
አዲስ አበባ ዩኒቨርሲቲ
Addis Ababa University

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

ASSESSMENT OF TRENDS AND DETERMINANTS OF ADULT MORTALITY IN BUTAJIRA, ETHIOPIA

BY: HAYMANOT NIGUSSIE

ADVISOR: WUBEGZEIR MEKONNEN (PhD)

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES, IN ADDIS ABABA UNIVERSITY FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

August, 2015

Addis Ababa, Ethiopia

Acknowledgment

First of all I would like to thank the almighty God for his support in all my work.

Secondly I would like to acknowledge my advisor Dr. Wubegzier Mekonnen for his all rounded support, follow up and thought provoking comments in a wide range of activities related to this research work.

I would also like to express my deepest gratitude to the Addis Ababa University, School of Public Health for making it possible to have this opportunity.

My great thanks also goes to Butajira Rural Health program for giving me the 22 year dataset which I have worked on it.

My appreciation also goes to Butajira Rural Health Program staffs who gave to me information about this work and also there cooperation in my stay in Butajira for the qualitative study.

At last but not least I want to thank my family and friends who had been by side of me in all this research work.

Dedication

This work is dedicated to my beloved son Natanim Elias for his true and amazing love and also to all my family for their support that my dream comes true.

Table of Contents

List of figures

List of tables

Abstract

Background: Adult mortality rate is the probability of dying between the ages of 15 and 60. Levels and trends in overall adult mortality have important implications for health and social program. Globally, adult mortality rate has been declining in the period of 1990 and 2012 though countries in sub-Saharan Africa showed increase in adult mortality. Despite this increase, adult mortality remains a neglected public health issue in Sub-Saharan Africa. A lack of empirical data about the levels of mortality experienced by adults in this region has fueled this neglect. Thus, analyzing data from continuous surveillance system can be a corner stone to the development of reliable data on trends and risk factors for adult mortality.

Objective: To assess trends and identify determinants of adult mortality in Butajira, South Central Ethiopia

Methods: Both quantitative and qualitative studies were conducted. The Butajira database running from 1987-2008 was extracted and analysed using STATA 12. The trend of adult mortality was computed using event history analysis and Poisson regression analysis was used to calculate IRR with 95% CI. For the qualitative part, data were collected from community leaders, staffs of health and agriculture offices and the BRHP to strengthen the result from quantitative part of the study. Open code 3.6 Software was used to code and categorize qualitative data and themathic analysis was employed.

Result: There was a significant decline in adult mortality, with some ups and downs in levels during the survey years.This was due to ill behaviours, social upheavals, food insecurity, health service related problems and occurrence of epidemics at different times.The incidence of adult mortality was found to be 6.57(6.33, 6.82) adult deaths per 1000 person years. There were higher incidences of female adult mortality with a level of (95%CI) 7.14 (6.78, 7.52). The incidence of adult mortality significantly increased with age. Married, divorced and widowed adults had higher incidence of death with adjusted IRR (95% CI) 1.71(1.52, 1.91), 2.93(2.11, 4.06) and 4.90(4.25, 5.66) respectively compared to the singles. Adults who were illiterate, resided in rural areas, confessed in Muslim religion and did not have window for their houses had significantly higher incidence of death with IRR (95% CI) 1.12(1.02, 1.23), 1.27(1.02, 1.57), 1.15(1.05, 1.26) and 1.20(1.08, 1.34) respectively.

Conclusion: The incidence of adult mortality showed a declining trend mainly due to social and behavioral problems. Age, residence, religion, marital status, availability of windows were significantly associated with incidence of adult mortality.Awareness creation with prevention of different diseases and ensuring food security are recommended to health and agricultural sectors respectively.Furthermore stakeholders are advised to work on decreasing the work burden of females and their empowerment.

Acronyms

AFI –Acute Febrile Illness

AIDS –Acquired Immuno Deficiency Syndrome

BRHP- Butajira Rural Health Program

CD- Communicable Disease

CHD-Chronic Heart Disease

DSA: Demographic Surveillance Area

DSS - Demographic Surviellance System

EC - External Causes

EDHS- Ethiopian Demographic and Health Survey

HIV-Human Immuno Virus

NCD-Non Communicable Diseases

IRR-Incidence Rate Ratio

SES –Socio Economic Status

SNNPR-Southern Nations Nationalities and Peoples Region

SPH –School of Public Health

SSA –Sub Sahara Africa

UNAIDS – United Nation Program on HIV/AIDS

1. Introduction

1.1 Back ground

Adult mortality rate is the probability of dying between the ages of 15 and 60 that is, the probability of a 15-year-old dying before reaching age 60.[1,2] Globally, adult mortality decreased from 1990 to 2012 from 198 /1000 to 156 /1000 population.[3] High income countries showed the sharpest decreases whereas Countries in sub-Saharan Africa, Oceania, and Eastern Europe showed increase in adult mortality.[4]

In the year 2002 it was estimated that about 10.8 million deaths occurred in the Africa region, or just about 20 percent of global mortality. The age structure of mortality showed 36 percent of the deaths occurred between the ages of 15 and 59 years.[5]

Countries in Sub Saharan Africa have different mortality patterns in which some have fastest increase in mortality and some showed slow increase and very few have decreasing trends . Among those sub-Saharan countries the fastest increase in mortality has occurred in South Africa, Zambia, Zimbabwe, Uganda, and Cameroon.[6] For example, in South Africa the probability of dying between exact Ages 15 and 60 reached to 0.135 in 1990 to 0.147 in 1995 for females and it reached 0.280to 0.302 for males . In some of sub Saharan countries including, Kenya and Tanzania adult mortality has risen relatively slowly and has hardly changed in Burkina Faso. For instance, in Kenya the mortality rate has been changed from 0.175 in 1990 to 0.262 in 1995 for females and it has been changed from 0.185 to 0.292 for males.[6]

In Ethiopia, the adult population comprises 52 % of the total population.[7] And the probability of dying among this age group (between the exact ages of 15 and 60)has been declining from 1990 to 2000 decreasing from0.433 to 0.266 for females and from 0.503 to 0.359 for males.[6]

In Ethiopia, by the year 1990 it was estimated that 448 male and 358 female per 1000 persons died among these adult age groups. But this figure has been declining to 377.4 male and 327.9 female by the year 2000 this figure further declines to 304 male and 259 female by the year 2010. [2]Despite this fact that adult mortality is decreasing in Ethiopia, this country is among the countries with very high adult mortality in sub Saharan Africa region. The most striking feature is that the estimated number of deaths at these ages in countries with very high adult mortality is nearly double that estimated for countries in high adult mortality.[5]

1.2 Statement of the problem

Since 1970, the average age of death has increased by 20 years globally.[8] During this period in Asia, Latin America, and the Middle East, the average age of death increased by 30 years or more. Sub Saharan Africa, however, has not made nearly as much progress as other developing regions, and people in this part of the world tend to die at much younger ages than in any other region.[8]

The contribution of premature death (measured by years of life lost or (YLL)), to overall burden of disease (measured by total Disability Adjusted Life Years (DALYs)) varied across regions, ranging from 62% in high-income countries to 85% in the WHO African Region in 2012. Adults aged 15-59 years old bore 43% of total DALYs in 2012 rising from 38% in 2000.[9]

Globally, adult mortality rate declined from 198 per 1000 population in 1990 to 156 per 1000 population in 2012. Adult mortality rate in the WHO African Region, however, remains very high in 2012, e

ven when comparing to the rates in any other WHO regions in 1990. Adult mortality is highest in low-income countries, and lowest in high-income countries.[3] Especially, in the African Region evidence shows that adult mortality rates are high, reflecting poor levels of health.[10]

In its estimates of mortality, the WHO found that of the 40 countries with the highest mortality, 37 were from the Sub-Saharan Region. The level of adult mortality is highly variable across African countries. Southern and Eastern Africa has particularly high adult mortality, whereas mortality in Western Africa is lower and the Indian Ocean Islands, which accommodate relatively small populations, have the lowest rates. According to those WHO estimates, the

probability of surviving from exact age 15 to exact age 60 in 2000 was less than 50 percent in nearly half of the countries in Sub-Saharan Africa. [10]

Despite that it remains very high, adult mortality remains a neglected public health issue in Sub-Saharan Africa. A lack of empirical data about the levels of mortality experienced by adults in this region has fueled this neglect, combined with the focus on maternal and child health, which has the highest incidence of disease and subsequent mortality.[11]

This can be seen from the fact that WHO report shows that regional coverage of adult death registration varies from close to 100% in the European region to less than 10 %in the African Region. However death registration is considered to be essentially 100% complete in only 64 of 115 countries reporting data, and predominantly these are developed countries in Europe, the Americas and the pacific regions.[12]

Preferred data source for adult Mortality is civil registration with complete coverage but if it is not available, data from surveillance is best.[1] The collection of mortality information through household surveys and censuses in countries lacking adequate registration remains a priority, as does the development of new and improved survey methods for measuring (particularly) adult mortality and identifying causes of death**.** [13]

In Ethiopia, even though adult mortality is declining the probability of dying is far more from that of the developed countries even it is much greater than some sub Saharan countries.[5] Despite this high mortality like the rest of sub-Saharan Africa counties Ethiopia does not have a complete registration for the death occurring in the country. In addition, there are only few studies done showing the determinants of adult mortality. Furthermore, studies showing the trends based on demographic surveillance sites are not available in recent years.

1.3 Significance of the study

Policies and programs should properly be based on current and timely information about the nature and extent of health problems, their determinants, and how the impact of such problem is changing, both with respect to magnitude and distribution in populations. Conducting, research on adult mortality is significant for understanding the health consequences of social inequality, human behavior, biological factors, and various other forces in human populations.[14] Thus, knowledge on levels and trends in overall adult mortality have important implications for health and social programmes. Furthermore, data on the levels and also determinants of adult mortality are useful for health planning and intervention.[15]

Due to increased burden of disease and increased mortality within the adult age group, the level of adult mortality is becoming an important indicator for the comprehensive assessment of the mortality pattern in a population. [16] Likewise, in Ethiopia, adult mortality rates are key indicators of the health status of the population and they are also national development indicators.[15]

In other ways, data generated through Demographic Surveillance System (DSS) have made substantial contributions to the knowledge of adult mortality in the Developing World.[17] Therefore, in a country like Ethiopia where there is no nationwide vital registration system or sample registration system, demographic surveillance system which is representative continous registration of vital and migratory events based on periodic visit of each household on a defined population, with appropriate procedures can yield extremely useful information on levels and patterns of adult mortality for large population.If it is completed with verbal autopsy data it could also provide with causes of death data. So, by having surveillance data, it is very important to know the trends and the risk factors of adult mortality in order to act up on the existing problems.

Based on this ground, it is very imperative to conduct research on the trends of adult mortality in Ethiopia.

2. Literature review

2.1 Temporal Trends of Adult Mortality

Globally, adult mortality rate declined from 198 per 1000 population in 1990 to 156 per 1000 population in 2012.[9]This is due to the sharpest decrease in high income countries. [3]Study from 187 countries showed that, during the period of 2004 and 2010, Eastern Europe has had a major decline in adult mortality of nearly 23%. This decline followed a substantial increase in adult mortality in the previous two decades and represents a notable change in mortality trend in that region.[18]

In Afghanistan, there is a decreasing trend in mortality for both sexes starting from 1996 -2010 over the three five-year periods. For women aged between 15-59 years, mortality rates for Afghanistan have been dropping from 160 deaths per 1,000 in the 10-14 years (1996-2000) before the survey to 112 per 1,000 in the 0-4 years before the survey and for males mortality rates have been dropping from 269 deaths per 1,000 in the 10-14 years before the survey to 147 per 1,000 in the 0-4 years before the survey [19]

In addition to this, study conducted in Nepal, showed that overall crude mortality rate has declined by 18.79% and 42.67% for men and women respectively in ten years period from 1996 -2006. Mortality rates for Men and Women of 15-49 year are also declining by1% and 3.2 % per year for the same period 1996 -2006.[20]

There is also growing evidence of rising trends in adult mortality in the countries in Sub-Saharan Africa.[4,5] The Eastern and Southern African regions have been particularly hard hit by the AIDS epidemic, and the available data show large increases in adult mortality rates.[5] In which the effects of high levels of HIV on adult mortality are readily apparent, with the average adult

mortality rate almost tripling between 1985–89 and 2000–04 (from a probability of around 1.7 percent to almost 5 percent) in the high-prevalence sub-Saharan countries. Importantly, however, mortality also increased in the low-prevalence sub-Saharan countries, from around 1.6 percent in 1985–89 to over 2 percent in 2000–04.[21]

A study conducted in Agincourt HDSS in Southern Africa from data collected during the period 1993-2010, the overall adult mortality rate was 8.2 (95%CI: 8.0-8.4) adult deaths per 1,000 person-years. Mortality significantly ($p<0.001$) increased over the study period, with the most pronounced increase occurring from 1999 onwards to reach a plateau of about 13 deaths per 1,000 person-years in 2004 with similar levels observed through 2007,after which it was observed a sharp decline in adult mortality. [22]

Another study conducted in Tanzania from the Kisesa DSS data collected from 1994 -2009 showed that the probability of dying in the age group 15-60 has increased from 43% in 1994 to 48 % in 2000 and declined from the year 2000 to 37%.Chance of dying in the 15-60 age group for both sexes combined was 39% (95% CI: 27-55%) in 1994 and 22% (95% CI: 15-31%) in 2009.[23]

In Ethiopia in the eleven years between the 2000 and 2011 EDHS surveys, the probability of dying between exact ages 15 and 50 decreased for both women and men, from 22 percent to 16 percent for women and from 28 percent to 18 percent for men.[15]

A study conducted in Butajira Ethiopia showed that the crude adult mortality rate of 7.8 per 1000 person years and there was a modest downward trend in adjusted mortality over the 18-year period, with 1993–98 at 93% of the initial mortality (95% CI 84% to 102%), and 1999–2004 at 73% (95% CI 67% to 81%) (adjusted for age group, area and gender).Considerable excess male

mortality was evident in the urban area up to 1991,and the rural area experienced a substantial peak in mortality from 1998 to 2000. These phenomena contributed substantially to the overall higher male mortality rate in the urban area [rate ratio 1.42 (95% CI 1.15 to 1.77).[24]

2.2 Determinants of Adult mortality

2.2.1 Socio demographic characteristics

In all regions and virtually all countries, adult mortality rate for males are higher than for females. The ratio is highest in the WHO European Region, where male adult mortality rate is more than twice that of female.[3] And according to a study conducted in south Africa the most prominent risks for adult mortality identified were male gender, being a migrant, increasing number of other household deaths, household head death, and distance to nearest health facility (6 km).[25]

The main socioeconomic dimension along which mortality appears to differ in the aggregate is gender. In Sub-Saharan Africa adult mortality rates have risen substantially higher for men than for women especially in countries with high HIV prevalence.[26]

The cross sectional national survey run by Statistics South Africa in 2007 to see the mortality for all over sub-Saharan Africa showed that the overall adult mortality proportion was approximately 145.2 deaths per 10,000 population (95% CI: 142.3, 148.2), with males having a significantly (p-value<0.001) higher mortality proportion of 155.1 (95% CI: 150.8, 159.6) compared to females at 135.9 (95% CI: 132.0, 140.0) per 10 000 population respectively.[27]

According to EDHS 2005 adult mortality between male and females showed that female mortality rate is 6.4 deaths per 1,000 population and which is 8 percent higher than the male mortality rate of 5.9 deaths per 1,000 population.[28]According to EDHS 2011 report overall, the

level of adult mortality is slightly higher among men (5.0 deaths per 1,000 population) than among women (4.1 deaths per 1,000 population).[15] Similarly a longitudinal study conducted in Ethiopia rural parts of Tigray from 2009-2012 showed that mortality was on average higher among males 4.5 per 1,000 person-years than females 3.64 per 1,000 person-years.[29]

Mortality rates in a wide range of populations show an approximately exponential rise with age for adults.[30] A study conducted in Nepal showed that the age specific mortality rates were not much different before the 35 years of age. The higher proportion of adult mortality rate was found after 35 years of age.[20]

In the region Africa, mortality rates among adults are more variable, with some age groups experiencing rising mortality, such as younger women of reproductive age and adult males between 25 and 39 years of age.[7]

In Ethiopia, the age-specific mortality rates of adults generally show the expected increases with increasing age, for both women and men. Based on the 2011 EDHS, 16 percent of women and 18 percent of men are likely to die between age 15 and age 50.[15] Another study conducted in Butajira showed that age group 30-39 and 40-49 has three fold and four fold risk of mortality compared to the youngest age group (OR=2.99 (95% CI 1.91-4.71) and OR=4.01(95% CI 2.49-6.46) [31]

With regard to marital status, a study conducted in Russia showed that for both men and women, divorced people had somewhat higher mortality; never-married women had lower risks and never-married men had higher risks; widowed subjects had the lowest risks.[32] A study conducted in Namibia in the year 2006/2007 showed that the never married adults had lower hazards of dying (HR=0.82, 95% CI: 0.70 to 0.99), than adults with other types of marital status

(divorced and widowed). Comparing never married and married adult (HR= 0.62, 95% CI: 0.53 to 0.73), there was a slightly lower hazard with only 0.2 units. [33]With regard to marital status in Ethiopia, according to a study conducted in Tigray Ethiopia from KAHDSS from a data collected between 2009 and 2012 mortality was higher among widowed and divorced; widowed (HR = 2.25, 95% CI: 1.81, 2.80) and divorced (HR = 1.80, 95% CI: 1.30, 2.48).[29] Another cohort study conducted in Butajira from 1987 to 2004 showed that men who were not in current marital union (single, divorced and widowed) were morethan 3 times more likely to die [odds ratio 3.56(95% CI 1.86, 6.83)].[24]

With regrd to the literacy status, highly educated adults in the United States have lower mortality rates than less-educated people in every age, gender, and racial/ethnic subgroup of the population. The mortality rate for white women who have not completed high school is nearly four times higher than the rate for white women with 16 or more years of education. An even wider disparity is evident for the same categories of white men: men with less than a high school degree have a mortality rate more than four times higher than those who have completed at least 16 years of education. [34]An open cohort followed adults aged from 15-59 years of age during the years 2005-2009 in Bangladish from International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) showed that those who are illiterate had lower incidence of death compared to those who are literate with IRR(95 % CI) 0.97 (0.74-1.23).[35]But according to a longitudinal study conducted in South Africa,KwazuluNatal DSA education stratified by age showed that the hazard of dying decline as the education status increases.That is in the age 15-40 primary education had lower mortality compared to those who are not educated with an adjusted HR 0.68 (0.58,0.80) and those in secondary and teritiary had also a lower mortality rate compared to those who do not have education with adjusted hazard ratio 0.53(0.45,0.61) and

0.32 (0.23,0.44)respectively. And in the age 41-64 primary education had lower hazard compared to those who had no education with an adjusted hazard ratio of 0.95(0.83,1.07) and those in secondary and teritiary education had also lower hazard of death compared to those who do not have education an adjusted hazard ratio of 0.97(0.82,1.15) and 0.58(0.37,0.91) respectively. [36]

In Ethiopia according to a longitudinal study in Butajira,the overall effect of no literate person in a household carried a mortality rate ratio of 2.38 (95% CI 2.19 to 2.59), adjusted for area, gender, age group and period.[24]

With regard to residence type, study conducted in Namibia in the year 2006/2007 there was a lower hazard of an adult dying in urban (HR=0.91, 95% CI: 0.76 to 1.10) than in rural area. The decline in hazard of an adult dying in urban area was not significant.[31] A study conducted in northern Ethiopia showed that individuals residing in rural area had more than twice higher mortality rate than their urban counterparts (4.34 versus 2.30 respectively per 1000 person years).This same study also showed that rural residents has higher hazard of mortality than the urban with (HR = 1.74, 95% CI: 1.32, 2.31).[29]

A study conducted in Bangladesh showed that, those in higher socio-economic groups reported better health compared to those in lower socio-economic groups.[37]Another study conducted in South Africa showed that low Scio Economic Status (SES) category, adults were 0.03 times less likely to die compared to the lowest group, but this was not significant (aHR=0.97; p=0.662;95% CI [0.87 - 1.08]). In the middle SES group, adults were 0.06 times less likely to die compared to the lowest SES group, but the hazard was also not significant (aHR=0.94; p=0.279; 95% CI [0.84

- 1.05]). And in the highest category, adults were 1.09 times more likely to die (aHR=1.09; p=0.128; 95% CI [0.97- 1.22]), but this higher risk was also not significant.[36]

A study conducted in England and Scotland showed that poorer housing conditions were generally associated with increased adult mortality. This study showed that Chronic Heart Disease (CHD) mortality was higher in individuals whose childhood home did not have a private indoor tapped water supply (adjusted hazard ratio 1.73, 95% CI 1.13 to 2.64). Furthermore not owning a house also increases the risk of death with HR 1.22 95% CI (1.12-1.34).[38] A study conducted in Butajira showed that non-ownership of the house where people lived was strongly associated with mortality [rate ratio 1.77 (95% CI 1.54 to 2.04), adjusted for area, gender, age group and period] and was seen particularly in rural areas [rate ratio 3.23 (95% CI 2.99 to 3.49)].[24]

2.2.2 Disease conditions

Globally mortality rates from HIV differs from 0.2 in Northern and Central Europe to 250 in Southern Africa which shows a 2500 fold difference HIV age pattern of deaths shows that it is peak in women at ages 35—39 years and in men at 40—44 years.[27] Globally, 69% of adult male deaths and 74% of adult female deaths were attributable to HIV/AIDS in 2003-2005. (2001-2002: 26/1000 person-years; 2003-2005: 31/1000 person-years), reflecting a sharp rise in mortality among HIV-positive individuals (62, 79 and 105 per 1000 person-years).[27]

Data from the UNAIDS "Barcelona"Report 2002 and referring to the calendar year 2001. For both sexes, as the HIV prevalence increases the probability of dying between ages 20 and 60 increases while the probability of dying at other ages remains little changed.[39]HIV infection follows distinct geographic patterns with continued high levels of infection throughout eastern

and southern Africa, with some exceptions.[27] According to the UNAIDS "Barcelona"Report 2002 the average prevalences and crude HIV mortality rates in different parts of Africa are: Southern Africa 29.2 percent and 15.41 per thousand;Eastern Africa 11.5 percent and 8.06 per thousand; Middle Africa 7.0 percent and 4.26 per thousand; Western Africa 4.8 percent and 3.21 per thousand; Northern Africa 2.6 percent and 1.10 per thousand. [39]

According to a study conducted in Southern Africa, the leading cause of death among adults in all the study provinces was attributed to infectious causes (largely HIV/TB). The remaining four of the top five cause of death by province were generally (with minor variations in ranking) attributed to external, diseases of the respiratory system, unknown and diseases of the circulatory system.[3]

Regarding malaria, Annual malaria deaths began to decline from a peak of 1·2 million (1·1 million to 1·4 million) in 2004 to about 855,000 (703,000 to 1,032, 000) in 2013, having increased from 888 000 (793 000 to 993 000) in 1990.and the that the cumulative fraction of malaria deaths in adults reaches 33·75%. [40]

According to a study conducted in South Africa, adult deaths that occurred from 1993 up to the end of 2010, the majority were attributed to communicable causes (53%), largely attributed to HIV/AIDS and Tuberculosis 45% (95% CI: 43.7-46.3). Non-communicable diseases were responsible for 22.2% of all adult deaths over the study period. Approximately 11% (643) adult deaths were attributed to external causes. According to this study, a significantly higher proportion of deaths attributed to non-communicable causes (25% versus 20%, $p<0.001$).[22]

In Ethiopia, by the year 2002 infectious and parasitic infections account for about 34% of the cause of death ,followed by Non Communicable Diseases (NCDs) accounting for 20% and in

third place HIV/AIDS and respiratory infections each account for 11% of the causes of death .[29] And by 2013 according to the report of Center for Communicable disease Control and prevention (CDC) the top cause of death in Ethiopia are respiratory infection accounting for 14% of the disease followed by cancer diarrheal disease and malaria each accounting for 6% of causes of death.[41]

A study conducted from 2009 -2013 in northern Ethiopia in KA-HDSS showed that among those who had ascribed causes of death in adults (n = 723), 263 (36.4% [95% CI: 32.9, 39.9]) fell within NCDs classification, 252 (34.9% [95% CI: 31.4, 38.4]) were classified within Communicable Diseases (CDs), and 89 (12.3% [95% CI: 10.1, 14.9]) were in the classification of External Causes . [42]

Another study conducted in Buajira showed that among adult deaths 53% were attributed to communicable diseases and the rest 47 % is attributed to the non communicable diseases.[24]

Thus, it is apparent to assess different socio demographic factors that affect the rate of adult mortality, in different parts of the World including Sub Saharan Africa (SSA) and Ethiopia. In addition, the trend analysis of adult mortality has shown decline in adult mortality, but death occurring in the adult age group is still very high. No attempt was made to assess the levels and trends of adult mortality using the Butajira DSS database in recent years and the reasons for change in adult mortality over time. This particular study will be assessing the trend and factors associated with adult mortality by using the longitudinal data from Demographic surveillance System and document reasons for variations in the level of mortality.

2.3 Conceptual frame work

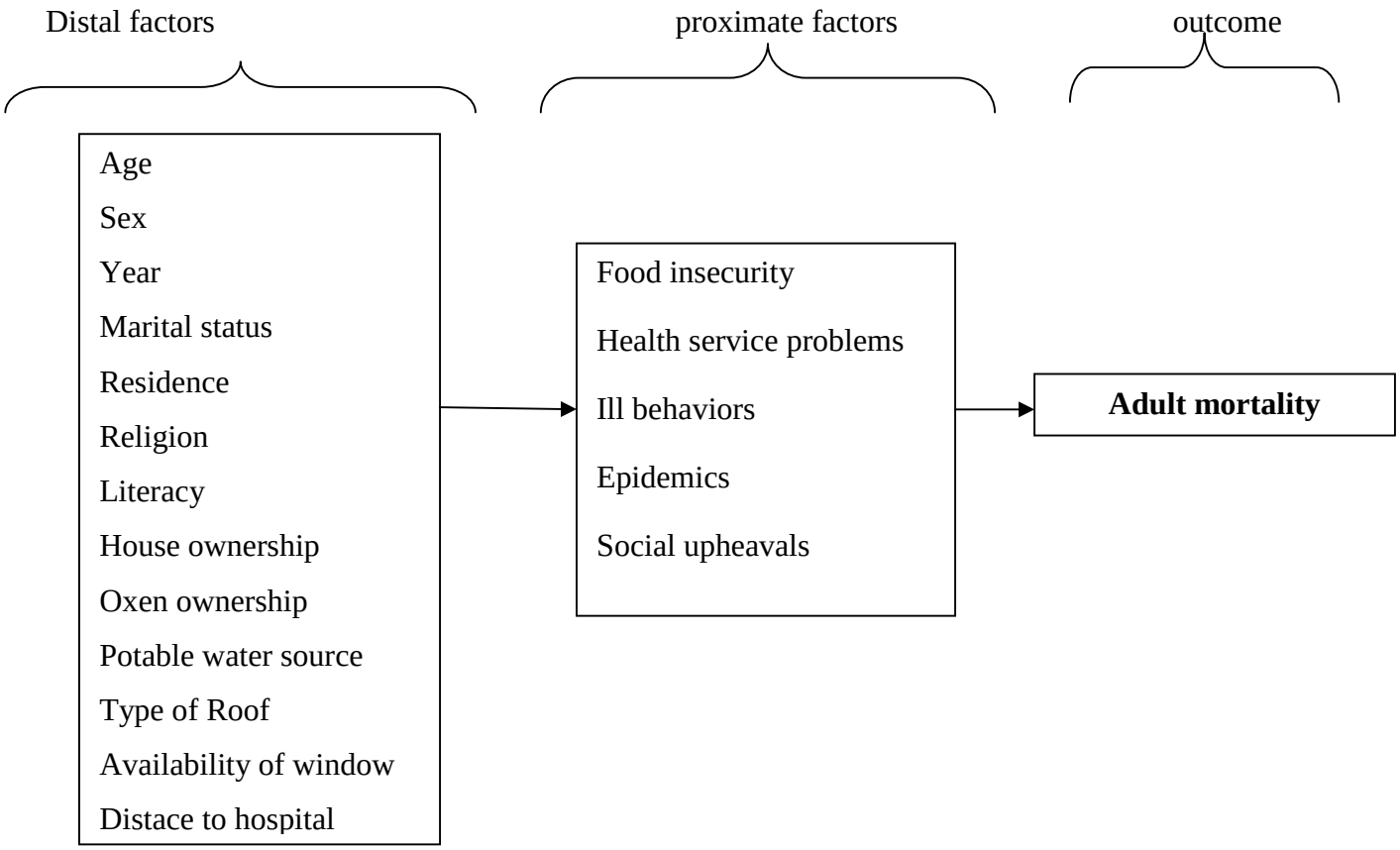


Figure 1 : Conceptual frame work for adult mortality [43]

This conceptual frame work shows that different determinant factors affect adult mortality. These factors affect adult mortality at different levels. Demographic factors like age and sex, literacy, the place where an individual resides, marital status and Housing conditions are among the distal factors which affect the rate of adult mortality in a population. These socio demographic factors contribute for the occurrence of the immediate factors like Epidemics, food insecurity, negative health behaviors, health service problems and social upheavals. These immediate factors again affect the occurrence of adult mortality.

3. Objectives

3.1 General Objective

The main aim of this study is to assess trends and identify determinants of adult mortality in Butajira, Ethiopia from 1987 to 2008.

3.2 Specific objective

The study addressed the following three specific objectives:

- To measure trends of adult mortality in Butajira, South Central Ethiopia
- To explore reasons for the flucatuations of adult mortality over time
- To identify factors associated with the incidence of adult mortality in the study area.

4. Methods

4.1 Study design

A longtudinal study design of the Butajira Demographic and Health Surveillance System, which has been capturing the occurrence of vital events (such as birth, in-migration, out-migration, internal move, changes in marital status, formation of new households and death) after a baseline census in 1987 enumerated the population in the demographic surveillance area.The Butajira Database in the period of 1987 to 2008 has been used for this study.

To assess the reasons contributing for the variations in adult mortality over time to complement the quantitative result, a qualitative in-depth interview has been conducted in the community among community and program leaders in the health and agricultural sector.

4.2 Study area

The study is conducted in the Demographic Surveillance Area (DSA) of Butajira Rural Health Program (BRHP) which covers nine rural and one urban villages (*Kebeles*) in the former Meskan and Mareko District of Guraghe Zone, Southern Nations Nationalities and Peoples Region (SNNPR) of Ethiopia. The study area is located in one of the most densely populated parts of Ethiopia, which are now delinated in Meskan, Mareko and Silti rural Districts and Butajira Town. The nine *Kebeles* were randomly selected using a probability proportionate to size technique from the then 82 rural and four urban Kebeles .[44] The capital, Butajira Town, is located 130 kms to the South of Addis Ababa and 50 kms to the west of Ziway Town in the Rift Valley, 8.2^{o} North latitude and 38.5 ^{o} East longitude. The estimated size of the District is 797 km^{2}, of which Butajira Town covers approximately 9 km^{2}. [45]

The initial census of the population in the selected villages was done in 1987 to obtain the baseline population. The original DSS population in 1987 was around 28,000 and grew over 23 years to about 70,000 individuals. [45] By relating the observed total number of deaths to this study base, the crude mortality rate was 15.3 per 1,000 person-years. From the age-specific mortality rates life expectancy at birth was estimated to be 50.8 years, 49.3 years for males and 52.3 years for females.[46]There are two hospitals of which one is governmental and the other is non governmental hospital. In addition, there is one health center and several private clinics and dispensaries which give health care to the population. There are 30 schools in the District including, one technical school and one high school, the rest being primary schools. About 77% of the populations are illiterate.[46]

4.3 Study period

The study is completed between May 2014 and June 2015 by using the BRHP database during the period of 1987 to 2008.

The qualitative part was also conducted in the period mentioned above immediately after the completion of the analysis of the quantitative part of the study.

4.4 Populations

4.4.1 Source population:

All adults aged 15 -60 years who have been living in the currently delineated four Districts (Meskan, Mareko, Silti and Butajira Districts) which were under the former one District namely Meskan and Mareko, in Gurage and Silti Zones, SNNPR, South Central Ethiopia

4.4.2 Study population

All adults aged 15-60 years who have been captured by the Butajira Demographic Surveillance System between 1987 -2008 within the Butajira Demographic Survillance Area (DSA) have been considered as the study population.

For the qualitative part of the study, the study populations are community leaders, BRHP field staffs and staffs from health and agricultural offices around the study area.

4.5 Sample size of the study

For the quantitative part: As this is a alongtudinal study, all adults aged 15 to 60 years who have been captured by the BRHP from 1987-2008 were considered.The adults were followed from the selected nine rural and one urban *Kebeles* in the DSA.The individuals are recruited in to the open cohort by enumeration , birth or inmigration. All adults which are entered in to the database are followed monthly by visiting each household until 1999; the period of visit is changed from monthly to quarterly thereafter. Individuals under the surveillance leave the database through death and outmigration. Besides, this analysis is limited the study period to 2008, which is an administrative censoring.

For the qualitative part: community leaders both from urban and rural, BRHP staffs and staffs from health and agricultural offices were interviewed until saturation of idea was reached.

4.6 Study variables

Dependent variable: adult death

Independent variables

Demographic factors: Sex, Age

Socioeconomic status: Religion, Marital status, literacy, house ownership, owning of oxen

Geographic factors: Residence, distance to hospital

Housing condition: potable water source, type of roof, number of windows in the house

4.7 Operational definitions

Adult: a person in the age group of 15 and 60 years.

Right censored: those adults who have out migrated from the DSS site or with draw from the data base or adults who are enrolled in the study, but have not died at the end of 2008

Literate: those who have formal education or those who can at least read and write.

4.8 Data collection procedures

4.8.1 Data collection Instrument

The data was collected using a structured standard questionnaire adopted from INDEPTH-Network.[43] The Questionnaire has seven parts including BRHP house registration form, family registration form, new individual registration form, individual movement registration form, birth registration form,death form and marital status form.All questionnaires were translated into

Amharic and administered to the study participants.[44] Initially data were collected every month. This has been changed to a quarterly active visit to each household since 1999. In addition, censuses were conducted every 3-5 years to update the baseline information with regards to each individual. Due to different circumstances, the first baseline census of the 1987 was not updated until 1995. A further update round was then conducted in 1999 and the last update was done in 2004. Any adult member of the household above the age of 15 years was eligible to respond to the monthly household interviews. The data collection was carried out by a team of secondary school graduate enumerators who were based in the surveillance *Kebeles*. The data collectors were trained for this field work. Refreshment trainings have been given to them as required.

For the qualitative part of the study, an indepth interview guide developed by the principal investigator of this study was used to discuss with the interviewee. The semi structured questionnaire which was first prepared in English and then translated in to Amharic was used as data collection tool. (See Annexes on section 11.5 and 11.6). After the respondents are selected purposively, the interview was done by the principal investigator assisted by a note taker selecting an appropriate place. The purpose of the study was briefed, before the begning of the interview. Respondents were assured about data confidentiality issues. Then, questions were forwarded to them and more probing questions when need arrises to clarify some ambuigities. All of the interviews were tape recorded and transcribed in full text. Training was given for the note taker who has a degree in a non health dicipine.

4.8.2 Data quality management

For the quantitative part of the study, data quality assurance mechanisms have been instituted at several points to ensure the integrity of the data. The most critical step is field supervision. Field

supervisors perform the immediate supervision of data collection procedures on a daily basis. Their tasks include checking of each completed data form and visiting randomly selected households each month on a weekly-distributed time table. The research assistants perform the next level of supervision. The other mechanism is performing data entry using software based on the dBase IV platform which includes procedures for automatic consistency checking as well as more sophisticated facilities for data management and retrieval. Surveys in the surveillance system have been used as an external quality checks for the system. And before starting the analysis data cleaning was done.Then after the age of each individual in the database was calculated by subtracting the birth date from the event date.Then those individuals in the adult age group were selected for the particular analysis. In the data cleaning those with missing values were critically checked and those with anamolies were corrected.The chronology of each event was also checked, for instance an individual must be recruited through either birth or inmigrationbefore its outmigration or death could be captured. In longitudinal data analysis, censoring is an important step which clearly identifies the residency of an individual in the demographic surveillance area, i.e., the episode of exposure of each individual has to be correctly delineated. The dates at which each individual has started to be observed and those dates at which the observation ended have to be clearly spelled out. This is really a meticulous step in a large dataset such as the 22 years database of the BRHP.

In case of qualitative part of the study data were collected from community leaders and staffs of the agriculture, health and BRHP to check the trustworthiness of the information obtained from in depth interviewees. The data was audio taped and note was also also taken to double check its quality. The principal investigator moderated the interview assisted by an experienced note taker.

4.9 Data Analysis procedures

For the longitudinal study, first the data was extracted from the database and the quality of the data was checked. Data analysis was conducted using STATA version 12 software and excel was used to do the trend graphs. Event history Analysis was carried out for adults registered in the system, after the data is set to be panel. The episodes of exposure were added to measure the person times of exposure that had been contributed by each person. The number of deaths happening in the period of study were divided by the person years of exposure over survey years to obtain the incidence of adult mortality rate. The incidence of adult mortality rate with its associated 95% Confidence of Interval was calculated for each year in the study period and with respect to each covariates.The test of significance for the difference in the incidence of adult mortality rate was across the categories of the covariates considered for the study was checked using the 95% CI and If the CI do not cross over, they were considered as statistically significant. The trend in the incidence of adult mortality rate was estimated in the same way by dividing number of adult deaths happening in each surveillance year by the person years lived in each year by adults. The association of variables with the incidence of adult mortality was checked using Bivariate analysis in Poisson Regression. Those variables which were found statistically significant at the Bivariate level were taken into the multivariate model. The degree of association was ascertained by the Incidence Rate Ratio (IRR) and the statistical significance was checked by the 95% confidence interval (CI) of the IRR. Finally, tables were used to present levels and associations while, smoothed hazard curves and mortality trend curves was done to describe trends and paterns of the incidence of adult mortality in during the survey years.

For the qualitative part of the study, a thematic analysis was employed. The audio information from the study participants was correctly transcribed and translated on the same day on which

data collection was conducted. Then, translated material was entered in to open code 3.6 software and was coded. Different codes in the text were merged in their category then in to their thematic areas. (Table 1) Then, the result was presented in narration by triangulating with quantitative findings.

Table 1: Codes of the qualitative study and their categories and thematic areas

Declining mortality		**Early death**			**Higher females death**	
Code	Category	code		category	code	category
sufficient rain proper feeding style no famine balanced diet fertile soil food available good weather high productivity good habit of saving good economic status	food security	smoking no balanced diet meningitis epidemic malaria epidemic HIV exposed to disease Epidemic drinking alcohol Diseased disease with no cure communicable diseases TB maternal cases chewing chat	typhoid Typhus unidentified diseases lack of clean water lack of proper feeding style no sanitation no separate kitchen poor personal hygiene maternal death change in malaria distribution change in production cerebral malaria no separate room for cattle	Unhealthy environments	exposed to disease administration domestic chores females domestic burden exposure to dung Polygamy raising children stress on females exposure to dirt	females burden
Sanitation safety net support separate kitchen separated room for cattle clean water declining maternal death decrease disease decreasing malaria distribution personal hygiene	Expansion of health education	thought as evil spirit lack of awareness late treatment negligent no feeling of ownership do not take medicine Reluctant	Preference thinking relieve by it self saying no disease and death not named malaria do not listen no belief on treatment	negative health behaviors	not get maternal care maternal death maternal cases late treatment not going to health facility early marriage after males returned home delivery	maternal problems
education to share chores Vaccination health extension program health education free health service implement prevention strategy new packages increasing health facilities Affordable policy and strategy down streaming Prevention new technologies prevention policy and strategy return back Treatment Accessible health facility Accessible transport Collaboration maternal care	improved health service	low economic status building house demolishing organizations no organizations villagization	Transition do not stay in house political instability high chance of -transmission engaged in developmental activities	Instability		
		no treatment no intervention difficult to control no organizations no health facility no vaccination no health professionals	low economic status no prevention in the highlands Topography transportation problem late treatment absence of HEP Un accessible health facility	health service problems		
listen awareness in recent years implement health education increasing consciousness Knowledge going to health facilities	positive health behaviors	food shortage expensive food Famine delay of rain low economic status climate change Interrupt farming	insufficient rain low population pressure starvation no balanced diet malnutrition no habit of saving dry season	Food insecurity		

4.10 Ethical consideration

Ethical clearance of this study was obtained from the research ethics committee of the School of Public Health, College of Health Sciences, Addis Ababa University. Permission was also obtained from the BRHP technical management committee.

The confidentiality of the data was kept very well. Except the principal investigator and the data cleaners, no other person had access to the data and no personal identifier was attached in the data extraction tool.

In addition to the above, in the qualitative part of the study letter was obtained from school of public health to those organizations and community leaders. Furthermore the purpose of the study was explained to the interviewee by the principal investigator and verbal informed consent was obtained from each interviewee before participation. Confidentiality was maintained for all interviewees and their specific identifiers such as names were not used on the study instrument and would not be mentioned on the study report.

4.11 Dissemination of results

This research report will be presented at the school of Public health in College of Health Science and a copy of it will be submitted to the SPH library. Another copy will be given to the BRHP and also to concerned governmental organizations at the study district and non governmental organizations. The research will also be presented in different seminars and conferences. Publication in reputable journal will also be considered.

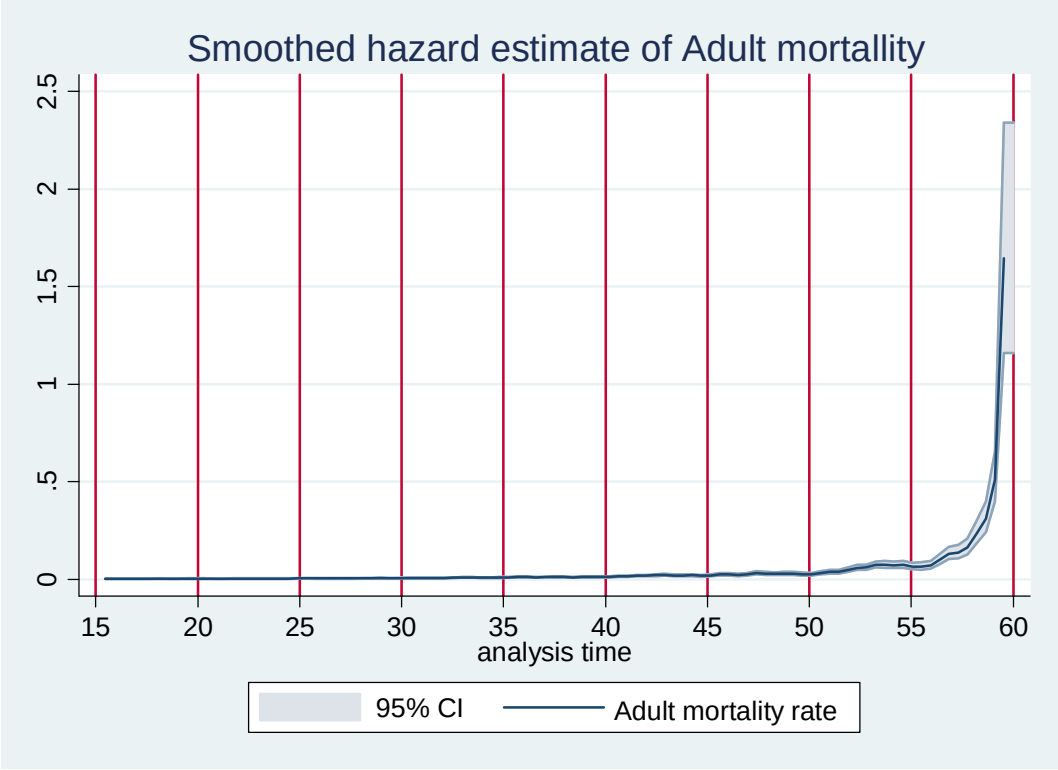
5. Results

5.1 Levels of adult Mortality in Butajira HDSS

A total of 2,810 adults deaths (aged 15- 60 years) has been registered in the BRHP from 427,649 person years of observations during the years 1987 and 2008. This has resulted in a total incidence of adult mortality rate of 6.57 deaths per 1000 person years of observations with 95 % CI (6.33, 6.82). The mean age of the adult population studied was 27.64 with SD $\pm$ 10.62. In this study, out of the total 2,810 deaths that occurred in the study period 1,388 (49.39%) of the deaths were males and 1,422 (50.60%) of them were females. The database captured a total of total 2,435(86.65%) deaths from rural areas and 375 (13.35%) deaths from urban areas of the Butajira demographic surveillance area. (Table 2)

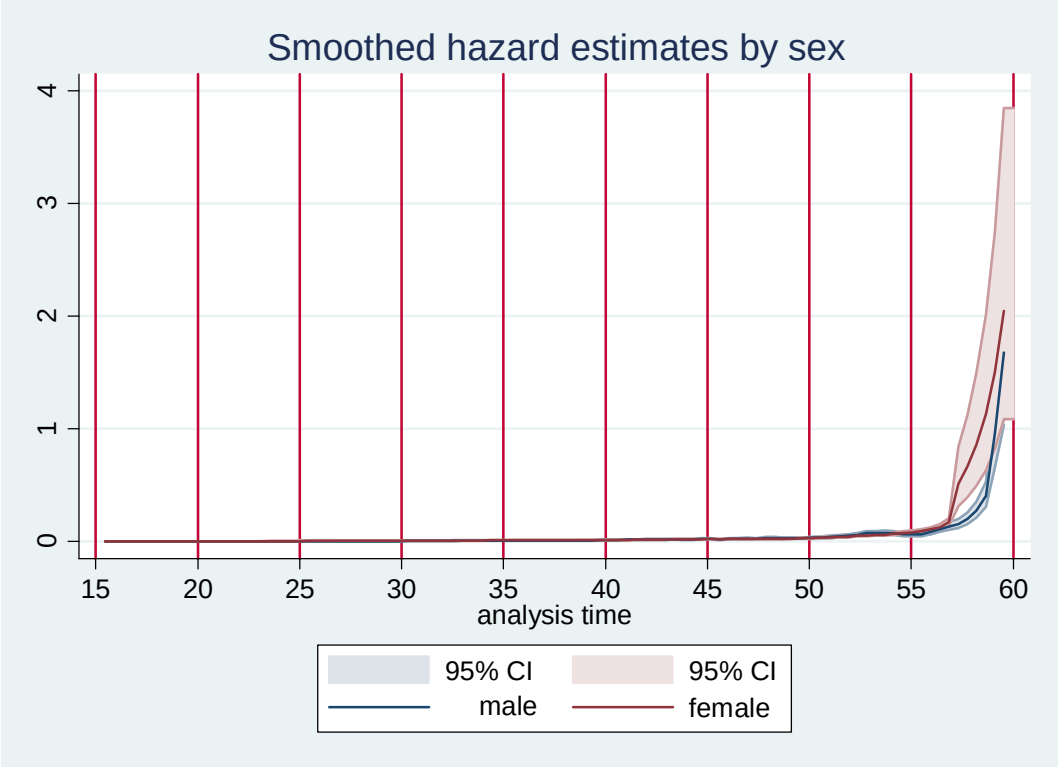
Table 2: Levels of Adult Mortality rate by different covariates in Butajira District, South Central Ethiopia: 1987-2008

Variable	deaths	person years	mortality incidence rate
Age			
15-19	365	154758	2.36 (2.13, 2.61)
20-29	584	162605	3.59 (3.31, 3.90)
30-39	597	70709	8.44 (7.79, 9.15)
40-49	628	31042	20.23 (18.70, 21.88)
50-60	636	8534	74.51 (68.86, 80.54)
Sex			
Male	1388	228507	6.07 (5.76, 6.40)
Female	1422	199141	7.14 (6.78 ,7.52)
Year			
1987-92	723	73499	9.84(9.14,10.58)
1993-98	887	104469	8.49(7.94,9.07)
1999-2004	924	145304	6.36(5.96,6.78)
2005-08	276	104377	2.64(2.35,2.97)
Residence			
Rural	2435	315758	7.71(7.41,8.02)
urban	375	111890	3.35(3.03,3.71)
Religion			
Muslim	2226	314658	7.08(6.79,7.38)
Christian	584	112991	5.17(4.76,5.61)
Marital status			
single	1537	218248	7.04 (6.70, 7.40)
Married	864	176274	4.90(4.59,5.24)
Separated	41	6197	6.62(4.87,8.98)
widowed	368	26930	13.67(12.34,15.14)
Literacy			
Illiterate	1277	135099	9.45 (8.94, 9.98)
literate	1533	292550	5.24(4.99, 5.51)
House ownership			
Own	2437	337162	7.23(6.95,7.52)
Rented	148	57412	2.58(2.19,3.03)
Given for free	225	33075	6.80(5.97, 7.75)
Oxen			
No	2248	323174	6.96(6.67,7.25)
yes	562	104475	5.38(4.95, 5.84)
Water source			
Protected	625	155647	4.01(3.71,4.34)
unprotected	2185	272002	8.04(7.71 ,8.38)
Window			
No	2224	286212	7.77 (7.45 ,8.10)
yes	586	141437	4.14 (3.82 ,4.49)
Roof			
Iron sheets	396	105329	3.76(3.41,4.15)
Thatched grass	2414	322320	7.49(7.20 ,7.80)
Distance to hosp			
< 5 kms	579	138248	4.19(3.86, 4.54)
>= 5 kms	2231	289400	7.71(7.40,8.04)
Total	2810	427649	6.57(6.33, 6.82)


Smoothed hazard estimate of Adult mortallity
0
.5
1
1.5
2
2.5
15
20
25
30
35
40
45
50
55
60
analysis time
95% CI
Adult mortality rate

The distribution of adult mortality rate significantly varied by sex in Butajira Demographic surveillance area. The distribution of adult mortality by sex showed that males contributed 1,388 deaths with total of 228,507 person year of follow up and this resulted in an adult mortality rate of 6.07(with 95% CI 6.06, 6.74) deaths per 1000 years of observations while in the case of females there were 1,442 deaths amog 199,141 person years of follow up that resulted in an adult mortality incidence rate of 7.14 (95%CI 6.78, 7.52) deaths per 1000 person years of observations. Females had generally significantly higher mortality rate than males. (Table 2)

The hazards of both males and females were low till the age of 45 after which the hazards gradually increased and accelerated after age 55 with a higher prospensity for females compared to males that means the hazard by sex showed that it was higher for females than for males and this difference has been more pronounced after the age of 55. (Figure 3)


Smoothed hazard estimates by sex
0
1
2
3
4
15
20
25
30
35
40
45
50
55
60
analysis time
95% CI
95% CI
male
female

also differed across the various categories of marital status in Butajira DSA that showed widowed persons had a significantly higher incidence of adult mortality rate of 13.67(95% CI 12.34, 15.14) deaths per 1000 person years of observations followed by those who were singles with adult deaths of 7.04 (6.70, 7.40) per 1000 person years of observation. However, lower incidence of adult mortality rate was observed among those who were in marital union with an incidence of adult mortality rate of 4.90 with 95% CI (4.59, 5.24) deaths per 1000 person years of observations.Nevertheless, the levels of adult mortality did not significantly vary between those in current marital union and temporarily separated.

On the other hand adult Mortality rate was also significantly higher among Butajia resedents who were not able to read and write accounting a mortality level of 9.45(95% CI 8.94, 9.98) per 1000 person years of observation. Regarding house ownership and oxen ownership, those who have their own house and those who did not have oxen had higher adult mortality incidence rate in which it was observed to be 7.23 with 95% CI (6.95, 7.52) and 6.96 with 95% CI (6.67, 7.25) adult deaths per 1000 person years of follow up.(Table 2)

Furthermore, adult mortality seems to vary by ecological residence, the adult mortality was significantly higher in rural areas of Butajira with an adult mortality incidence rate of 7.71(95% CI 7.41, 8.02) deaths per 1000 person years though it was nearly halfed for Urban Butajira residents with an incidence rate of 3.35 (95% CI 3.03, 3.71) deaths per 1000 person years. Regarding distance to hospital adults living farther than 5 kms have significant higher mortality rate of 7.71 (95% CI 7.40, 8.04) than those who were living within 5kms of the zonal hospital in the area. (Table 2)

In this study,the incidence of adult mortality rate varied with different housing conditions. In relation to the potable water usage, those who used unprotected water source had significantly higher Incidence rate of 8.04 with 95% CI (7.71, 8.38) deaths per 1000 person years of observation and those who use protected water source had incidence rate of 4.01 with 95% CI(3.71,4.34) adut deaths per 1000 person years of observation. Adult mortality also significantly differed with availability of windows for the house in which those who had no window in their house had higher incidence of adult mortality rate of 7.77 (95% CI 7.45, 8.10) per 1000 person years of observations and those who had windows in their house hold had an incidence of adult mortality rate of 4.14 with 95% CI (3.82 ,4.49) deaths per 1000 person years of observations. In addition,there was also a significant higher incidence of adult mortality for those households who were living in thatched grass roof having with an incidence of adult mortality rate of 7.49 (95% CI 7.20 ,7.80) deaths per 1000 person years followed by those who were living in a house with iron sheet roofs having an incidence rate of 3.76 (95% CI 3.41, 4.15) adult deaths per 1000 person years of observations.(Table 2)

5.2 Temporal trends of adult mortality in Butajira HDSS

5.2.1 Overall Trends of adult Mortality

The trend of adult mortality in the Butajira DSA was also showen using the 22 year data set of the BRHP by calculating the incidence of adult mortality rate for each year starting from 1987 to the year 2008. Variation in adult mortality was observed across follow up years. Generally adult mortality showed a statistically significantly declining trend over the 22 years of follow-up. However there were years in which the incidence of adult mortality was significantly higher or lower than other survey years. For instance,the incidence of adult mortality reached its peak level in the year 1991 with a level of 13.78 with 95% CI (11.82, 16.06) and was low in 2007 with an adult mortality rate of 1.98(95% CI 1.50, 2.63) per 1000 person year of observation.(Table 3)

Table 3: Adult mortality rate per year in Butajira in Butajira District, South Central Ethiopia: 1987-2008

year	person year	No of death	Rate/1000 (95% CI)
1987	10404	63	6.06 (4.73,7.75)
1988	13104	174	13.27 (11.45,15.41)
1989	13449	107	7.96 (6.58,9.62)
1990	13578	101	7.43 (6.12,9.04)
1991	11831	163	13.78 (11.82,16.06)
1992	11132	115	10.33 (8.60,12.40)
1993	14835	148	9.98 (8.49,11.72)
1994	15914	164	10.31 (8.84,12.01)
1995	13426	133	9.90 (8.36,11.74)
1996	15371	113	7.35 (6.11,8.84)
1997	19752	130	6.58 (5.54,7.82)
1998	25170	199	7.91 (6.88,9.08)
1999	29222	355	12.15 (10.95,13.48)
2000	26293	155	5.89 (5.04,6.90)
2001	18843	96	5.09 (4.17,6.22)
2002	23217	123	5.30 (4.44,6.32)
2003	24529	113	4.60 (3.83,5.59)
2004	23199	82	3.53 (2.85,4.39)
2005	25596	63	2.46 (1.92,3.15)
2006	26090	84	3.22 (2.59,3.98)
2007	24692	49	1.98 (1.50,2.63)
2008	27997	80	2.86 (2.29,3.56)

Starting from the year 1987 adult mortality started with a low incidence of adult mortality rate of 6.06 with 95% CI (4.73,7.75) and it sharply rised to high incidence of adult mortality rate on the year 1988 to an incidence of adult mortality rate of 13.27 with 95% CI (11.45,15.41) deaths per 1000 person years which again falls on the next two years. This adult mortality again sharply rises to reach the maximum mortality rate registered from 1987-2008 with an adult mortality rate of 13.78 with 95% CI (11.82,16.06)deaths per 1000 person years of observation .

Meanwhile it again declines slowly till the year 1997 and reached at an adult mortality rate of 6.58 with 95% CI (5.54, 7.82) after which it again started to raise by the year 1998 and 1999 and reached a mortality rate of 12.15 with 95% CI (10.95,13.48) after which there was a decline till the year 2008 and reached an adult mortality rate of 2.86 with 95% CI (2.29,3.56) adult deaths per 1000 person year of follow up.(Table 3 and Figure 4)

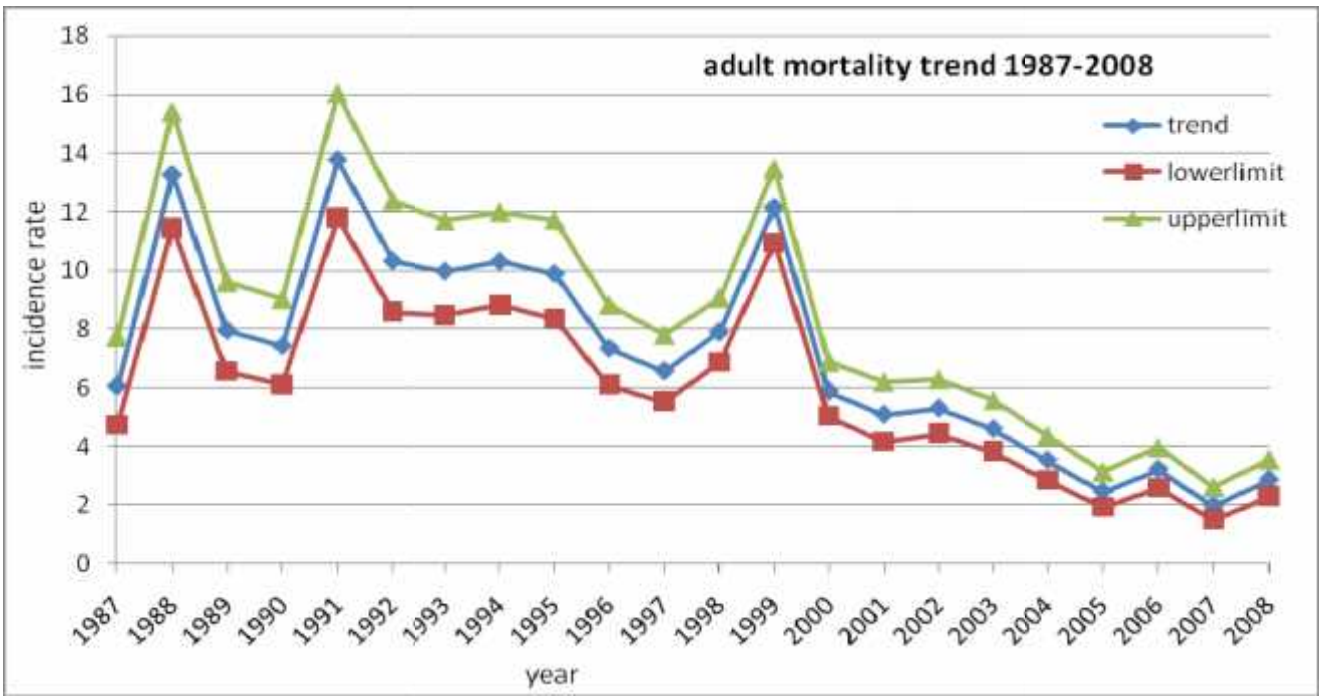


Figure 4: adult mortality rate by each year Butajira District, South Central Ethiopia: 1987-2008

There were specific years of follow up at which adult mortality has been significantly higher for instance the year 1988 documented a high adult mortality rate with 174 deaths out of 13104 person years resulting with a mortality rate of 13.27 with 95%CI (11.45, 15.41) deaths per 1000 person years of follow-up.(Table 3) The in depth interview to solicit reasons and mechanisms for such fluctuations revealed that during this year there was an epidemic of communicable disease including malaria and water borne diseases which claimed the lives of many villagers. In

addition to this lack of awareness on basic environmental hygiene and low economic status (deterring treatment seeking behavior and absence of better nutritional status), and villagization program which relocated villagers from their usual place of abode to a different area in which certain infectious diseases were prevalent and the high burden of work to construct houses was stated as reasons for the high burden of mortality in the specific years.

The villagization program introduced by the former government of Ethiopia has been accused to cliam the lives of many villagers in the study area according to the indepth interview participants. In the villagization program people were forced to form a new village in which communicable diseases were abundantly available. A 51 years old respondent said that

"….during this time villagization of the people were started so that peoples who were residents of different areas started to come up together. So the chance that one disease was transmitted from one to another becomes high. Furthermore when a certain disease prevails in the community, villagers thought it would go away soon. In addition there was economic problem in the community as villagers consumed most of their wealth to consutruct their new houses. Due to these reasons peoples were not going to hospitals.

…they were going to a house with nothing. When we see their house it is without roof. These things were happened because of their economic problem. The year 1981EC was the time where people moved out from their comfortable houses and started life in a new barren house. "

During the same year of 1988 Malaria was stated as the main cause of death since peoples were not aware how to prevent malaria disease so that they were exposed to it. Even after they acquired the infection, they were not going to hospital seeking for medical care. This was due to lack of awareness and also as there was no health service around so that peoples were not going to hospitals. A 42 years old interviewee said that

"….Because during the villagization there was no health service and follow up, there was a big problem. Such exposed them to disease. Children and adults were exposed to diseases because there was no health service."

A 55 years old respondent from the highlands also said:

"…Most of the time it is because of economical problem. As there is no health facility in nearby even the diseases was not able to be identified. As in this time there is no treatment and follow-up adults were died of unidentified diseases, there was large number of mortality..."

The other peak mortality was seen on the year 1991 during this time adult mortality had reached 13.78 with 95% CI (11.82, 16.06) adult deaths per 1000 person years of observations.(Table 3) The main reasons for the increased death within this year were political instability, famine, high malaria burden, HIVand unavailability of health facility had contributed a lot.

Since this was the time where there was government change there was political instability. This led individuals not to go to farming, as they have been doing it earlier and they were not in need to participate in different activities that resulted in low productivity. In addition to this, there was also insufficient rain during this year that lead to famine. A 55 years old individual said:

"At that time as there was government change, people were confused and they were not able to do their farm timely. Therefore there was big problem (economical and food). …"

A 42 years old male respondent also reiterated that

"*…..they were reluctant to do community works like terracing, planting trees and such the like and could not accept those works as they are right…"*

The other reason mentioned by key informants were the political instability made people to demolish different organizations like schools and health organizations because they thought that it was going to be taken by third party. A 51 year old individual also said that:

""Yes at that time there was no thought that the work they were doing was their own. As they were forced to do social works in the previous times and when the Ethiopian Peoples Revolutionary Democratic Front took power people try to demolish different organizations, institutions and schools, because they thought that some other government is going to take everything from them…"

By this time there were no awareness about treatment and they were hopeless about their future. In addition to this there were no health facilities. People prefer to stay at home and try some traditional and religious health practices. A 42 year old male respondent said that:

"Yes, yes! During this time there is no political stability and such situation led them to lose their hope, lack of money and awareness they were not going to health institutions. These were the contributing factors to increased death".

A 51 years old respondent also added:

"…..When someone had cerebral malaria they said it is just nightmare. And even when we fight with the community to take the diseased to hospital 3 individuals got died. When a person got disease they say he needs "eze" (prayer to allah) so they didn't take them to hospital…."

In addition to all of these that happened in the year mentioned there were also frequent deaths from HIV related diseases. This time onwards they respond that it had taken away many lives especially in the youth. A 48 years old male respondent said :

"There were many individuals who passed away due to HIV. It was not only malaria malnutrition and such…. in the previous years since there were no medication given for those with HIV…the first time I saw HIV patient was on the year 1983 EC and this has claimed the lives of many in the year around 1983,84…86."

Another 82 years old respondent also added

"At that time there appeared an incurable disease. Nowadays its name is unsaid. When we ask what killed someone it was answered that they were dying by this incurable disease. Even with his spouse many were died …..There was also a child who died when both her parents were dead."

The other time where there is high mortality is in the year 1998- 99 in which adult mortality started to increase from 7.91 95% CI(6.88, 9.08) per 1000 person year in 1998 to12.15 with95% CI (10.95,13.48) per 1000 person year in 1999. This period was explained by malaria epidemic and famine existing during that time (Table 3).

During this period 1998-99 there was a malaria epidemic and there were many individuals who died due to this. During this period, peoples were sick of the disease and since they had no awareness of going to hospitals this was complicated to be cerebral malaria and when they see the symptoms of this cerebral malaria like nightmare then they take this as evil spirit and prefer to go to witch crafts and traditional healers. An 82 years old male respondent explained the fact as follows

"In the previous years without knowing cerebral malaria there were people died by staying in their homes thinking malaria as "gini" or satan and when it was lately known people flocked to the health center otherwise there could be many deaths around these years.

Another 55 year old person also added the fact that:

"I remember there was malaria. And this disease killed those persons who were not ready and negligent, who do not take treatments. It was because of economical problems. There were many deaths because they were notable to get early treatment. It was like an epidemic. So, at that time, there were a huge number of malaria deaths."

In addition to this during this period there were also food shortage in the area due to insufficient rain and low production. A 51 years old respondent said:

"….There was food shortage during that time and there was also high malaria burden. Even in those houses near by the river mosquito entered into the house but the people doesn't know that it was malaria…"

The other respondent a 42 year old male person mentioned the occurrence of epidemic as follows

"For example we can take 1991 and also 1992. There were a large number of deaths because of malaria."

This high mortality was explained by the respondents that idirs were even unable to give money to the family of victims as there was high death with in that area.A 51 year old respondent explained this as:

"While death was high people start to leave "idirs" as they were unable to give money for all those deaths. Some "idirs" prposed victimed family members to take half the money until its account save bigger money for the next time. So during this period I understood there was increased death in this area."

Starting from the beginning year 1987 the mortality rate was low which was 6.06 with 95% CI (4.73, 7.75) (Table 3) . The main reasons for this were high productivity during that period and low population pressure in addition with sufficient rain and fertile soil as the factors contributing for the low mortality during this specific year. Furthermore it was explained that things in this year were affordable thus the community was in good economic status. And an a 51 year old interviewee said that:

"Yes during that time 1979-80 E.C. the economy was good and there was comfort. Even if cereal was expensive there was comfort in the community. There was also one story at this time, the farmer was prevented to drink alcohol on the day time then the farmer came during day time to save a drink for him as he could not enough of it if he came late during the evening. When there is budget individuals can withstand different diseases. But if they have deficiency they could not withstand those diseases. If there is a little comfort they can survive and also can go to hospital. During the year 1979-80E.C. the farmer had good budget."

The other is starting from the year 1992 adult mortality started to decline reaching to the lower mortality rate on the year 1997 in which adult mortality rate was reached at 6.58 with 95% CI (5.54,7.82) deaths per 1000 person years of observation.(Table 3)

This was also reasoned out by the interviewees in the qualitative study explaining that this was the time where improved health service started to be given after the political instability in 1991 and this was the time where the community started to get health education so that they started to develop awareness. The other factor which contributed for the decline in mortality was that people returned back to their previous places they have before the villagization.

"…after the down fall of DERGE the people were returned back to the pervious place where they live. This has an advantage because during the villagization there was no health service and

follows up, and there was a big problem that exposed them to epidemic. Children and adults were exposed to diseases because there was no health service. So, when they returned to their places they got space and they already adapted the area which contributed to the decline in the death of adults…"

From the year 2000 on ward adult mortality is declining till the year 2008 except that it has a little rise in the year 2006.the mortality rate has declined from adult mortality of 5.89 with 95% CI (5.04, 6.90) deaths per 1000 person years in the year 2000 to 2.86 with 95 % CI (2.29,3.56) deaths per 1000 years in the year 2008 with only little increment in the middle on the year 2006 to mortality rate of 3.22 95% CI (2.59,3.98) deaths per 1000 person years .(Table 3 and Figure 4).

This decline in mortality was reasoned out by the interviewees that it was because of the commencement of health education, improved health service, good habit of saving, and adoption of new technologies and development of new packages.

This period was the beginning of a health extension program where there was home to home education given to the community that enabled the community to develop awareness and implement what they are told to do so. The health education messages enabled them to keep their personal hygiene, have good sanitation, seek maternal care, have proper feeding style, have separate kitchen from main house and have separate room for cattle. In addition to this, the number of health facilities was increasing and health delivery service was also improved. Further more, different prevention works were done. This was explained by a 48 years old respondent as:

"After 93, the health delivery sytem were decentralized up to the kebele level. Health extension workers were assigned to each kebele and they taught the community how to prevent diseases that declined in the community after the intervention is put in place. ...in addition to that, they

got awareness how to keep personal hygine, how to prevent diseases and how to prevent malaria. Bed net has also been distributed in the community. This prevention works led to the declining of the mortality"

The adoption of new technologies and development of new packages was explained by a 45 years old respondent as:

"from 1993-2001 there was a huge and integrated work in health, education and agricultural economy sector …Now starting from 1993 for example in agricultural sectors new technologies were adapted. In addition, new packages were adopted for health, education & agriculture. So that the farmer was given education on what he should have to do for his own health and how to feed properly. And since the farmer do what was told to him in practice it contributed to the decline in adult mortality."

The little rise in the year 2006 was explained by the interviewees that there were food shortage in the rural areas especially in the lowlands. A 42 years old interviewee said

"In the lowland area it is seasonal. In the rain season they face food shortage. The food they save in the dry season not enough to them. If the rain is late they cannot get their food and subjected to government's aid……..…
Though, I don't remember the exact year, like the year around 1997E.C"

Another male 55 year old respondent from lowland area said that:

"….After separation of the cattle and human being, disease was declining. Both disease and death were decreasing. Except that for three consecutive years, there was a situation where adults' mortality had existed. ….

This means around 1997, 98 E.C. During that time in the low land area intermittently most adults were passed away. But after that it was decreasing."

5.2.2 The trend of adult mortality by sex

The trend shows that there was a declining incidence of adult mortality for both females and males. The incidence of adult mortality for males had declined from 6.00(4.19,8.58) adult deaths per 1000 person years of observation in 1987 to 2.92(2.19,3.90) deaths per 1000 person years of observation in 2008. And females had also shown a declining trend of the incidence of adult mortality from 6.11(4.34,8.59) adult deaths per 1000 persons years of observation in the year 1987 to 2.77(1.97 ,3.88) adult deaths per 1000 person years of observation in the year 2008.The trend of the incidence of adult mortality by sex showed that both males and females had reached to their peak in the year 1991 with in which males reach adult mortality rate of 14.44 with 95% CI (11.56, 18.03) and females reach to adult mortality rate of 13.21 with 95% CI (10.69,16.35). Comparing the trends of males and females mortality males mortality was higher till the year 1996 after which females mortality took the lead(Figure 5).

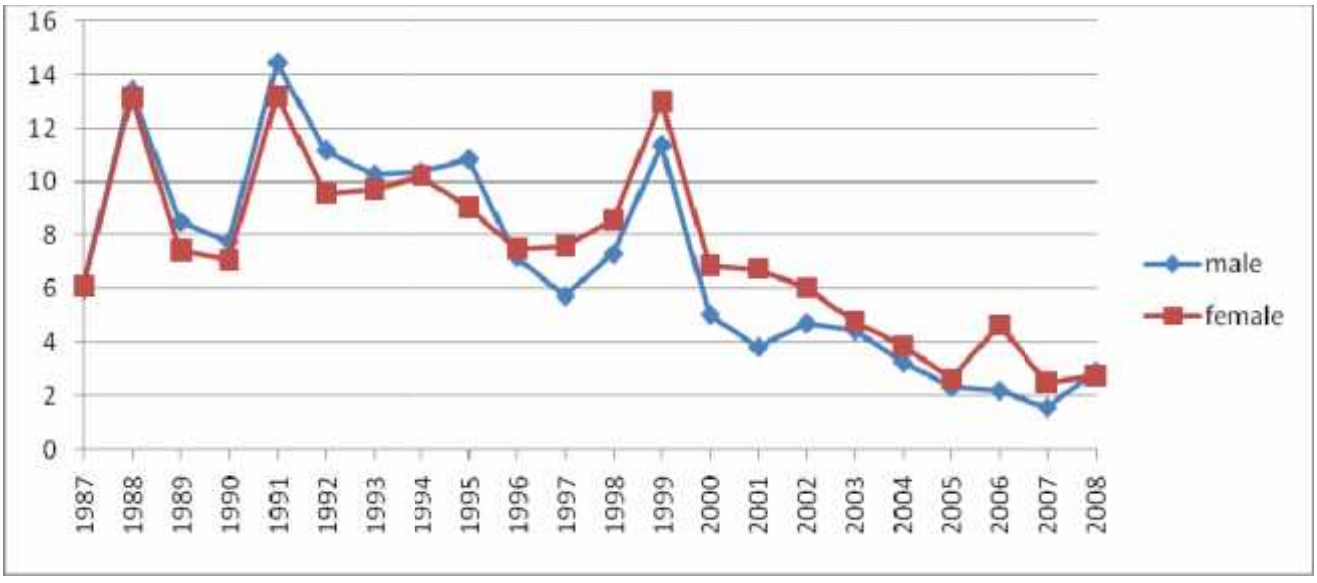


Figure 5 adult mortality rate by sex for each year in Butajira District, South Central Ethiopia : 1987-2008

The higher mortality of males before the year 1996 was attributed to the high burden of workload men had faced during the villagization program according to some qualitative indepth interviwees. During this time males were forced to engage in hard labor to construct houses for a longer time. They were also forced to expend their resources for constructing new houses. They need to take their family members to the new village and manage it without abundant resource which lead them to exhaustion and sickness.. The burden of males during that time was explained by 42 year old respondents as:

> *"Of course at the time of commencement of villagization period, building house was the responsibility of the males. It was desperate to see them carrying different sooty materials. They were given a plot of land and some material and they were expected to finish in some time interval. And this is true. They were forced to build one or two houses in a day. And at the same time they plough their land. And this was their day to day activity and which made them tired and exposed them to disease. When they were diseased in this context they would be dead."*

The other circumstance was that males were forced to be engaged in different campaign works like cotton plantation or "yetit zemecha".Thus the lives of males were full of stress in fear of being taken to this campains. Therefore, most men were not staying in their respective homes. This exposed them to different diseases and death. A 51 years old male respondent said:

"Yes in the years between 1979-89E.C. they were taken to cotton collection campaign ("yetit zemecha") there were also different campaigns that males were not able to stay in their house."

When the high burden of work of males was reversed, females started to have higher mortality than that of the males. Even though maternal care was a little bit enhanced in recent years the problem of maternal mortality has been very high in the community. Besides, early marriage has

been prevalent. The less trivial reason for the high mortality among females could also be attributed to the high burden of domestic chores among females.

In the study area, polygamy is very common. So, when a man got married to another wife he almost forgets his first wife and she sholders the entire responsibility of the first household including raising children. This makes the life of the first wife so miserable and death of females could be higher than that for males. This was explained by a 42 years old interviewee as:

"On the side of female, they would encounter problems when they give birth to a child, got pregnancy and rare children , this is especially hard when their husband is polygmaous. They do get less assistance and care from their husbands. Males had polygamy marriage and they give care/ go to their new wife.Then, rising of children fall on the shoulder of the women. In addition, the income and the expense she incurred do not fit…"

On the other hand, when males were returned from war front after EPRDF took power, they married women much younger than themselves in their earlier teens which expose them to maternal morbidity and mortality. A 51 years old respondent said:

"This was because first the females were in stable condition. But after 1989 the females were going back rather than getting forward. This was because males were returned back to the community there was early marriage. And every woman was in problem while giving birth. This was because they got married around 14 and when they give birth their age could be around 16.there were females who passed away while giving birth."

5.2.3 Trend of adult mortality by residencial ecology

The incidence of adult mortality was lower in the urban than the rural areas of the Demographic Surviellance Area.The adult mortality rate was higher through out the study period except in the year 2001.The incidence of adult mortality has been fluctuating. For instance, the incidence reached at its peak in the rural Butajira area in the year 1992 with an inidence rate of 15.5 with

95% CI (13.18,18.23) adult deaths per 1000 person years of observations.With regard to the urban area, the incidence of adult mortality rate reached at its maximum level in the year1988 with an incidence rate of 7.51 with 95% CI (4.45,12.68) adult deaths per 1000 person years of follow up.(Figure 6)

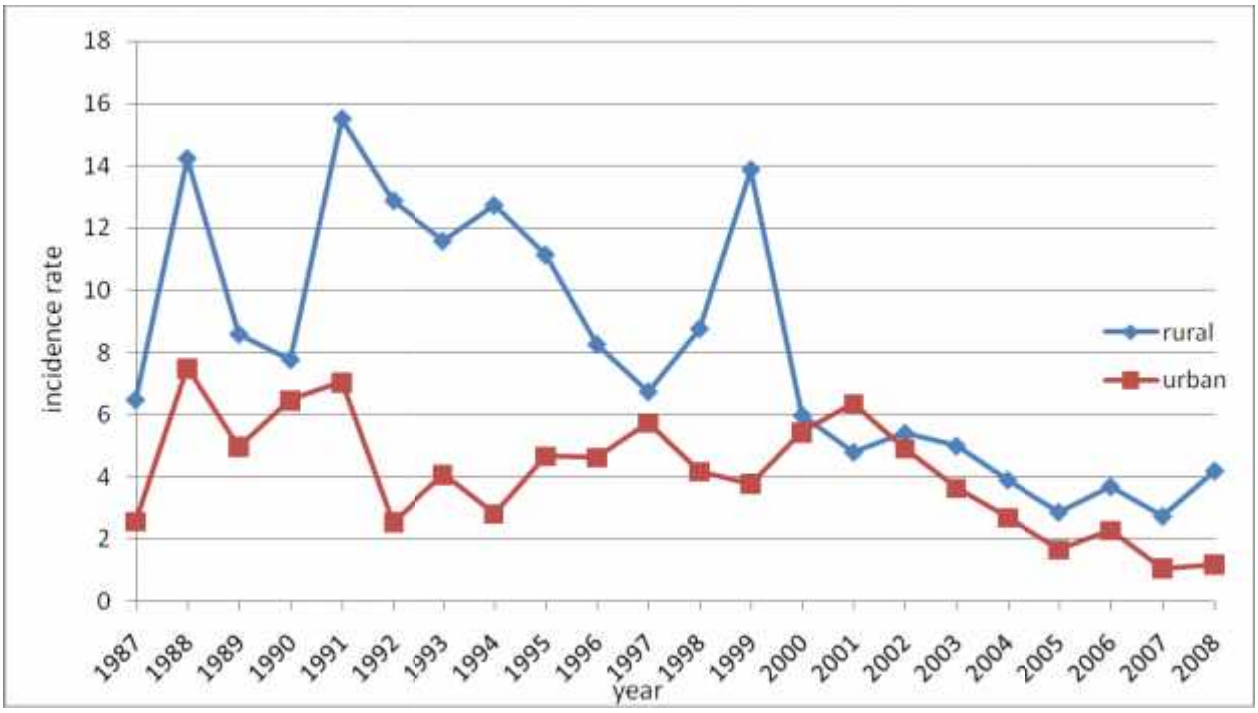


Figure 6: adult mortality rate by Residential area for each year in Butajira District,South Central Ethiopia : 1987-2008

5.3 Determinants of adult mortality

The incidence of adult death in the age group 20-29 was 1.08 with 95% I (0.95, 1.23) times higher than those who were in the age group 15-19 years. The risk of mortality increased as the age of an adult increased in this study. For instance, the risk of adult mortality were 4.58 (4.00,5.23) times higher among adults aged 50-60 years compared to those aged 15-19 years. However sex was not statistically significantly associated with the incidence of adult mortality.

Survey years were grouped in different categories in this analysis which revealed significantly variable incidence of adult mortality. The incidence of adult mortality were significantly higher in 1987-92,1993-98 and 1999-2004 with an adjusted IRR= 4.61(3.92,5.43), IRR=16.61(14.38,19.18) and IRR=13.66(11.92,15.65) compared to the recent period of 2005-8.With regards to residential area,the incidence of adult mortality was significantly higher in rural areas with an adjusted IRR= 1.27(1.02, 1.57) when compared to the urban residents.On the other hand,the incidence of adult mortality was significantly higher among Muslims compared to Christianity religion followers with an adjusted IRR= 1.15(1.05, 1.26). Moreover, adult mortality was also significantly higher among those who were married compared to the singles with an adjusted IRR= 1.71 with 95% CI (1.52,1.91). Compared to those who were not in current marital union,adult mortality was higher in those who were separated and widowed with an adjusted IRR= 2.93 with 95 % CI (2.11, 4.06) and IRR=4.09 with 95% CI (4.25,5.66) respectively. In addition to this, the study revealed that adult mortality was significantly higher among illiterates compared with their litrate counterparts with an adjusted IRR=1.12 with 95 %CI(1.02, 1.23).

With regard to housing conditions, the type of roof and availability of window with in the house were significantly associated with adult mortality but water source did not show a significant

association when other socio-demograhic variables were controlled. Those individuals living in a house not having windows have significantly higher incidence of adult death compared to those living in a house with windows having an adjusted IRR 1.20 95% CI (1.08, 1.34).Those individuals living in a house with thatched grass roof had significantly lower mortality compared to those living in house with iron sheet roofs with IRR (95% CI) 0.80(0.70, 0.92). Though it is not significant regarding house owner ship those who are living in a house given for free have higher incidence of death compared to those who are living in there own house with adjusted IRR= 1.02 95% CI (0.89,1.17).With regard to distance to hospital though it is not significant when other factors are added into the model,the incidence of adult death was higher in those living farther than 5km with adjusted IRR= 1.12 95% CI (0.98, 1.29) than those living within 5kms.(Table 4)

Table 4 Determinants of the incidence of adult mortality in Butajira District, South Central Ethiopia during1987 to 2008

Variable	death	person year	Unadjusted IRR	Adjusted IRR
Age				
15-19	365	154758	Ref	**Ref**
20-29	584	162605	1.11(0.97,1.26)	1.08(0.95,1.23)
30-39	597	70709	1.86(1.64,2.12)	**1.89(1.66,2.16)****
40-49	628	31042	3.31(2.92,3.76)	**2.99(2.62,3.41****
50-60	636	8534	5.62(4.95,6.37)	**4.58(4.00,5.23)****
Year				
1987-92	723	73499	3.61(3.14,4.15)	**4.61(3.92,5.43)****
1993-98	887	104469	13.24(11.58,4.08)	**16.61(14.38,19.18)****
1999-2004	924	145304	13.40(11.72,15.32)	**13.66(11.92,15.65)****
2005-08	276	104377	Ref	**Ref**
Residence				
Rural	2435	315759	2.11(1.89,2.35)	**1.27(1.02,1.57)****
urban	375	111890	Ref	**Ref**
Religion				
Muslim	2226	**314658**	1.23(1.12,1.35)	**1.15(1.05,1.26)****
Christian	584	**112991**	Ref	**Ref**
Marital status				
single	1537	218248	Ref	**Ref**
Married	864	176274	1.67(1.54,1.82)	**1.71(1.52,1.91)****
Separated	41	6197	2.97(2.17,4.06)	**2.93(2.11,4.06)****
widowed	368	26930	9.81(8.77,10.99)	**4.90(4.25,5.66)****
Literacy				
Illiterate	1277	135099	1.15(1.06,1.24)	**1.12(1.02,1.23)****
literate	1533	292550	Ref	**Ref**
House ownership				
Own	2437	337162	Ref	Ref
Rented	148	57412	0.42(0.36,0.50)	0.90(0.73,1.11)
Given for free	225	33075	1.24(1.09,1.41)	1.02(0.89,1.17)
Water source				
Protected	625	155647	Ref	Ref
unprotected	2185	272002	1.69(1.55,1.84)	1.09(0.98,1.22)
Window				
No	**2224**	**286212**	2.17(1.98,2.38)	**1.20(1.08,1.34)****
yes	**586**	**141437**	Ref	**Ref**
Roof				
iron sheets	396	105329	Ref	**Ref**
Thatched grass	2414	322320	2.17(1.95,2.41)	**0.80(0.70,0.92)****
Distance to hosp				
< 5 kms	**579**	**138248**	Ref	Ref
>= 5 kms	**2231**	**289400**	1.75(1.61,1.92)	1.12(0.98,1.29)

6. Discussion

This study showed a general statistically significant decline in the incidence of adult mortality trend though there were some fluctuations that made the trend not smooth. This fluctuations have been explained by different reasons.The general reasons responsible for the increase in adult mortality are unhealthy environments like malaria epidemic in different years, negative health behaviors which includ the cultural and religious beliefs which dominate the modern treatment, instability, health service problems and food insecurity . On the contrary, the decline was explained by expansion of health education, improved health service, positive health behaviors and food security especially after the year 2000.

Moreover age, religion, marital status, year, literacy, roof type and availability of window were statistically significantly associated with the incidence of adult death in Butajira District,South Central Ethiopia.

Though the surveillance duration was 22 years which is nearly a generation,the overall incidence of adult mortality rate over the followup years were 6.57 deaths per 1000 person year is slightly lower when compared with the results of studies done in Agincourt HDSS south Africa and in Butajira HDSS Ethiopia which have adult mortality of 8.2 per 1000 person years and 7.8 per 1000 person year respectively .[22,24] This higher mortality in Agincourt HDSS south Africa might be due to the fact that higher AIDS epidemic in South Africa when compared to the Eastern Africa[3,39] and with the Butajira HDSS this might be due to the time period in which that study did not include the recent years which have lower adult mortality and the adult age group was defined 15-65 years of age that it had five year difference with this study.

The adult mortality trend which has been declining in this study especially after the year 2000 was consistent with the study conducted in Afghanistan in which the trend was studied from 1996-2010.This research conducted in Afghanistan showed a declining pattern all over the study period.[19]And this declining pattern was also in line with the study conducted in Nepal in which adult mortality declines from 1996-2006.[20]This again is consistent with study done in Tanzania from 1994-2009 which showed an increase in adult mortality from 1994 to 2000 and decline after the year 2000-2009.[23] This decline in mortality rate after the year 2000 is also consistent with the declining mortality seen by EDHS from 2000-2011.[15] This might be related to the commitment of the international community to combat diseases such as HIV/AIDS, TB and Malaria which afflicted the adult population after the year 2000. [47]

But this result is inconsistent with the trend seen on a study conducted from a data collected from 1993-2010 in Agincourt HDSS in the South Africa which showed an increasing trend from 1999 to 2007 reaching to its plateau in the year 2004.[22]This might be due to the high HIV burden till the year 2004 in Southern Africa[3, 39] and the expansion of health facilities and health services in Ethiopia starting from the year 2000.

With regard to differentials in this study high adult mortality rate was stated in female sex, rural residence, Muslim religion illiterates and those who are widowed.

In this study female mortality rate was higher than males in which females have 7.14 and males have 6.07 this is not consistent with the study done in South Africa in 2007 which showed higher mortality of males than females.[22] It is not also in line with 2011 EDHS report which showed higher mortality for males compared to females respectively. [15] This might be due to the difference in the study method used for this study and the EDHS.

This result is again inconsistent with the results of study done in the year 2009-2012 in rural Tigray region of Ethiopia, which showed adult mortality rate is higher in males than females.[29]This might be due to the polygamous marriage, which is highly practiced around Butajira area. So that females are exposed for higher domestic burden and also a burden in raising children more than the males. But this difference between male and female is consistent with EDHS 2005 which showed that female adult mortality was higher than those of males.[28]

With regard to age there was an increase in mortality with the increasing age. This is in line with the study conducted in Nepal which showed that there was higher mortality rate after age 35.[20]This again was in line with a study conducted in Ethiopia that showed three fold and four fold risk of adult mortality in the agegroup 30-39 and 40 -49 compared to the youngest age group. [31]

Regarding to marital status those who are widowed and divorced individuals have higher incidence of mortality compared to those who are singles. This is consistent to the study conducted in Russia for both men and women divorced people had somewhat higher mortality and those subjects who are divorced had higher risk of dying than those who are not married.[32] This is again consistent with a study conducted in Namibia which showed that never married adults had a decreased hazard of dying than the widowed and divorced adults. [33]This finding again is congruent with a study conducted in Tigray Ethiopia which showed that mortality rate was higher among widowed and divorced individuals.[29] This is also in line with a study conducted in Butajira from 1987-2004 which showed that men who are not in current marital union were three times more likely to die.[24] This high mortality in widowed and divorced individuals might be due to the absence of care that they were getting from their spouse.In addition to this those who are widowed and have children might be exposed to the burden of

raising children and household management which might make them vulnerable to diseases and death.This might also be due to the acquired infections from the deseased partner in such diseases like HIV and TB.

Regarding literacy of the adults studied those who are illiterates have higher incidence of death.This finding is cogruent with the study done in South Africa from 2001-2007[36]that showed the hazard of adult mortality was lower in those who were educated than those who were not educated which might be because those who were litrate were more concerned about their health. In addition, those who were litrate can easily understand the Medias.

On the contrary this finding is not consistent with a study conducted in Bangladesh from 2005-2009 that showed lower incidence of death in the illiterates when compared to literates.[35] This might be due to the inclusion of those individuals who have five years of education as illiterates in the Bangladish.

The incidence of adult mortality was about 1.27 times higher among rural residents compared to the urban residents. This result is consistent with study conducted in Namibia showing the hazard of dying in urban areas is lower than the rural area. [33]This result again is consistent to the study conducted in Tigray Ethiopia which evidenced the hazard of dying in rural areas is higher compared to their urban counterparts.[29] This might be due accessible health service that the urban areas get but the rurals do not get this service closely. In addition to this the urban areas were close to different Medias so that they have knowledge about modern treatment and have good attitude about treatment. Furthermore the communities in the rural areas do know how to prevent disease.

With regard to house ownership, those who live in rented houses have lower incidence of death compared to those who had their own houses. And this result of adult mortality between those who rented and those who lived in their own house is in line with a study conducted in England and Scotland which showed that owning a house increases the risk of death.[38]

7. Strengths and Limitations of the study

The strength of this study is that it uses data that has been collected for long duration (22 years) that make measurements in the study reliable and the determinants fairly predicted.In addition to the use of the longitudinal study design it uses a qualitative method to complement the results found in the quantitative part of the study.

The limitation of this study is that it uses data which was collected up to the year 2008 which may be difficult to use the findings for recent interventions. In addition to this in qualitative part of the study there might be recall bias in remembering the events which occur before 7 and above years.

8. Conclusions

Analysis of the incidence of adult mortality demonstrated different patterns and varying degrees of socioeconomic inequalities in Butajira, Ethiopia. Adult mortality rate showed that there is a declining pattern from the year 1987-2008.but there were fluctuation in adult mortality in different years especially before the year 2000 these fluctuations were reasoned out by the qualitative study that unhealthy environment, negative health behaviors,instability, health service problems and food insecurity contributed for the increase and expansion of health education, improved health service, positive health behaviors and food security contributed for the decline in adult mortality.And the trend of adult mortality by sex showed that male adult mortality was higher till the year 1996 after which female mortality become leading And this higher female adult mortality compared to males was reasoned out by female burden especially because of the polygamy marriage in the area and maternal problems.In addition to this, different factors were found to be significant determinants of adult mortality in Butajira. Among the determinants age, year, residence type, religion, marital status ,literacy ,roof type and availability of window for the residential house were found to be significantly associated with incidence of adult mortality.However house ownership water source and distance to hospital were found to be non significant.

9. Recommendations

There should be consistent awareness creation and prevention of communicable diseases such as malaria by the health service provider and its partners.

The agricultural sector should have to strive to ensure food security in the area to alleviate the high burden of mortality due to food shortage in the study area and beyond.

All stakeholders should put their maximum effort to reduce the high burden of female mortality in the area. Special emphasis should be given to educate the community to avoid polygamous marriage which puts women in higher work load compared to their husbands. Community-based education about maternal care and follow up should also be given. Girls education beyond primary level of education should be given more emphasis to empower women in the study area and beyond.

Besides, more emphasis should be given on educating the community on the effect of housing structure and availability of windows on death.

10. Reference

1. World Health Organization. World Health Statistics 2012. Indicator compendium.2012

2. http://www.tradingeconomics.com/ethiopia/mortality-rate-adult-male-per-1-000-male-adults-wb-data.html

3. http://www.who.int/gho/mortality_burden_disease/mortality_adult/situation_trends/en/

4. Schumacher A , Wang H, D Lopez A, Murray J L C . Divergent trends in adult and elderly mortality for 21 regions and 187 countries, by sex, from 1970 to 2010: a systematic analysis. The Lancet, Volume 381, Page S131, 17 June 2013

5. Rao C, Lopez AD, Hemed Y. Causes of Death. In: Jamison DT, Feachem RG, Makgoba MW, et al., editors. Disease and Mortality in Sub-Saharan Africa. 2nd edition. Washington (DC): World Bank; 2006. Chapter 5

6. Timæus IM, Jasseh M .Adult Mortality in Sub-Saharan Africa: Evidence from Demographic and Health Surveys Springer Population Association of America. *Demography*, Vol. 41, No. 4 (Nov., 2004), pp. 757-772

7. World Health Organization. Country cooperation strategy at a glance. May 2014 available at http://www.afro.who.int/en/ethiopia/country-cooperation-strategy.html

8. Institute for Health Metrics and Evaluation, Human Development Network, the World Bank. The Global Burden of Disease: Generating Evidence, Guiding Policy — Sub-Saharan Africa Regional Edition. Seattle, WA: IHME, 2013

9. http://www.who.int/gho/mortality_burden_disease/daly_rates/text/en/

10. Bradshaw D, Timaeus IM. Levels and Trends of Adult Mortality. Disease and Mortality in Sub-Saharan Africa. 2nd edition. Washington (DC): World Bank; 2006. Chapter 4.

11. Jamison DT, Feachem RG, Makgoba MW. Disease and Mortality in Sub-Saharan Africa. 2nd edition. Washington (DC): World Bank; 2006.

12. Mathers CD, Fat DM, Inoue M, Rao C, Lopez AD. Counting the dead and what they died from: an assessment of the global status of cause of death data. Bulletin of world health organization 2005;83:171-177

13. Hill K. Making deaths count. Bull World Health Organ . 2006 Mar; 84(3): 162-162. Available from: http://www.scielosp.org/scielo.php?script=sci_arttext&pid=S0042-96862006000300002&lng=en . http://dx.doi.org/10.1590/S0042-96862006000300002

14. Richard G. Rogers ,Robert A. Hummer ,Patrick A. Krueger. Adult Mortality . IBS University of Colorado. WORKING PAPER POP2002-0003.October 9, 2002

15. Central Statistical Authority Ethiopia, ICF macro (2011): Demographic and Health Survey. Calverton, Maryland, USA

16. World Health Organization. World Health Statistics 2014. Indicator compendium.2014

17. Clark. S.J. Adult Mortality in the Developing World: Methods and Measures. paper prepared for workshop. Marconi Conference Center, California July 8-11, 2004

18. Wang H, Lindgren LD , Lofgren KT , Rajaratnam JK , Marcus JR, Rector AL, Levitz CE, D Lopez A, Prof Murray JLC. Age-specific and sex-specific mortality in 187

countries, 1970—2010: a systematic analysis for the Global Burden of Disease Study 2010. The Lancet, Volume 380, Issue 9859, Pages 2071 - 2094, 15 December 2012

19. Afghan Public Health Institute, Ministry of Public Health (APHI/MoPH) [Afghanistan], Central Statistics Organization (CSO) [Afghanistan], ICF Macro, Indian Institute of Health Management Research (IIHMR) [India], and WHO Regional Office for the Eastern Mediterranean . 2011. Afghanistan Mortality Survey 2010. Calverton, Maryland, USA: ZGFXAAPHI/MoPH, CSO, ICF Macro, IIHMR and WHO/EMRO

20. Aryal UR, Lohani SP, Upadhyaya S, Sinha RC.A comparative study on adult mortality of Nepal.Kathmandu University Medical Journal (2009), Vol. 7, No. 3, Issue 27, 246-251

21. Walque D, Filmer D. Trends and Socioeconomic Gradients in Adult Mortality around the Developing World. Mar 2013 .PoPulation and develoPment Review 39(1): 1–29

22. Sartorius B, Kahn K, Collinson M, Sartorius K, Tollman S. Dying in their prime: determinants and space-time risk of adult mortality in rural South Africa. Geospat Health. 2013 May; 7(2): 237–249 PUB Med available at http://www.ncbi.nlm.nih.gov/pubmed/23733287

23. Michael D, Kanjala C, Calvert C, Pretorius C, Wringe A , Todd J , Mtenga B, Isingo R, Zaba B,and Urassa M.Does the Spectrum model accurately predict trends in adult mortality? Evaluation of model estimates using empirical data from a rural HIV community cohort study in north-western Tanzania . Measuring HIV associated mortality in africa .Glob Health Action 2014,7: 21783 available at http://dx.doi.org/10.3402/gha.v7.21783

24. Fantahun M, Berhane Y, Hogberg U, Wall S, Byass P. Young adult and middle age mortality in Butajira demographic surveillance site, Ethiopia: lifestyle, gender and household economy. 2008.BMC Public Health 8:268

25. Sartorius B. Modelling determinants, impact, and space time risk of age-specific mortality in rural South Africa: integrating methods to enhance policy relevance. Measuring HIV associated mortality in Africa. Glob Health Action 2013, 6: 19239 available at http://dx.doi.org/10.3402/gha.v6i0.19239

26. World Bank. Trends in Adult Mortality around the Developing World. 5(4)2011 available at http://siteresources.worldbank.org/DEC/Resources/84797-1154354760266/2807421-1288872844438/7530108-1313070714827

27. Sartorius B, Sartorius K (2013) Identifying and Targeting Mortality Disparities: A Framework for Sub-Saharan Africa Using Adult Mortality Data from South Africa. PLoS ONE 8(8): e71437. doi:10.1371/journal.pone.0071437

28. Central Statistical Authority Ethiopia, ICF macro (2005): Demographic and Health Survey. Calverton, Maryland, USA

29. Weldearegawi B, Spigt M, Berhane Y, Dinant G (2014) Mortality Level and Predictors in a Rural Ethiopian Population: Community Based Longitudinal Study. PLoS ONE 9(3): e93099. doi:10.1371/journal.pone.0093099

30. Bongaarts J. Long-Range Trends in Adult Mortality: Models and Projection Methods. Springer .Demography, vol 42 no. 1, February 2005: 23-49 available at http://www.jstor.org/stable/1515175

31. Kidist L. Determinants and causes of adult mortality in Butajira . Master's thesis in Public Health, Addis Ababa University,2000

32. Martin B, Michael M, Richard R , Michael M. Determinants of Adult Mortality in Russia: Estimates from Sibling Data. September 2003: 14(5): 603-611

33. Kandjimbian A. Event history analysis of socio-economic determinants of adult mortality in Namibia. master's thesis in applied statistics and demography, University of Namibia,2014

34. Hummer Aand Elaine M. Hernandez, "The Effect of Educational Attainment on Adult Mortality in the United States," Population Bulletin 68, no. 1 (2013)

35. Hanifi M A, Khan I R, and Bhuiya A. Determinants of Premature Adult Deaths in Coastal area of Bangladesh.2010

36. Nikoi CA, Odimegwu C. The Association Between Socioeconomic Status and Adult Mortality in Rural Kwazulu-Natal, South Africa . Oman Medical Journal (2013) Vol. 28, No. 2:102-107

37. Razzaque A, Nahar L, Khanam MA, Streatfield PK. Socio-demographic differentials of adult health indicators in Matlab, Bangladesh: self-rated health, health state, quality of life and disability level. Glob Health Action. 2010;3:70–7. [PubMed]

38. Naess Y, Claussen B, Smith GD Housing conditions in childhood and cause-specific adult mortality: The effect of sanitary conditions and economic deprivation on 55,761men in Oslo. Scandinavian Journal of Public Health, 2007; 35: 570–576

39. Ngom P, Clark S. Adult mortality in the era of HIV/AIDS: Sub-Saharan Africa. Workshop on HIV/AIDS and adult mortality in developing countries. Population division. New York.18 August 2003

40. Murray JLC, Ortblad FK et al .Sep 2014.Global, regional, and national incidence and mortality for HIV, tuberculosis, and malaria during 1990—2013: a systematic analysis for the Global Burden of Disease Study 2013. The Lancet, 384, (9947), Pages 1005 – 1070

41. CDC Global Health-Ethiopia: http://www.cdc.gov/global health/countries/ethiopia/

42. Melaku YA, Sahle BW, Tesfay FH, Bezabih AM, Aregay A, et al. (2014) Causes of Death among Adults in Northern Ethiopia: Evidence from Verbal Autopsy Data in Health and Demographic Surveillance System. PLoS ONE 9(9): e106781. doi:10.1371/journal.pone.0106781

43. Rogers G.R., Hummer, A.R., & Krueger, M.P.Adult Mortality. In Handbook of population 2005.283-309.

44. Mekonnen W, the interrelationship between population dynamics and child hood mortality in butajira district ,south central Ethiopia .desertation for Phd in Public Health.AAU.2012.

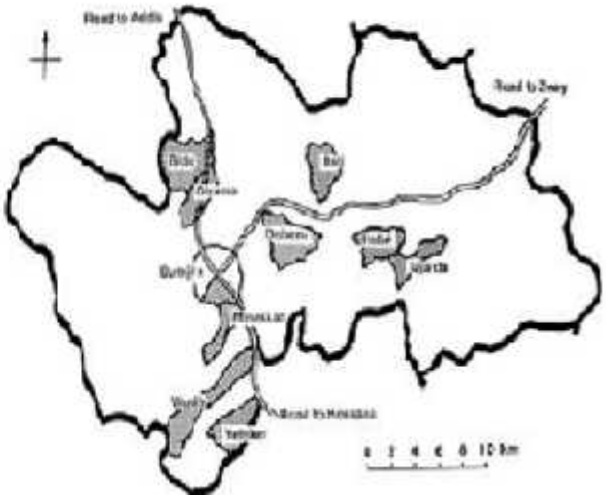
45. Shamebo D, sandstorm A, Wall S. Epiedemiological Surviellance for health research and intervention in primary health care. Scand J prim health care 1992:10:198-205

46. Berhane Y, Wall S. Butajira DSS, Ethiopia INDEPTH Monograph. AAU, UMEÅ UNIVERSITY.Volume 1 Part C.

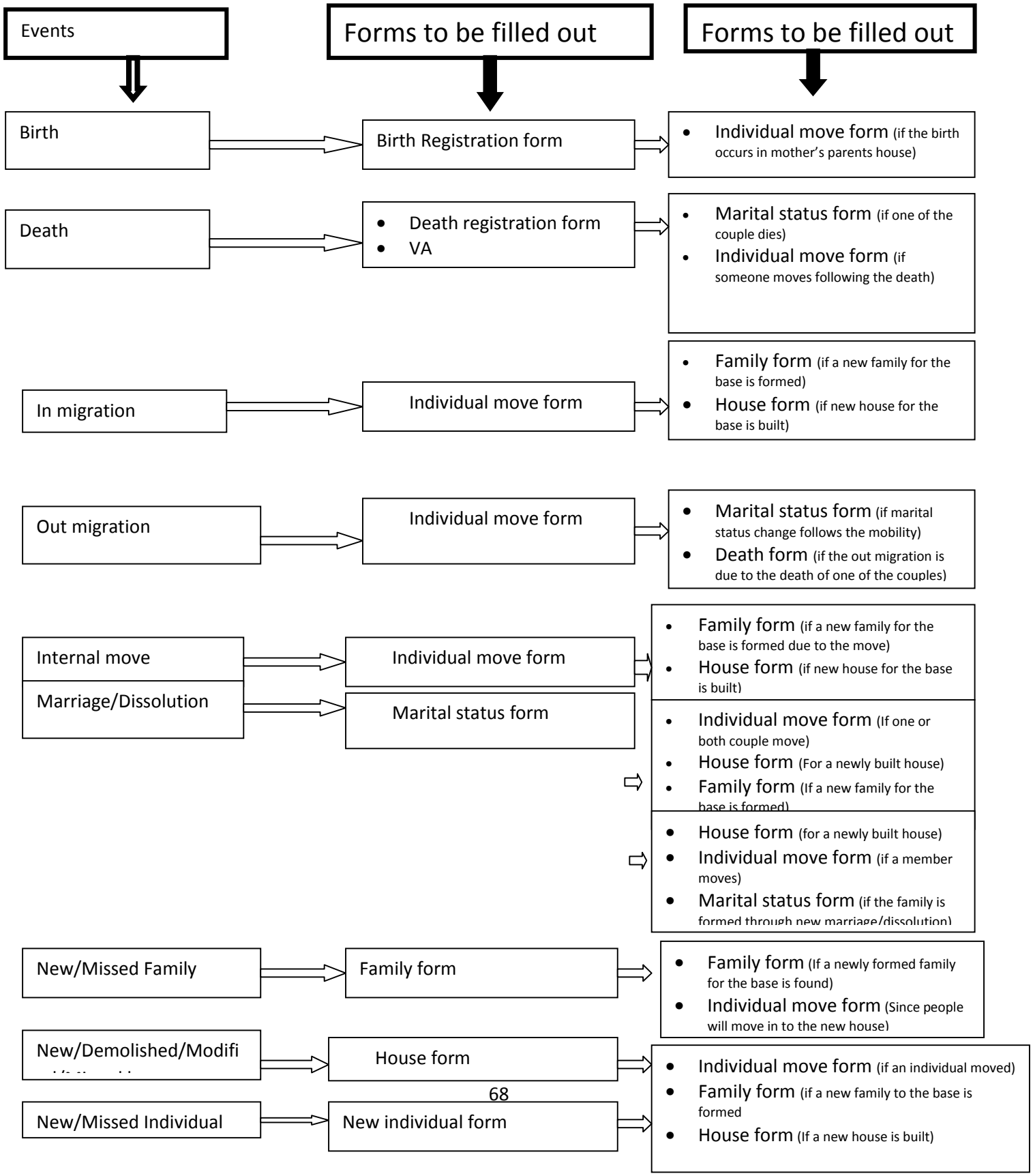
47. http://www.un.org/millenniumgoals/maternal.shtml


ETHIOPIA


Ethiopia



11.2Flow chart showing the activities of a BRHP data collector



11.3Questionnaires English Version

BRHP House Registration Form

1. Reason for filling out this form ⎕ 1. Surveillance 2. Reconciliation
2. Date of interview **DD MM YYYY** ⎕⎕ ⎕⎕ ⎕⎕⎕⎕
3. Name of interviewer and code ⎕⎕ / /
4. Is it a newly built house? ⎕ 1. Yes, new 2. No 3. Yes, modified 4. Yes, demolished & rebuilt 5. No, demolished
5. If new, the nearest house number ⎕⎕⎕⎕⎕⎕⎕⎕
6. House number ⎕⎕⎕⎕⎕⎕⎕⎕
7. Name and ID of head ⎕⎕⎕⎕⎕⎕⎕⎕ / /
8. Who is the owner of the house? ⎕ 1. Own 2. Governmental / Kebele 3. Rented from Individuals/Private 4. Cohabitant (Un-rentablel) 5. Other (specify) _____ 6. Cohabitant (Paying)
9. Type of roof ⎕ 1. Thatched 2. Corrugated iron sheet 3. Other (specify) _____
10. Characteristics of the wall of the house? ⎕ 1. Wood and mud 2. Wood and stalk/ grass 3. Stone and cement 4. Hollow blocks 5. Bricks 6. Corrugated iron sheets 7. Other (specify) _____
11. Does the house have a separate kitchen? ⎕ 1. Yes 2. No 3. Yes, shared
12. How many rooms does the house have (excluding kitchen)? ⎕⎕
13. Does the house have windows? ⎕ 1. Yes, a small opening 2. Yes, openable and closeable 3. No
14. Does the house have its own source of water within the compound? ⎕ 1. Yes, well 2. Yes, Pipe 3. No
15. What type of toilet facility does the house have? ⎕ 1.None 2. Pit latrine (functional) 3. Pit latrine (non-functional) 4. Flush toilet (functional) 5. Flush toilet (non functional) 6. Other (specify _____
16. Does the house have electricity? ⎕ 1. Yes 2. No
17. Geographical position: North ⎕⎕.⎕⎕⎕⎕ East 038° ⎕⎕⎕⎕
18. Housing dimension (Tukuls) Axis ⎕⎕⎕ Radius ⎕⎕⎕ Wall height ⎕⎕⎕ (Cms)

BRHP Family Registration Form

1. Reason for filling out this form ⎕ 1. Surveillance 2. Reconciliation
2. Date of interview **DD MM YYYY** ⎕⎕ ⎕⎕ ⎕⎕⎕⎕
3. Name and code of interviewer ⎕⎕

/ /

4. House number |_|_|_|_|_|_|_|

5. Name and ID of head |_|_|_|_|_|_|_|_|_|

/ /

6. Name and ID of spouse |_|_|_|_|_|_|_|_|_|

/ /

7. Number of usual members |_|_|

8. What type of fuel is mostly used for cooking in the family? |_|

1. Nothing 2. Kerosene 3. Charcoal 4. Wood 5. Leaves/ brushwood 6. Animal dung 7. Other (specify) __

9. Do domestic animals spend the night in the room where members of the family sleep in the night? |_|

1. Yes 2. No

10. What is the main source of water supply of the family? |_|

1. River 2. Protected well 3. Unprotected well 4. Lake 5. Pond 6. Pipe 7. Unprotected spring 8. Other (specify)_____ 9. Protected spring

11. Where do you usually dispose family refuse? |_|

1. Waste disposal pit 2. Open field 3. Burning 4. Other (specify) _____ 5. On the farm plots

12. What type of toilet facility does the family use? |_|_| 1. Private 2. Shared 3. Public 4. Field

13. Where did you usually seek health care when a member of the family ≥5 years is sick? |_|_|

01. Governmental health center
02. CHA/HP
03. Pharmacy
04. Traditional health care
05. Do self-treatment
06. Private clinic
07. Health station
08. Do nothing
09. Other (specify)_____
10. Hospital

14. Where did you usually seek health care when a member of the family <5 years is sick? |_|_|

01. Governmental health center
02. CHA/HP
03. Pharmacy
04. Traditional health care
05. Do self-treatment
06. Private clinic
07. Health station
08. Do nothing
09. Other (specify)_____
10. Hospital
98.No child

15. Is there a radio in the household? |_|_| 1. Yes (functional) 2. Yes (non-functional) 3. No

16. Is there a television in the household? |_|_| 1. Yes (functional) 2. Yes (non-functional) 3. No

17. What is the main source of income/livelihood for the family? |_|

1. Subsistence farming and or livestock 2. Trade or private enterprise 3. Governmental employee 4. Laborer 5. Private employee
6. Pension/remittance. 7. Other (specify) _____

18. If the main source of income of the family is farming and or livestock, how much plot of land "Timad" have the family planted? |_|_|.|_|_|

19. What do you mainly produce for family consumption? |_|

1. Maize 2. Pepper 3. Teff 4. Sorghum 5. Enset 6. Other (specify) _____7. Kchat 8. None

20. What do you mainly produce for market consumption? |_|_|

01. Maize 0 2. Pepper 0 3. Teff 0 4. Sorghum 0 5. Enset 0 6. Other (specify) _____
07. Honey 08. Kchat 10. None 11. Coffee

21. How many domestic animals does the family have? a. Horse or Donkey |_|_|
b. Cow |_|_| c.Ox |_|_| d. Calf |_|_| e. Sheep or Goat |_|_|

22. If the main source of income of the family is trade or private enterprise, what is the type of trade or enterprise? |_|_| 1. Factory 2. Hotel / Grocer/ Restaurant 3. Big shop 4. Small shops 5. Petty trader 6. Other (specify) _____

23. What was the family's monthly expenditure last month for the following items?

|___|Food item |___|Water |___| Education |___|Transport |___|House rent
|___|Edir/equib |___| Electricity |___| Telephone |___|Savings |___|Other (Specify)

24. How much is the average monthly expenditure for the family? |___|___| (Birr)

BRHP Family registration form Version: II Print Date: November 28, 2003 Serial #: _____

A sheet used to calculate rural family's expenditure for last month

Items (Col.1)	Amount Consumed last month from the stock (Col.2)	Current Market unit price (The price for 1kg/Litre) (Col.3)	Monthly expenditure for the item (Col.4=Col.2*Col.3)
Enset (Kocho)			
Enset (Bulla)			
Enset (Amicho)			
Teff			
Wheat			
Barley			
Maize/Corn			
Sorghum/Millet			
Green pepper			
Red pepper			
Beans			
Lintels			
Peas			
Coffee			
Kchat			
Potatoes			
Onion			
Tomatoes			
Cabbages			
Oranges			
Banana			
Meat			
Milk			
Tea			
Sugar			
Salt			
TOTAL FOOD ITEMS			

Remark: 1. Write the column 4 total in the boxes provided for food expenditure under question 23.
2. If the household slaughtered owns sheep/goat/ox, please write its market price in column 4 (without changing in to current unit market price.)

BRHP New Individual Registration Form

1. Reason for filling out this form |__| 1. Surveillance 2. Reconciliation

2. Date of interview **DD MM YYYY** |__|__| |__|__| |__|__|__|__|

3. Name and code of interviewer |__|__|
/ /

4. House number |__|__|__|__|__|__|__|

5. Name and ID of the individual |__|__|__|__|__|__|__|__|__|
/ /

6. Sex of the individual |__| 1. Male 2. Female

7. Date of Birth **DD MM YYYY** |__|__| |__|__| |__|__|__|__|

8. What is the religious affiliation of the individual? ⎿⎾
1. Orthodox Christians 2. Muslim 3. Catholic 4. Protestant 5. No religion
6. Others (specify) _____ _____

9. What is the ethnic group of the individual? ⎿⎾
0. Welene 1. Sodo 2. Dobi 3. Meskan 4. Mareko 5. Silti 6. Amhara 7. Oromo
8. Other (specify) _____

10. Does the individual read and write? ⎿⎾
1. Yes, Amharic 2. Yes, Arabic 3. Yes, both Amharic and Arabic
4. Yes, other (specify) _____ 5. No, I can't read and write 6. Too young

11. How many years have the individual attended schools? ⎿⎾⎿⎾

12. What is the marital status of the individual? ⎿⎾⎿⎾
01. Monogamous marriage 02. Polygamous, 2 wives 03. Polygamous, 3 wives
04. Polygamous, 4 or more wives 05. Divorced 06. Separated
07. Never married 08. Widowed 10. NA

13. What is your occupational status? ⎿⎾⎿⎾
01. Farming 02. Trading/related occupation 03. Animal husbandry
04. Professional, managerial, & administrative 05. Transport
06. Craftsman / related production 07. Laborer
08. Other (specify) _____ 11. Student
44. Unemployed 66. Housewife
88. NA 98. Too young

14. Mother's name and ID ⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾
/ /

15. Father's name and ID ⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾
/ /

16. What is your relation to the family head? ⎿⎾⎿⎾
01. Head 02. 1st spouse
03. 2nd spouse 04. 3rd spouse
05. 4th spouse & above 12. Child of head and 1st spouse
13. Child of head and 2nd spouse 14. Child of head and 3rd spouse
15. Child of head and 4th spouse 21. Child of head only
22. Child of 1st spouse only 23. Child of 2nd spouse only
24. Child of 3rd spouse only 25. Child of 4th spouse only
31. Parent of head 32. Parent of 1st spouse
33. Parent of 2nd spouse 34. Parent of 3rd spouse
35. Parent of 4th spouse 41. Other relative of head
42. Other relative of 1st spouse 43. Other relative of 2nd spouse
44. Other relative of 3rd spouse 45. Other relative of 4th spouse
46. Other relatives 47. Adopted child
48. None relative

BRHP Individual Move Registration form

1. Reason for filling out this form ⎿⎾ 1. Surveillance 2. Reconciliation

2. Date of interview **DD MM YYYY** ⎿⎾⎿⎾ ⎿⎾⎿⎾ ⎿⎾⎿⎾⎿⎾⎿⎾

3. Name and code of interviewer ⎿⎾⎿⎾
/ /

4. Name and ID of the moved person ⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾
(If already registered)
/ /

5. Type of move ⎿⎾ 1. In migration 2. Out migration 3. Internal move

6. Previous House number ⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾⎿⎾
(For out migration & internal move)

7. What is your previous residential area? Region _____ Zone _____ Wereda_____
(For in migration only) Kebele _____ ə Abroad

8. Type of previous residential area? ⎕ 1. Rural 2. Urban 3. Unknown
(For in migration only)

9. Date of move **DD MM YYYY** ⎕⎕ ⎕⎕ ⎕⎕⎕⎕

10. Name and ID of the previous family head ⎕⎕⎕⎕⎕⎕⎕⎕⎕⎕
(If already registered)
/ /

11. New House number ⎕⎕⎕⎕⎕⎕⎕⎕
(For in migration & internal move)

12. What is the new residential area? Region _____ Zone _____ Wereda_____
(For out migration only) Kebele _____ ə Abroad

13. Type of new residential area? ⎕ 1. Rural 2. Urban 3. Unknown
(For out migration only)

14. Name and ID of the new family head ⎕⎕⎕⎕⎕⎕⎕⎕⎕⎕
(If already registered)
/ /

15. What is the reason for moving? ⎕⎕
01.Marriage 02.Marital dissolution 03.Job seeking/employment 05.Health related problems
08.conflict 10.Education/training 11.Demobilization 12.Retirement
09.Other (specify) _____

Remark: Ask the following questions for in migrants only

16. Have you ever previously lived in the following Kebeles?
❑Yeteker (06A) ❑Bido(011) ❑Bati(007) ❑Buta(K04) ❑Wurib (06B)
❑ Hope (09B) ❑Dirama (04B) ❑Dobena (008) ❑Majarda (09A) ❑M/meskan (005)
❑ No

17.Did the in-migrant form a new family for the destination area? ⎕
1. Yes (Fill out Family Background form) 2. No

18. Is this person moving into a new house? ⎕
1. Yes (Fill out the house form) 2. No

19. What is the sex of the in-migrant? 1. Male 2. Female ⎕

20. Date of birth **DD MM YYYY** ⎕⎕ ⎕⎕ ⎕⎕⎕⎕

21. What is the religious affiliation of the in-migrant? ⎕
1. Orthodox Christians 2. Muslim 3. Catholic. 4. Protestant 5. No religion
6. 0thers (specify) _____

22. What is the ethnic group of the in-migrant? ⎕
0. Welene 1. Sodo 2.Dobi 3. Meskan 4. Mareko 5. Silti 6. Amhara 7. Oromo
8. Other (specify) _____

23. Does the in-migrant read and write? ⎕
1. Yes, Amharic 2. Yes, Arabic 3. Yes, both Amharic and Arabic
4. Yes, other (specify) _____ 5. No, I can't read and write 6. Too young

24. How many years have the in migrant attended schools? ⌊_⌋⌊_⌋
Grade (years) attended

25. What is the marital status of the in-migrant? ⌊_⌋⌊_⌋

01. Monogamous marriage 02. Polygamous, 2 wives 03. Polygamous, 3 wives
04. Polygamous, 4 or more wives 05. Divorced 06. Separated
07. Never married 08. Widowed 10. NA

26. What is the occupation of the in-migrant? ⌊_⌋⌊_⌋

01. Farming 02. Trading/related occupation
03. Animal husbandry 04. Professional, managerial, & administrative
05. Transport 06. Craftsman / related Production
07. Day laborer 08. Other (specify) _____
11. Student 44. Unemployed
66. House wife 88. NA

27. Mother's Name & ID ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋
/ /

28. Father's Name & ID ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋
/ /

29. What is the relation of the in-migrant to the family head? ⌊_⌋⌊_⌋

01. Head 02. 1st spouse
03. 2nd spouse 04. 3rd spouse
05. 4th spouse & above 12. Child of head and 1st spouse
13. Child of head and 2nd spouse 14. Child of head and 3rd spouse
15. Child of head and 4th spouse 21. Child of head only
22. Child of 1st spouse only 23. Child of 2nd spouse only
24. Child of 3rd spouse only 25. Child of 4th spouse only
31. Parent of head 32. Parent of 1st spouse
33. Parent of 2nd spouse 34. Parent of 3rd spouse
35. Parent of 4th spouse 41. Other relative of head
42. Other relative of 1st spouse 43. Other relative of 2nd spouse
44. Other relative of 3rd spouse 45. Other relative of 4th spouse
46. Other relatives 47. Adopted child
48. None relative

Marital status form

0. Reason for filling out this form ⌊_⌋ 1. Surveillance 2. Reconciliation

1. Date of interview **DD MM YYYY** ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋⌊_⌋⌊_⌋

2. Name of interviewer / / code ⌊_⌋⌊_⌋

3. Name of respondent / /

4. Reason for filling out the marital status form: ⌊_⌋ 1. Marriage 2. Dissolution (Widowhood, divorce)

5. Type of marriage ⌊_⌋ 1. Legal 2. Abduction by consent 3. Abduction without consent 4. Widow inheritance (Fill it irrespective of the answer to Q4)

6. House number ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋

7. Name of the family head / /

8. Date of marriage /Marrital dissolution **DD M M YYY Y** ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋⌊_⌋⌊_⌋

Husband's	**Wife's**

ID ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋	ID ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋
9. Name / /	10. Name / /
11. Male marital status (Following this marriage/dissoulttion) ⌊_⌋	12. Female marital status (Following this marriage/dissolution) ⌊_⌋
1. Married (monogamous) 2. Married, two wives 3. Married, three wives 4. Married, four wives or above 5. Divorced 6. Widowed	
13. Male's old house number (If there is a move) ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋⌊_⌋	14. Female's old house number (If there is a move) ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋⌊_⌋
15. Male's new house number ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋	16. Female's new house number ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋ ⌊_⌋
17. Relation of the husband to the head of family ⌊_⌋⌊_⌋	18. Relation of the wife to the head of family ⌊_⌋⌊_⌋
19. Does this event include a move to a new compound/house? ❑Yes (complete house form) ❑ No	
20. Does this event include a move for the husband? ❑Yes (complete individual move form) ❑ No	
21. Does this event include a move for the wife? ❑ Yes (complete individual move form) ❑ No	

Relation ship codes:

01. head
02. 1st spouse
03. 2nd spouse
04. 3rd spouse
05. 4th spouse & above
12. child of head and 1st spouse
13. Child of head and 2nd spouse
14. child of head and 3rd spouse
15. child of head and 4th spouse
21. child of head only
22. child of 1st spouse only
23. child of 2nd spouse only
24. child of 3rd spouse only
25. child of 4th spouse only
31. parent of head
32. parent of 1st spouse
33. parent of 2nd spouse
34. parent of 3rd spouse
35. parent of 4th spouse
41. other relative of head
42. other relative of 1st spouse
43. other relative of 3rd spouse
44. other relative of 3rd spouse
45. other relative of 4th spouse
46. other relatives
47. adopted child
48. non-relative

Birth registration form

0. Reason for filling out this form ⌊_⌋ 1. Surveillance 2. Reconciliation

_____

		DD MM YYYY
1.	Date of interview ⌊_⌋⌊_⌋	⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋
2.	Name of interviewer / /	code ⌊_⌋⌊_⌋
3.	House number (where the mother gives birth) ⌊_⌋⌊_⌋	⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋
4.	Name of the head of family /	/
5.	Name and ID of child ⌊_⌋⌊_⌋⌊_⌋ / /	⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋
6.	Sex of the child ⌊_⌋ 1. Male 2. Female	
7.	Mother's name /	/
8.	Mother's house number ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋⌊_⌋⌊_⌋	ID ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋
9.	Father's name /	/
10.	Father's house number ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋⌊_⌋	ID ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋
11	Mother's relation to the family head ⌊_⌋⌊_⌋	

01. Head
02. 1st spouse
03. 2nd spouse
04. 3rd spouse
05. 4th spouse & above
12. Child of head and 1st spouse
13. Child of head and 2nd spouse
14. Child of head and 3rd spouse
15. Child of head and 4th spouse
21. Child of head only
22. Child of 1st spouse only
23. Child of 2nd spouse only
24. Child of 3rd spouse only
25. Child of 4th spouse only
31. Parent of head
32. Parent of 1st spouse
33. Parent of 2nd spouse
34. Parent of 3rd spouse
35. Parent of 4th spouse
41. Other relative of head
42. Other relative of 1st spouse

43. Other relative of 2nd spouse 44. Other relative of 3rd spouse 45. Other relative of 4th spouse
46. Other relatives 47. Adopted child 48. None relative

12. Relation of the child to the family head ☐☐ (refer codes from ques. 12)

13. Date of birth DD ☐☐ MM ☐☐ YYYY ☐☐☐☐

14. Status of the baby at birth? ☐ 1. Live birth 2. Still birth

15. Was the birth single? ☐ 1. Single 2. Twin 3. Triple & more

16. Was the new born child physically normal ☐ 1. Normal 2. Physically abnormal

17. Place of delivery? ☐☐
01. Parents' home 02. Own home 03. Neighbour's house 04. Health post 05.Clinic/Health station 06. Health center 07. Hospital 08. Private clinic 91. others (specify) _____

18. Who assisted the delivery? ☐
1. TBA 2. Relative 3. Neighbour 4. Health professional (doctor, nurse) 5. TTBA 6. No assistant
7. Community health worker (CHA) 8. other (specify) _____

19. Did the mother seek health care for complications of delivery like retained placenta and post partum hemmoriage? ☐
1. Yes 2. No

20. If yes to question 20, where did she seek care? ☐
1.Health post 2. Clinic/health station 3. Health center 4. Hospital 5. Private clinic 6. Others (specify) ____
7. None

21. Total number of pregnancy (including this birth) ☐☐

22. Total number of deliveries (including this birth and any still births) ☐☐

23. Total number of Live births (inclding this birth) ☐☐

24. Total number of Live children at present? ☐☐

25. Is your next to last child alive? ☐ 1. Yes 2. No 3. First child_____

26. What is the religion of the child ? ☐
1.Orthodox Christians 2. Muslim 3. Catholic. 4. Protestant 5. No religion 6. 0thers (specify) _____

_____

27. What is the ethnicity of the child? ☐ 0. Welene 1. Sodo 2. Dobi 3. Meskan 4. Mareko 5. Silti 6. Amhara 7. Oromo 8. Other (specify) _____

Death form

0. Reason for filling out this form? ☐ 1. Surveillance 2. Reconciliation_____

1. Date of interview DD ☐☐ MM ☐☐ YYYY ☐☐☐☐

_____

2. Name of interviewer code ☐☐

3. House number ☐☐☐☐☐☐☐☐

4. Name of the deceased person ID ☐☐☐☐☐☐☐☐☐☐ / /

5. Date of death DD ☐☐ MM ☐☐ YYYY ☐☐☐☐

6. Sex ☐ 1. Male 2. Female

7. If female, was she pregnant at the time of death? ☐ 1. Yes 2. No 3. Under age/child (Skip to # 9)

8. If female, when was her last delivery ? ☐ 1. Less than 6 weeks 2. 6 weeks to 3 months 3. 4-11 months ago 4. 1-4 years ago 5. five years or more 8. Unknown

9. Name of family head / /

10. Relation of deceased person to the head. ☐☐

01. head 02. 1st spouse 03.2nd spouse
04. 3rd spouse 05. 4th spouse & above 12. child of head and 1st spouse
13. Child of head and 2nd spouse 14. child of head and 3rd spouse15. child of head and 4th spouse
21. child of head only 22. child of 1st spouse only 23. child of 2nd spouse only
24. child of 3rd spouse only 25. child of 4th spouse only 31. parent of head
32. parent of 1st spouse 33. parent of 2nd spouse 34. parent of 3rd spouse
35. parent of 4th spouse 41. other relative of head 42. other relative of 1st spouse
43. other relative of 3rd spouse 44. other relative of 3rd spouse 45. other relative of 4th spouse
46. other relatives 47. adopted child 48. non-relative

11. Cause of death (reported) ☐☐

01. Still birth	09. Malnutrition	18. Suicide
02. Premature birth	11. Meningits	19. AIDS
04 .Malaria	12. Tubreculosis	20. Inv Abortion
05. Phneumonia	14. Sudden death	21. Ind. Abortion
06. Measles	15. Tetanus	22. Glandular TBC
07. Whooping cough	16. Hepatits	81. Accident (describe)
08. Diarrhea/vomiting	17. Pregnancy/ delivery related	91. Other describe

12. Place of death ☐☐

01. Parents house 02. Own residence 03. Neighbour
04. Health post 05. Clinic 06. Health center
07. Hospital 91. Other (specify) _____

13. Where did the deceased mainly seek health care for the illness that lead him to death? ☐☐

01. Governmental health center	04. Traditional health care	07. Health station
02. CHA/HP	05. Did self-treatment	08. Did nothing
03. Pharmacy	06. Private clinic	09. Other (specify)_____
10. Hospital		

11.4 Questionnaires Amharic Version

የቡታጅራ ገጠር ጤና ኘሮግራም

የቤት መመዝገቢያ ቅጽ

1. ቅጹ የሚሞላበት ምክንያት ⎕1. ተከታታይ ጥናት 2. ዓመታዊ ለውጥን ማረጋገጥ

_____

ቀን ወር ዓ.ም

2. መጠይቁ የተደረገበት ቀን ⎕⎕ ⎕⎕ ⎕⎕⎕⎕

_____

3. የጠያቂው ሙሉ ስምና ኮድ ⎕⎕

ስም የአባት ስም የአያት ስም

_____/_____/_____

_____

4. ቤቱ አዲስ ነውን? ⎕1. አዎ 2. የለም 3. አዎ፣ ተለውጧል 4. አዎ፣ ፈርሶ የተሰራ 5. የለም፣ ፈረሷል

_____

5. አዲስ ከሆነ፣ በቅርብ የሚገኘው የቤት ቁጥር ⎕⎕⎕⎕⎕⎕⎕⎕

_____

6. የቤት ቁጥር ⎕⎕⎕⎕⎕⎕⎕⎕

_____

7. የቤተሰብ ኃላፊው ሙሉ ስምና መለያ ቁጥር ⎕⎕⎕⎕⎕⎕⎕⎕⎕⎕⎕⎕

ስም የአባት ስም የአያት ስም

_____/_____/_____

_____

8. የቤቱ ባለቤት ማን ነው? ⎕⎕ 1. የግል 2. የመንግስት/የቀበሌ 3. ከግለሰብ ኪራይ 4. ደባል የማይከፍል 5. ሌላ (ይገለጽ) _____6. ደባል (የሚከፍል)

_____

9. የቤቱ ጣራ የተሰራው ከምንድን ነው? ⎕⎕ 1. ሣር 2. ቆርቆሮ 3. ሌላ (ይገለጽ) _____

_____

10. የቤቱ ግድግዳ የተሰራበት ዋነኛ የግንባታ ቁሳቁስ ምንድን ነው? ⎕⎕

1. እንጨትና ጭቃ 2. እንጨት፣ ጭራሮና ሣር 3. ድንጋይና ሲሚንቶ 4. ብሎኬት 5. ጡብ 6. ቆርቆሮ 7. ሌላ (ይገለጽ)

_____

11. ቤቱ የተለየ ማዕድ ቤት አለው? ⎿⎿1. አዎ 2. የለውም 3. አዎ፣የጋራ

---

12. ቤቱ ማዕድ ቤቱን ሳይጨምር ስንት ክፍሎች አሉት? ⎿⎿⎿

---

13. ቤቱ መስኮቶች አሉት? ⎿⎿1. አዎ፣ ትንሽ ቀዳዳ 2. አዎ፣ የሚዘጋና የሚከፈት 3. የለውም

---

14. ቤቱ በግቢው ውስጥ የራሱ የሆነ ውሃ አለው? ⎿⎿1. አዎ፣የጉድጓድ ውሃ 2. አዎ፣የቧንቧ ውሃ 3. የለውም

---

15. ቤቱ ምን ዓይነት መጸዳጃ ቤት አለው? ⎿⎿

1. የለውም 2. የሚሰራ የጉድጓድ ሽንት ቤት 3. የማይሰራ የጉድጓድ ሽንት ቤት

4. የሚሰራ በውሃ የሚወርድ 5. የማይሰራ በውሃ የሚወርድ 6. ሌላ (ይገለጽ) _____

---

16. ቤቱ የኤሌክትሪክ ኃይል አለው? ⎿⎿ 1. አዎ 2. የለውም

---

17. ጂኦግራፊአዊ አቀማመጥ ሰሜን⎿⎿⎿.⎿⎿⎿⎿⎿⎿ምስራቅ 038⁰ ⎿⎿⎿⎿⎿⎿

---

18. የቤቱ ስፋት በሳ.ሜ (ለጐጆ ቤት ብቻ) ምሰሶው⎿⎿⎿⎿⎿ሬዲየስ⎿⎿⎿⎿⎿የግድግዳ ቁመት ⎿⎿ ⎿⎿⎿

የቡታጅራ ገጠር ጤና ኘሮግራም

የቤተሰብ መመዝገቢያ ቅጽ

1. ቅጹ የሚሞላበት ምክንያት ⎿⎿ 1. ተከታታይ ጥናት 2. ዓመታዊ ለውጥን ማረጋገጥ

ቀን ወር ዓ.ም

2. መጠይቁ የተደረገበት ቀን ⎿⎿⎿ ⎿⎿⎿ ⎿⎿⎿⎿⎿

---

3. የጠያቂው ሙሉ ስምና ኮድ ⎿⎿⎿

ስም የአባት ስም የአያት ስም

_____/_____/_____

---

4. የቤት ቁጥር ⎿⎿⎿⎿⎿⎿⎿⎿

---

5. የቤተሰብ ኃላፊው ሙሉ ስምና መለያ ቁጥር ⎿⎿⎿⎿⎿⎿⎿⎿⎿⎿

ስም የአባት ስም የአያት ስም

_____/_____/_____

---

6. የባለቤት ሙሉ ስምና መለያ ቁጥር |_|_|_|_|_|_|_|_|_|_|

ስም የአባት ስም የአያት ስም

_____/_____/_____

_____

7. የቤተሰቡ መደበኛ አባላት ብዛት |_|_|

_____

8. ቤተሰቡ በአብዛኛው ለማብሰያ የሚጠቀምበት የማገዶ ዓይነት ምንድን ነው? |_|

1. ምንም አይጠቀምም 2. ነጭ ጋዝ 3. ከሰል 4. እንጨት 5. ቅጠላቅጠልና ጭራሮ 6. ኩበት

7. ሌላ (ይገለጽ) _____

_____

9. የቤተሰቡ አባላት የሚተኙበት ክፍሎች ውስጥ ከብቶች ያድራሉ? |_|_| 1. አዎ 2. የለም

_____

10. ቤተሰቡ የመጠጥ ውሃ የሚያገኘው ከየት ነው? |_|

1. ወንዝ 2. የተጠበቀ ጉድጓድ 3. ያልተጠበቀ ጉድጓድ 4. ሐይቅ 5. ኩሬ 6.ቧንቧ 7. ያልተጠበቀ ምንጭ 8. ሌላ (ይገለጽ) _____ 9. የተጠበቀ ምንጭ

_____

11. የቤቱ ቆሻሻ በአብዛኛው የት ነው የሚጣለው? |_|

1. ቆሻሻ መጣያ ጉድጓድ 2. ሜዳ ላይ 3. በማቃጠል 4. ሌላ (ይገለጽ) _____5. ማሳ ላይ

_____

12. ቤተሰቡ የሚጠቀመው ምን ዓይነት መጸዳጃ ቤት ነው? |_|

1. የግል 2. የጋራ 3. የሕዝብ 4. ሜዳ ላይ

_____

13. ከቤተሰቡ አባላት መካከል 5 ዓመትና በላይ የሆነው ሰው ቢታመም የትኛው ጤና ተቋም ይወሰዳል? |_|_|

01. የመንግስት ጤና ጣቢያ 02. የአካባቢ ጤና ተጠሪ (ጤና ኬላ) 03. ፋርማሲ 04. የባህል መድሀኒት አዋቂ

05. የቤት ውስጥ እርዳታ እናደርግለታለን 06. የግል ክሊኒክ 07. የመንግስት ክሊኒክ 08. ምንም አናደርግም

09. ሌላ (ይገለጽ) _____10. ሆስፒታል

_____

14. ከቤተሰቡ አባላት መካከል ከ 5 ዓመት በታች የሆኑ ህፃናት ቢታመሙ የትኛው ጤና ተቋም ይወሰዳሉ? |_|_|

01. የመንግስት ጤና ጣቢያ 02. የአካባቢ ጤና ተጠሪ (ጤና ኬላ) 03. ፋርማሲ 04. የባህል መድሀኒት አዋቂ

05. የቤት ውስጥ እርዳታ እናደርግለታለን 06. የግል ክሊኒክ 07. የመንግስት ክሊኒክ 08. ምንም አናደርግ

09. ሌላ (ይገለጽ) _____ 10. ሆስፒታል 11. ህፃን የለንም

---

15. ቤተሰቡ ሬዲዮ አለው? ☐☐
1. አዎ፣ የሚሰራ 2. አዎ፣ የማይሰራ 3. የለም

---

16. ቤተሰቡ ቴሌቪዥን አለው? ☐☐
1. አዎ፣ የሚሰራ 2. አዎ፣ የማይሰራ 3. የለም

---

17. የቤተሰቡ ዋነኛ የገቢ ምንጭ ምንድን ነው? ☐☐
1. ግብርና (ሰብል ማምረት እና/ወይም ከብት ማርባት) 2. ንግድ ወይም ሌላ የግል ስራ 3. የመንግስት ስራ
4. የቀን ወይም የወቅት ስራ 5. የግል ድርጅት ተቀጣሪ 6. ጡረታ/ተቆራጭ 7. ሌላ (ይገለጽ) _____

---

18. የቤተሰቡ የገቢ ምንጭ ግብርና (ሰብል ማምረት እና/ወይም ከብት ማርባት) ከሆነ ባለፈው የምርት ወቅት ምን ያህል መሬት አለሙ? ☐☐☐.☐☐☐

---

19. ቤተሰቡ በአብዛኛው ለቀለብ የሚያመርተው የሰብል ዓይነት ምንድን ነው? ☐☐
1. በቆሎ 2. በርበሬ 3. ጤፍ 4. ዘንጋዳ 5. እንሰት 6. ሌላ (ይገለጽ) _____ 7. ጫት 8. የለም

---

20. ቤተሰቡ በአብዛኛው ለሽያጭ የሚያመርተው የሰብል ዓይነት ምንድን ነው? ☐☐☐
01. በቆሎ 02. በርበሬ 03. ጤፍ 04. ዘንጋዳ 05. እንሰት 06. ሌላ (ይገለጽ) _____
07. ማር 08. ጫት 10. የለም 11. ቡና

---

21. ቤተሰቡ ስንት የቤት እንስሳት አሉት?
ሀ. ፈረስ ወይም አህያ☐☐☐ ለ. ላም☐☐☐ ሐ. በሬ☐☐☐ መ. ጥጃ☐☐☐ ሠ. በግ ወይም ፍየል☐☐☐

---

22. የቤተሰቡ ዋነኛ የገቢ ምንጭ ንግድ ወይም ሌላ የግል ስራ ከሆነ፣ ስራው ምንድን ነው? ☐☐
1. ፋብሪካ ነክ ስራ 2. ሆቴል፣ ግሮሰሪ፣ ምግብ ቤት 3. ትልቅ ወይም መካከለኛ ሱቅ
4. ትንሽ ሱቅ 5. የጉልት ንግድ 6. ሌላ (ይገለጽ) _____

---

23. ቤተሰቡ በአለፈው ወር ለሚከተሉት ምን ያህል ገንዘብ አውጥቷል?

ለምግብ|_|_|_|_| ለውሃ |_|_|_|_| ለትምህርት |_|_|_|_| ለትራንስፓርት|_|_|_|_|ለቤት ኪራይ |_|_|_|_| ለእድር/እቁብ |_|_|_|_| ለመብራት |_|_|_|_|ለስልክ |_|_|_|_| ለቁጠባ |_|_|_|_| ሌላ (ይገለጽ) |_|_|_|_|

---

24. የቤተሰቡ አማካኝ ወርሃዊ ወጭ ምን ያህል ነው? |_|_|_|_|

የቡታጅራ ገጠር ጤና ኘሮግራም

የአዲስ ግለሰብ መመዝገቢያ ቅጽ

1. ቅጹ የሚሞላበት ምክንያት |_| 1. ተከታታይ ጥናት 2. ዓመታዊ ለውጥን ማረጋገጥ

ቀን ወር ዓ.ም

2. መጠይቅ የተደረገበት ቀን |_|_| |_|_| |_|_|_|_|

---

3. **የጠያቂው ሙሉ ስምና ኮድ** |_|_|_|

ስም የአባት ስም የአያት ስም

_____/_____/_____

---

4. የቤት ቁጥር |_|_|_|_|_|_|_|_|

---

5. **የግለሰቡ ሙሉ ስምና መለያ ቁጥር** |_|_|_|_|_|_|_|_|_|_|_|_|

ስም የአባት ስም የአያት ስም

_____/_____/_____

---

6. **ፆታ** |_|_| 1. ወንድ 2. ሴት

ቀን ወር ዓ.ም

7. ግለሰቡ የተወለደበት ቀን |_|_| |_|_| |_|_|_|_|

---

8. **የግለሰቡ ሐይማኖት ምንድን ነው?**|_|_|1. ኦርቶዶክስ ክርስቲያን 2. ሙስሊም 3. ካቶሊክ 4. ፕሮቴስታንት 5. የለውም6. ሌላ (ይገለጽ) _____

---

9. **የግለሰቡ ብሔረሰብ ምንድን ነው?** |_|_|0. ወለኔ1. ሶዶ 2. ዶቢ 3. መስቃን4. ማረቆ 5. ስልጢ 6. አማራ7. ኦሮሞ 8. ሌላ (ይገለጽ) _____

---

10. ግለሰቡ ማንበብና መፃፍ ይችላሉ? ___
1. አዎ፣ በአማርኛ 2. አዎ፣ በአረብኛ 3. አዎ፣ በአማርኛና በአረብኛ 4. አዎ፣ በሌላ ቋንቋ (ይገለጽ)_____ 5. አይችሉም6. ህፃን

---

11. **ግለሰቡ መደበኛ ትምህርት የተማሩ ከሆነ፣የትምህርት ደረጃቸው ቢገለጽ** ____(በትምህርት ያሳለፉት ዓመታት)

---

12. **የግለሰቡ የጋብቻ ሁኔታ ምንድን ነው?**___ 01. **ያገባ፣ አንድ ባለቤት** 02. **ያገባ፣ ሁለት ባለቤት** 03. **ያገባ፣ ሶስት ባለቤት** 04. **ያገባ** 4**ና በላይ ባለቤት** 05. **ፈት** 06. **የተለያዩ** 07. **ያላገባ** 08. **የሞተባቸው** 10. N/A

---

13. **የግለሰቡ ዋነኛ ስራቸው ምንድን ነው?** ____**01. ሰብል ማምረት 02. ንግድና መሰል ስራ 03. ከብት እርባታ 04. የሰለጠኑ ባለሙያ፣ ኃላፊ፣ አስተዳዳሪ 05. ትራንስፖርት ሰራተኛ 06. እደጥበብና መሰል ስራ 07. የቀን ወይም የወቅት ስራ 08. ሌላ (ይገለጽ) _____ 11. ተማሪ 44. ስራ የላቸውም 66. የቤት እመቤት 98. ህፃን 88.** N/A

---

14. **የእናትየዋ ሙሉ ስምና መለያ ቁጥር** ____
ስም የአባት ስም የአያት ስም

_____/ _____ / _____

---

15. **የአባትየው ሙሉ ስምና መለያ ቁጥር** ____
ስም የአባት ስም የአያት ስም

_____/ _____/ _____

---

16. ግለሰቡ ከቤተሰብ ኃላፊው ጋር ያላቸው ዝምድና ምንድን ነው? ___

01. ኃላፊ	12. የ1ኛ ባለቤት ልጅ	21. የኃላፊ ብቻ ልጅ
02. 1ኛ ባለቤት	13. የ2ኛ ባለቤት ልጅ	22. የ1ኛ ባለቤት ብቻ ልጅ
03. 2ኛ ባለቤት	14. የ3ኛ ባለቤት ልጅ	23. የ2ኛ ባለቤት ብቻ ልጅ
04. 3ኛ ባለቤት	15. የ4ኛና በላይ ባለቤት ልጅ	24. የ3ኛ ባለቤት ብቻ ልጅ
05. 4ኛና በላይ ባለቤት		25. የ4ኛና በላይ ባለቤት ልጅ
31. የኃላፊ ወላጅ	41. የኃላፊ ሌላ ዘመድ	46. ሌሎች ዘመዶች
32. የ1ኛ ባለቤት ወላጅ	42. የ1ኛ ባለቤት ሌላ ዘመድ	47. የማደጉ ልጅ
33. የ2ኛ ባለቤት ወላጅ	43. የ2ኛ ባለቤት ሌላ ዘመድ	48. ዘመድ ያልሆኑ
34. የ3ኛ ባለቤት ወላጅ	44. የ3ኛ ባለቤት ሌላ ዘመድ	
35. የ4ኛና በላይ ባለቤት ወላጅ	45. የ4ኛና በላይ ሌላ ዘመድ	

የቡታጅራ ገጠር ጤና ፕሮግራም
የግለሰብ ፍልሰት መመዝገቢያ ቅጽ

1. **ቅጹ የሚሞላበት ምክንያት** ___1. **ተከታታይ ጥናት** 2. **ዓመታዊ ለውጥን ማረጋገጥ**

ቀን ወር ዓ.ም

2. **መጠይቁ የተደረገበት ቀን** ___ ___ ____

---

3. **የጠያቂው ሙሉ ስምና ኮድ** ___
ስም የአባት ስም የአያት ስም

_____/_____/_____

4. **የፈላሽ ሙሉ ስምና መለያ ቁጥር** |_|_|_|_|_|_|_|_|_|_|_|_|

ስም የአባት ስም የአያት ስም

_____/_____/_____

5. **የፍልሰቱ ዓይነት** |_|_| 1. ወደ ጥናቱ ቀበሌዎች መግባት 2. ከጥናቱ ቀበሌዎች መውጣት 3. የውስጥ ፍልሰት

6. **የበፊቱ የቤት ቁጥር** |_|_|_|_|_|_|_|_|_|_| (ከቀበሌዎቹ ለሚወጡና ለውስጥ ፍልሰት)

7. **ግለሰቡ በፊት የሚኖሩበት የመኖሪያ አካባቢ መለያ** (ወደ ጥናቱ ቀበሌዎች ለሚገቡ ብቻ)

ክልል _____ **ዞን** _____**ወረዳ** _____**ቀበሌ** _____ **ውጭ አገር**

8. **ግለሰቡ በፊት የሚኖሩበት የመኖሪያ አካባቢ ዓይነት ምንድን ነው**? |_|_|(ወደ ጥናቱ ቀበሌዎች ለሚገቡ ብቻ)

1. ገጠር *2*. ከተማ *3*. አይታወቅም

ቀን ወር ዓ.ም

9. **ፍልሰቱ የተፈጸመበት ቀን** |_|_| |_|_| |_|_|_|_|

10. **የበፊቱ የቤተሰብ ኃላፊ ሙሉ ስምና መለያ ቁጥር**|_|_|_|_|_|_|_|_|_|_|_|_|

ስም የአባት ስም የአያት ስም

_____/_____/_____

11. **የአሁኑ የቤት ቁጥር** |_|_|_|_|_|_|_|_|_|_| (ወደ ጥናቱ ቀበሌዎች ለገቡና ለውስጥ ፍልሰት)

12. **የአዲሱ የመኖሪያ አካባቢ መለያ** (ከቀበሌዎች ለሚወጡ ብቻ)

ክልል _____**ዞን** _____ **ወረዳ** _____**ቀበሌ**_____ **ውጭ አገር**

13. **አዲሱ የመኖሪያ አካባቢ ዓይነት ምንድን ነው**? |_|_| (ከቀበሌዎች ለሚወጡ ብቻ) 1. ገጠር 2. ከተማ 3. አይታወቅም

14. **የአዲሱ የቤተሰብ ኃላፊ ሙሉ ስምና መለያ ቁጥር**|_|_|_|_|_|_|_|_|_|_|_|_|

ስም የአባት ስም የአያት ስም

_____/_____/_____

15. **ለግለሰቡ ፍልሰት ዋነኛ ምክንያት ምንድን ነው**? |_|_|_|

01. ጋብቻ 02. የጋብቻ በሞት ወይም በፍች መፍረስ 03. ስራ ፍለጋ/ቅጥር 05. ከጤና ጋር የተገናኘ ችግር 8. ግጭት(ፀብ)

10. ትምህርት (ስልጠና) *11*. ከስራ ቅነሳ *12*. ጡረታ መውጣት *09*. ሌላ (ይገለጽ) _____

ማስታወሻ፣ የሚከተሉትን ጥያቄዎች አዲስ ለሚገቡ ግለሰቦች ብቻ የሚጠየቁ ናቸው

16. **በየትኞቹ የፕሮግራሙ ቀበሌዎች ውስጥ ኖረው ያውቃሉ?**

የጠቀር (06A) **ቢዶ** (011) **ባቲ** (007) **ቡታጅራ ከተማ**(K04) **ሆጴ** (09B)

ዲራማ (04B) **ዶበና** (008) **መካከለኛ ጃሪ ደመቃ**(*09*A) **ውራብ** (06B)

17. ግለሰቡ ለገቡበት ቀበሌ አዲስ የሆነ ቤተሰብ መስርተዋል? ☐☐ 1. አዎ፣ (የቤተሰብ ቅጽ ይሙሉ) 2. የለም

18. ግለሰቡ አዲስ ቤት ውስጥ ነው የገቡት? ☐☐ 1. አዎ፣ (የቤት መመዝገቢያ ቅጽ ይሙሉ) 2. የለም

19. የፈላሹ ግለሰብ ጾታ ☐☐ 1. ወንድ 2. ሴት

20. ፈላሹ ግለሰብ የተወለዱበት ቀን ቀን ☐☐ ወር ☐☐ ዓ.ም ☐☐☐☐

21. ወደ ጥናቱ ቀበሌዎች የገቡት ግለሰብ ሐይማኖት ምንድን ነው? ☐☐
1. ኦርቶዶክስ ክርስቲያን 2. ሙስሊም 3. ካቶሊክ 4. ኘሮቴስታንት 5. ሐይማኖት የላቸውም 6. ሌላ (ይገለጽ) _____

22. ወደ ጥናቱ ቀበሌዎች የገቡት ግለሰብ ብሔረሰብ ምንድን ነው? ☐☐
0. ወለኔ 1. ሶዶ 2. ዶቢ 3. መስቃን 4. ማረቆ 5. ስልጢ 6. አማራ 7. ኦሮሞ 8. ሌላ (ይገለጽ) _____

23. ወደ ጥናቱ ቀበሌዎች የገቡት ግለሰብ ማንበብና መፃፍ ይችላሉ? ☐☐☐
01. አዎ፣ አማርኛ 02. አዎ፣ አረብኛ 03. አዎ፣ አማርኛና አረብኛ 04. አዎ፣ (ሌላ ይገለጽ) _____05. የለም 98. ህፃን

24. ወደ ጥናቱ ቀበሌዎች የገቡት ግለሰብ መደበኛ ትምህርት የተማሩ ከሆነ የትምህርት ደረጃቸው ቢገለጽ ☐☐ (በትምህርት ያሳለፉት ዓመት)

25. ወደ ጥናቱ ቀበሌዎች የገቡት ግለሰብ የጋብቻ ሁኔታ ምንድን ነው?☐☐ 01. ያገቡ፣አንድ ባለቤት 02.ያገቡ፣ሁለት ባለቤት 03. ያገቡ፣ሶስት ባለቤት 04. ያገቡ፣4ና በላይ ባለቤት 05. ፈት 06. የተለያዩ 07. ያላገባ 08. የሞተባቸው10. N/A

26. ወደ ጥናቱ ቀበሌዎች የገቡት ግለሰብ ዋነኛው የስራ ዓይነት ምንድን ነው?☐☐
01. ሰብል ማምረት 02. ንግድና የመሳሰሉ ስራዎች 03. ከብት እርባታ 04. የሰለጠነ ባለሙያ፣ ኃላፊ፣ አስተዳዳሪ
06. ትራንስፖርት ሰራተኛ 06. እደጥበብና የመሳሰሉ ስራዎች 07. የቀን ወይም የወቅት ሰራተኛ
08. ሌላ (ይገለጽ) _____ 11. ተማሪ 44. ስራ የላቸውም 66. የቤት እመቤት 88. N/A

27. የእናትየዋ ሙሉ ስምና መለያ ቁጥር ☐☐☐☐☐☐☐☐☐☐☐☐
ስም የአባት ስም የአያት ስም
_____ / _____ / _____

28. የአባትየው ሙሉ ስምና መለያ ቁጥር☐☐☐☐☐☐☐☐☐☐☐☐
ስም የአባት ስም የአያት ስም
_____ / _____ / _____

29. ወደ ጥናቱ ቀበሌዎች የገቡት ግለሰብ ከቤተሰብ ኃላፊው ጋር ያላቸው ዝምድና ምንድን ነው? ☐☐☐
01. ኃላፊ 12. የ1ኛ ባለቤት ልጅ 21. የኃላፊ ብቻ ልጅ

02. 1ኛ ባለቤት
03. 2ኛ ባለቤት
04. 3ኛ ባለቤት
05. 4ኛና በላይ ባለቤት
13. የ2ኛ ባለቤት ልጅ
14. የ3ኛ ባለቤት ልጅ
15. የ4ኛና በላይ ባለቤት ልጅ
22. የ1ኛ ባለቤት ብቻ ልጅ
23. የ2ኛ ባለቤት ብቻ ልጅ
24. የ3ኛ ባለቤት ብቻ ልጅ
25. የ4ኛና በላይ ባለቤት ብቻ ልጅ
31. የኃላፊ ወላጅ
32. የ1ኛ ባለቤት ወላጅ
33. የ2ኛ ባለቤት ወላጅ
34. የ3ኛ ባለቤት ወላጅ
35. የ4ኛና በላይ ባለቤት ወላጅ
41. የኃላፊ ሌላ ዘመድ
42. የ1ኛ ባለቤት ሌላ ዘመድ
43. የ2ኛ ባለቤት ሌላ ዘመድ
44. የ3ኛ ባለቤት ሌላ ዘመድ
45. የ4ኛና በላይ ሌላ ዘመድ
46. ሌሎች ዘመዶች
47. የማደጉ ልጅ
48. ዘመድ ያልሆኑ

የቡታጅራ ገጠር ጤና ኘሮግራም
የልደት መመዝገቢያ ቅጽ

0. ቅጹ የሚሞላበት ምክንያት ___ 1. ተከታታይ ጥናት 2. ዓመታዊ ለውጥን ማረጋገጥ

1. መጠይቁ የተደረገበት ቀን ___ ___ ___ (ቀን ወር ዓ.ም)

2. **የጠያቂው ሙሉ ስምና ኮድ** ___
ስም / የአባት ስም / የአያት ስም

3. **የቤት ቁጥር (እናትየዋ የተገላገለችበት)** ___ ___ ___ ___ ___ ___ ___ ___ ___

4. **የቤተሰብ ኃላፊው ሙሉ ስም**
ስም / የአባት ስም / የአያት ስም

5. የህፃኑ ሙሉ ስምና መለያ ቁጥር ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
ስም / የአባት ስም / የአያት ስም

6. የህፃኑ ጾታ ___ 1. ወንድ 2. ሴት

7. **የህፃኑ እናት ሙሉ ስም**
ስም / የአባት ስም / የአያት ስም

8. የእናትየዋ የቤት ቁጥር ___ ___ ___ ___ ___ ___ ___ ___ ___ የእናትየዋ መለያ ቁጥር ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

9. **የህፃኑ አባት ሙሉ ስም**
ስም / የአባት ስም / የአያት ስም

10. የአባትየው የቤት ቁጥር ___ ___ ___ ___ ___ ___ ___ ___ ___ የአባትየው መለያ ቁጥር ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

11. እናትየዋ ከቤተሰብ ኃላፊው ጋር ያላት ዝምድና ___

01. ኃላፊ
02. 1ኛ ባለቤት
03. 2ኛ ባለቤት
04. 3ኛ ባለቤት
05. 4ኛና በላይ ባለቤት
12. የ1ኛ ባለቤት ልጅ
13. የ2ኛ ባለቤት ልጅ
14. የ3ኛ ባለቤት ልጅ
15. የ4ኛና በላይ ባለቤት ልጅ
21. የኃላፊ ብቻ ልጅ
22. የ1ኛ ባለቤት ብቻ ልጅ
23. የ2ኛ ባለቤት ብቻ ልጅ
24. የ3ኛ ባለቤት ብቻ ልጅ
25. የ4ኛና በላይ ባለቤት ብቻ ልጅ

31. የኃላፊ ወላጅ
32. የ1ኛ ባለቤት ወላጅ
33. የ2ኛ ባለቤት ወላጅ
34. የ3ኛ ባለቤት ወላጅ
35. የ4ኛና በላይ ባለቤት ወላጅ
41. የኃላፊ ሌላ ዘመድ
42. የ1ኛ ባለቤት ሌላ ዘመድ
43. የ2ኛ ባለቤት ሌላ ዘመድ
44. የ3ኛ ባለቤት ሌላ ዘመድ
45. የ4ኛና በላይ ባለቤት ሌላ ዘመድ
46. ሌሎች ዘመዶች
47. የማደጐ ልጅ
48. ዘመድ ያልሆኑ

---

12. ህፃኑ ከቤተሰብ ኃላፊው ጋር ያለው ዝምድና ⎕⎕ (ኮዶችን ከጥያቄ ቁጥር 11 ይመልከቱ)

ቀን ወር ዓ.ም

13. ህፃኑ የተወለደበት ቀን ⎕⎕ ⎕⎕ ⎕⎕⎕⎕

---

14. ህፃኑ ሲወለድ በሕይወት ነበር? ⎕ 1. በሕይወት የተወለደ 2. ሞቶ የተወለደ

---

15. ህፃኑ ሲወለድ መንትዮች ነበሩት? ⎕ 1. የለም 2. መንታ 3. ሶስትና በላይ

---

16. ህፃኑ ሲወለድ የነበረው የሰውነት (የአካል) ሁኔታ ⎕
1. ጤነኛ (የተስተካከለ) 2. የአካል ጉዳተኛ (ያልተስተካከለ ሰውነት ነበረው)

---

17. ህፃኑ የተወለደው የት ነው? ⎕⎕
01. የህፃኑ ወላጆች ቤተሰብ ቤት 02. የህፃኑ ወላጆች ቤት 03. የህፃኑ ወላጆች ጐረቤት ቤት 04. ጤና ኬላ
05. ክሊኒክ 06. ጤና ጣቢያ 07. ሆስፒታል 08. የግል ክሊኒክ 91. ሌላ (ይገለጽ) _____

---

18. ህፃኑን ያዋለደው ሰው ማን ነው? ⎕
1. የልምድ አዋላጅ 2. ቤተ ዘመድ 3. ጐረቤት 4. የጤና ባለሙያ (ዶክተር፣ነርስ፣ ወዘተ) 5. የሰለጠነች የልምድ አዋላጅ 6. እናትየዋ ራሷ 7. የቀበሌ ጤና ተጠሪ 8. ሌላ (ይገለጽ) _____

---

19. የህፃኑ እናት ይህንን ህፃን በምትወልድበት ጊዜ ከወሊድ ጋር የተገናኘ ችግር (የእንግዴ ልጅ መቅረት ወይም ብዙ ደም መፍሰስ) አጋጥሟታል? ⎕ 1. አዎ 2. የለም

---

20. ከወሊድ ጋር የተገናኘ ችግር ካጋጠማት፣የት ነው የሕክምና እርዳታ ያገኘችው? ⎕
1. ጤና ኬላ 2. ክሊኒክ 3. ጤና ጣቢያ 4. ሆስፒታል 5. የግል ክሊኒክ 6. ሌላ (ይገለጽ) _____ 7. አላገኘችም

---

21. ይህንን ጨምሮ እናትየዋ ስንት ጊዜ አረገዙ? ⎕⎕

---

22. ይህንን ጨምሮ የተወለዱት ልጆች ብዛት ስንት ነው (ሞተው የተወለዱትን ጨምሮ)? ⎕⎕

---

23. ይህንን ጨምሮ በሕይወት የተወለዱት ልጆች ብዛት ስንት ነው? ⎕⎕

---

24. በሕይወት ከተወለዱት ውስጥ አሁን ስንቶቹ በሕይወት ይገኛሉ? ⎕⎕

---

25. ከዚህ ህፃን በፊት የተወለደው ልጅ በሕይወት አለ/ች? ⎕⎕
1. አዎ 2. የለም 3. ይህ ህፃን የመጀመሪያ ልጅ ነው

---

26. የህፃኑ ሀይማኖት ምንድን ነው? ⎕
1. ኦርቶዶክስ ክርስቲያን 2. ሙስሊም 3. ካቶሊክ 4. ፕሮቴስታንት 5. ሀይማኖት የለውም 6. ሌላ (ይገለጽ) _____

---

27. የህፃኑ ብሔረሰብ ምንድን ነው? ___

0. ወለኔ 1. ሶዶ 2. ዶቢ 3. መስቃን 4. ማረቆ 5. ስልጢ 6. አማራ 7. ኦሮሞ 8. ሌላ (ይገለጽ)

_____

የቡታጅራ ገጠር ጤና ኘሮግራም
የሞት መመዝገቢያ ቅጽ

0. ቅጹ የሚሞላበት ምክንያት ___ **1.** ተከታታይ ጥናት **2.** ዓመታዊ ለውጥን ማረጋገጥ

_____

1. መጠይቁ የተደረገበት ቀን ቀን ___ ወር ___ ዓ.ም ___

_____

2. የጠያቂው ሙሉ ስምና ኮድ ___

ስም _____ / የአባት ስም _____ / የአያት ስም _____

_____

3. የቤት ቁጥር _____

_____

4. የሟች ሙሉ ስምና መለያ ቁጥር _____

ስም _____ / የአባት ስም _____ / የአያት ስም _____

_____

5. ሟች የሞቱበት ቀን መቼ ነው? ቀን ___ ወር ___ ዓ.ም ___

_____

6. የሟች ጾታ ___ **1.** ወንድ 2. ሴት

_____

7. ሟች ሴት ከሆነች ስትሞት እርጉዝ ነበረች? ___ 1. አዎ 2. የለም 3. ህፃን ነበረች (ወደ ጥያቄ ቁጥር 9 እለፍ)

_____

8. ሟች ሴት ከሆነች በመጨረሻ የወለደችው መቼ ነበር? ___

1. ከ 6 ሳምንታት ውስጥ 2. ከ 6 ሳምንት-3 ወራት 3. ከ 4-11 ወራት 5. ከ 5 ዓመታት በላይ ይሆናታል 8. አይታወቅም

_____

9. የቤተሰብ ኃላፊው ሙሉ ስም

ስም _____ / የአባት ስም _____ / የአያት ስም _____

_____

10. ሟች ይኖሩበት ከነበረው ቤተሰብ ኃላፊ ጋር የነበራቸው ዝምድና ምንድን ነው? ___

01. ኃላፊ	12. የ1ኛ ባለቤት ልጅ	21. የኃላፊ ብቻ ልጅ
02. 1ኛ ባለቤት	13. የ2ኛ ባለቤት ልጅ	22. የ1ኛ ባለቤት ብቻ ልጅ
03. 2ኛ ባለቤት	14. የ3ኛ ባለቤት ልጅ	23. የ2ኛ ባለቤት ብቻ ልጅ
04. 3ኛ ባለቤት	15. የ4ኛና በላይ ባለቤት ልጅ	24. የ3ኛ ባለቤት ብቻ ልጅ
05. 4ኛና በላይ ባለቤት		25. የ4ኛና በላይ ባለቤት ልጅ
31. የኃላፊ ወላጅ	41. የኃላፊ ሌላ ዘመድ	46. ሌሎች ዘመዶች
32. የ1ኛ ባለቤት ወላጅ	42. የ1ኛ ባለቤት ሌላ ዘመድ	47. የማደጎ ልጅ
33. የ2ኛ ባለቤት ወላጅ	43. የ2ኛ ባለቤት ሌላ ዘመድ	48. ዘመድ ያልሆኑ
34. የ3ኛ ባለቤት ወላጅ	44. የ3ኛ ባለቤት ሌላ ዘመድ	
35. የ4ኛና በላይ ባለቤት ወላጅ	45. የ4ኛና በላይ ሌላ ዘመድ	

_____

11. ሟች የሞቱበት ምክንያት ምንድን ነው? ___

01. ሞቶ የተወለደ	09. የምግብ እጥረት/ክሳት	18. ራሱን/ራሷን የገደለ/ች
02. ቀኑ ሳይደርስ የተወለደ	11. ማጅራት ገትር	19. ኤድስ
04. ወባ	12. የሳንባ ነቀርሳ	20. በራሱ የተከሰተ ውርጃ
05. የሳንባ ምች	14. ድንገተኛ ሞት	21. በራስ ወይም በሰው የተከሰተ ውርጃ
06. ኩፍኝ	15. መንጋጋ ቆልፍ	22. ነቀርሳ/እጢ

07. ትክትክ 16. የወፍ በሽታ/የጉበት በሽታ 81. አደጋ (ይገለጽ)_____
08. ተቅማጥ/ትውከት 17. እርግዝና (ከወሊድ ጋር የተገናኘ ችግር) 91. ሌላ (ይገለጽ)_____

---

12. የት ነበር ያረፉት (የሞቱት)? ___

01. ወላጅ ቤት 02. መኖሪያ ቤት 03. ጉረቤት 04. ጤና ኬላ 05. ክሊኒክ 06. ጤና ጣቢያ 07. ሆስፒታል 91. ሌላ ይገለጽ)_

---

13. **ሚቹ ለሞቱበት በሽታ በዋናነት የትኛው ጤና ተቋም ተወስደው ነበር?** ___

01. የመንግስት ጤና ጣቢያ 02. የአካባቢ ጤና ተጠሪ (ጤና ኬላ) 03. ፋርማሲ 04. የባህል መድሀኒት አዋቂ
05. የቤት ውስጥ ተደርጎለታል 06. የግል ክሊኒክ 07. የመንግስት ክሊኒክ 08. ምንም አልተደረገለትም
09. ሌላ (ይገለጽ) _____10. ሆስፒታል

የቡታጅራ ገጠር ጤና ኘሮግራም

የጋብቻ ሁኔታ መመዝገቢያ ቅጽ

0. **ቅጹ የሚሞላበት ምክንያት** ___ 1. ተከታታይ ጥናት 2. ዓመታዊ ለውጥን ማረጋገጥ

ቀን ወር ዓ.ም

1. መጠይቁ የተደረገበት ቀን ___ ___ ___

---

2. **የጠያቂው ሙሉ ስምና ኮድ** ___

ስም የአባት ስም የአያት ስም

_____/_____/_____

---

3. **የተጠያቂው ሙሉ ስም**

ስም የአባት ስም የአያት ስም

_____/_____/_____

---

4. የጋብቻ ሁኔታ ቅጹ የሚሞላበት ምክንያት ___ 1. ጋብቻ ስለተፈጸመ 2. ጋብቻ በሞት ወይም በፍች ስለፈረሰ

---

5. **የጋብቻው ዓይነት ምንድን ነው?** ___ (የጥያቄ 4 መልስ የትኛውም ቢሆን ይህን ጥያቄ ይጠይቁ)

1. ህጋዊ 2. በስምምነት የተከናወነ ጠለፋ 3. ያለስምምነት የተከናወነ ጠለፋ 4. የሚች ወንድምን ሚስት መውረስ

---

6. የቤት ቁጥር ___

---

7. **የቤተሰብ ኃላፊው ሙሉ ስም**

ስም የአባት ስም የአያት ስም

_____/_____/_____

---

8. ጋብቻው የተፈጸመበት ወይም የፈረሰበት ቀን መቼ ነው? ቀን ወር ዓ.ም

___ ___ ___

ባል	ሚስት
መለያ ቁጥር ___	መለያ ቁጥር ___
9. ሙሉ ስም ስም የአባት ስም የአያት ስም _____/_____/_____	10. ሙሉ ስም ስም የአባት ስም የአያት ስም _____/_____/_____
11. የጋብቻ ሁኔታ (ይህንን ጋብቻ ወይም መፍረስ ተከትሎ) ___	**12. የጋብቻ ሁኔታ** (ይህንን ጋብቻ ወይም መፍረስ ተከትሎ) ___
1. ያገባ፣ አንድ ባለቤት 2. ያገባ፣ ሁለት ባለቤት 3. ያገባ፣ ሶስት ባለቤት 4. ያገባ፣ 4ና በላይ ባለቤት 5. ፈት 6. የሞተባቸው	
13. የበፊቱ የቤት ቁጥር ___	**14. የበፊቱ የቤት ቁጥር** ___

15. የአሁኑ የቤት ቁጥር_____	16. የአሁኑ የቤት ቁጥር_____
17. ባልየው ለቤተሰብ ኃላፊው ያለው ዝምድና ___	18. ሚስትየዋ ለቤተሰብ ኃላፊው ያላት ዝምድና ___

19. ይህ ጋብቻ/መፍረስ ወደ አዲስ ቤት መግባትን አስከትሏል? አዎ (የአዲስ ቤት መመዘገቢያ ይሙሉ) የለም

---

20. ይህ ጋብቻ/መፍረስ የባልየውን መፍለስ አስከትሏል? አዎ፣ (የግለሰብ ፍልሰት መመዝገቢያ ቅጽ ይሙሉ) የለም

---

21. ይህ ጋብቻ/መፍረስ የሚስተየዋን መፍለስ አስከትሏል? አዎ፣ (የግለሰብ ፍልሰት መመዝገቢያ ቅጽ ይሙሉ) የለም

ከኃላፊ ጋር ያለው ዝምድና ኮድ

01. ኃላፊ	12. የ1ኛ ባለቤት ልጅ	21. የኃላፊ ብቻ ልጅ	41. የኃላፊ ሌላ ዘመድ
02. 1ኛ ባለቤት	13. የ2ኛ ባለቤት ልጅ	22. የ1ኛ ባለቤት ብቻ ልጅ	42. የ1ኛ ባለቤት ሌላ ዘመድ
03. 2ኛ ባለቤት	14. የ3ኛ ባለቤት ልጅ	23. የ2ኛ ባለቤት ብቻ ልጅ	43. የ2ኛ ባለቤት ሌላ ዘመድ
04. 3ኛ ባለቤት	15. የ4ኛና በላይ ባለቤት ልጅ	24. የ3ኛ ባለቤት ብቻ ልጅ	44. የ3ኛ ባለቤት ሌላ ዘመድ
05. 4ኛና በላይ ባለቤት		25. የ4ኛና በላይ ባለቤት ብቻ ልጅ	45. የ4ኛና በላይ ሌላ ዘመድ
31. የኃላፊ ወላጅ	33. የ2ኛ ባለቤት ወላጅ	35. የ4ኛና በላይ ባለቤት ወላጅ	46. ሌሎች ዘመዶች
32. የ1ኛ ባለቤት ወላጅ	34. የ3ኛ ባለቤት ወላጅ	48. ዘመድ ያልሆኑ	47. የማደጉ ልጅ

11.5 Indepth Interview Guides, English version

Semi structured Questionnaire for qualitative study done on adult mortality around Butajira

Steps to follow

1) Greetings

2) Telling the purpose of the study and confidentiality of the data

3) Ask the willingness of the participants

Good morning /Afternoon and thank you for being with us.

My name is _____-and this is my colleague we are students in AAU we are conducting research on trends and determinants of adult mortality in Butajira and we are here to discuss with you about this adult mortality. And we came here knowing that your ideas are very important so feel free and discuss what you have inside of you. We do have plenty of time to talk with you.

Your answers will remain confidential and anonymous. So that do not loose any information .we are going to tape record our discussion. But the record will only remain with the researcher. Is that right to continue with the Inerview?

Yes …….continue

No …….stop here

Guideline questions(for organizations and the elderlies)

1. What do you think are the main factors influencing adult mortality in your community?

2. Why do you think that adult mortality (15-60) is higher in the year 1988,1998 & 1999 in your community?

3. Why do you think that adult mortality (15-60) is higher in the year 1987,1990, 1997 and from 2000-2008 in your community?

4. Why do you think male adult mortality was higher up to 1987-1996 and females are higher from 1997 till 2008?

5. Were there epidemics that ravaged adults in your community from 1987-2008? When? What were the interventions?

6. Were there droughts /famines that claimed the lives of adults in your community? What interventions or coping mechanisms were there?

7. Is there anything you want to say about adult mortality around butajira?

Thank you!

11.6 Indepth Interview Guides, Amharic version

በቡታጂራ አካባቢ ስለአዋቂዎች ሞት ጥናት አማጥናት የተዘጋጀ መጠይቅ

መከተል ሚገቡ ደረጃዎች

1. ሰላምታ

2. የጥናቱን አላማ መንገር እንዲሁም የሚሰጡት መረጃ ጥናቱን ከከሚያጠኑት ሰዎች ሌላ ጋር እንደማይሰጥ መንገር

3. በጥናቱ ለመሳተፍ ፈቃደኛ መሆኑን(ኗን) መጠየቅ

እንደምን አደርክ(ሽ)/እንደምን ዋልክ(ሽ)

ስሜ _____-ይባላል፡፡ይህ የስራ ባልደረረባዬ ነው፡፡በአዲስ አበባ ዩኒቨርሲቲ ተማሪ ስሆን በአዋቂዎች ሞት ላይ ጥናት እየሰራሁ እገኛለሁ በዚህም ላይ ከአንተ(ከአንቺ)ጋር መወያየት እንፈልጋለን፡፡ እዚህ የመጣነውም የምትሰጠን(ጪን) ሃሳብ ጠቃሚ ነው ብለን ስላመንን ነው፡፡ መልሶችህ(ሽ) ሚስጥራዊንታቸው የተጠበቀ ነው ከዚህ በተጨማሪም የተናጋሪው ማንነትበጥናቱላይ አይጠቀስም በመሆኑም በነጻነት በውስጣችሁ ያለውን ሃሳብ እንድትነግረን(ሪን) በትህትና እንጠይቃለን፡፡አንተን(አንቺን) ለመስማት እኛ ብዙ ሰአት ስለአለን ተረጋግተህ(ሽ)ሃሳብህን(ሽ)ን መግለጽ ትችላለህ(ትችያለሽ)፡፡ ፡፡

ድምጽም እንቀርጻለን ይህም ጥናት ከሚያጠናው ሰው ጋር ብቻ ይቆያል፡፡ንግግር ለማድረግ ፍቃደኛ ነህ(ነሽ)፡፡

ውይይቱን መቀጠል ትፈልጋለህ(ሽ)

አዎ……ውይይቱን መቀጠል

አልፈልግም……ውይይቱን ማቆም

መምሪያ ጥያቄዎች (ለተለያዩ መስሪያ ቤቶች እና የሃገር ሽማግሌዎች)

1. የአዋቂዎቸ ሞት ላይ ተጽእኖ የሚፈጥሩ ነገሮችን ምንድን ናቸው ብለህ ታስባለህ(ሽ) ?

2. የአዋቂዎች ሞት 1980-81 ፣1983-84 እና 1990-92 የጨመረው ለምን ይመስልሀል?

3. የአዋቂዎች ሞት 1979-80፣ 1989 (ወደ መጨረሻ)እና 1993-2001 ድረስ የቀነሰው ለምን ይመስልሃል(ሻል)?

4. የአዋቂ ወንዶች ሞት 1979-1988 ለምን ከፍተኛ የሆነ ይመስልሃል እና የሴቶችስ ከ1989-2001 ከወንዶች የበለጠ የሆነ ይመስልሃል?

5. ከ1979 -2001 የአዋቂዎችን ሞት የሚጨምር ወረርሽኝ በአካባቢችሁ ተከስቶ ያውቃል?መቼ?ለዛ እንደምላሽ ምን ተደርጎ ነበር ?

6. ከ1979-2001 የአዋቂዎችን ሞት የሚጨምር ርሀብ ወይም ድርቅ ተከስቶ ያውቃል? መቼ?ለዚህስ ምን ምላሽ ተደርጎ ነበር?

7. ስለአዋቂዎች ሞት ማለት ምትፈልገው(ጊው) ነገር ካለ?

Declaration

I the undersigned, declare that this is my original work, has never been presented in this or any other University and all the all people and institutions who gave support for this work are fully acknowledged.

Name of the student: _____

Date._____ Signature _____

Approval of the primary Advisor

This thesis work has been submitted for examination with my approval as university advisor.

Name of the primary advisor: _____

Date._____ Signature _____

.