or care.

Hibbard in 1989, conducted a study on health facilities based reporting system concluded that, the system provides information on case episodes as a unit of observation rather than the individual. He also stressed that findings on diseases and prevalence may have been misleading policy implications to the extent that they fail to reveal how a disease is concentrated in a population with multiple health problems.

In a large scale multivariate study of health services utilization, the term propensity to visit a doctor has sometimes been used (Feachem et al., 1992 and Purola, 1988) to imply that for each individual, or a group of individuals

there is at any given moment a probability of using health services.

### 1.3.2 Prevalence of Perceived Morbidity in African Countries

The health picture in developing countries is changing, generally and broadly there is a shift towards a greater prominence of diseases suffered by adults and the elderly particularly non-communicable diseases and injuries. This picture is called epidemiologic transition (Omran, 1971; Kamuzora, et al., 1991 and Sullivan, 1990). It is imperative to have some knowledge of the pattern of diseases generally affecting the population at large. However, one of the problems affecting the recognition and effective deployment of self-perceived morbidity is the different concept of disease and causation among adult population (Feachem, et al., 1992 and Abrahamson, 1990).

A number of studies in African countries like in Ghana (Darffa Project 1979); Kenya (Mutanda, 1989); Lesotho (Feachem et al., 1992); Nigeria (Osubor and Etta, 1990); Tanzania (Tanner et al., 1985) quoted by Feachem et al., 1991) have revealed that frequency of diseases/conditions vary substantially from one year to another. This may be



partly explained as deficiencies in reporting systems. For instance (Tanner et al., 1985) in Kilombero Tanzania concluded that the number of cases reported in 1985 was 2.2 times higher than cases reported in 1983.

In their studies on self-perceived morbidity as a measure of morbidity (Catherine et al., 1990) noted a variation from one locality to another as well as from one community to another. For instance, in some communities in Egypt more schistosomiasis is reported by individuals than is detected by physicians, while in other place the converse is true (Matovu et al., 1980). In her study (Catherine, 1990) she did household surveys where each member was asked about illness in the previous month, using the silence criteria. The total reported rate of self-perceived morbidity was 5.5% for males and 6.9% for females.

### 1.3.3 Prevalence of Perceived Morbidity in Tanzania

The only study from Tanzania quoted by Kroeger was performed in 1972 by Van Etten in one village of 131 households of 876 people to determine the self-perceived morbidity. The recall period was one year and the prevalence of self-perceived morbidity was 33.1% with diseases classified according to the

part of the body affected. However, no list of trace questions was used.

In Dar es Salaam, Mtwara and Morogoro, (Rawal et al., 1994 Unpublished), has performed a household survey in which they looked at the costs incurred by sick people as a result of ill-health. They reported the type of health services used in response to illnesses or injuries during the previous year, However, data does not indicate whether this represents the first, last, most common, highest level or other encounter with health services. They do not mention how they deal with those who use more than one type of health services. Other aspects they looked at were suggestions for improving health services, attitudes for user charges, where people get the money to pay for health services, and other matters related to user charges.

In a study on health facilities based data on tuberculosis in Tanzania (Chum et al., 1992 and Shao et al., 1991) found that in high prevalence areas, the proportion of HIV positive among the tuberculosis patients ranges from 20% to 40%. A community based survey conducted in Kagera by Killewo et al., 1989 showed that individuals between 15 to 54 years of age had a sero prevalence of HIV infection of 33%.

A community based survey can roughly estimate a precise picture of diseases load in a community. In two studies Mtango et al., 1989 and Neuvians et al., 1988 on acute respiratory infections showed a prevalence ranging from 0.1% to 36.8%, and are higher compared to those obtained from health facilities data.

In Tanzania diarrhoea diseases are among the leading causes of morbidity in adults. In a study conducted by Mhalu et al., (1991) cholera was found to be a major cause of acute diarrhoea in Tanzania with a prevalence of about 5%. A community based survey by (DUHP, 1994 unpublished) found out that diarrhoea disease cases are under-reported in hospital based data.

Two local community health studies by Pederson and Koltrup, 1986 on onchocerciasis endemic area in Southern Tanzania where the disease is endemic and one in Central Tanzania (Anon, 1985) gave a prevalence of 8.9% and 6.6% respectively. Similar findings were noted by analysis of hospital based data whereby eye diseases were the most frequently reported health problems with a prevalence of 6.3% (Health Statistics Abstract MOH, 1994 and Yorston, et al., 1991). However, in Kenya the frequency of eye diseases was found to vary with



age being low under 20 (0.1%) of age and high 7.7%) at 20 years and above (Whitfield, 1981).

Chiduo (1989) in his annual health budget speech and (Kilama et al., 1991) cited that malaria was the number one cause of health facility attendances with about 15% from all total attendances. A global questionnaire survey by (Iarotski and Davis, 1981) showed that about 19% of the 16 million people in Tanzania in 1977 were estimated to be constantly exposed to schistosomiasis infections (Matovu and Nditi, 1980). These findings do not however answer the questions clearly whether, within the same community the population perceives the same disease frequencies as depicted by attendance.

Many studies worldwide have cited that adults as a group are highly affected by non-communicable as well as communicable diseases. An analysis of health facilities inpatient morbidity data (Mwaluko et al., 1991) summarized the top common eight illnesses in Tanzania for all age groups according to the frequencies in which they occur. These were deliveries and their complication (22%), malaria (7.3%), gastroenteritis (6.5%), measles (4.3%), anaemia (Iron deficiency and other types of anaemia) (2.8%), worms (2.6%),

bronchopneumonia (2.2%), and injuries (2%) had the lowest proportions.

The outpatient clinic attendance report showed different patterns. The most common illnesses reported were malaria (14%), gastroenteritis (9%), digestive tract diseases (6.3%) and accidents and injury (6%) of all attendances. There was a group of conditions/diseases which did not feature much in the overall morbidity attendances like respiratory diseases (5.3%), bronchitis (4.8%) and broncho pneumonia (3.2%). A community based survey (DUHP, 1994) has found out different conditions perceived by community compared to those reported to health facilities (a gap between recorded, existing and perceived morbidity).

Anaemia (all forms) and hypertension are among the most common illnesses in Tanzania. Several community surveys in the country by Kavishe, (1986) quoted by Mwaluko, et al., (1991) showed that the prevalence of anaemia in all age groups averaged 28%, while the prevalence of hypertension in Africa was between 10% and 20% in urban populations and 5 and 10% in rural areas and semi-urban communities by Mtulia (1986), quoted by Mwaluko, et al., 1991. According to National hospital data, anaemia contribute almost 3% to the



overall percentage of morbidity in Dar es Salaam (Health Statistic Abstract MOH, 1994).

It has been estimated that about 75% of the country population is living within a radius of 10 kilometers of modern health facilities (Health Statistic Abstract MOH, 1994 and Killewo, 1985). But the need and demand for health services has not been adequately assessed in this country because of lack of appropriate studies and inadequate disease reporting mechanisms.

**•1.3.4 Prevalence, Distribution and Patterns of Morbidity in Dar es Salaam**

From the districts health facility attendances data it is assumed that, reduction in the proportion of sick population attending health facilities means that many are left unserved in the community, hence there is an increase of unseen ill-health conditions for households and the community at large.

According to the monthly observations of the most common reported ill-health to health facility attendances reports by Dar es Salaam Urban Health Project and city health department (Unpublished report, 1994), the most common illnesses reported for in Temeke district were malaria (20.8%), acute





respiratory infections (10%), diarrhoea diseases (5.8%) and eye diseases/problems (3%). However, different patterns were found for the Ilala district health facilities, malaria contributed (22%), ARI(7.9%), diarrhoea disease (7%), eye diseases/problems(2.8%) and pneumonia( 3%). It was concluded that there is considerable variation between the level of self perceived morbidity and hospital based morbidity when the two are compared.

The annual hospital attendance reports in Dar es Salaam (Dar es Salaam Urban Health Project and City Council health from 1992-1994) has recorded a reduction of sick persons attending health facility tiers. For instance the annual report on outpatient attendance at government health facilities (Dispensaries, health centers, and district hospitals) in 1993 in Dar es Salaam were as follows; Temeke district 1,256,003 cases (22%), Ilala district 2,264,826 cases (39%) and Kinondoni district 2,264,832 cases (39%) (Data are for the whole district government health facilities and percentages show attendance of sick people who attended government health facilities in the whole region).

The annual reports of outpatients attendance in 1994 were as follows: Temeke 850,000 cases (41%) Ilala district 650,000

cases (31%) and Kinondoni district 600,500 cases (29%). From the above findings the reduction proportion in attendance of sick people in all the districts between 1993 and 1994 was 64%.

Adult Mortality and Morbidity and Dar es Salaam Urban Health Projects, mortality surveillance system have provided decision makers with adequate information they require about mortality in Dar es Salaam in order to know the major causes of death and thus act accordingly. However, death is not the only outcome of diseases. There is a larger, and perhaps poorly recognized number of people in the community who suffer from diseases, but do not die and contribute to what is being called the 'burden of diseases' (Murray et al., 1994).

The department of the Urban Health Project and the City Council are collecting from public health facilities based data on outpatients. These data are useful but will not represent an important section of the community, that is those who do not use those services. Other studies have revealed that unserved people are most likely to be the poorer and perhaps most needy members of the community (Mujinja, 1990 and Abel-Smith et al., 1992). Household health



surveys include this group and therefore are able to provide representative information on the health status, services used and a number of other features of health care for the whole population (Timaeus et al., 1988).

Data from community based Adult Morbidity and Mortality project had classified the top seven causes of deaths among adults in study areas as: HIV (19%), fever (17%), stroke (12%), cancer (10%), Pulmonary tuberculosis (5.5%), chronic cough (5%), gastro-enteritis (2.4%) and others (22.1%), (AMMP census, 1993). From these findings it is not clear if the top seven causes of deaths are also the major self perceived morbidity causes among adults in the community. There was therefore a need to determine whether the top seven causes of deaths are also the major self-perceived morbidity conditions among adults. In relation with inadequate health facilities data on morbidity, available literature also shows evidence of declining utilization of health facilities countrywide, especially amongst the poor, and a gap exists between recorded morbidity and true prevalence of diseases in the community, (Rawal et al, 1994; unpublished and W.H.O., 1992). Reports from the City Council, Dar es Salaam urban health project shows that health facilities annual attendance



rate of sick people declined from 75 % in 1992 to 64 % 1994 (DUHP, City Council Health Reports, 1994 Unpublished).

Adult ill-health can cause death in household members. Adult ill-health directly and indirectly can affect household composition through its effects on fertility, care of children, and marriage behaviour (Abel-Smith et al., 1992). Some of these are immediate consequences of ill-health, others are the results of various coping responses. In their study, Blesoe, Ewbank and Isingo Abamile (1988) quoted by Feachem, et al., (1991) suggested that children are more likely to receive foster care when the mother is severely ill or dies. Despite the all above, the health of adult household members influence the size and composition of the household and welfare of other household and Consequently, adult ill-health is likely to increase the desired family size. (Murray and Lopez, 1994 and Overbeek, 1992).

The purpose of the study was to determine the level of self-perceived morbidity (acute or chronic and disabilities) in the last two weeks prior study, source of health care for those with perceived ill-health conditions and possible implications of ill-health findings in Dar es Salaam.

### 1.3.5 Measurement of Perceived Morbidity

Morbidity measures can be classified as either observed or self-perceived (Feachem et al., 1991). Observed morbidity consists of reports from clinicians or other investigations about illnesses they have observed in the people they examined or test. Self-perceived morbidity consists of reports from people about their illnesses.

The deviation from a normal state of health is defined by the investigator in observed morbidity and by individual in self-perceived morbidity. Self-perceived morbidity is closer to the concept of illness, while observed morbidity corresponds more closely to disease.

Self-perceived reports have been used for studying morbidity (Feachem et al., 1991). This method has been used in assessing factors associated with ill-health seeking behaviour (person knowledge, attitudes and perceptions). Usually anonymous self-completed questionnaire delivered in person or via postal mail have been used.

Self-reports are relatively easy to obtain from subjects. This method being non-invasive, may encourage participation

in the study. However, self-reports are sometimes best under or over-reporting.

Proxy response has also commonly been a means of obtaining information related to self-perceived morbidity (Kroeger, 1983). This is a procedure whereby another person provides information when target a subject is not present or is considered incapable of providing the information. Proxy response is likely to suffer from non-response or from under or over-reporting of the frequency or extent of the perceived illnesses. These limitations may be more pronounced when adolescents acts as informers, primarily due to their limited recall.

#### **1.3.6 Utility of Prevalence Data of Perceived Morbidity**

Prevalence is important, particularly in acute and chronic diseases ,in determining workload, as it is a useful tool for the planning of facilities and manpower needs. Prevalence may be also used to express the burden of some attribute or conditions in population. Furthermore, for disease control, information is needed about factors produced chronicity or recurrence once a disease has developed . Since prevalence reflects duration as well as incidence, it can be useful for



monitoring control programs of chronic conditions such as mental illness .

When data necessary for the calculation of incidence are not available, prevalence rates may be used to estimate the importance of a disease in a population, but with the realization that prevalence may not be a good estimation of incidence.

#### **1.4 Study Hypotheses**

The Hypotheses to be Tested in the study include:

1. Approximately 20 - 30% of people to be studied perceive acute ill-health or chronic diseases/conditions and disabilities at community level.

2. Females perceive more ill-health episodes than male adults in this community survey. Health research has shown women as having a worse health status and therefore a higher level of utilization of health services than men. Women are reported to show high rates of various illness indices, such as number of acute, chronic illness/conditions, a number of health complaints and disabilities.

3. Self-perceived morbidity will have significant associations with socio-demographic characteristics such as sex, level of education, level of income, age, marital status and household size.

## 1.5 STUDY OBJECTIVES

### 1.5.1 Broad Objective

1. To determine the prevalence of self-perceived morbidity among adults and its implications for households and the communities.

### 1.5.2 Specific Objectives

a) To determine the prevalence of self-perceived acute morbidity, chronic illnesses and disability among adults in Dar es Salaam.

b) To investigate possible associations between self-perceived morbidity and age, sex, education, household size, marital status and level of income.

c) To investigate the possible contributory factors for choice of health care in response to ill-health.

d) To assess the possible policy implications of the study findings among adults in Dar es Salaam.

**CHAPTER TWO****2.0 METHODOLOGY****2.1 Background Information****2.1.1 Climate**

Tanzania is a country which encompasses a variety of environmental features ranging from tropical rain forests, snow capped mountains, vast lakes, man-made dams, to enormous grassland savannah, coastal belt, semi-desert and fertile lands which provide the widest possible diversity of ecological conditions for an enormous variety of tropical diseases and health problems.

**2.1.2 Demographic Profile**

According to the 1988 population census the population was estimated at 23.2 million persons. The population now is above 23.2 millions ( $\approx$  26 million). About 20% of the population are women in the reproductive age group while children 0-5 years constitute about 18-20% (National Population Census; Tanzania Bureau of Statistics, 1988). Annual growth of 2.8%, and an age specific proportion of 27% for the age group of 5-14 years form the bulk of the Nursery and Primary school populations (National Population Census, 1988). Primary school enrolment and attendance is compulsory



from the age of 7 to 14 years. Adult literacy rate is estimated to be 70%, and the national language, Swahili, is widely spoken throughout the country (National Population Census, 1988 , Preliminary Report, Bureau of statistics, Dar-es-Salaam and appendix 11).

#### 2.1.3 Administrative Structure

The country is divided into 25 administrative regions, of which 20 are in the mainland and 5 in Zanzibar. The regions are divided into districts, which are further subdivided into divisions, wards and village levels.

#### 2.1.4 Economic Status

Tanzania is one of the poorest countries in the world. Its economy mainly depends on agriculture which accounts for about 7% of total export earnings (National Population Census, 1988). Population from these areas, some are civil servants and some of them are fishermen or petty traders.

The majority of people in the above mentioned areas are poor peasants involved in subsistence farming. The main source of income of in the study areas are coconuts, and cashew nuts; and to a lesser extent fishing.

### 2.1.5 Health Services in Dar-es-salaam

The basic health care system in Dar-es-Salaam does not differ from the one in the rural areas of the whole country (appendix 7). The main sources of health care are:

- (1) Health care delivery through city council facilities (Government).
- (2) Health care delivery through non-government sectors and non-profit making institutions and voluntary agencies.
- (3) Private or profit oriented facilities.
- (4) Health service through informal sector (Ministry Health statistic Abstracts, 1994; Chiduo, 1991 and Mandara, 1991).

Dar-es-Salaam region does not have a regional hospital as other regions on the mainland, but it has a City Medical Officer of Health whose role is to coordinate health related issues within the city. The City Medical Officer of health is answerable to the city Director. Patients from district hospitals are directly referred to Muhimbili Medical Center, the Zonal Consultant Hospital when there is a need for referral.

In Dar-es-Salaam, health services are delivered at three levels:

- 1) The hospital level; Dar-es-Salaam region has three district hospitals namely Temeke, Amana and Mwananyamala.
- 2) The health centers level: There are three health centers in Dar-es-Salaam namely Kigamboni (Peri-urban) Mnazi Mmoja and Magomeni (urban).
- 3) The dispensary level:
  1. Kinondoni district- 20 dispensaries
  2. Ilala district- 19 dispensaries
  3. Temeke district - 18 dispensaries

Together with the City Council facilities, there are 6 private hospitals and 253 private dispensaries. Several private hospitals and dispensaries are located near the center of the city. (Health Statistics Abstract MOH, 1994, Appendix 7 and 8).

## **2.2 Description of the Study Area (Study Settings)**

Dar-es-Salaam is one of the 25 regions of Tanzania and is situated along the Indian Ocean. It has a surface area of 1950 square kilometers comprising mostly of coastal lowlands. The climate exhibits two dry seasons, a cool dry season from June to October and a hot and humid dry season from January



to March. There are two rainy seasons; a cool, and long raining season from March to May and short rainy and hot season from November to January (Statistics Abstract MOH 1987; Appendix 9; map 1 and 2).

Administratively Dar es Salaam is divided into three divisions and fifty two wards. In the study area there are eight wards.

Religious organizations and non-government organizations provide health care at nominal fees or even free. Parastatal organizations are also providing health care, to its employees, but the general public is a beneficiary. Private medical providers are also offering an expanding source of health care at a profit.

The study areas are shown in Maps 3, 3a-f, appendix 2 and 9 (AMMP, 1992). These three areas namely Ilala, Keko and Mtoni contain a total of eight branches. The areas were not randomly selected, but were chosen empirically by AMMP for the following reasons: Ilala was chosen as a typically urban area with a high population density. Keko was selected because it is a residence to a large number of government civil servants living in reasonable housing as well as

income. Housing in this third division consists mainly of rented flats and bungalows. However, the residents of Keko Tololi branch are mostly low income factory workers and petty traders living in rather poor housing.

Chang'ombe: This branch has two main population housing groups. One contains middle income government civil servants living in government flats. The second consists mainly workers employed in neighboring factories. Most of those, workers are of low income, but many of the houses are owner-occupied.

Mtoni: This branch could be described as semi urban where most residents are petty traders, low-income employees and low income farmers. Mtoni Relini is similar to the above but with more rural features, and Mtoni Saba Saba is similar to above two wards although incomes are in general higher.

The study was carried out in Ilala and Temeke districts of Dar es Salaam City. Ilala District as one of the study areas occupies an area of 400 square kilometers with a total population of 338,708 people out of whom 158,566 are females and 180,142 are males (Population census, 1988). Temeke occupies an area of 700 square kilometers with a population of 406,000 people (Population census, 1988) whereby 212,366 are males and 193,387 are females (Appendix 6).



The two districts included in the study are located along the coast of Indian Ocean. The districts encompass a variety of environmental conditions ranging from tropical rain seasons, vast man-made dams, coastal belts which provide the widest possible diversity of ecological conditions for an enormous variety of tropical diseases and health problems.

The majority of the people in study areas are Zaramo, Ndegereko and other tribes from others regions. However, the people of these selected areas are mainly engaged in commercial activities, employed in government sectors, parastatals, privately owned firms and self employed and the rest are involved in small scale farming around the city.

The study covered eight administrative wards out of 52 which constitute the region (Appendix 9 and map 3). The study was linked with on going Adult Morbidity Mortality and Dar es Salaam Urban Health Projects (A.M.M.P. and DUHP) in Dar es Salaam. The projects had established well functioning surveillance sentinel areas since June 1992. The surveillance populations are monitored on mortality, birth, migrations, immigration, and other health related issues twice every one year.



The investigator took opportunity of the existence of such projects to identify the self-perceived morbidity, and to assess possible implications for households and communities.

### **2.3 Target Population**

The entire urban dwellers in the Dar es Salaam city living at sentinel areas represented the target population.

### **2.4 Study Design and Population**

This was a Cross-Sectional Study which was carried out among the general population aged 15 years and above in Ilala and Temeke districts. The study covered eight out of fifty two wards which constitute the region. This study design was chosen based on objectives, study questions, and hypotheses of the study.

A cluster sampling design was chosen because the idea of taking a simple random sample of individuals across Dar es Salaam was found to be inappropriate and a priority was given to those areas where adult morbidity surveillance was going on. The cluster sampling design was preferred for appropriate, practical and economic reasons.

Before explaining the first stage, the following information is useful. The adult Morbidity and Mortality Project has a surveillance population where relevant health issues have been monitored since 1992. On the basis of the AMMP surveillance data base there are at least 69,000 people in surveillance areas, whereby 2/3 of them are adults and ratio of adults (15 years and above) to children is 2:1 per household. There are about 17,000 households in the eight wards (Appendix 6).

The first stage of the sampling procedure involved drawing a list of 17,000 households and assigning each an index number of two digits, before randomly selecting the households using random number tables. The second stage was to list all adult individuals in each chosen households who were then included in the study.

The number of households to be included in the study population was proportional to the number of households in the ward. All selected households were visited. The study units were either both husband and his wife or one of the two if he/she was living alone in the household.

The study population was chosen from the target population and constituted all adults in sentinel areas in Dar es Salaam established previously by AMMP and DUHP since 1992. An adult in this study was defined as an individual of either sex who was 15 years and above.

### **2.5 Sample Size Estimation**

The selection of an appropriate sample size for a survey like this was a compromise between the desired precision and the costs. The precision of the estimates made from the survey depended on the size of the sample, the amount of clustering and the value of the item being determined.

Due to limited resources and time constraints, it was decided that a prevalence estimate with a marginal of error of  $\pm 2\%$  ( 0.02) would be aimed at and would be the basis for computing the desired sample size.

Since the study comprises adult group (15 years above ), then the determination of the sample size was based on prevalence estimate of perceived ill-health (acute or chronic and disability).



In Dar es Salaam city the prevalence estimate of self-perceived morbidity is unknown, hence prevalence estimates derived from ill-health surveys conducted in other parts of the country has been adopted in sample size determination.

Due to multiplicity of objectives the sample size estimation requires to use value higher than 1.96 (95%) in order to maintain overall precision of estimates (Swinscow, 1983). In this study a marginal error which is precision of results desired or degree of accuracy desired set at 0.02 (2%). Kroeger in 1972 cited a study conducted by Van Etten in one village of Tanzania of 131 households of 876 people, the self-perceived morbidity prevalence of 33.1% among adult population in community based study.

Substituting for the above formula, the sample size required for adults is:

**Formula**

$$n = Z^2 Pq / (d)^2$$

n =The number of subjects required in the sample

d<sup>2</sup>=Degree of accuracy desired set at 2% (0.02)

Z =Standardized normal deviate value that corresponds to a level of statistical significance

P = Proportion of subjects in the target population estimated to have particular characteristics. In this case, peoples self-perceived morbidity (P=33%)

q = Proportion of subjects in the population without ill-health conditions.

Then substituting the values to the formula:-

$$Z = 2.576$$

$$P = 33\% (0.33)$$

$$q = (1-P) = (1-0.33) = 0.67$$

d = degree of accuracy desired, set at 0.02 (2%)

$$n = \frac{(2.576)^2 \times (0.33 \times 0.67)}{(0.02)^2}$$

$$n = 3,668 \text{ subjects.}$$

From the sample size calculation 3,668 adults aged 15 years and above were the minimum sample size calculated.

The average households size in the sentinel population is 4 (revealed by AMMP, DUHP 1993 for adult and children). A total of 3,668 adult respondents were the minimum sample size needed from approximately 917 households.

However, in this study 4126 subjects from 1032 households were studied as it was unethical to leave others who were not

selected but were found present in those households selected for survey.

## **2.6 Sampling Procedure**

A multistage cluster sampling method was used to obtain the number of wards as well as number of the households included in the study. The study areas were eight wards. The number of required households were divided equally from each of the eight study ward using random number tables thereafter the required numbers were selected from a list of the households in the respective wards. All members of selected households (adults) were included in the study.

The unit of analysis for the self-perceived morbidity was the individual while for its implications it was for households and the community.

## **2.7 Methods**

### **2.7.1 Development of Questionnaire, Translation and Pretesting**

The questionnaire was developed in accordance with objectives of the study. The important aspects of the study were listed down followed by a list of information directly relevant and necessary to meet the aim of the study. The main sections



consisted of questions to establish household/personnel identification. The questionnaire was developed in conjunction with Adult Morbidity and Mortality and Urban Health Project.

The second part of the questionnaire consisted of unprompted, followed by prompted questions on health problems (chronic and acute illness) during the last fourteen days including the day of the visit, by type, duration and severity of perceived morbidities.

The last part of the questionnaire consisted of questions which address utilization of health care options: type of service used, reasons for choosing those services, satisfaction and outcome. A list of questions, which were thought appropriate for obtaining the required information from the respondents were formulated. The questions were checked against the aim of the study to ensure that they are well phrased in order to obtain required information needed for the study. Closed and open questions were formulated. For open-ended questions enough space was left for recording the respondents answers. The closed - ended questions code numbers were established at this early stage.

The questionnaire was translated from English to Swahili by the principal investigator and re-translated through other persons.

A pilot study was conducted 6 months before the actual study to test the instruments. It also served as a means of training the personnel for data collection. The subjects in the pilot study were 150 adults randomly selected from sentinel areas at Temeke district. The sample consisted almost similar proportions of females and males. The findings indicated that 16% of all adults studied perceived ill-health.

Finally the results were reviewed and adjustments and corrections of questionnaires made; the interviewing instructions as well as other data collection tools were well reformulated to meet the aim of the study. The final version of questionnaire was made ready for use in the field.

#### **2.8. Data Collection**

Data were collected during the period April to May 1995.



### 2.8.1 Manpower

Before data collection, selection, training of interview teams and supervisors took place for three days. The thirty interviewers were identified among individuals with non-medical training background and were of both sexes, males and females. Their qualifications were form four/form six education level. They were recruited from a large number of ex form four and six who wanted to be interviewers. Non-medical personnel were recruited, against medical personnel, it is assumed that results between these categories of people during survey are not consistent. Kroeger, (1983) found that the use of medical trained health worker's seems to be particularly disadvantageous when asking questions on health related topics. He also claimed that students are inappropriate because of their tendency to hurry and possibly have an influence on the interviewees strongly. The selected and recruited interviewers were engaged for one month and seven days (six days training, and pre-test survey and 31 days data collection).

### 2.9 Interview

The interviews were conducted at the homes of respondents. Each interviewer made a house to house visit with the ten-cell leader, who was introducing him/her to the household



members. The interviewers had to create a good rapport with the prospective interviewees and to obtain their consent. The interview was carried out privately and each person was interviewed separately. Sometimes during the data collection, the principal investigator had to make a surprise visit to research teams as part of supervision, when necessary sub-sample auditing interview was done to verify the accuracy of data collected. Every day after data collection the team had to meet at a CCM office, to ensure that the questionnaires were adequately filled and to discuss problem encountered during the data collection process. Absent interviewees were revisited a second time. If absent again, they were considered as non-respondents.

Intra-observer bias was solved by taking sub-samples for control by re-interviewing by the similar interviewees and interviewers in the last 24 hours. This was to validate the recall information of respondents.

The Principal investigator supervised the work to ensure that the procedures were followed in filling the questionnaire forms. To improve the coverage every member of the selected households was told about the study how she/he would benefit.

Inter-observer bias due to the fatigue of the interviewers was reduced by restricting the number of individuals to be interviewed for a day to 3 to 5 individuals.

The regional as well as district authorities in Dar es Salaam were briefed about the study, procedures and study benefits, through the on going Adult Morbidity Mortality and Dar es Salaam Urban Health projects. With the help of ten cell leaders each household in selected ward was visited. On each visit the head and members of the household were informed about the study a day before and requested to comply, and those qualifying as adults were identified. The study subjects were assured of anonymity and of the confidentiality of their responses.

#### **2.10 Data Analysis (Statistical Methods)**

After field work the questionnaires were arranged and assigned serial numbers. The responses for the open-ended questions were reviewed, categorized and coded. The data were entered into the computer by the Principal investigator with the assistance of an experienced computer operator using the statistical package of Social Scientists (SPSS/PC). Then, data cleaning and validation were done. Finally data analysis was done using the Epi-Info 5.0 computer program.

The frequency distributions, prevalence of perceived ill-health problems by subjects were computed. Cross tabulation were performed between the presumed perceived ill-health problems. The chi-square test was used to evaluate the statistical differences between groups. Further exploration of the relationship of socio-demographic characteristics and self-perceived ill-health was done using the step wise logistic regression. The dependent variables were dichotomized and coded as 1 = perceived ill-health (sick), 2 = not perceived ill-health (not sick). The independent variables considered for inclusion in multivariate analysis were: Household size, level of education status, sex of respondents, marital status and age (in years) of respondents.

A probability value of 0.05 and below was used for an independent variable to be retained in the final model. Odds Ratio (OR) were computed for each independent variable which emerged as statistically associated with the dependent variables.



## 2.11 The Variables Studied

### (a) Socio-demographic Characteristics

The subjects' ages (in years) and their gender (pre-coded as 1 = male, and 2 = Female. The interviewees' response code 1 = subject, 2 = proxy. The language of interview was coded 1 = kiswahili, 2 = other languages. The subjects' residential areas were coded 01 = saba saba, 02 = chang'ombe, 03 = Ilala-Ilala, 04 = Keko-keko, 05 = Mtoni Relini, 06 = Shaurimoyo, 07 = Keko Toroli and 08 Mtoni relini.

### (b) Self-perceived Chronic Conditions/Diseases

The subjects had to report if they had experienced or perceived the listed chronic conditions, (Code 1) for yes and not (code 2).

The interviewees also had to indicate whether they perceived disabilities specified in the last four weeks. The disabilities of interest involved the eye, ears, arm, hands, legs, speech and back pain. The respondents had to indicate whether they perceived disabilities by selecting options 1 = Normally, 2 = with some difficulty, 3 = with much difficulty and 4 = I cannot see at all, I cannot hear at all.

**(c) Unprompted ill-health problems**

The unprompted health problems were studied by asking interviewees to report whether they had been sick in the last two weeks including the day of interviews. Subjects had to choose 1 (yes) or 2 (no). However, respondents were required to prioritize their perceived ill-health conditions in order of importance: (1) for first problem, (2) for second problem and 3 for third problem. Interviewees were asked about the number of days suffered from problem 1, 2 and 3. The subjects were asked to state how severe the problem was 1 for (mild), 2 (moderate) and 3 (severe). The respondents were also asked about hospital admission in the last two weeks including a day of interview.

**(d) Prompted ill-health Conditions/Symptoms/Diseases**

The reported ill-health problems obtained by prompting interviewees were coded as 1 = yes if perceived that health problem and 2 = no if not perceived in the last two weeks including a day of survey (appendix 1). Number and duration in days were recorded from respondents.

**(e) Utilization of Available Health Care for Problem 1**

The reported health cares used by subjects were coded as, 1 = no treatment, 2 = self treatment, 3 = traditional healers,

4 = government dispensary, 5 = government health center, and government district hospital, 6 = Muhimbili Medical Center, 7 = parastatals health services, 8 = other dispensaries, 9 = other hospitals and 10 = health worker at home. The subjects also had to indicate reasons for non-use of governmental health services.

1 = not applicable, 2 = too expensive, 3 = user charges, 4 = too far, 5 = long waiting time, 6 = bad language, 7 = poor performance, 8 = bribes, 9 = no drugs, 10 = mild illness, 11 = treatment known, 12 = former treatment failed and 13 = for others.

## **2.12 Definition of Terms Used**

In this community-based Survey, Study Population is defined as all members of households selected from Sentinel areas, who can be male or female aged fifteen years and above (Adult Morbidity Mortality Project, 1994)

### **(1) Prevalence**

In this study prevalence is used as a measure of Morbidity: hence it is defined as the number of persons who are sick at a given time divided by the number of persons in the population at the Specified time.



**Prevalence** = Number of Cases of a disease present in the population at a specified time

---

Number of persons in the population at that specified time.

The rates are given numerically, whereas, the number of persons in this study is based on a count of subjects having perceived illnesses (two weeks recall periods).

(2) **Illness**

In this study illness is defined as the subjective perception of an individual of having poor health, or as departure from a state of good health as occurrence of one or more symptoms abnormal for the individual concerned.

(3) **Disease**

Disease(s) is defined as a disorder conditions/symptoms which are recognizable as a specific entity and is a medically ascertained and diagnosed sickness (Lilienfeld, 1980). OR

**Disease** is not only an anatomical or functional disorder caused by a pathogenic or an extra ordinary stimulus, it is rather a set of changes which arises from infections and which can be durational and have conceptional definitions. In this study diseases which are characterized by recurring

attacks or exacerbation of what may be a single disease such as asthma, herpes simplex, and new diseases were obtained by counting the number of individuals who at the two weeks recall period had an acute manifestation of a recurrent disease (Lilienfeld, 1980).

**(4) Health**

Is a rather elastic concept. However, in this study health means merely as absence of diseases and disability WHO, 1948 or Health is defined as a state of complete physical, socio, well-being and not merely an absence of diseases or infirmity.

**(5) Peasants**

People whose main daily activities aim at food/cash crops production, (National Population Census, 1988).

**(6) Working Day**

In this study applies to the time of the day used by individual(s) to participate in household or market activities.

**(7) Peoples' Perception of Illness**

Self perceived morbidity or illness in this study is defined as total ill health conditions/diseases/symptoms as felt during the last two weeks by a respondent or means an entity which includes knowledge, attitudes and practice of people concerning ill-health.

This self report measures of health, estimates or assesses true health related variance. In this present study the subjective health measures partly reflect subjects' perceptions of and interpretation about their physical state.

**(8) Appropriate Health Action**

In this present study, this means what people think one should do when they fall sick.

**(9) Ill-Health Period**

In this study is defined as a continuous interval of time during which a person experiences an absence from a state of good health (Mausner,1990).

**(10) Morbidity**

In this study means an absence from a state of physical or mental, well-being, resulting from disease or injury of which the affected individual is aware. Morbidity in this present study includes not only active and progressive disease but also impairments or premature defects that are static in nature, resulting from disease, injury or congenital malformation. Hence, the existence of morbidity in an individual based on a particular disease, injury is defined as morbidity conditions(s) and illnesses is among the evidence of the existence of morbidity conditions (Abrahamson, 1990, Anonymous, 1986).



**(11) Injury**

Defined as a condition produced by an external cause such as violence, accidents and poisoning (Abraham, 1980).

**(12) Disability**

In this study disability is defined as any temporary or long term reduction of a person activity as a result of an acute and chronic condition.

**(13) Sickness**

In this study reflects a person general subjective perception of his/her health and the factors that influence it.

**Acute illness:** In this study is the illness which lasts two or less than two weeks. Any disease/condition, lasting more than two weeks is considered as chronic.

**(14) Household**

Refers to a set of relation among individual who share the same roof and food.

**(15) Dependent Variables Used in this Study**

Perceived ill or perceived not ill.

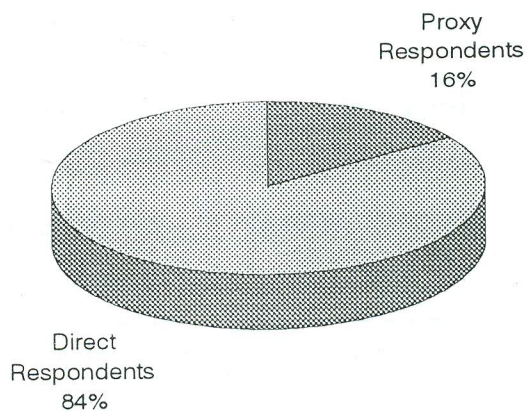
## CHAPTER THREE

## 3.0 RESULTS

## 3.1 General Description

In the period of 6 weeks a total of 1032 households were visited, whereby 4126 study subjects aged fifteen years or more were recorded. A total of 3472 were directly interviewed equivalent to a coverage of 84.2% subjects, whilst 645 proxy information subjects were interviewed, equivalent to a coverage of 15.8 %

**Figure 1. Distribution of Interviewees by Type of Responds**



### 3.2. Socio-demographic Characteristics of the Study Population

n= 4126

Table 1: Age and sex distribution among 4126 subjects aged 15 years and over studied in Dar es Salaam, 1995

Age Group	Sex					
	Female		Male		Total	
	N	(%)	N	(%)	N	(%)
15 - 34	1493	(51.7)	1393	(48.3)	2886	(69.9)
35 - 64	447	(40.8)	649	(59.2)	1096	(26.6)
65 and above	44	(30.6)	100	(69.4)	144	(3.5)
All	1984	(48.1)	2142	(51.9)	4126	(100.0)

The age and sex distribution of study population in the eight wards is shown in Table 1. Seventy percent of the study respondents were in the age group 15 - 34 years. There were approximately an equal number of females (48.1%) and males (51.9%) in the sample.



Table 2: Percentage distribution of 4126 subjects aged 15 years and over studied in Dar es Salaam 1995 according to marital Status

Marital Status	N	(%)
Single (Never Married)	1669	(40.5)
Married Monogamous	1993	(48.3)
Married Polygamous	120	(2.9)
Divorced/Separated	235	(5.7)
Widow/Widower	109	(2.6)
Total	4126	(100.0)

Table 2 shows percentage distribution of the study population according to their marital status. Persons who were married/monogamous constituted the highest proportion (48.3%). Widow/Widowers constituted 2.6% of the study population. However, 41% of adults studied were single.

The study areas were classified into socio-economic and demographic characteristics using qualitative household profiles (Based on Adult morbidity and Mortality project annual census 1992-1995). Two relatively homogeneous livelihood groups were generated from the cluster. The first

group consisted of those, households with high income living at Chang'ombe and Ilala Shaurimoyo areas. The Low income group included people living in Keko, Ilala, Mtoni, Mtoni Relini, Mtoni Saba Saba and Keko Toroli, part of Chang'ombe and Ilala-Shaurimoyo.

Regarding relation to the level of income, (62%) of the study subjects were from low income areas Table 3 . This grouping is not boundary-proof as there is overlap between the wards. The criteria, definition and classification of study areas according to the level of income are based on the AMMP census reports done twice yearly from 1992 till the time of study.

Table 3: Percentage distribution of 4126 subjects aged 15 years and over studied in Dar es Salaam, 1995 by level of income

Level Income	N	(%)
High	1576	(38.2)
Low	2550	(61.8)
Total	4126	(100.0)

Table 4: Percentage distribution of 4126 subjects aged 15 years and over studied in Dar es Salaam 1995 .  
by level of Education

Level of Education	N	(%)
None	440	(10.7)
Primary	2658	(64.4)
Secondary and above	1028	(24.9)
Total	4126	(100.0)

Table 4 shows the distribution of the interviewees by level of education. The majority (64%) of the study population had attained primary education level. Twenty five percent had secondary education and above. Of the adults studied 11% were illiterate (none).



Table 5: Socio-demographic characteristics with perceived disability among 1107 subjects aged 15 years and over studied in Dar es Salaam 1995

	Characteristics	N	(%)
1	Age in (years)		
	(i) Mean 38.6		
	(ii) 15 - 35	519	(46.9)
	(iii) > 35	588	(53.1)
2	Marital status		
	(i) Single	305	(27.6)
	(ii) Married (Mono)	593	(53.5)
	(iii) Married (Polygamous)	44	(3.9)
	(iv) Separated	11	(1.0)
	(v) Divorced	85	(7.7)
	(vi) Widow/Widowers	69	(6.3)
3	Education		
	(i) None	216	(19.5)
	(ii) Primary	586	(52.8)
	(iii) Secondary & above	305	(27.5)
4	Household size		
	(i) Less than 5	838	(75.7)
	(ii) More than 5	269	(24.3)
5	Residence		
	(i) Chang'ombe	168	(15.2)
	(ii) Mtoni sabasaba	251	(22.6)
	(iii) Keko Toroli	133	(12.0)
	(iv) Ilala Ilala	158	(14.3)
	(v) Ilala Shaurimoyo	100	(9.0)
	(vi) Mtoni Relini	100	(9.0)
	(vii) Sabasaba	80	(7.3)
	(viii) Mtoni	117	(10.6)
6	Sex		
	(i) Male	634	(57.3)
	(ii) Female	473	(42.7)

N.B. Out of 4126 subjects interviewed only 1107 perceived or claimed to have disability (Table 5).

Table 5 shows demographic characteristics of persons with self-reported disability among the adults study population.

The mean age of studied subjects with perceived disability was 38.6 (years). Forty seven percent of interviewees perceived to have disability were aged 15 to 35 years, while 53.1 % were aged more than 35 years. Of the adults studied 53.5 % with perceived disability were married monogamous, while single were 27.5%.

Regarding marital status and type of marriages among adults studied with perceived disability (53.5%) were married monogamous subjects. They constituted the highest proportion.

The level of education was one of the factors looked at in relationship to perceived disability. From Table 5 (52.8%) of subjects with primary education perceived disability.

There were more males (57.3 %) than females (42.7 %) who perceived or reported disability . Regarding the household size, the households with less than five respondents 75.7% perceived themselves as having disability while more than 5 households were 24.3%.

### 3.3 Prevalence of Self Perceived Morbidity (Acute or Chronic ill-health and Disability)

It was not easy to have or to follow international classification of diseases in this present morbidity survey due to several inconsistencies of data findings and design of survey. However, in this study before analysis, self perceived symptoms/diseases/conditions were grouped into two major groups, namely communicable and non-communicable, with codes number 01 and 02 respectively while others like injuries, burns and accidents were given code 03. The three major groups were divided into sub-groups, prompted and unprompted symptoms/conditions/diseases. Communicable diseases or conditions had more subjective claims compared to non-communicable ones.

The possible conditions/diseases/symptoms developed by the household members and the hypothetical ones were so many and varied that it became necessary to categorize them into 35 groups (Appendix 10) of related diseases/conditions/symptoms.

Since the respondents gave information about signs and symptoms which were not based on standardized procedures it was not possible to follow the international classification of diseases. For example, all diseases producing fever as



their main symptoms were placed in one group, those producing predominantly gastrointestinal symptoms, in another, and so on. Diseases like asthma, cancer, epilepsy, leprosy, sickle cell diseases etc. which seemed well known to those interviewed were given the same names. Diseases/conditions producing ill defined symptoms were placed in one category.

The most recent perceived top ten acute ill-health conditions among the study population for the last two weeks are shown in Table 6. A total 33.5% (1384/4126) reported acute ill-health in the last two weeks prior to the study. Fever, generalized abdominal pain, headache, pain and numbness of upper and lower limbs; heart problems and musculo-skeletal/problems with a prevalence of 10%, 3.5%, 3.1%, 1.9% and 1.4% respectively were the mostly frequently reported health problems.

Table 6: Percentage distribution of perceived top ten acute ill-health during the last two weeks prior to study among 4126 subjects aged 15 years and over studied in Dar es Salaam 1995

	Symptoms / Diseases / Conditions	N	(%)
1	Fevers (Intermittent, constant, high and low grade, occasional headache, chills, Nausea, vomiting, joints pains, dizziness and coma.	418	(10.2)
2	Generalized abdominal pain, site not stated, abdominal fullness / distension and vomiting	142	(3.5)
3	Headache only	125	(3.1)
4	Pain and numbness of legs, feet or upper limbs (suggestive for polyneuropathy, swelling of lower limbs + face	80	(1.9)
5	All heart problems (hypertension, breathlessness only at rest, or orthopones on light exertion, heart palpitation and stroke)	79	(1.9)
6	Musclo-skeletal problems, paralysis, back pain, neck pain or "Waist pain" only	58	(1.4)
7	Eye problems of any kind	55	(1.3)
8	Diarrhoea disease dysentery/+ Blood or mucus, abdominal pain and vomiting	48	(1.2)
9	All surgical problems (abscess, acute appendices etc)	40	(0.9)
10	Chest pain only including retrosternal pain, rib, pleural pain, worse on breathing, pleural effusion	35	(0.9)
11	Other symptoms / conditions / diseases	304	(7.4)
12	None (Did not perceive acute illness)	2742	(66.5)
	Total	4126	100.0

N.B: Information in the table only refers to the first perceived health problem.

The self perceived chronic ailments among the study population (prompted) are shown in Table 7. The table shows the different patterns of chronic ill-health. Hypertension (7.4%) and infertility in female (4.9%) persons were the most reported health problems. Of those studied (61.5%) did not have any chronic diseases/symptoms/conditions. The overall prevalence of self perceived chronic diseases/conditions was 38.5%



Table 7: Percentage distribution of self perceived chronic conditions, diseases among 4126 subjects aged 15 years and over studied in Dar es Salaam 1995

Conditions/Diseases/Symptoms	Number with Ill-health N	Total (%)
Diabetes	27	(0.7)
Hypertension	305	(7.4)
Epilepsy	13	(0.3)
Cancer	6	(0.2)
Stroke	12	(0.3)
Asthma	63	(1.6)
Tuberculosis	35	(0.8)
Sickle Cell disease	43	(1.1)
Other Health Problems	91	(2.2)
For Female only Infertility	203	(4.9)
Problems of Menses	190	(4.6)
Other Conditions/Symptoms	600	(14.4)
None (Did not perceive chronic ill-health)	2538	(61.5)
<b>Total</b>	<b>4126</b>	<b>(100.0)</b>

The proportion of persons with perceived ailments obtained by prompted symptoms is shown in Table 8. Fever(23.6%), cough (6.7%), diarrhoea (5.5%) and palpitations (5.3%) were the most frequently perceived prompted symptoms among the studied adults.

Table 8: Percentages distribution of perceived ill-health conditions/diseases (prompted symptoms) among 4126 subjects aged 15 years and over studied in Dar es Salaam 1995

Symptoms/Conditions Diseases	N u m b e r	
	Reported Ill-health N	(%)
Fever	974	(23.6)
Productive Cough	279	(6.7)
Breathlessness	79	(1.8)
Palpitations	219	(5.3)
Diarrhoea	226	(5.5)
Blood in Urine	81	(1.9)
Weight Loss	141	(3.4)
Pain while Urinating	39	(0.9)
Wanting to Urinate but difficult in doing so	29	(0.7)
Skin Problems	203	(4.9)
Thirst, drinking much water, Urinating frequencies	92	(2.3)
Discharge from Privately/Genital Parts	14	(0.3)
Accident/Injury	54	(1.3)
Urinating Frequently	64	(1.6)
None (Did not perceive symptoms prompted)	1632	(40.0)
Total	4126	(100.0)

Regarding disabilities, ear/nose/throat (E.N.T) ill-health problems, back pain and lower limbs disability were the commonly reported conditions. There was higher proportion of disabled females (38.9%) than males (61.1%) Table 9. Of those studied subjects 11.2% reported eye disability ,while 6.6% reported back pain disability . Speech disability were 0.9% disabled individuals.Of those interviewed 70.8% did not report any disability.



Table 9: Distribution of subjects aged 15 years and over studied in Dar es Salaam 1995 by sex and type of disability.

Disability	Sex					
	Male		Female		Total (%)	
	N	(%)	N	(%)	N	(%)
1 Eyes	202	(43.7)	260	(56.2)	462	(11.2)
2 Ears	53	(38.4)	85	(61.6)	138	(3.3)
3 Arms, Hands	60	(42.6)	81	(57.4)	141	(3.4)
4 Legs	41	(26.8)	112	(73.2)	153	(3.7)
5 Speech	22	(57.9)	16	(42.1)	38	(0.9)
6 Back Pain	112	(40.9)	162	(59.1)	274	(6.6)
7 Did not perceive disability	1115	(38.2)	1805	(61.8)	2920	(70.8)
Total	1605	(38.9)	2521	(61.1)	4126	(100.0)

The distribution of first and most recent type of health services utilized by interviewees who reported ill-health during the last two weeks prior study is shown in Table 10. Sixty percent of the sick people preferred modern health services, while self treatment (24.7%) and 1.3% consulted traditional healers and primary health care workers 0.6% consulted. Nonetheless, 13% did not consult any health facility.

Table 10: Percentage distribution of sick household members among 4126 subjects aged 15 years and over studied in Dar es Salaam 1995 by most recent source of available health services utilized by those who reported illness

Health Service	Sex				Total	
	(N)	Male (%)	Female (N)	Female (%)	(N)	(%)
Modern (Allopathic)	361	(43.3)	473	(56.7)	834	(60.2)
Self Treatment	155	(45.3)	187	(54.7)	342	(24.7)
Traditional (Healers)	8	(42.2)	11	(57.9)	19	(1.3)
Primary health care	1	(20.0)	4	(80.0)	5	(0.6)
Worker (PHCW'S) Did not use health Facility	80	(43.5)	104	(56.5)	184	(13.2)
Total	605	(43.7)	779	(56.0)	1384	(100.0)

The reasons or options for choosing particular government health services among those who perceived ill-health conditions (n=1384) in last two weeks prior the study are shown in Table 11. Reasons for not utilizing government health services were generally negative responses (reasons which reflect poor health care services); for example 14 % of interviewees gave the reasons that government health care

services have no drugs. Moreover 5.7% reported poor performance, 5.5% too far, 2.5% previous treatment failed and 4.7% too expensive. However, 7% of respondents interviewed gave positive reasons that treatment known 7% and 10.8% that the perceived ill-health conditions were mild did not need any care.



Table 11. Reasons for utilizing and not utilizing of government health services reported among 1384 subjects aged 15 years and over studied in Dar es Salaam 1995, who perceived ill-health according to sex.

Characteristics	Sex				Total Surveyed	
	Male		Female		N	(%)
	N	(%)	N	(%)		
(i) Positive Characteristics						
Treatment Known	50	(51.1)	48	(48.9)	98	(7.0)
Mild Ill-health	80	(53.4)	70	(46.6)	150	(10.8)
(ii) Negative Characteristics						
Bribes	3	(42.8)	4	(57.2)	7	(0.5)
Previous treatment failed	17	(48.6)	18	(51.4)	35	(2.5)
No drugs	102	(52.5)	92	(47.5)	194	(14.0)
Poor performance	40	(51.2)	38	(48.8)	78	(5.7)
Bad language	8	(42.2)	11	(57.8)	19	(1.4)
Long waiting Time	24	(51.1)	23	(48.9)	47	(3.4)
Too far	43	(56.6)	33	(43.4)	76	(5.5)
User charges	26	(48.1)	28	(51.9)	54	(3.9)
Too expensive	37	(59.9)	28	(43.1)	65	(4.7)
Other reasons	75	(54.7)	62	(45.3)	137	(9.8)
No reasons stated	243	(57.5)	181	(42.5)	424	(30.6)
All	748	(54.1)	636	(45.9)	1384	(100.0)

Table 12 shows reasons for choosing particular health care service among adult subjects studied who perceived ill-health. Sixty four percent of respondents sought modern health service, while 1.4% consulted traditional healers with the reason that traditional healers you use less time and 24.8% performed self treatment with a reason that the perceived ill-health conditions were mild illnesses. However, 9% did not use any health care services. The overall reason given by the majority of respondents (18.3%) who perceived ill- health conditions were mild and did not need any care.

Table 12. Reasons for choosing particular health care facility among 1384 subjects aged 15 years and over studied in Dar es Salaam 1995 who perceived ill-health

Reasons	Modern		Traditional		Self Treatment		Primary Health Care Workers		None		Total	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Referred	59	(98.4)	1	1.6)							60	(4.4)
Cheap treatment	29	(43.3)	2	(2.9)	36	(53.7)					67	(4.9)
Near distance	182	(77.8)	1	(0.4)	48	(20.5)	1	(0.4)	2	(0.8)	234	(17.0)
Mild illness	45	(17.8)	2	(0.8)	159	(62.8)	2	(0.8)	45	(17.8)	253	(18.3)
Treatment known	75	(65.2)	3	(2.6)	36	(31.3)			1	(0.9)	115	(8.4)
Short waiting time	8	(72.7)	1	(9.1)	1	(9.1)			1	(9.1)	11	(0.8)
Medicine available	77	(81.2)	4	(4.2)	14	(14.7)					95	(6.9)
Relative working there	81	(94.2)	4	(4.6)	1	(1.2)					86	(6.2)
Trust in treatment	127	(93.4)	1	(0.7)	6	(4.4)	2	(1.5)			136	(9.8)
Last treatment failed	137	(92.6)			6	(4.1)	4	(2.7)	1	(0.6)	148	(10.7)
Investigation available	21	(65.6)			11	(34.4)					32	(2.3)
Other Reasons	47	(31.9)			25	(17.0)	1	(0.7)	74	(50.3)	147	(10.6)
All	888	(64.1)	19	(1.4)	343	(24.8)	10	(0.7)	124	(8.9)	1384	(100.0)

N.B: Information in the table only refers to the first self-perceived ill-health.



A list of the top ten groups of diseases /conditions according to the description of household members was then compiled and compared with that of Tanzania most frequent causes of outpatients attendance and most common morbidity in Dar es Salaam (Table 13). The most common perceived ill-health by studied subjects was fever 30.2%, while the commonest ill-health condition reported among outpatients was malaria which was 13% of all attendances ( Mwaluko et al., 1992).

Table 13: Comparison of the top ten diseases/conditions/symptoms for Tanzania and Dar es Salaam study data for the last two weeks in 1995

Tanzania Out patient attendances common ill-health reported	Overall Total (%)	Dar es salaam Study Areas Ill-health conditions perceived by subjects	N	(%)
1. Malaria	12.9	All fevers (Intermittent, Constant, High and Low Grade Occasional + Headache. Chills, Nausea, Vomiting Joints Pains, Dizziness and Coma	418	(30.2)
2. Symptoms and ill defined conditions	8.1	Generalized abdominal pain, site not stated, abdominal fullness distension and vomiting	142	(10.3)
3. Gastro-enteritis diseases	6.8	Headache only	125	(9.1)
4. Liver diseases	6.4	Pain and numbness of legs feet or upper limbs (suggestive Polyneuropathy + swelling of lower Limb + Face	80	(5.8)
5. Other diseases of the digestive	6.4	All heart problems (hypertension, breathlessness only at rest, or orthopnoea, light exertion heart palpitation, stroke)	79	(5.7)
6. Other diseases for the respiratory system	6.7	Muscle skeletal problems paralysis, back pain, neck pains or waits pain only	58	(4.2)
7. Nutritional deficiencies	5.3	Eye problems and any kind (/+ blindness)	55	(4.0)
8. Accidents, Poisoning and Violence	4.8	Diarrhoea diseases and dysentery +/- Blood or mucus, abdominal	48	(3.5)
9. Bronchitis	4.4	All surgical problems (abscess, hernia hydrocele)	40	(2.9)
10. Pneumonia	3.6	Chest pain only (including retrosternal pain, rib pain pleural pains, rib pain pleural pain, worse on breathing, pleural effusion	35	(2.5)
11. Other symptoms	34.6	Other Symptoms/Conditions	304	(21.9)
All Symptoms/Conditions/Diseases			1384	(100.0)

### 3.4 Relationship of Between Perceived Ill-health and Socio-Demographic Characteristics

Table 14 shows the age specific prevalence of ill-health. The table shows that there is an increase of ill-health perception with age from 15 to 65 and above years. However, in age groups 44 to 64 and 65 and above years, the perception is higher. There were approximately an equal prevalence of ill-health perception between 15 to 24 and 25 to 34 year age groups. The difference in perception between age groups was statistically significant ( $p < 0.05$ ).



Table 14: Age specific prevalence of ill-health among 4126 study subjects aged 15 years and over studied in Dar es Salaam 1995

Age Groups	Total Surveyed N	With Ill-health	Percent Prevalence (%)
15 - 24	1513	460	(30.4)
25 - 34	1261	385	(30.5)
35 - 44	690	238	(34.5)
44 - 64	564	242	(42.4)
65 and above	98	59	(60.2)
All ages	4126	1384	33.5

Chi-square 68.9, df. = 4,  $p < 0.001$

In Table 15 marital status and type of marriages was categorized. The first category comprises those who were single (29%), married monogamous (35%), those married polygamous (54%), those who were divorced or separated (40.4%) and lastly those who were widows or widowers (48%). The results show that persons who were married polygamous had the highest prevalence of ill-health conditions perception among the categories of marital status. The difference was statistically significant ( $P < 0.05$ ).

Table 15: Prevalence of ill-health according to marital status (unprompted symptoms/disease/conditions) among 4126 subjects aged 15 years and over studied in Dar es Salaam 1995

Marital Status	Total No. Subjects Interviewed N	No with ill-health	Percents Prevalence (%)
Single (Not married)	1669	485	(29.1)
Married monogamous	1993	687	(34.5)
Married polygamous	120	65	(54.2)
Divorced/Separated	235	95	(40.4)
Widow/Widowers	109	52	(47.7)
ALL	4126	1384	(33.5)

Chi-square 53.53, df. = 4,  $P < 0.001$

Table 16 shows self-perceived ill-health (conditions/diseases/symptoms) according to sex. As shown in Table 16 a prevalence of self-perceived morbidity is higher among females (38.1%) than among males (29.3%). The difference between proportions was statistically significant ( $P < 0.05$ ).

Table 16: Prevalence of ill-health according to sex among 4126 subjects aged 15 years and over studied in Dar es Salaam 1995

Sex	Total No. Interviewed N	No. with Ill-health N	Prevalence (%)
Male	2142	628	(29.3)
Female	1984	756	(38.1)
All Sexes	4126	1384	(33.5)

Chi-square 35.67, df. = 1,  $P < 0.001$

The study population in eight wards was categorized in the two major socio-economic and demographic variables. Two relatively homogenous livelihood groups were generated by the cluster analysis. The first included the study areas of Chang'ombe and Ilala Shaurimoyo (high income) and the second included Mtoni Saba Saba, Keko, Toroli, Relini and Mtoni low income areas (Classification based on AMMP census 1992-1995).

Table 17 shows the prevalence of perceived ill-health according to their level of income. The majority (40%) of high income individuals perceived ill-health conditions, whilst 30% of the low income individuals claimed to have ill-health conditions. Although the majority of the study population were from low income groups, the difference in perception of ill-health according to levels of income was not statistically significant ( $P > 0.05$ ).



Table 17: Prevalence of perceived ill-health according to level of income of subjects aged 15 years and over studied in Dar es Salaam 1995

Levels of Income	Total Number Interviewed N	Number with Ill-Health N	(%)
High	1576	630	(39.9)
Low	2550	754	(29.5)
All levels	4126	1384	(33.5)

Chi-square 47.52, df. = 1,  $p < 0.001$

The level of education was also categorized into those who never had any formal education (none) those who had either attained adult literacy education or primary education and those who had secondary education or above (Table 18). The prevalence of ill-health perception was found to be higher in persons without education (47%) than in person with other levels of education categories. The differences are statistically significant ( $p < 0.05$ ).

Table 18: Prevalence of ill-health by education status of subjects aged 15 years and over studied in Dar es Salaam 1995 (unprompted symptoms/conditions/diseases)

Level of Education	Total No. Interviewed N	Total No. with Ill-health N	Percent Prevalence (%)
None	440	205	(46.6)
Primary	2658	890	(33.5)
Secondary and above	1028	289	(28.7)
All	4126	1384	(33.5)

Chi-square 47.52, df. = 1, P<0.001

Table 19. Ill-Health distribution of 4126 subjects aged 15 years and over studied in Dar es Salaam 1995 by ethnicity

Ethnic Group	Total Number Interviewed	Number with Ill-Health	percent prevalence (%)
	N	N	
Tanzanians	4097	1378	(33.6)
Asians	17	3	(17.7)
Arabs	12	3	(25.0)
All	4126	1384	(33.5)

Chi-square 2.34, df. = 2, p = 0.3107

Regarding ethnicity (Table 19), the prevalence of ill-health perception was found to be lowest among Asians (17.7%) and highest among Tanzanians (33.6 %). However, the difference was not statistically significant ( $p > 0.05$ ).



### 3.5 Multivariate Analysis

Multivariate Logistic regression model was done using data from interviews of respondents aged fifteen years and more. Ill-health perceived in the last two weeks before the time of interview was used as the dependent variable. Independent variables that were used were those that had been found to influence the self-perceived ill-health conditions/diseases/symptoms from this present study. Therefore, demographic characteristics such as age, sex, household size, number of years of formal education and marital status were included in the model.

During analysis the following reference groups were used:  
1= Age group 15 - 34 years, 2 = Male , 3 = Household size >5 subjects, 4 = Single marital status and 5 = No formal education (Table 20).

Table 20: Variables for Stepwise Multiple Logistic  
Regression

Description	Specification
Self perceived morbidity	0 = ill 1 = not ill
Household size	0 < 5 1 > 5
Level of education	1=None 2=primary 3=secondary and above
Sex of respondents	0= Male 1= Female
Marital status	1=Single 2= Married Polygamous/Monogamous 3= Others Separated/Divorced Widow/Widowed
Age of respondents	1 = 15-34 2 = 35-60 3 = 61 and above

Logistic estimates of the probability of the perceived ill-health in the last two weeks at the time of interview were estimated together (Table 21).

Table 21: Multivariate logistic regression results of respondents aged fifteen years and above showing factors associated with self-perceived morbidity after adjusting for all variables

Variables	Odds Ratio	P-Value
CONSTANT	-	< 0.0001
AGE		
35-60	1.5	< 0.0001
61 and above	2.2	< 0.0001
SEX <sup>2</sup>		
Female	1.4	< 0.0001
HOUSEHOLD SIZE <sup>3</sup>		
>5	1.3	< 0.0019
MARITAL STATUS <sup>4</sup>		
Married	1.8	< 0.0341
other = separated/ divorced		
window/windowed	1.2	< 0.1249
EDUCATION <sup>5</sup>	0.9	< 0.2501
Primary		
Secondary and above	0.7	< 0.0025

Information in the table only refers to 4126 respondents used in the analysis.

After having separately considered each the above variables only sex, age, household size, education and marital status were found to have an influence on self-perceived morbidity.



Therefore it was appropriate to find out whether or not, when all the significant factors were taken into account, each of them would be independently associated with perceived morbidity. In other words, does age have an effect on perceived morbidity after adjusting for the effects of, marital status or does household size have an effects on perceived morbidity after adjusting for the effects of other variables?

Age group 35 to 60 years old were found to be more likely to perceive ill-health compared to 15 to 34 years age group, after adjusting for other variables ( $P < 0.0001$ ).

Those households with more than five respondents were found to be more likely to perceive ill-health conditions/diseases /symptoms compared to those with five or less individuals even after adjusting for other variables ( $p < 0.0019$ ).

Those single respondents were most likely to perceive ill-health compared to married, separated/divorced, widow/widowers even after adjusting for other variables ( $p < 0.0341$ ,  $P = 0.1249$  respectively), Widow/widowers were less likely to perceive illness compared to single individuals.

Education of respondents had an effect on self perceived morbidity. Of those, with primary and secondary school and above education were found more likely to perceive ill-health compared to those with none, even after adjusting for other variables ( $p < 0.0025$ ).

## CHAPTER FOUR

## 4.0 DISCUSSION

## 4.1 General Discussion

Ill-health is widely recognized as a major public health problem in sub-Saharan Africa. However, the exact magnitude of the problem and how it compares with that in the rest of the developing world is not generally known (Murray et al., 1994).

Previous studies by the World Health Organization in 1994 conclude that most developing countries like Tanzania do not have enough information regarding community morbidity because the health facility data used are not adequate to address this problem (Carlson et al., 1975). Moreover, the level of morbidity and its implications of ill-health for households and communities in such countries have not been well addressed.

Health facilities attendance rates have been used extensively in the past to assess the overall total morbidity, but it is not known whether these data have straight forward relationships with the extent of the health problems perceived by the community. There is a shift from curative approach to disease prevention. Moreover, control of ill-health conditions/symptoms has



important than treatment as it has become apparent that health facilities morbidity data are inadequate to give the workload of health problems in the community.

In order to have more precise estimates of the level of ill-health prevalence we need to know what proportion of ill-health is actually self-perceived. In the present study this proportion was estimated in order to serve the purpose.

As assumed, this study has found out that the prevalence of ill-health is higher among the females than among the males, males (38%) and females (29%).

These findings seem to complement those by Van Etten (1972) in one village of 131 households, whereby the self perceived morbidity was 33.1%. The difference between this and Van Etten's study is that the latter used a recall period of one year, hence recall bias may have affected the results. However, since the results are similar it means that recall bias was negligible.

This study indicates that in Dar es-Salaam adult morbidity is a common public health problem. Indeed, the level of adult population morbidity estimated previously based on hospital data may be an underestimation of the actual

morbidity load in the community. This study has shown that in Dar es Salaam the top ten causes of outpatient attendances do not resemble the groups of diseases identified in the community.

The author assumes that the difference in disease patterns between males and females reflects a true difference in the magnitude of health problems. Gijsbers Van Wilk et al., (1992) in their study cited that there is a difference in morbidity perception between males and females. In their study they found that the prevalence of ill-health was 9.5% among the females and 7.1% among the males. This sex difference in ill-health showed its highest value in the age group 15 to 44 years with male/female sex ratio of 1.67 with a further decline in the age of 60 and above.

The findings of this study contrast greatly with other studies based on hospital data. Hospital based findings are questionable on methodological grounds, in that there is selection of persons in the community, whereby only a subgroup will reach the health facilities. Another hospital based study conducted by Thelin , (1978 to 1983) to determine the level of ill-health among Swedish farmers showed that the difference in sex was due to difference in life style factors.



The rates of sickness according to age and sex were significantly different ( $P < 0.05$ ). Not surprisingly, the age in both sexes was the main determinants of self-perceived morbidity. The highest prevalence self-perceived ill-health was noted in age group 65 years which emphasized that adults above 65 years are more prone to diseases. The possible explanation for the relatively high morbidity in females may be that females seek medical care fast whenever perceive ill-health and perhaps at earlier stages of diseases and that the same diseases will have a less lethal course in women than in men (Gijsbers Van Wijk et al., 1991, Nathason, 1978 and Ofosu-Amaah, 1991).

Marital status and type of marriage were found to influence the self-perceived morbidity. The findings of this study are the same as those found by Mhalu et al.; (1988) in a community based survey.

In this study married polygamous constituted a higher proportion 54.2% compared to other groups.

This study enquired about the educational status of each of the individuals who had developed ill-health as well as that of the head of the household in which the sick individuals lived. It is not known how much education would influence the prevalence of reported ill-health conditions.



In Tanzania the level of literacy is the highest among other developing countries in Africa. It is however, not clear how much this achievement has contributed to the findings in this study. A large majority of highest number of interviewed subjects completed ordinary level or primary school education. In the present study the interviewed subjects with no education perceived the highest percentage of ill-health (46.6%). The same findings were obtained by Rawal et al., 1994 unpublished in which they found out that illiteracy was related to illnesses perception.

#### **4.2 Unprompted or Prompted Symptoms/conditions (Acute Morbidity)**

There are many ways in which the top ten conditions perceived by community differ from the main causes for outpatient hospital attendances. Later the common reported conditions were all fevers (10%) and generalized abdominal pain, site not stated, abdominal fullness, distension and vomiting (3.5%). However, malaria (13%) and symptoms and ill defined conditions (8%) these form the main hospital outpatient attendances. This can be explained by the fact that most fevers are self treated at home and that they are probably not reported to health facilities.

The proportions of self-perceived ill-health accounted among unprompted and prompted symptoms/conditions were

computed for each group separately. Communicable diseases contributed 15.7% and non-communicable disease/conditions 17.8% and others accident including burns, fractures and poisoning conditions contributed 0.2%. However, there are other conditions which contributed 66.3% out of all studied subjects who perceived ill-health (Appendix 15).

The results have shown that 10% of the household members who developed illness during the two weeks period before the interview perceived to have fever. This finding is in great contrast to that of national finding (out patient attendances) where the main common reported health problem was malaria 13% (Mwaluko et al., 1992).

In this study generalized abdominal pain (3.5%) and headache (3.1%) were found to rank second and third in the list of the top ten self-perceived conditions among adults.

Headache (3.1%) was perceived to be a major public health problem. The causes were not identified, but, could have been due to stress, depression, organic process, cardiac lesions and malaria. Almost similar findings were found in a study by Swai and McLarty in six villages in rural Tanzania where the prevalence of headache ranged from 2.7% to 6.1%. The difference between these two studies is that the present study was done in urban settings and the latter



in rural areas with different population structure, health needs, economic status, level of education, accessibility and adequate health services etc which may have contributed to these differences. In order to conceptualize and operationalize headache as one among the public health problems more data and details are required.

Pain and numbness of upper and lower limbs were frequently reported ill-health conditions with a prevalence of 1.9%. The need to specify group of heart diseases arises because of the heterogeneity. In this study all heart problems were found to be fifth in the list of top ten conditions with a prevalence of 1.9% out of all reported ill-health. The findings of this study are different from those found by Swai and McLarty in which it was found that the prevalence of reported heart problems was 14.6%. The difference between these two studies is that this study was conducted in urban settings probably with many factors associated with risk of heart problems while the preceding study was done in rural areas where such factors are non-existent. However, there is no evidence that health service provision for people with cardiac lesions has improved in different tiers of health care facilities in Dar es Salaam.

In the top ten conditions list, eye diseases/problems have shown a high prevalence among the reported ill-health with



a prevalence of 1.3%. This finding is different compared to results of two studies by Pedersen and Kolstrup (1986) and one in a trachoma endemic area in central Tanzania (Anon, 1985) that gave a prevalence of 8.8% and 1.6% respectively. The reasons for such low prevalence found in this study can be explained as increased provision of health care for eye problems/diseases in Tanzania, and probably the majority adults studied perceived eye problems/diseases as not a public health problems.

Diarrhoea diseases in this study were found with prevalence of 1.2%. Other findings by Mhalu et al., (1984) indicate that the prevalence of diarrhoea ranged from 1.4 to 31.9%. Despite the similarities, differences exist. The differences between these two studies may be due to the fact that the preceding study was conducted during epidemics, while this study was done when there was no epidemic at all.

In this survey surgical problems were posed among the top ten conditions with a prevalence 0.9%. Many surgical problems are common in the community and are less problematic in their latent stages, hence they are less perceived by the community as health problems.

Chest pains were also perceived by the community with a prevalence of 0.8%. Possible explanation for this may be due to the fact that the population studied is living in urban areas, densely populated areas with poor shelters which predispose to acute respiratory tract infections.

Findings on prompted conditions indicate that fever was perceived with a prevalence of 23.6% while for unprompted conditions it was perceived with a prevalence of 10.2%. One explanation for the difference could be that fever is considered an indication of being unwell, not a reflection of raised body temperature.

In this study diseases with social stigma character were under-reported among the adults studied for instance discharge from private parts (genital) showed a prevalence of 0.3% .

#### **4.3 Chronic Conditions/Diseases/Symptoms**

The pattern of chronic diseases in a population can be determined by the population age structure, where most chronic diseases risk increases roughly exponentially with age (Omran, 1988). Self-perceived hypertension had a prevalence of 7.4% among the studied subjects. In a study of blue collar office workers, an epidemiological survey conducted by Makene et al., (1982) found that the

prevalence of hypertension ranged from 30 to 40%. Findings by Swai and McLarty in six rural villages in Tanzania showed a range between 3% and 12.8%. This difference may be real or due to different study designs, living conditions, state of the subjects for instance whether they were on drug therapy during survey or not.

Infertility and problems of menses among studied subjects showed a prevalence of 4.9% among the reported ill-health conditions. This finding is in line with those by Kamuzora et al. (1992) in which they found that the prevalence of those conditions ranged from 6.6% to 6.9%, based on health facilities data.

The present community based study showed high prevalence of reported infertility ill-health condition among the female adults interviewed. This may be due to the fact that health problem not yet addressed as public health problem by Policy Makers and other knowledgeable people to this subject ,hence no proper interventions established.

On other hand less perceived chronic health problem at community level like Cancer and stroke showed a low prevalence of 0.2% and 0.3% respectively among the reported ill-health conditions.



#### 4.4 Utilization of Health Care Facilities

The number of attributable cases per head of population reporting to a health facility gives a measure of the amount of morbidity potentially handled faced by the health services. Passive case detection within health services also provided potential outcome measures. However, people do not always use the health facility when they are sick therefore the number of cases at health facilities at different levels will always underestimate the total number of cases in the community.

The argument that patients make unnecessary or frivolous use of services assume that people can always tell whether use is necessary or not. A wide variety of health care options exists in Tanzania. The analysis of specific series of illness episodes showed that the majority of cases obtained treatment from different medical systems for a single episode.

In urban Dar es Salaam due to a complex pluralistic medical settings the system provides a wide variety of health care alternatives like indigenous (home based), traditional and cosmopolitan nature.

In the present study no significant difference was seen between sexes on health care utilization. The results have shown that approximately 60.2% of the household members who developed illness during the two weeks before the interview sought health care from modern medical services, whilst 24.7% of subjects resorted to treatment with drugs and herbs from pharmacy shops and 1.3% consulted traditional healers. This finding is different from other studies elsewhere where the majority of those interviewed, would prefer to consult traditional healers rather than modern health services. In Ethiopia, of those interviewed 45.6% consulted traditional healers, 32.8% consulted modern medical services (Killewo et al., 1985).

The difference between the present study and the Ethiopian one is that while this study dealt with people who had developed diseases during the preceding two weeks, the Ethiopian study interviewed individuals who had developed diseases in the preceding one year. The present study 13.2% of studied subjects did not consult any source of cares.

The present study found that self perceived ill-health has had an influence on selection of health facilities (government/private) and noted that there was difference in selection of health services between sexes. Of those



interviewed 11.1% said that they liked a particular facility because they have trust in the treatment provided. However, 17.2% preferred particular facility which is near their homes.

This study enquired general opinions about the reasons for disliking utilization of government health services. Of those, interviewed 30.6 % had no reasons, while 43.7% gave reasons which reflects poorly on service. (former treatment failed(2.5%), no drugs (14%), poor performance (5.7%), bad language (1.4%), bribes (0.5%), long waiting time (3.3%), too far( 5.5%), user charges( 3.8%) and( 4.6%) too expensive . Approximately 17.8% of the respondents gave positive reasons like treatment known 7% and 10.8% the ill- health were mildness . A similar finding was obtained in the study by Mujinja et al., (UNICEF, 1990) in which they found that few drugs, bad language, former treatment failed, and mild illness health seeking behaviour factors were also responsible for poor utilization of government modern health services in Tanzania.

#### 4.5 Disability

The estimates of the prevalence of disability represent the disabilities caused by most diseases and injuries. In this study 6 groups of disabilities were addressed such as; the disability of the subject to see, hear, to use her/his



arms/hands/lower limbs, speak and defects of spinal cord resulting a disability.

While analysis of the data provides an overall picture of disability by socio-demographic characteristics we have to be critical concerning the reliability of the results. Most studies on disability or impairment have been general in nature, measuring moderate and severe disability in the population (Murray, 1994). Several studies plus the present one, although important in their own right, do not identify the causes of disability.

As is reported world wide only about one quarter of the total disabilities is due to communicable diseases as well as maternal and prenatal conditions while over 60% arise from non communicable diseases and the remaining 13% from injuries and poisoning (Murray and Lopez, 1994).

This study has found that more people who perceived disabilities are coming from low income areas. These findings are in line with those AMMP census 1992-1994 which found that more people with health problems come from those areas with low income.

The mean age of the study population who perceived disabilities was 38.6 years, which is in contrast to that

observed by Murray et al., (1994) the mean age was 45 and above years. This difference is probably due to different population structures in the two study population.

Education status was considered in relationship to perception of disabilities. This study has found that people little or no education are more likely to perceive disability but it is not clear how education had influenced the perception of disabilities.

#### **4.6 IMPLICATIONS OF SELF PERCEIVED MORBIDITY FOR HOUSEHOLDS AND COMMUNITIES.**

Ill-health conditions as perceived by individuals may have serious implications both on households as well as on the community at large. Implications of perceived morbidity on the household may be in terms of the current trend of economic rationalization that involves financial costs of the perceived morbidity incurred, both directly as a result of cost of care for the sick and indirectly from loss of income due to inability to work.

Since households are a family entity, it is natural to see an equitable distribution of the available resources in the household for health care. When an adult gets sick there is an immediate concern over possible losses in income and therefore all efforts are made to ensure quick recovery. At



that material time, health becomes a priority for the household. Well wishers take the time of the household unaware of the economic implications. Households attempt to cope with ill-health of individuals by shifting household labour away from health maintaining activities such as household hygiene, collecting water and breast feeding/ infant feeding.

The implications of ill-health are both social and economic. High levels of perceived morbidity among adults who constitute the working force of a household may have serious socio-economic implications for the household especially when the adult is the bread winner.

Perceived morbidity can also influence health seeking behaviour of individuals as was observed in this study. Perceived morbidity can lead to self treatment which in itself may result in delay to seek appropriate health care. The implications for this is that true ill-health conditions may lead to permanent disability or death both of which will have even more serious socio-economic implications on the household.

In this study, it was found that the prevalence of perceived morbidity among adults was 33.5%. This means that one third of the adult population (working force) was



feeling unhealthy. It is therefore conceivable that economic production at both household and community levels can be affected to the same degree if not more. Hence, there is potential economic loss at any one time caused by both medical and opportunity costs.

As for households, perceived morbidity has socio-cultural as well as socio-economic implications for communities. The socio-cultural implications include misery among healthy household members with ill relatives. These make up the community and if a high proportion of the adult population is feeling unhealthy then there is misery in the community. Under such conditions certain traditional activities may not take place. These include recreational activities such as ngomas, festivals and other social gatherings.

Perceived ill-health can sometimes have positive reinforcement to health seeking behaviour of communities by having an influence over what type of health care is selected by the majority. This is usually the result of constant interactions by members of the community who tend to share experiences when they visit one another as well wishers.

The economy of a community may also suffer when a high proportion of adult members are feeling unhealthy. Time

lost by community members visiting one another to see the sick in the homes or hospitals can be quite substantial and yet this is culturally essential. The situation is worsened if the member dies as the community is directly involved in bearing the funeral costs as well as the time to mourn.

Perceived ill-health by members of a community can also result in direct as well as indirect cost of treatment of community members especially when community services are utilised such as hospitals or other health units which are supported by the community. Production and development of a community can therefore be seriously affected if a large proportion of the community is feeling unhealthy.

#### **4.7 Health Policy Implications of perceived Ill-Health Findings**

The most obvious effects of ill-health is immediately subjective suffering of the person who becomes ill, injured or dies. Another aspect is the sympathetic grief of his or her family and friends. The reduction of these psychic costs is an important goal of all health policies.

In Tanzania there is lack of policy explicitly addressing the health problem of adults, except for those caused by tropical diseases for example Malaria and those associated with pregnancy. Hence, there is need to establish adult



health policy aiming at decreasing adult health problems as seen in this study around one third (33.5%) of studied adults perceived ill-health.

The findings from this study are expected to act as a source of information on the major health problems of the adults. Good health policy making depends on appropriate information source. However, it requires an understanding of the options available for tackling these problems and their full costs and benefits.

The policy implications of this study findings are perhaps most important for encouraging donor commitment to health programs which are based on the health of adult populations. However, much preparation is required to improve an effective policy which ensures sustainability. Since sustained and improved quality of care is critical to the success of such policies, the effort must be well prepared prior to implementation and then on going supervision is a necessity.

This study tried to identify the major self-perceived symptoms/conditions/diseases affecting adult age groups of the Dar es Salaam population, as a prerequisite for adult health policy development. The findings should be used as baseline data for planning. It is hoped too that the



results of this study should act as a stimulant to greater cooperation between groups who share similar goals in advancing the health of the nation, by expanding sources of health care, and eventually reducing avoidable and premature death in adults. Those involved in selective and vertical health programs may wish to use the data as one possible source of information in evaluating the effectiveness of those programs.

The policy implications of findings for the government or agencies mandated to improve the health of adults indicate that high priority should be given to supporting sustainable livelihood and that a multiple approach would contribute to this overall aim. A reduction of perceived morbidity might probably decrease mortality.

#### **4.8 Implications of Findings for Further Research**

The results of this study indicate the following areas of consideration for further research:

- (1) Verification of the characteristics of vulnerable groups identified here on a broader and statistically representative scale in Dar es Salaam.
- (2) Further work on the prevalence and repercussions of incapacitating ill-health among adults over time.
- (3) In-depth longitudinal household studies on the determinants of the household livelihood.

- (4) Further work on the efficacy of methods to identify ill-health conditions at household levels.

#### 4.9 Study Limitations

Having discussed the empirical results it would be reasonable to discuss the study's methodological shortcomings. In this study the two weeks recall period was used, so as to minimize the recall bias as duration was short to enable everyone to remember the events. Other studies' recall period is either one month or a year or more.

Another methodological problem which concerns self-perceived illness in this study is information bias.

People with existing perceived ill-health conditions might tend to report more illness episodes than other people.

Regarding this discussion, efforts to reduce biases were taken into account. In order to reduce random errors (improving precision) the sample size was large enough to meet the aimed precision. The biases also were reduced in this study by controlling inter and intra-observer variations by using the same observers for the entire study and common methodology used/common training of research assistants, random quality checks during the survey period



and was controlled by use of appropriate tools for data collection which provide the information required.

An ideal study to determine the prevalence of self-perceived morbidity should have a prospective design. With such a design not only can various forms of biases be controlled, but also the time sequence of events can be established and documented. This would enable inference of a causal nature to be drawn. A cross-sectional design conducted in this study. However, precludes such conclusions. Despite efforts used to reduce bias through multivariate analysis, logistic, regression, the absence of temporal information makes interpretation of some findings problematic.

There are a number of obstacles in implementing such a longitudinal design in big cities like Dar es Salaam. Experiences by the Adult Morbidity Mortality and Urban Health Projects on surveillance population indicate that there is a high turn over rate in the groups being studied. Some of the people earlier recruited into the program could not be contacted one year later, as it was noted that some of them had left their places of work. Such workers tend not to have permanent residences and when they leave their place of work, no forwarding address is given.



Prospective studies would therefore require a great deal of effort and resources to ensure a reasonable rate of follow-up.

Although this study had provided some baseline data information concerning peoples self perception on morbidities and source of available health care options at households and communities level, several constraints seems to have limited the findings (Appendix 4). This household survey conducted on self perceived morbidities cannot reveal underlying medical causes of morbidity, as medical diagnoses are not done, hence, it may be difficult to detect some perceived morbidities, illnesses not known by biomedicine (to the researcher) hence, tend to be neglected or underestimated.

Indeed, Kroeger (1983) stated that it is not the domain of health interview surveys to obtain prevalence figures, except for those which can be disclosed only by well addressed questions.

## CHAPTER FIVE

## 5.0 CONCLUSION AND RECOMMENDATION

## 5.1 Conclusion

Published data from many countries and population studies, suggest the possibility of cross-country differentials of self-perceived morbidity distribution and patterns, however, such comparison has been hampered by methodological and other differences (Murray et al., 1994). The findings from this study explored self-perceived morbidity level in a large population in an urban setting. The population considered in this study is well defined and internally relatively homogeneous. The sample size was large enough to give fairly accurate estimates of self-perceived ill-health of the studied population.

In conclusion the results obtained from this study have re-affirmed that adult population morbidity is a major public health problem which needed to be addressed. It appears from this study that people of Dar es Salaam can clearly define their self perceived common illnesses. However, their approach is extremely ectatic in their complex search for health care.

These findings call for comprehensive and theory based interventions regarding ill-health among adults in Tanzania.

In this study the total overall prevalence of self-perceived acute ill-health among the adults surveyed was 33.5%, whilst it was 38% among the females and 29% among the males. In the same study it was found out that there are a number of socio-demographic characteristics that were independently related to self-perceived ill-health conditions like age, sex, level of education, marital status and household size.

Despite the similarities of the top ten conditions reported to outpatient hospital attendance with the top ten conditions self-perceived by individuals in this study there are some differences, like those seen for fevers, generalized abdominal pain as major self-perceived symptoms in the community but one of the last conditions causing health facilities outpatient attendances. Of those studied 10% (unprompted) perceived fevers as the most common acute ill-health condition although the etiological and causes of fever were not established in this study.



The social stigma symptoms/conditions like blood in urine (1.9%) , discharge from private parts (sexually transmitted diseases) 0.3% , wanting to urinate but difficult in doing so (0.7%) and pain while urinating (0.9%) were less reported among surveyed subjects, among the prompted symptoms/conditions.

On prompting specific conditions/symptoms to the interviewees the majority (24%) perceived fever symptoms as the most common health problem.

The results from this study have shown that 60.2% of the household members who reported illnesses during the past two weeks before the interview sought health care from modern medical services, whereby 1.3% consulted traditional healers. Out of all studied subjects 7.4% perceived hypertension condition as major cause of ill-health among the chronic illnesses reported.

General opinions about disliking utilization of government health facilities were enquired from the studied subjects. Out of interviewed subjects 17.8% gave positive reasons (mild illness 10.8%; while treatment known 7%). However, of those studied who perceived ill-health 51.4% of respondents gave reasons which reflect poorly on services like (last treatment failed 2.5%, no drugs 14%, poor performance 5.6%,

bad language 1.4%, long waiting time 3.3%, too far 5.5%, user charges 3.9%, too expensive 4.7%) etc. However, 30.6% of studied subjects did not give any reasons for disliking government health facilities. Sex was seen a significant factor in the selection of health care utilization opinions.

The Multivariate analysis (stepwise logistic regression model) has shown that factors like marital status and type of marriage, age, sex, size of households and level of education to have significant relationship with ill-health conditions perceived by individuals ( $P < 0.05$ ).

Finally, the study has shown that a simple study design such as the cross-sectional method can be used to determine the level of community based illnesses, although other conditions/diseases can easily become masked or exaggerated depending on the methods of ascertainment as it has been demonstrated by this study. This study on the level of perceived morbidity has at least confirmed the widely held hypothesis that adults are suffering from many diseases/conditions which are not well addressed.



## 5.2 Recommendations

It is therefore recommended that whenever such studies are to be carried out a community based survey should be used. This study only determined a level of self perceived morbidity at community level and investigated possible policy implications of findings for households and communities in urban and peri-urban Dar es Salaam districts. In order to obtain more reliable findings for self perceived illnesses for comparison it is recommended that a similar study be carried out in the other urban and remote districts of this country where more problems of adults than those existing for districts in Dar es Salaam are anticipated.

The findings from this study should assist further research of prospective follow-up designs involving all the household members and should be undertaken in the study areas in order to validate the perceived symptoms by conducting medical diagnoses, whereby standardized techniques can be applied to measure relevant parameters of health.

The results outline in this study provide a new picture of the current health status of the Dar es Salaam adult population. Hence, it is recommended that during allocation of resources Policy Makers or Health Planners should take



into consideration the fact that self-perceived morbidity is very high among adults in general population and should cater for their health needs accordingly.

## REFERENCES

1. Abel-Smith B. and Rawal, P. Can the Poor Afford 'free' Health Services? A case study of Tanzania. **Health Policy and Planning**. 1992; 7: 329-341. e
2. Abrahamson, J.H. Making Sense of Association. **In: Survey Methods in Community Medicine**. 4th rev ed., Churchill Livingstone Endinburgh, London Melbourne and New York; 1990: 251-263. b
3. Abraham M.I. and David, E.L. Editors. **Morbidity Statistics In: Foundation of Epidemiology**. 2nd rev ed., New York, Oxford University Press, 1980: 133-218. b
4. Adult Morbidity and Mortality Project (AMMP): **Policy Implications of Adult Mortality and Morbidity**. Summary of Preliminary Report, Dar es Salaam 1993 December (unpub): 1-35. ec
5. Anonymous. Kongwa Primary Eye Care Report New York. **Hellen Keller International**, 1985: 1-20. b
6. Anonymous: Centers for Diseases Control. Annual summary: Reported Morbidity and Mortality in the united states. **In: Morbidity and Mortality Weekly Report (MMWR)**; 1986: 54: 1-35. e
7. Arthur, A. and Dayi, S. Is there a direct relation between decreased access to medical care and decreased health status?. **Medical care** August 1984; 22 (8):20-40. y
8. Belcher, D.W., Wurapa F., Neuman A., and Lourie, I.M. Comparison of Morbidity Interviews with a Health Examination Survey in Rural Africa, **Am J Trop Med and Hyg** 1976; 25 (5):751-58. g
9. Bradley D.T. Malaria. **In: Feachem R.G., Jamison, D.T. and Bos E.R. Editors. Changing Patterns of Diseases and Mortality in Sub Saharan Africa. In: Health and Mortality sub-Saharan Africa**. Oxford University Press, 1992: 190-202. b
10. Bonte, J. Patterns of Mortality and Morbidity. **In: Voges L.C. Editor. Health and diseases in Kenya**. Literature Bureau Nairobi; 1992:75-90. b



11. Castro, E.B. and Mokate K.M. Malaria and its Socio-Economic Meanings. The Study of Cunday in Colombia, In: Herrin, A.H. and Rosenfield, P.L. Editors. **Economic Health and Tropical Diseases**. Manila School of Economics, University of the Philippines; 1978:520-60. b
12. Catherine, K.R. Strategic Usage of Narrative in Presentation of Self and Illness(es): A Research Note. **Soc Sci Med** 1990; 30 (11): 1195-1200. g
13. Carlson, B.A. The Potential of National Household Survey Programs for Monitoring and Evaluating Primary Health Care in Developing countries. **Wld Hlth Stat Quart.** 1975; 38: 20-40. g
14. Chiduo, A.D. Hotuba ya Waziri wa Afya Kuhusu Makadirio ya Matumizi ya Fedha kwa Mwaka 1989/90, **Tanzania Ministry of Health**, Dar es Salaam. b
15. Chiduo, A. D. Health Services in Tanzania. Future Perspectives and Policy Options. In: Mwaluko. G.M.P., Kilama, W.L., Mandara, P.M., Murru, M., and Macpherson, C.N.L. editors. **Health and Diseases in Tanzania**. Harper Collins Academic, London and New York, 1991:296-308. b
16. Chum, H.J., Killewo, J.Z.J. and Van Cleef, M.R.A. Tuberculosis. In: Mwaluko, G.M.P., Kilama, W.L., Mandara, M.P., Murru, M. and Macpherson, C.N.L. Editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991:66-82. b
17. Feachem, R.G.A., Phillips M.A. and Bulatao, R.A. Introduction to Adult Health In: Murray, C.J.L., Over, M., and Phillips M.A. Editors. **The Health of Adults in Developing World**. New York, Oxford University Press for World Bank, 1992 April: 1-21. b
18. Feachem, R.G., Jamison, D.T. and Bos, E.R. Changing Patterns of Disease and Mortality in Sub-Saharan Africa. In: **Disease and Mortality in Sub-Saharan Africa**. New York, Oxford University, Press, for World Bank; 1991: 3-27. b
19. Gijsbers Van Wijk, C.M.T. and Wil J.H. Van Den Bosch. Symptoms, Sensitivity and Sex Difference in Physical Morbidity. **Women Health**, 1991; 17: 91-124 g



20. Gijbers Van Wijk C.M.T., Bosch Van Den Wil, J.H. and Hoogen Van Den Henk J.M. Male and Female Morbidity in General Practice: The Nature of Sex Difference: **Soc Sci Med** 1992; **35**, (5):665-678. g
21. Greenwood, B.M., Bradley, A.K., Byass, P., Alice, M., Menon, A., Snow, R.W. et al.; Evaluation of Primary Health Care Programs in the Gambia: Its Impact on Mortality and Morbidity in Young Children. **J Trop Med and Hyg**, 1990; April **93**:87-97. g
22. Greenhil, S. and Singh, H.J. Reported Illness in Daily Practice. **J Med Educ**, 1965; **40**: 856-61. g
23. Holder, H. A Visit of Patient to Doctor Over a Twelve Month Period. In: Alderson M. R. editor. **Morbidity Mortality and Health Statistics**. Stockholm Press and New York, 1954:325-338. b
24. Hunter, P. A. and Sultan, F. Health Seeking Behaviour and the Meaning of Medications in Balochistan, **Soc Sci Med** 1992; **34** (12):1385-97. g
25. Iarotski, L.S. and Davis, A.: The Schistosomiasis Problem in the World. Result of the WHO Questionnaire Survey. **Bull Wld Hlth Org**. 1981; **59** (1):115-127. g
26. Kamuzora, C.L. and Komba, A.S. Demographic Trends. In: Mwaluko, G.M.P., Kilama, W.L., Mandara, P.M., Murru, M., and Macpherson, C.N.L., editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991:2791-288. b
27. Kilama, W.L. and Kihamia, C.M. Malaria. In: Mwaluko, G.M.P., Kilama, W.L., Mandara, M.P., Murru, M. and Macpherson, C.N.L., Editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991:117-128. b
28. Kilima, P.M., Lorenz, N., and Garner, P. Primary Health Services in Dar es Salaam: **Establishing the Roles of Governmental Urban Health Services Tiers, Particularly that of Health Centers**: Workshop Summary, 1994: Tuesday 14-15. b
29. Killewo, J.Z.J., Semali, I.A.J., Msuya, I.A.J.R., Mshiu, E.N., DoAmsi, D.M. and Makwaya, C.K. The Pattern of Illness and Utilization of Available Health Service in Two Regions of Tanzania **Tanzania Medical Journal Special Issue. Proceeding of the International Conference on Traditional Medicine**, 1985 October 6-8. b



30. Kjellstrom, T., Koplan, J.P., and Rothenberg, R.B. Current and Future Determinants of Adults Ill-health. In: Feachem, R.G.A., Kjellstrom, T., Murray, C.J.L., Over, M. and Phillips, M., Editors. **The Health of Adults in Developing Countries**. New York, Oxford University Press for World Bank, 1992:209-259.
31. Kristensen T.K. 'Sickness' Absence and Work Strain Among Danish Slaughterhouse Workers: An Analysis of Absence from Work Regarding as Coping Behaviour: **Soc sci Med** 1991; 32 (1): 15-27.
32. Kirkwood, B.R. Diarrhoea Changing Patterns of Disease and Mortality in Sub-Saharan Africa. In: Feachem, R.G., Jamison, D.T., and Bos, E.R., Editors. **Disease and Mortality in Sub-Saharan Africa**. New York, Oxford University Press for World Bank, 1991:134-172.
33. Kroeger, A. Health Interview Surveys in Developing Countries: A Review of Methods and Results **Intr J Epidemiology** 1983; 12 (4):464-81.
34. Kroeger, A.L. Response Errors and Other Problems of Health Interview Surveys in Developing Countries. **Wld Hlth Stat Quart** 1985; 38:15-37.
35. Krueger, D.E. Measurement of Prevalence of Chronic Disease by Household Interviews and Clinical Evaluations. **Am J Publ Hlth** 1957; 47:953-60.
36. Litvack, J.L. and Bodart, C. User Fees Plus Quality Equals Improved Access to Health Care: Results of a Field Experiment in Cameroon. **Soc Sci Med** 1993; 37 (3): 369-383.
37. Magari, F.M. and Msambichaka, K.A. Status of EPI Target Diseases. In: Mwaluko, G.M.P., Kilama, W.L., Mandara, P.M., Murru, M., and Macpherson, C.N.L., Editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991: 247-260.
38. Mandara, M.P.: Health Services in Tanzania. A Historical Overview. In: Mwaluko, G.M.P., Kilama, W.L., Mandara, P.M., Murru, M., and Macpherson, C.N.L., Editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991: 1-7.
39. Matovu, D.B. and Nditi, H.P. The Distribution and Intensity of Schistosomiasis in Tanzania Mainland. **Proceeding of the Annual Scientific Conference of the Medical Association of Tanzania**, Dar es Salaam:1980 .

40. Mauser, J.S. Bahn, and Krammer, S. (Editors) Source of Data on Community Health. **Epidemiology: An Introductory Text**. 2nd rev ed., Japan, 1980: 66-90.  
b
41. Mechanic, D. The experience and reporting of common physical complaints **J Hlth Soc Behav** 1980; 20:146-156.  
e
42. Mhalu, F. S., Moshi, W.K. and Mbagala, I. A Bacillary Dysentery Epidemic in Dar es Salaam Tanzania. **J Diar Res** 1984 Dec. 2(4): 217-222.  
ej
43. Mhalu, F.S. Cholera. In: Mwaluko, G.M.P., Kilama, W.L., Mandara, P.M., Murru, M. and Macpherson, C.N.L., editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991:46-55.  
b
44. Ministry of Health Tanzania. Morbidity. In: **Health Statistics Abstract**. Health Information System Unit Planning Department 1994 June:2 12-19.  
er
45. Mizrahi, M.: A Study on a Private Company Working for the Pharmaceutical Industry. In: Alderson, M.R. Editor. **Mortality, Morbidity and Health Statistics**. Stockholm Press and New York, 1976:319-338.  
b
46. Mujinja, P.G.M. User Chargers in Non-government Organization and Consumers Response. A Study done by UNICEF, Dar es Salaam 1990.  
b
47. Murray, C.J.L., Gonghuan, Y. and Xinjian, O. Adult Mortality Levels, patterns and Causes. In: Feachem, R.G.A., Kjeulstrom, T., Murray, C.J.L., Over, M. and Phillips M. A., Editors. **The Health of Adults in the Developing Countries**. New York, Oxford University Press 1992: 25-87.  
b
48. Murray, C.J.L. Editor. Quantifying the Burden of Diseases: The Technical Basis for Disability Adjusted Life Years Editor. **Bull Wld Hlth Org** 1994; 72 (3):429-445.  
g
49. Murray, C.J.L., Lopez, A.D. Editors. Quantifying Disability: Data Methods and Results. **Bull Wld Hlth Org** 1994; 72 (3):481-494.  
ej
50. Murray, C.J.L., Lopez, A.D. (Editors) .Global and Regional Cause of Death Patterns in 1990, Editors. **Bull Wld Hlth Org** 1994; 72 (3):447-480.  
g
51. Murray, C.J.L., Lopes, A.D., and Jamison, D.T. (Editors). The Global Burden of Disease in 1990: Summary Result, Sensitivity Analysis and Future



52. Mtango, F.D.E. and Neuvians, D. Acute Respiratory Infections. In: Mwaluko, G.M.P., Kilama, W.L., Mandara, P.M., Murru, M., and Macpherson, C.N.L., Editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991: 29-45.
53. Mwaluko, G.M.P., Swai, A.B.M. and McLarty, D.G. Non-Communicable diseases. In: Mwaluko, G.M.P., Kilama, W.L., Mandara, P.M., Murru, M., and Macpherson C.N.L.; editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991: 219-237.
54. Mwaluko, G.M.P., Lukmanji, Z. and Kasale, H.A.S. Urbanization and Health. In: Kilama, W.L., Mandara, P.M., Murru, M., and Macpherson, C.N.L., Editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991:289-295.
55. Nathanson, C.A. Sex Roles as Variable in the Interpretation of Morbidity Data. A Methodological Critique. *Int Jour Epidemiology* 1978; 7:253-262.
56. Neuvians, D., Mtango, F.D.E. and Kielmann. The Burden of Disease Among Preschool Children from Rural Tanzania. *Trop Med Parast* 1988; 39:9-13.
57. Ofosu-Amaah, S. Disease in Sub-Saharan Africa: An Overview. In: Feachem, R.G.A., Jamson, D.T. and Bos, E.R. Editors. **Disease and Mortality in Sub-Saharan Africa**. New York, Oxford University Press for World Bank, 1991: 119-125.
58. Omran, A.R. The Epidemiological Transition: A Theory of the Epidemiology and Population Change. In: **Wld Hlth Stat Quart Rpt Trim de**. Mill Bank Memorial Fund, 1971; 49:509-38.
59. Omran, A.R. The Changing Picture of Adult Health: The Health Transition. In: Feachem, R.G.A., Kjeulstrom, T., Murray, C.J.L., Over, M., Phillips M. A. Editors. **The Health of Adults in the Developing Countries**. New York and Oxford University Press 1992:13-21.
60. Overbeek, J. The Sources of Information for Demographers. In: **Population: An Introduction**. Harcourt Brace Jovanovich, Atlan, London and Sydney Toronto, 1992: 37-40.

- b 61. Over, M., Randall, P.E., Huber, J.H. and Solon, O.: The Consequences of Adult Ill-health. In: Feachem, R.G.A., Kjellstrom, T., Murray, C.J.L., Over, M. and Phillips M. A., Editors. **The Health of Adults in the Developing World**. New York, Oxford University Press for World Bank, 1992:161-207.
- g 62. Pedersen, E.M. and Kolstrup, N. The Epidemiology of Onchocerciasis in the Tukuyu Valley, South West Tanzania. **Trop Med Parast** 1986; 37:35-8.
- g 63. Petit, P.L.C. and Van Ginnekan. Analysis of Hospital Records in Four African Countries, 1975-1990, with Emphasis on Infectious Diseases **J Trop Med and Hygn** 1995; 98:217-227.
- b 64. Phillips ,M.A. Feachem, A.P. and Koplan, J.P. The Emerging Agenda for Adults Health. In: Feachem, R.G.A., Kjellstrom, T., Murray, J.L., Over, M. and Phillips, M.A., Editors. **The Health of Adults in the Developing World**. New York, Oxford University Press for World Bank, 1992:261-994.
- b 65. Purola, T. The Utilization of Medical Services. In : Alderson,M.R., Editor. **Morbidity, Morbidity and Health Statistics**. 2nd rev ed., United States, Canada, Stockholm Press and New York. 1988: 318-19.
- g 66. Remme, Jan, H.F., Peter, Der, R., and Tore, G.: The Burden of Tropical Diseases. **Journal of the Australia Medical Associations**. 1993; 158 (7):465-469.
- g 67. Ross, D., Vaughan, P. Health Interview Survey in Developing Countries: A Methodological Review with Recommendations for Future Surveys. **London School of Hygn and Trop Med**, 1984; 7:2-10.
- b 68. Rutayungulwa J. Maternal Health Services Utilization: Factors Related to non-Attendance of Pregnant Women at Level of First Referral in Peri-urban Dar es Salaam [dissert]. **Center for International Child Health Institute of Child Health University London** 1992 December.
- b 69. Shao, J., Maselle, S.Y., Swai, R.O. AIDS In: Mwaluko, G.M.P., Kilama, W.L., Mandara, P.M., Murru, M., and Macpherson, C.N.L., Editors. **Health and Disease in Tanzania**. Harper Collins Academic, London and New York, 1991:8-16.



70. Smith, A. An inquiry into the nature and causes of the wealth of Nations. **Works and correspondence** 1976: 11, Oxford, Clarendon Press. b
71. Sullivan, D.H., Patch, G.A., Wall, C.R. and Lipschitz, D.A. Impact of Nutrition Status on Morbidity and Mortality in a Select Population of Geriatric Rehabilitation Patients. **Am J Clin Nutr.** 1990 May: 51 (5): 749-58. e
72. Swinscow, T.D.V. Population and Samples. In: Statistics at Square One. **British Medical Journal** 1983: 7-15. b
73. Tanzania Bureau of Statistics. Population Census: **Preliminary Report**, 1988:1-30. b
74. Tarimo, E. Community Based Studies in Sub-Saharan African: An Overview. In: Feachem, R.G. Jamison, D.T. and Bos, E.R.; Editors. **Diseases and Mortality in Sub-Saharan African.** New York, Oxford University Press of World Bank 1991: 243-318. b
75. Thelin, A. Morbidity in Swedish Farmers According to National Hospital records. **Soc Sci Med** 1991; 32 (3):305-309. e
76. Timaeus I., Harpharm, T. Price, M. and Gilson, L. Health Surveys in Developing Countries: The Objectives and design of an International Program. **Soc sci Med** 1988; 27 (4):359-369. e
77. Titmus, R.M., Abel-Smith, B., MacDonald, G., William, R.W. and Wood, C.H.: **The health Services of Tanganyika: A Report to the Government by African Medical Research Foundation** London. Pitman Medical Publishing Co, Ltd; 1964. b
78. Tunner, M.P. The pattern of Diseases as Seen by Medical Admissions to coast Province General Hospital in 1960. **East Afr Med J** 1978; 12:160-170. e
79. Verbrugge, L.M. Sex Differentials in Health **Public Hlth Rep** 1982; 97:417-437. e
80. Wadsworth, M.E.J., Butterfield W.L.H. and Blaney, R. Health and sickness, the choice of treatment. In: **The Theory and Practice of Public Health.** Hobson, W. editor. Oxford University Press, New York Toronto, 1979:26-30. b



81. **Waddington, C.J. and Enyimayew, K.A.** Price to pay the impact of user charges in Ashanti-Akim district of Ghana. **Int J Hlth Plan Manpower** 1989: 4, 17-47.
82. **Watson, D., Vessend, O. and Pennebaker, J.W.** Health Complaints among adults. **Psychol Rev** 1989; 96:234-258.
83. **Whitchfield, R.** Experience of Kenya Rural and Urban Blindness, Prevention Project. **International Eye Foundation**, Washington DC 1981.
84. **WHO: Study Group on Primary Health Care in Urban Areas.** The Role of Health Care Centers in the Development of Urban Health Systems. **Wld Hlth Org**, Geneva; 1991:2-9 December.
85. **WHO: Our Health, Our Planet.** **Wld Hlth Org**, Geneva 1988:20-120.
86. **Yorston, D., Mihale, P.N. and Mmbaga, B.B.O.** Eye disease. In: **Mwaluko, G.M.P., Kilama, W.L., Mandara, M.P., Murru, M. and Macpherson, C.N.L.**; Editors. **Health and Disease in Tanzania.** Harper Collins Academic, London and New York, 1991:56-65.