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FACTORS ASSOCIATED WITH PARTIAL HEALTH INSURANCE COVERAGE AMONG HOUSEHOLDS IN MALAWI

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Thesis Abstract

Background

Health insurance has proven ideal for curbing the increase in household contribution towards health expenditure. However, despite efforts to expand health insurance in Sub-Saharan Africa, coverage has remained low and favouring higher-income groups. Malawi is among the countries that face this low uptake, with only 3% of the total population insured. Moreover, within insured households, coverage is often incomplete, leaving some members without protection. This partial insurance coverage increasingly contributes to a reliance on out-of-pocket expenditure (OOPE), a regressive and inequitable financing mechanism that disproportionately affects vulnerable households. However, there is dearth of evidence on factors associated with this phenomenon among households in Malawi, thus, understanding the dynamics of partially insured households is crucial to addressing these gaps, reducing financial barriers to healthcare, and promoting Universal Health Coverage (UHC).

Methodology

This study aimed to examine the determinants associated with partially insured households in Malawi. The thesis is divided into three parts: a structured literature review, a journal manuscript and a policy brief. The literature review revealed that most studies in Africa and elsewhere have focused on individual health insurance coverage determinants and not intrahousehold health insurance coverage status determinants. In Malawi, this is coupled with a low health insurance uptake. There is also limited information on factors influencing households to insure some but not all members. This study therefore aimed to fill this gap in literature and inform health financing policies.

This quantitative study used cross-sectional secondary Data from the 2019-2020 Multiple Indicator Cluster Survey (MICS). The individual health insurance status; insured and uninsured, was defined as coverage by any health insurance. Using unique identifiers (cluster number, household number and line number), every individual was grouped into their respective households. Consequently, household size was used to determine a household's health insurance coverage status where a household with all members as insured was categorized as fully insured, a household with at least one but not all members insured as partially insured and a household with no member covered as completely uninsured.

A two-stage analysis approach was then utilized in this study. Firstly, descriptive statistics were used to analyse and compare fully insured households, partially insured households and completely uninsured households. Zoning into partially insured households, the second stage applied multivariate binary logistic regression to identify factors associated with health insurance coverage. Analysis was done using STATA statistical package version 18.

Results

This study had 64,615 unique individuals from 22,886 households. Only 0.6% of individuals had health insurance. A higher proportion of the households were completely uninsured (22,649; 98.96%) with 228 households (1%) being partially insured and the remaining 9 households (0.04%) were fully insured. Household sizes differed significantly among fully, partially insured, and completely uninsured households (median of 1, 5, & 4 respectively; p-value=<0.001). Higher education levels of household heads were strongly associated with full and partial insurance coverage and in contrast, lower education levels, such as no education or primary education, were linked to a lack of insurance coverage (89% vs 50% vs 72%; p-value=<0.001). All fully insured households were from the richest quintile. Age of household head [AOR 1.025 (1.000-1.050);p-value=0.045], higher education level of an individual [AOR 4.470 (1.519-13.154); p-value=0.007], an individual's access to media [AOR 2.276 (1.050-4.931); p-value=0.037] and a higher dependency ratio [AOR 1.655 (1.111-2.466);p-value=0.014] were positively associated with being an insured individual from a partially insured household with household size [AOR 0.813 (0.682-0.969); p-value=0.022] being negatively associated with the outcome. On the other hand, residential area, sex of an individual and region were not associated with health insurance ownership in partially insured households. Households, therefore, were partially insured mainly because of being with large household members (median size of 5), higher dependency ratio, media access, individuals having no or primary education and being from the poorest quintile.

Conclusion

Socioeconomics and household dynamics influence health insurance coverage. This study highlights education, household size, wealth, dependency ratio, and media exposure as significant determinants influencing partial household health insurance enrolment. Partially insured households remain particularly vulnerable as they continue to face financial risks due to uninsured members, highlighting the need for targeted interventions to facilitate their transition to full coverage. The findings emphasize socioeconomic and informational disparities. Therefore, efforts to enhance health insurance enrolment should focus on improving education access, supporting larger and economically disadvantaged households, and leveraging media channels to raise awareness about the benefits of comprehensive health insurance coverage. Implementing policies that enhance affordability, and accessibility will also be essential in achieving universal coverage and reducing financial vulnerability among households. Moreover, these findings are timely given Malawi's commitment to UHC, Sustainable Development Goal 3, and regional targets such as the Abuja Declaration, reinforcing the need for equitable health financing policies that address partial household insurance coverage.

Acknowledgement

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List of Abbreviations

AOR	Adjusted Odds Ratio
CI	Confidence Interval
CHE	Catastrophic Health Expenditure
CBHI	Community-Based Health Insurance
IQR	Interquartile Range
LMICs	Low-Middle Income Countries
MICS	Multiple Indicator Cluster Survey
MOH	Ministry Of Health
NCDs	Non-Communicable Diseases
NHI	National Health Insurance
NHIS	National Health Insurance Scheme
NHSRC	National Health Sciences Research Committee
OOP	Out Of Pocket Expenditure
OOPP	Out Of Pocket Payments
PCA	Principal Component Analysis
SDG	Sustainable Development Goals
SHI	Social Health Insurance
SSA	Sub-Saharan Africa
THE	Total Health Expenditure
SES	Socioeconomic Status
SDF	Social Determinants of Health
UHC	Universal Health Coverage
UNICEF	United Nations Children's Fund
US$	United States Dollar
WTP	Willingness To Pay
WHO	World Health Organisation

1. PART A: STRUCTURED LITERATURE REVIEW

1.1 Introduction

The sustainable development agenda was ratified by United Nations member states in 2015 where they outlined 30 Sustainable Development Goals (SDGs) to be achieved by 2030. One of these SDGs is SDG three, which states that countries should ensure healthy lives and promote wellbeing for all at all ages (1). Universal Health Coverage (UHC), has become a key public health priority for achieving SDG three and has gained attention from the different member states (1).

UHC is described as having equal access to quality health care needs without facing financial hardships (2). SDG three, target 3.8 states that countries should achieve UHC, including financial risk protection, access to quality essential health care services and access to safe, effective, quality, affordable essential medicines and vaccines for all (1). UHC therefore contributes significantly to achieving SDG three on health and well-being and also plays a vital role in eradicating poverty (SDG one), promoting decent work and economic growth (SDG eight), and reducing inequalities (SDG 10) (3). By ensuring equitable access to quality health services, UHC helps prevent financial hardship due to health costs, supports a healthier and more productive workforce, and narrows health disparities among different population groups.

The World Health Organization (WHO) recommends that UHC can be achieved through increased population and healthcare service coverage while reducing healthcare costs through various mechanisms (4), thus one goal of UHC is financial risk protection. Evidence suggests that it can be achieved through sustainable prepayment mechanisms such as health insurance as opposed to Out of pocket expenditure (OOPE) (5). This is especially crucial as nearly one billion people globally experience financial hardship each year, with 70 million falling below the extreme poverty line due to catastrophic health expenses (CHE) (6).

Health insurance is a form of financing medical costs with pre-arranged payments known as premiums (7) and it facilitates risk pooling as well as redistribution of financial resources to secure financial protection against treatment costs (8). Health insurance takes several forms like private health insurance (voluntary or compulsory), social health insurance (SHI), and community-based health insurance (CBHI) (5). Countries in Sub-Saharan Africa (SSA) like Benin, Ghana, Kenya, Nigeria, Rwanda, Tanzania, and Zambia have implemented national health insurance (NHI) schemes to achieve UHC, with others like Burkina Faso, Cameroon, Ethiopia, Mali, South Africa, Uganda, and Togo planning similar initiatives (9).

African healthcare systems continue to grapple with financing challenges(10). The existing healthcare financing constraints arising from the respective health financing strategies and mechanisms have led to an increase in OOPE (11). This increases household contribution towards health expenditure and regionally, in Africa, high OOPE has pushed many households into poverty annually (12). Protecting people against such impoverishing effects is one of the key African health systems policies being advocated for to be achieved by 2030 (12) and one of the ways of achieving that is increasing number of household members covered on health insurance. Consequently, the introduction of health insurance in several SSA countries, such as Ivory Coast has proven to be effective in reducing the proportion of household expenditures towards health (13). Additionally, the best evidence suggests that health insurance is linked to improved healthcare service utilization and better health outcomes (14). However, in some countries such as Malawi, the uptake of health insurance has been low. Ng'ambi et al (15) found that 205 of the 31,259 participants in the Multiple Indicator Cluster Survey (MICS) 2019-2020 had health insurance in Malawi, representing a 1% uptake.

The goal is full insurance coverage for all members of the household, however the Institute of Medicine indicated that there is a variation of health insurance coverage among different types of households (14). Such a situation where at least one member or not all household members are being covered by health insurance is called partial health insurance coverage (16). Existing research in countries like South Africa has shown disparities regarding health insurance coverage among members within the same household (16). The implication of partial health insurance coverage includes an increase in the likelihood of inequalities at the household level. A study by Govender et al. (16) found that approximately 10% of the households in South Africa were partially insured. Within these households, children and women, who are among the most vulnerable groups, are often the ones excluded from health insurance enrolment. This is regardless of their increased healthcare needs that require them to consistently utilize healthcare services. This is also consistent with the findings by McLeod and Ramjee (17), who found that when households are faced with affordability problems, children are often left out of health insurance subscriptions. Uninsured household members are less likely to seek timely medical care, resulting in worsening conditions and increased treatment costs.

Furthermore, partial health insurance coverage can increase healthcare expenses due to higher OOPE. These costs can be catastrophic, which is a situation where the out-of-pocket healthcare costs exceed a certain threshold, usually 10% and 40% of total household spending or income and non-food consumption respectively (18), potentially leading to impoverishment. Impoverishment occurs when a household is pushed below the poverty line due to OOPE (18). The WHO and World Bank found that CHE is highest in the world's poorest regions, Asia and Africa at 16.6% and 10.0%, while

impoverishment rates were 1.1% and 1.4%, respectively (6). Impoverishment due to high OOPE appears high in countries with high poverty rates. Therefore, when an uninsured household member falls ill, the financial burden often falls on the other household members, straining household financial resources. This further emphasizes the need for comprehensive health insurance coverage to protect all members from significant financial and health-related risks. Healthcare expenditure, therefore, should be a concern for all household members. Illness affects the entire household, as healthcare costs impact shared financial resources. Additionally, Wagstaff (19) proposes that assessments like CHE are conducted at household level highlighting the need for a similar household-level analysis of health insurance uptake.

The published literature on the inequality household members face when enrolling in health insurance in Malawi is scanty. This highlights the need to investigate the factors influencing partial health insurance coverage among households in Malawi and address this gap in the literature.

1.1.1 Malawi: country context

1.1.1.1 Population, poverty level and disease burden

Malawi is a low-income country in SSA with a Gross Domestic Product per capita of US Dollars($) 645.2 and a population of 20.4 million people as at 2022 (20). With most people living in rural areas, only 18% of the total population is estimated to be living in urban areas with an average annual growth rate of 1.96% (21). According to 2019 data, an estimated 70% of the population was living on less than $2.15 per day (22). The country faces a significant burden from both communicable diseases such as malaria, tuberculosis, and HIV/AIDS and non-communicable diseases (NCDs) (23). According to Malawi's Health Sector Strategic Plan III (2023–2030), NCDs are the country's fastest-growing contributors to mortality and morbidity. Notably concerning is the disproportionate impact of communicable diseases like malaria on rural areas (24) where resources are already scarce compared to urban regions. This disparity underscores the critical need for health insurance, as it can provide financial protection and improve access to essential healthcare services in underserved rural communities.

1.1.1.2 Healthcare financing

The Malawi health system is financed through four main channels: donor aid, which accounts for 54.5% of the Total Health Expenditure (THE); government contributions (24.1% of THE); OOPE contributions (11.9% of THE); private health insurance (9.1% of THE) (25). Such a higher percentage of reliance on donor aid poses sustainability risk. This is exemplified by the United States government's recent funding withdrawal (26), impacting Malawi's $350 million annual aid for different sectors, health inclusive (27).

Malawi's healthcare delivery system is publicly funded with the government offering 63% of health services (28). The General Government Health Expenditure expressed as a percentage of the total government expenditure was 8.4% in the 2018/19 fiscal year (25). This is below the Abuja declaration set target where African governments pledged to allocate 15% of the total budget to health (29). These health financing constraints have led to inefficiencies like failure to provide adequate medicines and health workers, insufficient equipment, and poor access to emergency services, which has necessitated the use of OOPE to access healthcare raising household contribution to total healthcare to 11.9% (25, 30). Amidst such financing challenges, many advocacies for improvement are moving towards a prepayment mechanism like health insurance. This is to complement the public health sector and for financial risk protection against healthcare costs.

A very small percentage of the population in Malawi is covered by private health insurance. Existing schemes, among others, include the Medical Aid Society of Malawi (MASM) the country's first and largest provider, servicing over 80% of the private insurance market and primarily catering to formal sector employees (31). Other options include Wella Medical Aid Society (WEMAS) , which also serves the formal workforce, and community-based initiatives such as Abwenzi Rural Health Insurance, which offers health protection to underserved rural communities (32). Ng'ambi et al. (15) reported a 1% health insurance uptake as of 2019 whereas the National Statistical Office (33) in 2015 reported a 3% uptake for Malawi. With SHI being a consistent health reform for Malawi due to growing demands of providing adequate healthcare and to complement the Ministry of Health's efforts, an assessment of the feasibility of NHI in Malawi by Gheorghe et al. (34) was conducted and found that it could be viable. However, evaluating the factors associated with the uptake of the current private health insurance schemes is key to understanding the current low uptake, addressing the barriers and ensuring the program's successful implementation and widespread adoption should the program be proposed in the future.

Currently, private health insurance is voluntary in Malawi with a higher percentage having it through their employer, and smaller percentages through CBHI and private purchasing (35). With the voluntary nature, barriers for health insurance uptake include affordability, limited awareness especially for the rural populations, and a lack of comprehensive benefits. In December 2023, there was a launch for a civil servants' medical scheme, which is also voluntary and at the time it had registered 26,000 members (36). While the scheme has increased coverage for civil servants, its voluntary nature limits overall uptake. Additionally, as of 2022, 89% of the population was working in the informal sector (37), and thus the newly launched scheme excludes a significant proportion of the population from private health insurance. This poses a significant challenge in terms of the pooled

funds due to the voluntary nature of the scheme and exclusion of the informal workers. As noted by the International Labour organization, in most low-middle income countries social protection is geared for the formal sector neglecting the informal sector (38). Inadequate information about health insurance and unaffordability of insurance premiums are some of the health insurance uptake barriers faced by the informal sector (39).

With a significant proportion of the population living in monetary poverty (40), an increase in OOPE predisposes these people to CHE and further pushes them below the poverty line. Malawi's large informal sector, high unemployment, and low wages also makes basic needs inaccessible for many. Inflation and frequent currency devaluation further worsen living conditions, deepening poverty (40). McIntyre et al. and Ramjee et al. (17, 41) argue that the rising cost of health insurance contributions or premiums is associated with health insurance enrolment rates. The aforementioned high poverty levels and unemployment rate therefore, further limits people's ability to afford health insurance, hindering uptake.

Ng'ambi et al. investigated different factors influencing individual-level health insurance uptake in Malawi and identified age, wealth status, education level, and marital status as being associated with insurance uptake (15). The factors affecting household health insurance uptake are yet to be explored. According to Abdel-Ghany et al. (42), 'Health insurance coverage is a family rather than an individual decision therefore, it is essential to examine the socioeconomic variables of a family unit'. Moreover, in Malawi, low health insurance uptake is coupled with partial coverage as enrolment is often for selected members. This study defines households with insurance for at least one member but not all as "partial coverage," those with all members insured as "full coverage," and those with no member insured as "no coverage".

Various studies (15, 35) have investigated different factors associated with the uptake of health insurance at an individual level in Malawi with a limited focus on partial coverage of households. Ataguba and Goudge (43) argued that discussions on health insurance have tended to focus on affordability and inter-household coverage neglecting the determinants of coverage within the household. This highlights the gap in the literature and presents an opportunity to assess factors associated with partial health insurance coverage among households specifically because there might be underlying inequalities associated with the coverage at the family level, which may potentially affect vulnerable groups such as women or children under five.

1.2 Literature review

This section introduces health insurance coverage, its various types and importance, it describes different theoretical frameworks associated with health insurance like UHC, consumer theory, Grossman theory, intrahousehold bargaining theory, the methodological review, empirical review and conceptual framework.

1.2.1 Introduction to Health Insurance Coverage

Health insurance is defined as “a way to distribute the financial risk associated with the variation of individuals’ healthcare expenditures by pooling costs over time through pre-payment and over people by risk pooling”(44). Health insurance coverage, therefore, provides access to either comprehensive or partial healthcare services at any time during which an individual is enrolled, depending on the plan of insurance one is registered for. For example, comprehensive healthcare services can include prevention, diagnosis, treatment and rehabilitation services whereas partial healthcare services might be limited to specific prioritised services like basic primary care and exclude rehabilitation or cosmetic services.

Health insurance takes several forms, with the two main types being public (funded or managed by the government) and private health insurance as broadly grouped by Census Bureau (45). McIntyre (5) classifies health insurance into mandatory and voluntary health Insurance, where mandatory health insurance is a legal requirement obliging certain groups or the entire population to be enrolled in an insurance system. This model, often termed NHI or SHI, has been adopted by many countries like Ghana, Zambia and Germany among others. In contrast, voluntary health insurance, also called private health insurance, does not carry legal requirements and is available for individuals to enrol in at their discretion. Voluntary insurance can take several forms: employment-based, where coverage is provided through an employer; direct purchase, where individuals buy insurance directly from a company; and (45) CBHI, where community members contribute small amounts to a collective fund, a model commonly found in rural areas (5). For Malawi, CBHIs are mostly found in the hard-to-reach rural remote areas where most times the available health facilities are at a fee for service as offered by the Christian Health Association of Malawi hence calling for such community efforts to promote their access. In collaboration with the health facilities, community members and their respective traditional leaders administer the CBHI, Kaundu CBHI being an example (46).

1.2.1.1 Full health insurance coverage and Partial health insurance coverage

Some literature(42, 47, 48) describe full health insurance coverage as comprehensive coverage for all healthcare services without copayments at the point of service and partial health insurance coverage

as payment for specific healthcare services according to the benefits package per medical insurance plan. The other services are paid for by the individual out of pocket.

However, for the purposes of this paper, the definition by Govender et al. will be utilized which defines full health insurance as a household that has all its members enrolled in health insurance regardless of the household size. Partial coverage, on the other hand, refers to a household that does not have all its members enrolled in health insurance**.**

Having health insurance is important because illness is often unpredictable, and its associated costs can be a shock to the household by predisposing it to catastrophic expenditure or impoverishment. In cases where an individual in a household falls ill and does not have health insurance, some households resort to selling assets and borrowing in order to cope with the medical bills associated with the illness (49, 50). Health insurance, therefore, offers coverage against the risk of incurring medical and related financial costs at the point of healthcare service use. This aids in lowering OOPE, and there is existing evidence supporting the impact of health insurance on reducing OOPE (51, 52). Moreover, household members are likely to encourage the sick person to seek health care when they know that they will not bear the health care costs at the point of use.

Evidence also suggests increased healthcare access and utilization is associated with health insurance (53). It provides timely access to health care while offering protection from high unexpected costs. This seeking and accessing quality healthcare services timely ultimately improves health outcomes, as individuals receive the necessary care to support their health and well-being. In Kenya, Mugo et al. concluded that health insurance enrolment reduced mortality (54).

Overall, these highlighted health insurance's positive effects are most impactful when the entire household is covered, as this enhances financial protection and supports comprehensive access to healthcare. Therefore, this paper aims to encourage full household enrolment in health insurance to fully realize these protective benefits**.**

1.3 Theoretical review

Different theories underpinning health insurance coverage are discussed in this section.

1.3.1 UHC

WHO designed the UHC action framework to aid countries in attaining better health for all. The framework has 15 action domains and related priority actions organized according to five essential attributes, which include quality, efficiency, equity, accountability, good governance and sustainability, and resilience (55). This study adapts the equity essential attribute recognizing that no single

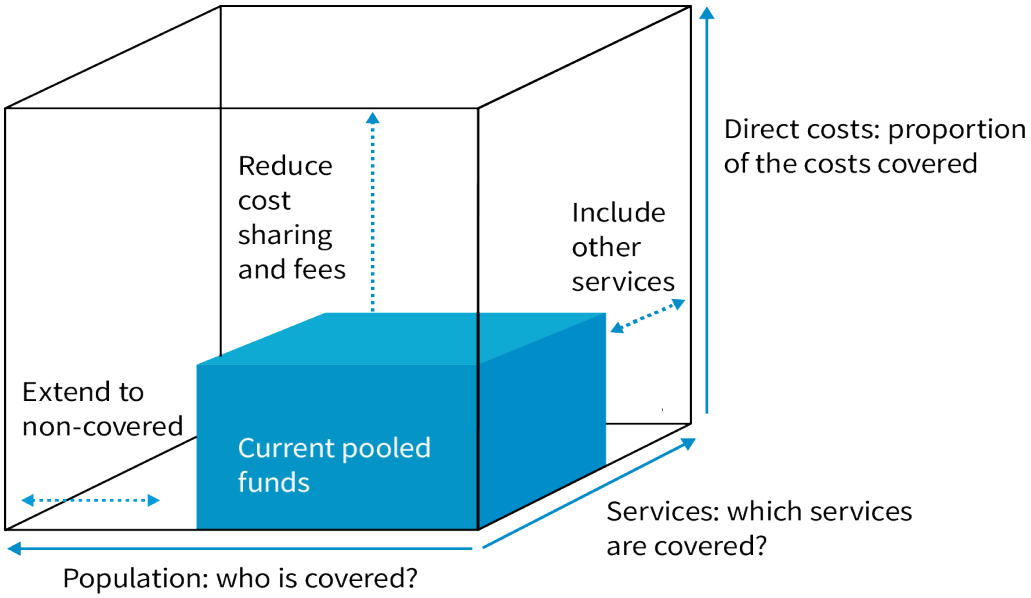
approach can address all attributes effectively. Equity means everyone has a fair chance to achieve full health, regardless of their background or circumstances (55). Health equity can only be realized when every individual has the opportunity to achieve optimal health. Several countries like Brazil, Thailand and Japan have demonstrated significant progress in achieving the equity attribute, ensuring that every citizen has equal access to quality healthcare (56). This is exemplified by their role as leading high achievers in the pursuit of UHC (57).

The three action domains in attaining equity in the framework include financial protection, service coverage and access, and non-discrimination. The first two dimensions are the key ones used to measure UHC. Financial protection is explained as receiving healthcare that does not cause financial hardship, and service coverage is when access to the needed healthcare is for all regardless of the ability to pay (58). The UHC index, a measure of the geometric mean for financial protection and service coverage, is used as an indicator by policymakers to monitor and compare the progress different countries make while working towards achieving UHC (58). The UHC index score ranges from 0-100 with higher scores indicating better progress. The WHO recommends calculating sub-indices for service coverage across several key components: infectious diseases, reproductive, maternal, newborn, and child health, service capacity and access, and NCDs (59). Wagstaff et al. (58) and Barasa et al. (60) proposed the use of catastrophic and impoverishing OOPE as measures of the financial risk protection index. The indices for service coverage and financial protection are divided into two equal weights to compute the overall UHC index.

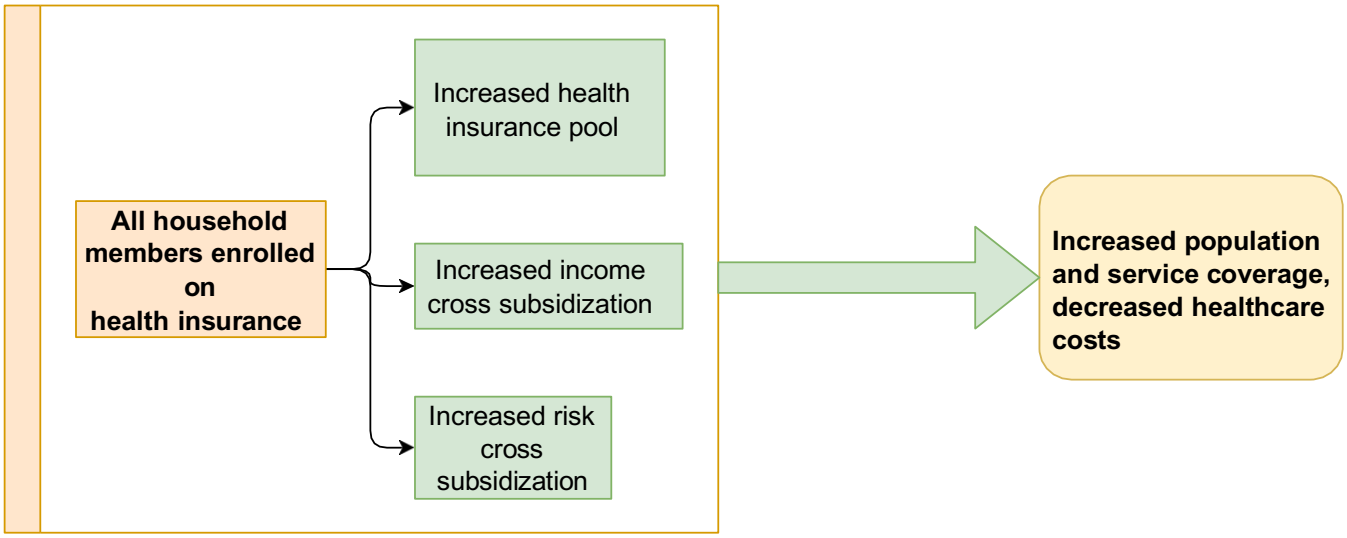
The UHC index varies significantly across regions, ranging from 48.2 to 90.3 in Middle Eastern and African countries (61), 53% in India (62), and 52% in Kenya (60). Malawi's UHC index stands at 69.68% (63), which, while higher than many other countries, has some associated issues. According to Mchenga et al. (63) this relatively high index in Malawi masks underlying inequities, as coverage for many health services remains pro-rich. The higher financial risk protection score, influenced by low OOPE among poorer populations, suggests that healthcare access is limited for the poor due to financial constraints. Consequently, the impact of CHE and impoverishment from OOPE is primarily observed among wealthier individuals, highlighting disparities in healthcare access that need to be addressed by policy.

Health insurance promotes financial protection as it enables resource pooling and the promotion of income and health risk cross-subsidization, removing financial barriers to healthcare. Comprehensive household coverage in turn enhances equity by addressing access barriers for vulnerable groups thus tackling non-discrimination action domain.

The UHC cube as seen in Part A: Figure 1 below, summarizes how UHC is to be attained. The cube shows that half of the population of a country is covered for approximately half of the services they need, however, just half of the costs for these services are funded through the collected or pooled funds. This highlights significant inequalities in service coverage, as a substantial portion of the population remains uncovered, and many healthcare services are inadequately funded. Consequently, individuals are often compelled to rely on OOPE to access services not covered by pooled funds, exacerbating financial barriers to healthcare access. UHC therefore targets an increase in population coverage, service coverage and a reduction in healthcare costs. This is dependent on the centre which is the pool of funds. As summarized in Part A: Figure 2, enrolling more household members on health insurance means increasing the population coverage and the higher the numbers in a pool the greater the income and risk cross subsidization which can increase the services covered and lower the healthcare costs.



Part A: Figure 1: Three dimensions to consider when moving towards UHC. Source: (WHO, 2015).



Part A: Figure 2: Summary of attaining UHC cube goals through increased household health insurance enrolment (Adapted from the UHC Cube explained).

1.3.2 The Consumer Theory

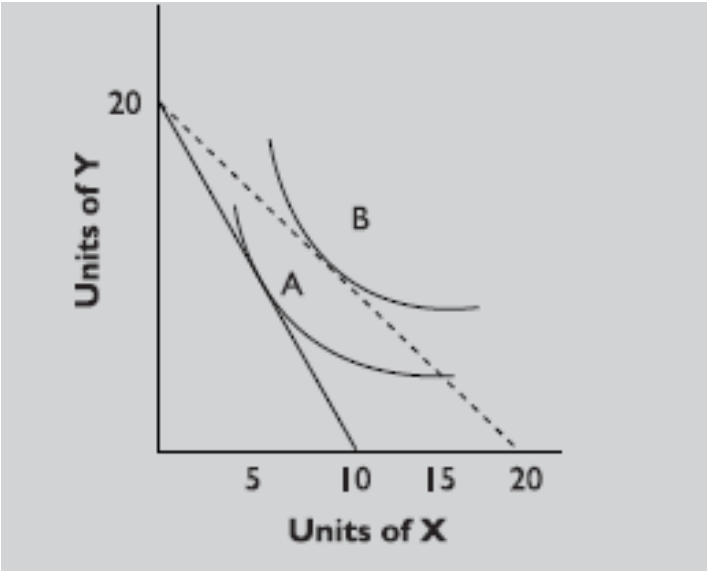
Levin and Milgrom (64) explain the consumer theory as how a consumer makes rational consumption decisions based on individual preferences and budget constraints. One's income is allocated across a wide range of goods available to an extent that attempts to maximize the consumer's utility. A consumer therefore maximizes their utility when the ratio of marginal utility to price is equal (65) for all goods they consume. Marginal utility is defined as the additional satisfaction or benefit a consumer gets from consuming one more unit of a good or service (65). Given a range of goods to choose from, a consumer therefore weighs the utility of each extra unit of good purchased against the respective price. If these are equal, the consumer achieves maximum utility.

Families are likely to purchase health insurance based on their income or budget constraint and the utility expected thereof. Health insurance provides a role in financial protection against unpredictable and potentially increased medical costs hence allowing consumers to manage their health-related financial risks and maintain overall utility. Thus, health insurance is considered a utility maximising choice as it reduces future financial uncertainties. The first health insurance purchase is expected to have high marginal utility as it shields individuals and families from devastating healthcare costs. An additional unit of the same health insurance, however, is likely to be associated with diminished marginal utility as the satisfaction sought from it cannot equate to that of the first purchase. At some point the cost of additional coverage may outweigh the benefits hence lowering the utility (48).

Purchasing decisions by the consumer, as explained in the consumer theory, are based on the income and prices of goods and services. The concepts of income and substitution effect then come into play. The income effect occurs due to a change in real income when the price of a good changes (65). The purchaser cannot buy the same bundles as he or she would have before the price change. If the price of a good goes up, the bundles purchased are likely to decrease compared to when the price of a good goes down as the purchasing power in the latter increases, allowing one to purchase more or even a range of goods. In health insurance, household income and health insurance premiums are likely to determine if one will purchase health insurance and if this individual has dependents, how many household members should be enrolled subject to the purchasing power. If the health insurance premiums are likely to be a significant proportion of household income or if the premiums increase, then the bundles of health insurance are less likely to be purchased for different family members.

The quantity or combination of two goods to be purchased can be illustrated using indifference curves where any point in the indifference curve shows the same utility received from the two goods (65). According to Guinness and Wiseman (65), these indifference curves are curved inwards to indicate the diminishing marginal utility associated with the purchasing of an extra good. Given a budget, a consumer can purchase a number of goods to meet one's utility.

The other concept when analysing consumer behaviour is the budget line. It illustrates all the possible combinations of two goods that can be purchased at given prices with a set budget (65). The number of household members to be enrolled in a health insurance scheme is therefore very dependent on the household income with an increase in the budget line allowing more household member enrolment and a decrease in the budget line allowing a reduced number or no household member enrolment.



Part A: Figure 3: Indifference curves for goods A and B. Source: Guiness and Wiseman: Introduction to Health Economics (65).

As illustrated in Part A: Figure 3 above, the straight solid and dotted lines illustrate the budget line. The dotted budget line shows a higher income than the lower solid straight line. The units of goods purchased are higher in B, compared to A. This can be equated to the number of household members enrolled on health insurance as per budget constraint with B enrolling more household members than A.

Substitution effect occurs when a change in the price of a good affects the consumer's attractiveness to it compared to other goods leading to consumers substituting it for another good (65). The substitution effect principle entails reallocating spending to minimize the impact of higher prices in one area. An increase in healthcare costs, for example, might lead to individuals seeking alternatives to manage these expenses such as purchasing health insurance, which lowers healthcare expenditure. This fulfils the substitution effect as direct, unpredictable OOPE is substituted with a relatively stable, predictable insurance premium.

1.3.3 Grossman theory (The demand for healthcare theory)

The Grossman model of health demand highlights that an individual's initial stock of health is a capital that deteriorates as age increases, and its main output is healthy times (66). As health stocks deplete with age, the old household members are more likely to require healthcare services than the young ones and are, therefore, more inclined to be on health insurance than younger members. They are prone to having chronic conditions, which increases the risk of adverse selection when

purchasing health insurance for household members. Adverse selection refers to the tendency of one party to use private information to the disadvantage of the other party before entering an agreement (65). In health insurance, this occurs when individuals or families possess more knowledge about their health status than the insurer. Individuals who perceive themselves to be at high risk are, therefore, more likely to seek health insurance than those who perceive themselves as low risk. As a result, households may choose to insure older or chronically ill members while leaving healthier members uninsured due to the expected healthcare needs and costs.

The Grossman model also explains that health is produced after a combination of inputs like time of the consumer, medical treatment, diet, exercise, recreation and housing (66). The model entails that health-related inputs are investments aimed at replenishing health. For example, the medical treatment input entails access to curative care with inputs like exercise and diet having a significant role in prevention of various diseases. Purchasing health insurance subsequently enhances access to medical treatment, one of the key inputs for maintaining and restoring health. Consequently, households may choose to enrol in health insurance to ensure sustained access to care and to maintain healthy living over time.

According to Grossman (67), the other variable that impacts health stock is level of education or knowledge, and those with more education are seen as the more efficient producers of health. Educated individuals tend to have greater access to health-related information which they are more likely to understand and utilize. Highly educated household members are, therefore, more likely to purchase health insurance to maximize their utility and ensure their health stocks are not quickly depleted or are continuously replenished.

1.3.4 Intrahousehold bargaining and resource allocation

A household typically includes a number of adults and children, especially in developing countries. According to Doss (68), empirical studies often consider the two household decision makers to be husband and wife. Therefore, bargaining is between husband and wife, and these have more bargaining power than other household members, who are assumed to be passive or unimportant (68).

Decisions in the household are, therefore, likely to be made by the household head on how household resources will be allocated. The decision on which member will be enrolled in health insurance, in this case, will be determined by them, and household members with less bargaining power will have minimal or no say. The household head might allocate the household's limited resources to prioritize other basic needs, like food, education, or shelter, which the head views as essential for overall well-being. Health insurance, which is seen as one of many competing needs, and thus may only be purchased for those

members who are perceived to need it most leading to the partiality concept where not all household members are insured.

1.3.5 Wagstaff's Model of Health

The Wagstaff Model extends Grossman's demand for healthcare theory by incorporating several key insights that enhance the understanding of individual health-related decision making under real-world constraints. First, it recognizes that while health is a desirable good, individuals also prioritize other forms of consumption, such as food, leisure, leading to trade-offs (69). This is indicated in a downward sloping indifference curve, indicating that individuals aim to balance health and other consumables rather than health at all costs. Second, it includes a health production function where individuals combine various health inputs like nutrition and medical care to produce health (69). Like Grossman (66), Wagstaff (69) notes that those who are more educated may be more efficient producers of health, making informed decisions and being more likely to invest in health insurance. This may then result in households being fully insured and having better healthcare access. Third, like the consumer theory (64), Wagstaff (69) highlights the role of budget constraints in health-related decisions noting that neither health inputs nor consumption items are costless. This being the case, wealthier households are more likely to afford comprehensive coverage while poorer households may insure some members or none.

Uncertainty in health outcomes is also introduced by Wagstaff's model as people face unpredictable risks of illness and do not know how current choices will affect future health. In this context, health insurance plays a crucial role by reducing the financial uncertainty associated with illness. Individuals who are insured are more likely to seek medical care when needed, leading to higher healthcare utilization, particularly for preventive and early treatment services. In summary, the Wagstaff model offers a realistic, intuitive framework for understanding how households navigate health decisions, balancing health desires, financial limits and uncertainty while also highlighting why insurance coverage may vary within and across households.

1.3.6 The Inverse Care Law

The inverse care law was proposed by Julian Tudor Hart, and it describes a paradox in healthcare access where "the availability of good medical care tends to vary inversely with the need for it in the population served" (70). It highlights how medical resources are maldistributed in the population as those who need them the most often have the least access to it (70). In the context of health insurance, this means that individuals and households with the greatest health needs such as the poor, chronically ill, or rural populations, are often the ones with partial or no coverage. Meanwhile,

those who are healthier and more financially secure tend to have comprehensive coverage. For example, as discussed in the Malawi context, rural households face a high burden of diseases such as malaria, yet they are the least likely to have comprehensive health insurance coverage despite their greater healthcare needs. This misalignment between need and access reinforces health inequalities and undermines the goals of UHC. Addressing this requires targeted policies that expand insurance access for the most vulnerable, ensuring that access to care is driven by need, not wealth.

1.3.7 Adverse Selection and Moral Hazard

While adverse selection has been introduced earlier in the Grossman's theory, in relation to individual behaviour, its effect extends to broader patterns of household level insurance decisions. In settings like Malawi, where health insurance options may be limited or costly, households may tend to prioritize coverage for members perceived to have higher risks resulting in partial household health insurance coverage. This selection behaviour, although rational from the household's perspective, may lead to unintended systemic effects by distorting the health insurance markets leading to higher premiums and potentially making full family coverage unaffordable. It also greatly impacts on the risk pool as low-risk individuals deter from enrolling, a tendency that potentially threatens the sustainability of insurance schemes and limits progress towards equitable health financing. This, in turn, may further discourage full household coverage, perpetuating a cycle of partial coverage decisions.
Moral hazard occurs when insured individuals alter their behaviour because they bear less financial responsibility for the consequences (65). In health insurance, this may result in increased healthcare utilization among insured individuals, as they face lower direct costs. In partially insured households, insured members may utilize health services more frequently while uninsured members, facing out of pocket expenses, may delay or avoid seeking care. This creates intra-household disparities in healthcare access and outcomes, reinforcing broader inequalities and potentially undermining overall health gains.

1.3.8 The Social Determinants of Health (SDH) Framework

As explained by WHO (71), social determinants of health are conditions that influence people's lives from birth to later life. The SDH framework highlights that health outcomes are shaped not only by biological or clinical factors but also by the broader social, economic and environmental conditions in which people live (71). In Malawi, determinants such as poverty, education, employment, gender and rural residence, significantly influence both access to health insurance and the ability to utilize healthcare services. For instance, households in rural areas often face geographic and infrastructural barriers to accessing health facilities or enrolling on health insurance (32). In line with the theories of

Wagstaff and Grossman (66, 69), which highlight the role of education in improving health outcomes, the SDH Framework further illustrates how low educational attainment can limit awareness of health rights and access to financial protection mechanisms, such as health insurance. Similarly, consistent with the principles from consumer theory (64), the SDH framework illustrates how informal employment, and irregular income can reduce a household's ability to afford health insurance premiums. Additionally, gender dynamics within households may also influence which members are insured, potentially disadvantaging women and children. Together, these social factors may help explain the observed disparities in partial or no health insurance coverage among vulnerable populations in Malawi, despite their high health needs. Without addressing these underlying social determinants, health insurance schemes risk reinforcing rather than reducing existing inequalities.

1.3.9 Conclusion

The theories discussed in this section underscore the diverse factors influencing a household's decision to enrol its members in health insurance. The UHC theory emphasises health insurance's role in achieving financial risk protection and increasing service coverage. Consumer theory highlights how income and budget constraints shape enrolment decisions, with higher-income households enrolling more members. Expected utility theory, supported by Grossman's model, depicts that older household members are more likely to prioritize health insurance compared to younger ones. Individuals with depleted health stocks like the chronically ill, are also more likely to purchase health insurance. Ultimately, the household head's bargaining power determines resource allocation, often leading to trade-offs between health insurance and other essential household needs, reflecting the complexity of these decisions.

While each theory sheds light on different dimensions of health insurance uptake, their application must be understood in context. For instance, Grossman's model, though useful, assumes rational decision-making and individual autonomy, which may not reflect the realities of low-income, resource-constrained households where shared priorities, gender roles, and informal norms shape decisions. Additionally, consumer theory's emphasis on income overlooks non-monetary barriers such as health literacy and trust in the health system. The SDF deepens this understanding by highlighting how structural factors shape health behaviours and access. Similarly, Wagstaff's model builds on Grossman's theory by embedding health within broader consumption choices. At the same time, the Inverse Care Law illustrates that those in most need of care are often the least likely to access it. Therefore, these frameworks must be interpreted not in isolation, but as part of a broader social and economic ecosystem that affects household behaviour. A more comprehensive, context-specific interpretation enhances the

understanding of intra-household health insurance coverage and provides a stronger foundation for relevant policy interventions.

1.4 Methodological review

This section describes the different methods utilised in analysing associations of variables with the outcome. Studies analysing factors associated with partial health insurance coverage mostly use econometric analysis which is explained as the use of statistical models to test existing hypothesis and forecast future trends from data (72). One key econometrics analysis widely used is the regression analysis which can be linear or logistic regression.

1.4.1 Study Methods

The study by Govender et al. (16) used data from a nationally representative household survey of 4800 households and 21,593 individuals sampled across South Africa's nine provinces collected between April and July 2008. This survey provided a comprehensive view of the insurance landscape across different households in South Africa. The dependent variable was derived from survey responses indicating whether any household member belonged to a medical scheme or sick fund allowing for a clear understanding of insurance coverage within the sampled households. This generated a categorical variable at the household level that classified households as completely uninsured, completely insured, or partially insured, based on the insurance status of household members (16). Additionally, a dichotomous variable was created to indicate whether an individual within a partially insured household was insured or not, focusing on the primary interest of the study which was partially insured households (16). The independent variables included categorical variables like households socioeconomic status (SES) constructed using the Principal Component Analysis (PCA) methodology, household-heads educational level, employment status, health status and the individuals' or household members health status (16).

Data was analysed in two parts: a multinomial logit model estimated household choices among partial, full, or no coverage, using household head and household characteristics. The second part focused on partially insured households, analysed using logit regression (16). The sample size was adequate and detected the effect change with the highest alpha set at 0.1. Serdar et al. (73) explains that large sample sizes are associated with higher statistical power. Nonetheless, a high alpha has limitations, as it increases the likelihood of rejecting the null hypothesis when it is true and may lead to overinterpretation of results though the exploratory nature of the study provides context for using such an alpha (74). The multinomial logistic regression was also suitable for categorical data making the overall findings to be rigorous and valid. Such methodology, models the probability of each category simultaneously, without

requiring the categories to be ordered or the analysis to be split into separate binary comparisons thus avoiding loss of detailed information (75). However, a key limitation of the study was the exclusion of premium costs, a key predictor of household insurance coverage. Omitting this variable, therefore, may potentially overestimate the effects of other covariates.

Another study in the United States of America by Abdel-Ghany et al. (42) also investigated factors associated with the different degrees of health insurance coverage. This study used data from the National Health Interview Survey, and it comprised of 31,527 families. It utilized logistic regression to determine the probability of one's insurance coverage status; partial, full and no insurance coverage. These were the dependent categorical variables for the model, which were defined as insurance that covers a substantial fraction of medical expenditure, insurance that covers every medical expenditure and when insurance does not cover any medical expenditure, respectively (42). The independent variables in the model were also guided by research. These were consistent with some of the variables used in Govender et al. 's study (16), and they included education and age of reference person, area of residence, health status, employment status, race, presence of children as categorical variables, poverty status and type of family were binary variables. The authors (42) then, later applied the model and found the predictive values. However, they highlighted that they did not control other variables, which makes their methodology insufficient. The results cannot be explicitly said to be due to the factors that they had explored. Nonetheless, like the study by Govender et al. (16), they had enough statistical power due to an adequate sample size and smaller alphas to detect an effect change (73).

A study by Jehu-Appiah et al. (76) explored reasons why households enrolled or did not enrol in the National Health Insurance Scheme (NHIS) in Ghana. The 2009 household survey data was used, and it included 3301 households comprising of 13,865 individuals (76). The outcome variable was categorical, whether the household's insurance status was currently enrolled, previously enrolled and never enrolled. The independent variables used included age, gender, education, occupation, family size, marital status, peer pressure, health beliefs, income place of residence, health status and perceptions (premium costs). Respondents' perceptions were first evaluated using the PCA to remain with factors that can be fitted in the model. Similar to the aforementioned studies (16, 42), a multinomial logistic regression model was used to analyse the data with the reference category as those who had never been enrolled in the NHIS. With sufficient sample size and smaller alphas, the study had enough statistical power. Furthermore, utilizing the multinomial logistic regression for a categorical variable with three outcomes indicated the right methodology choice.

Broadening the perspective, Salari et al. (77) analysed health insurance enrolment determinants in Ghana utilizing three national household surveys. Evidence sought from more than one national representative household survey helps make the findings from this study more robust. The first household survey was the 2011 MICS comprising of 10,963 women and 3,511 men from 12,150 households, the 2014 Demographic Health Survey with 12,831 households and the Ghana Living Standard Survey with 18,000 households were the other surveys used. The sample sizes utilized were adequate to detect meaningful associations. The outcome variable was binary, whether an individual was enrolled in the Ghana NHIS or not. Multilevel logistic regression models examined the association between NHIS enrolment and socio-economic characteristics, accounting for geographic variation. Separate analyses for men and women were conducted to explore potential behavioural differences. To ensure robustness, Salari et al. (77) analysed the full sample and excluded groups with premium exemptions, such as pregnant women and minors. Explanatory variables included individual, household, regional, and urban/rural characteristics. The multilevel approach accounted for unobserved contextual factors, such as healthcare availability, and residual correlations within households which was a unique approach by this study that added to its strengths. Similar to the other studies, the methodology choice with the binary outcome was appropriate.

Chauluka et al. (35) examined factors associated with coverage of health insurance among women in Malawi utilizing the Malawi Demographic Health Survey data with a sample size of 24,562 women. The binary dependent variable was health insurance ownership or not. Informed by the literature and the dataset used, the authors used a woman's education, area of residence, age, work, marital status, household head and level of wealth as independent variables in the binary logistic regression model. This model was a good choice as the outcome variable was binary and categorical. Sample size was also sufficient similar to other studies described above and there was enough statistical power with the p-values used as <0.01 (73).

A study by Ng'ambi et al. (15) investigated factors associated with the uptake of health insurance in Malawi. This study used the MICS with a total of 31,259 individuals. The binary outcome variable for this study was health insurance coverage or lack thereof. The dependent variables used are consistent with those used by other studies (16, 35, 42, 76) as they included age, wealth status, level of education, marital status, frequency of reading newspapers or magazines, frequency of listening to the radio, and frequency of watching television (15). However, the authors only analysed percentages and frequencies. They did not analyse if these factors are predictors of health insurance enrolment in Malawi constrained by the number of observations on health insurance to do a multivariate analysis (15) limiting the ability of the study to detect meaningful associations.

A study by Phiri et al. (78) sought to determine households' willingness to pay (WTP) for micro health insurance in Malawi. Utilizing data obtained in 2009, the study included 829 households from 3 districts: Blantyre, Lilongwe and Thyolo. The sample size was adequate to obtain meaningful associations. However, the districts were not a national representation, limiting the generalizability of the findings to the overall Malawi population. The questionnaire recorded a binary response on WTP for health insurance, with those answering "yes" specifying a continuous payment amount. The initial analysis employed binary logistic regression to model the WTP for health insurance, using individual characteristics of household heads, household socioeconomic factors, and community variables (78). The second part analysed the amount respondents were willing to pay for health insurance using linear regression. These methodologies were appropriately chosen based on the nature of the outcome variables: binary logistic regression for the binary outcome and linear regression for the continuous outcome.

1.4.2 Strengths and limitations of the methodologies explained

The key strengths of logistic regression include its ability to model outcomes with more than two categories, making it ideal for categorical data analysis. The interpretation of the odds ratios it derives is easy, enabling a clear understanding of the effect and magnitude of predictors on the response outcome. Additionally, its versatility is enhanced by not requiring assumptions such as normality, linearity, or homoscedasticity (79). However, it has limitations, including the need for a large sample size to detect significant associations and high sensitivity to multicollinearity, where strong correlations among predictors can distort coefficient estimates (79).

1.4.3 Conclusion

When dealing with a categorical dependent variable with more than two categories, a multinomial logistic regression model is used, whereas a binary logistic regression is applied for outcomes with two categories. In this study, binary logistic regression will be employed since the health insurance outcome has two categories. With an adequate sample size, the effects of the explanatory variables will be effectively explored.

1.5 Empirical review

The empirical literature introduces the impact of health insurance on OOPE, discusses evidence on factors associated with partial health insurance coverage among households including households' SES, area of residence and size, household heads' (age, gender, level of education and employment status), and individual household members age, level of education and health status. These factors are particularly relevant in the context of SSA, where varying socioeconomic and demographic conditions

significantly influence health insurance adoption. Findings will be presented thematically as demographic factors and socioeconomic factors.

1.5.1 Health insurance and OOPE

Health insurance has been shown to reduce OOPE. For instance, a 2021 study by Al-Hanawi et al. (51) in Saudi Arabia reported that health insurance reduced OOPE for general health and medicine in the general population by 2% and 2.4%, respectively. While these reductions appear modest, they represent a meaningful financial relief for low-income households. Similar findings were observed in China, where research by Zhang et al. (52) indicated that health insurance reduced inpatient OOPE, particularly benefiting low- and middle-income groups. However, individuals facing very high medical costs continued to experience financial strain due to limited coverage. These findings highlight the need for comprehensive insurance policies that cover all household members and provide a full benefit package. Without universal coverage, the financial burden on households may increase, as uninsured family members can elevate overall OOPE, thus undermining the financial protection that health insurance aims to provide.

Okunogbe et al. (80) further explored the short- and long-term impact of health insurance on CHE as most studies had focused primarily on its impact on OOPE. Notably, the study found that insured households had decreased CHE by approximately 5.7 percentage points particularly for the vulnerable groups like the poor and the chronically ill. This underscores that not only does health insurance reduce OOPE as established by previous studies, but it also reduces the CHE. However, this effect was significant only in the short term, with no lasting impact observed over the long term, suggesting that the duration of insurance coverage may influence its effectiveness in protecting against catastrophic expenses over time. This then highlights the need for sustained health insurance policies that ensure long-term financial protection.

1.5.2 Demographic factors associated with partial health insurance

The following demographic factors were explored to determine their impact on health insurance enrolment.

Household size

Several studies found a negative association between household size and health insurance enrolment (16, 76, 81-84). An increase in household size reduced the likelihood of health insurance ownership such that larger households were less likely to be insured compared to smaller households. This is likely to be attributed to a reduced per capita income that occurs when household income remains constant

as household size increases. The average income available per individual then reduces hence lowering the likelihood of enrolling in health insurance. In contrast to this, Phiri et al. (78) and Ataguba (85) found that larger households (six household members or more) in Malawi and Nigeria respectively, were more likely to be insured compared to smaller households. This case can be attributed to an increase in household income (assuming it does not remain constant) as the number of household members increase, leading to a greater WTP for health insurance. This mixed evidence raises the need to explore further the impact of household size and enrolment in health insurance in Malawi as these variations likely stem from differences in income distribution and household economic strategies across diverse settings.

Household area of residence

Residential area positively influenced health insurance enrolment in several studies (16, 35, 42, 76, 78, 83). Individuals and households residing in the urban areas were more likely to be insured compared to individuals and families from the rural areas. These findings also resonate with those by Ahmed et al. (86) where individuals residing in the metropolitan city in Bangladesh were willing to pay a higher amount for health insurance compared to those from the districts. This may be attributed to the higher economic well-being of those from urban areas which increases their ability to afford health insurance premiums. Notably, divergent findings emerged from a study by Salari et al. (77) where utilizing different health surveys yielded different results on the impact of area of residence on health insurance enrolment emphasizing the role of methodological differences. Salari et al. (77) concluded that there was no significant association between residing in the rural or urban areas and enrolment in the Ghana NHIS which is contrary to what Jehu-Appiah et al. (76) found in the similar setting. The robustness and diversity of the surveys employed by Salari et al. strengthen their findings compared to those of Jehu-Appiah et al. By utilizing three distinct surveys, Salari et al. allowed for a broader examination of the research question. In contrast, Jehu's study, which relied on one household survey, may have lacked the depth and triangulation of the data necessary to ensure the same level of rigor and generalizability in its conclusions. Consequently, the findings of Salari et al. benefit from stronger methodological support and greater validity.

Household heads' age and gender

Govender et al. (16), Abdel-Ghany et al. (42) found that older, male-headed households were more likely to be insured compared to households headed by young ones or females. These findings align with a study in Malawi by Chauluka et al. (35) which found that male-headed households were more likely to own health insurance, and with research by Chankova et al. (87) which showed a positive

association between older household heads and insurance enrolment in Ghana, Mali, and Senegal. Contrary to this, Jehu-Appiah et al. (76) found that female headed households in Ghana had an increased likelihood to enrol in the NHIS compared to male headed households. These mixed findings may be influenced by the contextual factors in play. In certain settings, women serve as key decision-makers, leading to higher enrolment in health insurance. However, in more male-dominated environments, this dynamic may not apply, resulting in differing patterns of health insurance enrolment. Contrary to the finding for older household heads, Phiri et al. (78) observed that WTP for micro health insurance in Malawi decreased with an increase in households head age. This in a context like Malawi can be attributed to the low income and financial constraints with a higher dependence on the young for financial support making them less likely to be insured. Phiri et al. (78) did not find a significant association between gender of the household head and WTP for health insurance in Malawi.

Individuals' or household members' age and gender

Chauluka et al. Kirigia et al. Jehu-Appiah et al. Miti et al. (35, 76, 81, 83) found that an individual's age had an impact on owning health insurance. Old individuals were more likely to be insured compared to the young ones. Most studies (76, 83) attribute this to Grossman's theory, which posits that as individuals age, their health stock depreciates, prompting them to invest in replenishing these depleted health resources (66). This process, in turn, leads to an increased demand for health insurance as individuals seek to mitigate the costs associated with maintaining and restoring their health. This differed with what the systematic review by Adebayo et al. (88) found where young individuals had a higher WTP for health insurance compared to the old ones.

Onwujekwe et al. (82) found that relative to women, men were more willing to pay for health insurance in Nigeria. This is consistent with the findings by Yego et al. (89) in Kenya and Dong et al. (90) in Burkina Faso.

Marital status

Different studies found a significant association between health insurance enrolment and marital status. Salari et al. and Boateng et al. (77, 91) found that married individuals were more likely to be insured compared to their counterparts (those not married). Chauluka et al. (35) did not find a significant relationship between marital status and health insurance ownership which resonates with the findings by Jehu-Appiah et al. (76) where there was no statistical difference between the divorced and married individuals on their likelihood of enrolling in health insurance. A possible explanation for this is that married individuals may find it easier to afford insurance premiums than single individuals due to a shared income. Having two incomes in a household can increase financial stability and flexibility, which

may make it easier to cover additional expenses like insurance. Interestingly, a study by Banwat et al. (92) found that single respondents had an increased WTP into the CBHI compared to the married or divorced in Nigeria.

1.5.3 Socioeconomic factors associated with partial health insurance

At household and individual level, the following factors were explored.

Education level of household head

The education level of the household head has shown to have a significant impact on health insurance ownership. Studies (16, 42) found that households headed by an individual with tertiary education had an increased likelihood of being fully insured compared to those households whose head had no or less than high school education. These findings resonate with those found by Phiri et al. (78) and Nosratnejad et al. (84) where the higher the education of the household head, the more the amount one was willing to pay for health insurance in Malawi and Iran respectively.

Individual and household Socioeconomic status

A study by Yego et al. (89) that aimed to predict the determinants with most significant influence on health insurance uptake found income or poverty vulnerability to be the topmost influencer of health insurance uptake. Relative to poor individuals, wealthier individuals had an increased likelihood to own health insurance(15, 35, 89, 93). Govender et al. and Abdel-Ghany et al. (16, 42) established that households with better socio-economic conditions (a higher asset index) were also more likely to have all or some members of their household as insured compared to households with poor socio-economic conditions. According to Abdel-Ghany et al. (42) families at or above poverty level were likely to have full coverage compared to those below the poverty line. In China, a study by Bärnighausen et al. (94) established that an increase in monthly income increased the WTP for health insurance and these findings resonate with those by Nosratnejad et al. (84). This strongly indicates that affordability is a key issue that hinders health insurance uptake.

Media Exposure

A study by Ng'ambi et al. (15) established that media exposure influenced the uptake of health insurance in Malawi. It established that people with media exposure had a positive association with being on medical insurance and this trend was also observed in other studies (95-97). Additionally, these findings resonated with those found by Barassa et al. (93) who in a systematic review of various studies found that exposure to media was highly correlated with health insurance enrolment. This was attributable to

the media being a means of communication about health insurance programs and therefore making those with access to it more likely to enrol in health insurance.

Education level of the individual

Like the education of the household head, individuals with higher education were more likely to have health insurance or had a higher WTP for health insurance than those with lower education (16, 35, 77). These findings are consistent with those established by Jehu-Appiah et al. (76) where individuals with tertiary education were 29 times likely to enrol and remain in the NHIS compared to those with no education.

Employment status

Another determinant that had a significant impact on health insurance enrolment was employment status. Household heads who were employed were more likely to have a fully insured household compared to those who were unemployed (16, 42). Phiri et al. (78) established that formal sector employed household heads were willing to pay a higher amount for health insurance compared to their counterparts. Relative to unemployed individuals, employed individuals also had a higher likelihood of owning health insurance (35, 77). Chauluka et al. (35) and Salari et al*. (77)* also established an individual's occupation to determine enrolment in health insurance where compared to women in the low skilled jobs like farming and sales, women in highly skilled jobs had an increased likelihood of enrolling in health insurance. Most studies only included employment status in their analysis therefore inclusion of the type of employment and determining if there is a significant association with health insurance was commendable.

1.5.4 Health and healthcare system factors

The following health and healthcare system factors are discussed: health status, confidence or trust in the healthcare system and healthcare access.

Health Status

Different studies ascertained health status differently. Other studies used the presence of chronic medications (16), age, utilization of healthcare services in the past two weeks (77), chronic illness and disease episodes in the preceding three months (78) as a proxy to heath status**.** Most studies (16, 42, 77, 78) did not find a significant relationship between health status and the WTP for health insurance.

According to the moral hazard of insurance, unhealthy individuals in this case those using chronic medications, with chronic conditions, frequent healthcare services users are more likely to purchase health insurance which is a little contradictory with the findings of the studies. This can be attributed to

the use of only one proxy for health status. A study by Sokoya et al. (98) found that the use of a combination of a number of health indicators to be ideal when determining an individuals' health status. Additionally, health status is an endogenous variable in that it can affect health insurance uptake or coverage and at the same time having health insurance can predispose one to continuous use of chronic medications. This bi-directional relationship therefore complicates causal inference, as it may obscure the true impact of health status on insurance uptake. Furthermore, it also affects the estimates made by the covariates in the model (99).

Notably, existing literature also explored the impact of having health insurance on health status. As one can hypothesize, owning health insurance as found by Barker and Li in 2020 (100), has a significant impact on health outcomes. For individuals who initially reported "fair" or "poor" health, having health insurance was associated with a 10% reduction in the likelihood of reporting poor health after two years (100). This suggests that health insurance coverage not only improves access to necessary care but may also lead to measurable improvements in health over time, particularly for those with lower initial health status. These findings highlight the value of health insurance as a tool for improving individual well-being and potentially reducing the burden on healthcare systems by promoting better long-term health.

Confidence or trust in the healthcare system

According to Phiri et al. (78), households perceiving the quality of public healthcare as good were less willing to pay for health insurance, suggesting that satisfaction with accessible public services reduces the need for coverage. This contrasts with findings by Afriyie et al. (101), where confidence in private healthcare increased the likelihood of enrolling in health insurance, possibly reflecting a lower perceived adequacy of public healthcare options. This difference likely reflects concerns over the quality and accessibility of public healthcare services.

Healthcare access

Another study explored the impact of health insurance on access to cancer treatment in the United States of America. Utilizing a sample of cancer patients, Nabi et al. (102) found that the cancer patients with Medicare, Medicaid, or no insurance were generally less likely to receive surgical care at high-volume hospitals compared to patients with private insurance. Specifically, for breast, prostate, and lung cancer, these patients had reduced odds of accessing high-volume hospitals (102). This underscores the importance of having comprehensive health insurance, as it significantly reduces the likelihood of experiencing catastrophic expenses related to cancer treatment. Given the high costs associated with cancer care, having full health insurance can help mitigate financial burdens.

1.5.5 Intra-Household health insurance coverage

The broader literature review suggests that, in Africa, most studies have focused on individual or household-level determinants of health insurance coverage, with limited attention paid to how coverage is distributed within households or the factors influencing these patterns. Govender et al. (16) examined intra-household insurance coverage in South Africa and highlighted disparities based on relationship to the household head, older age, tertiary education and household, all of which were positively associated with being an insured individual from a partially insured household. Similarly, Abdel-Ghany et al. (42) explored factors associated with different degrees of health insurance coverage and found that families with older or more educated household heads were more likely to be fully insured. At the same time, those below the poverty line were more likely to have only partial coverage. These few studies highlight the importance of examining intra-household inequalities in health insurance coverage, particularly in contexts such as Malawi, where insurance decisions are influenced by resource constraints, gender roles, and varying health needs. The lack of region-specific literature highlights a critical gap that this study aims to address.

1.5.6 Conclusion

The key takeaway from the empirical review is the existence of mixed evidence on the impact of some variables on health insurance uptake. Particularly, the influence of household size on health insurance uptake in Malawi remains understudied, requiring further exploration. There are also limited or few studies focusing on household health insurance coverage. This highlights a clear gap in literature especially in the Malawi context on the factors that drive households to only insure selected household members and not all. Addressing these gaps is critical for designing equitable and effective health insurance schemes in low-resource settings like Malawi. The lack of recent, context-specific research on intra-household disparities in coverage further underscores the originality and policy relevance of this study.

1.6 Conceptual framework

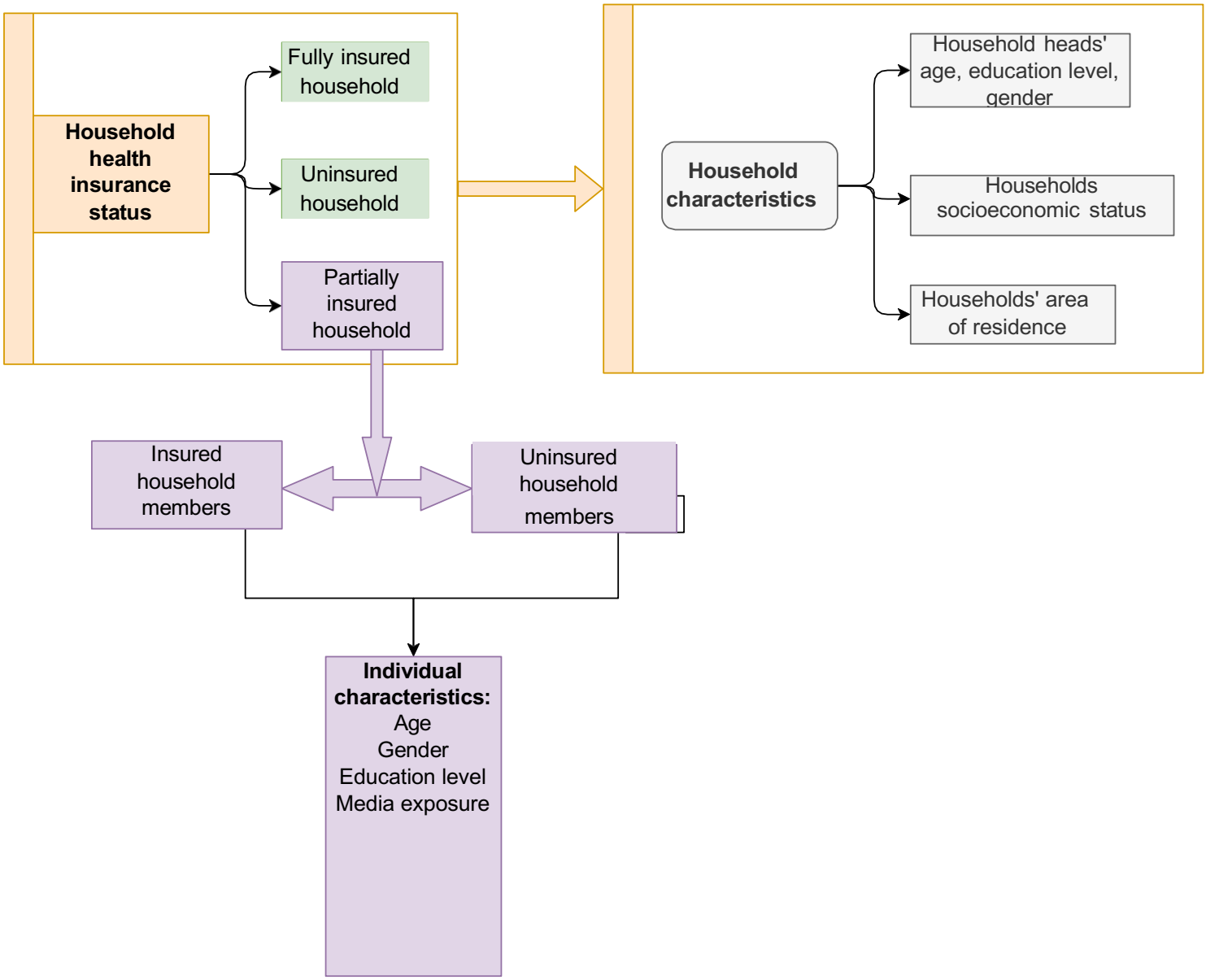
Upon review of the different behavioural and economic theories underpinning the demand for health insurance, the empirical and methodological review, the following conceptual framework was designed. This study will examine whether a household enrols all, some, or no members in health insurance. For households with partial health insurance coverage, the study will examine the household characteristics and individual characteristics of members with and without insurance.

The decision to purchase health insurance, as explained by the consumer theory, is subject to income

or budget constraints and preferences (64). At a household level, the decision to purchase health insurance for the household members is influenced by the households' SES, area of residence and the household heads' education level, age, as well as gender. Households with higher SES, located in urban areas are hypothesized to be more likely to purchase health insurance for the entire household members compared to those with low SES and located in rural areas. Households headed by older, educated men are hypothesized to have full health insurance coverage.

Information asymmetries, particularly adverse selection, also occur and this is when one party uses private information to disadvantage the other before an agreement is made (65). At an individual level in partially insured households, high-risk household members with frequent healthcare needs are more likely to purchase health insurance (103) if they are knowledgeable about their health risk. Awareness of personal health risks influences health insurance purchase decisions. Educated individuals, understanding their health needs and insurance benefits, are more likely to buy health insurance, especially high-risk individuals. The age of the household members also influences whether to purchase health insurance or not. As health tends to decline with age, older individuals are more likely to purchase health insurance relative to the younger ones (66).

Other variables that are associated with enrolling in health insurance at an individual level in partially insured households include gender as well as area of residence. As indicated by other studies (16), women are mostly left out of enrolling in health insurance due to cultural or systemic barriers. Area of residence can be hypothesized that individuals in urban areas are more likely to have access to information regarding health insurance and are therefore more likely to purchase health insurance. Part A: Figure 4 below summarises the framework and methodology that the study will adapt to attain its objectives. Households will be grouped into the respective three categories; completely uninsured, fully and partially insured. Household enabling and impeding factors to own health insurance like households' residential area and SES, household heads' age, education level, gender will be analysed with individual characteristics for partially insured households, like age, gender, education level, and media exposure also being analysed.



Part A: Figure 4: Impeding and enabling factors to purchase health insurance at household and individual level (Adapted from the frameworks and empirical review explained).

1.7 Literature review conclusion

The thorough literature review revealed that determinants of health insurance coverage have predominantly been assessed at the individual level or inter-household level, highlighting a critical gap in understanding intrahousehold health insurance coverage and its implications for equitable healthcare access. This gap is particularly evident in Malawi, where existing studies have focused on health insurance uptake among the general population, primarily women, or on households' WTP for micro-health insurance. However, these studies have not addressed the distribution of health insurance coverage within households.

This study seeks to fill this gap in the literature and aligns with the Malawi Ministry of Health's goal of achieving UHC by 2030. By informing UHC policies, particularly those related to financial protection, this research supports the Malawi National Health Financing Strategy, which aims to reduce the proportion of households incurring catastrophic healthcare expenditures. The findings will inform policy design to increase household health insurance coverage, reduce OOPE, and prevent impoverishment.

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2. PART B: JOURNAL MANUSCRIPT

Proposed Journal: BMC Public Health

Factors associated with partial health insurance coverage among households in Malawi.

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2.1 Abstract

Background

Health insurance has proven ideal to curb increasing health expenditure in households. However, despite efforts to expand health insurance in Sub Saharan Africa, coverage has remained low and favouring high-income groups. Malawi is among the countries that face this low uptake with only 3% of the total population insured, and varying levels of coverage among members of the same household which often leads to an increase in out-of-pocket expenditure for health care services, a financing mechanism that is regressive in nature. A low and partial uptake of health insurance in Malawi suggests that several factors impede all individuals in a household from enrolling. However, there is a dearth of evidence on factors associated with this phenomenon among households in Malawi, necessitating a need to explore these determinants.

Methodology

This quantitative study used data from the 2019-2020 Multiple Indicator Cluster Survey. Descriptive statistics among the fully insured (all household members insured), partially insured (at least one but not all household members insured) and uninsured households (no household member insured) were first explored. Focusing on partially insured households, the second stage applied multivariate binary logistic regression to identify factors associated with health insurance coverage within partially insured households. Analysis was done using STATA statistical package version 18.

Results

Of the 64,615 individuals in the sample, only 0.6% had health insurance. Among the 22,886 households, only 9(0.04%) were fully insured with 228(1%) households being partially insured. Age of household head [AOR 1.025 (1.000-1.050); p-value=0.045], higher education level of an individual [AOR 4.470 (1.519-13.154); p-value=0.007], individual's access to media [AOR 2.276 (1.050-4.931); p-value=0.037] and higher dependency ratio [AOR 1.655 (1.111-2.466);p-value=0.014] were positively associated with

being an insured individual within a partially insured household while household size [AOR 0.813 (0.682-0.969); p-value=0.022] was negatively associated with the outcome.

Conclusion

The findings emphasize socioeconomic and informational disparities, revealing policy gaps in affordability and awareness that hinder comprehensive coverage. This underscores the need for targeted policies and efforts to enhance education, reduce financial barriers for larger households, and leverage media campaigns to raise awareness about the benefits of comprehensive health insurance coverage.

Key words: Health insurance, partial insurance coverage, out of pocket expenditure

2.2 Background

Universal Health Coverage (UHC) has become a key public health priority globally. Described as having equal access to quality health care needs without facing financial hardships (1), it can be achieved by increasing population health coverage, health care service coverage and lowering financial costs towards healthcare using different mechanisms (2). UHC not only contributes to achieving Sustainable Development Goal (SDG) three which focuses on promoting good health and well-being but also plays a vital role in eradicating poverty (SDG one), promoting decent work and economic growth (SDG eight), and reducing inequalities (SDG 10) (3). By ensuring equitable access to quality health services, preventing financial hardship due to health costs, UHC supports a healthier and more productive workforce, and narrows health disparities among different population groups.

The World Health Organization (WHO) recommends health insurance as one strategy to ensure financial risk protection and ensure UHC. Evidence suggests that UHC can be achieved through sustainable prepayment mechanisms such as health insurance as opposed to Out of Pocket (OOP) payments (4). Health insurance pools funds to cover members' healthcare needs during illness, reducing financial hardship and promoting access to quality healthcare, thereby supporting the key goals of UHC. Nearly one billion people globally experience financial hardship each year, and 70 million people fall below the extreme poverty line due to catastrophic health expenses (5). WHO and World Bank found that catastrophic health spending is highest in the world’s poorest regions, Asia and Africa at 16.6% and 10.0% respectively and impoverishment was at 1.1% and 1.4% respectively as at 2021 (5). Impoverishment due to high Out-of-Pocket Expenditure (OOPE) also appears high in countries with high poverty rates.

The financing challenges that most African healthcare systems continue to face suggests a continued reliance on OOPE as a significant financing mechanism for the health care system which causes African countries to continuously fall into poverty every year (6-8). On the other hand, the introduction of health insurance in several Sub Saharan African (SSA) countries, such as Ivory Coast has proven to be

effective in reducing the proportion of household expenditures towards health (9). However, in most Low to Middle Income Countries (LMICs) Malawi inclusive, the uptake of health insurance has been low averaging 27.3% for LMICs(10, 11). Additionally, intrahousehold health insurance coverage has mostly been partial rather than comprehensive.

To achieve UHC, countries should aim for full health insurance coverage for all members of each household, however the Institute of Medicine indicated that there is a variation of health insurance coverage among different types of households (12). Existing research in countries like South Africa has also shown disparities regarding health insurance coverage among members within the same household (13). Such a situation where at least one member or not all household members are being covered by health insurance is called partial health insurance coverage (13). For instance, parents may have health insurance while their children remain uninsured due to affordability constraints. The implication of partial health insurance coverage includes an increase in the likelihood of inequalities at the household level. Within partially insured households, children and women, who are among the most vulnerable groups, are often the ones excluded from health insurance enrolment as found by Govender et al. (13). This is regardless of the increased healthcare needs that require them to utilize healthcare services consistently. This is also consistent with the findings by McLeod and Ramjee (14), who found that when households face affordability problems, children are often left out of health insurance subscriptions. Furthermore, partial health insurance coverage can increase healthcare expenses due to higher OOPE. These costs can be catastrophic and potentially lead to impoverishment. This is because when an uninsured household member falls ill, the financial burden of seeking and obtaining health care often falls on other household members, straining household financial resources. This further emphasizes the need for comprehensive household health insurance coverage to protect all members from significant financial and health-related risks.

Healthcare expenditure should be a concern for all household members as an individual's illness impacts the entire household, and the assessments of health expenditure impact are conducted at the

household level as proposed by Wagstaff (15). There is little information on the inequality household members face when enrolling in health insurance in Malawi. Therefore, it is necessary to address this gap in the literature and investigate the factors associated with insurance uptake from a partial health insurance coverage perspective among households in Malawi.

2.2.1 Malawi context

The Malawi health system is financed through four main channels: donor aid, which accounts for 54.5% of the Total Health Expenditure (THE); government contributions (24.1% of THE); OOPE contributions (11.9% of THE); private health insurance (9.1% of THE) (16). Its healthcare delivery system is publicly funded with the government offering 63% of health services (17). However, the high reliance on donor aid poses sustainability risks for the Malawi health system. This is exemplified by the United States government's recent funding withdrawal (18), impacting Malawi's $350 million annual aid for different sectors, health inclusive (19).

The General Government Health Expenditure expressed as a percentage of the total government expenditure was 8.4% in the 2018/19 fiscal year (20). This is below the Abuja Declaration set target where African governments pledged to allocate 15% of the total budget to health (20). These health financing constraints have led to inefficiencies like failure to provide adequate medicines and health workers, insufficient equipment, and poor access to emergency services, which has necessitated the use of OOPE to access quality healthcare increasing households' share of healthcare expenditure to 11.9% (16, 21).

Amidst such financing challenges, many advocacies for improvement are moving towards a prepayment mechanism like health insurance to complement the public health sector and for financial risk protection against healthcare costs. Over reliance on donor aid is unsustainable (22). However, currently a very small percentage of Malawi's population is on private health insurance in Malawi. Ng'ambi et al. (11) reported a 1% health insurance uptake as of 2019 whereas the National Statistical

Office (23) in 2015 reported a 3% uptake for Malawi. Such a decreased, low level of private health insurance uptake coupled with Malawi's reliance on donor funding is a concern as it presents distinct challenges for achieving UHC.

With social health insurance being a consistent health reform for Malawi due to growing demands of providing increased adequate healthcare and to complement the Ministry of Health's efforts, an assessment of the feasibility of National Health Insurance in Malawi by Gheorghe et al. (24) was conducted and was found to be viable. However, evaluating the factors associated with the uptake of the current private health insurance schemes is key to understanding the current low uptake, addressing the barriers and ensuring the program's successful implementation and widespread adoption should the program be proposed in the future.

Currently, private health insurance is voluntary in Malawi with a higher percentage having it through their employer, and smaller percentages through community-based insurance and private purchasing (25). With the voluntary nature, barriers for health insurance uptake include affordability, limited awareness especially for the rural populations, and a lack of comprehensive benefits. In December 2023, there was a launch for a civil servants' medical scheme, which was also voluntary and at the time had 26,000 members (26). While the scheme has increased coverage for civil servants, its voluntary nature limits overall uptake. Additionally, as of 2022, 89% of the population was working in the informal sector (27), and thus the newly launched scheme excludes almost a third quarter of the population from private health insurance. This poses a significant challenge regarding the pool as the number of civil servants is low and they are only enrolled voluntarily. 70.1% of the population lives in monetary poverty; less than United States dollar (US$) 2.15 a day (22) of which an increase in OOPE predisposes these people to impoverishment as they are further pushed below the poverty line. Given the high formal unemployment and low-income levels, accessing basic needs is challenging for most Malawians. High inflation rates as well as the frequent devaluation of the Malawian currency have also worsened the living conditions, pushing people further below the poverty line(22). McIntyre et al.

and Ramjee et al. (14, 28) argue that the rising cost of health insurance contributions or premiums is associated with health insurance enrolment rates. The aforementioned high poverty levels and unemployment rate therefore, further limits people's ability to afford health insurance, hindering uptake.

Various studies have investigated different factors associated with the uptake of health insurance at an individual level in Malawi (11, 25) with a limited focus on partial coverage of households. As Ataguba and Goudge argue, discussions on health insurance have tended to focus on affordability and inter-household coverage neglecting the determinants of coverage within the household (29). According to Abdel-Ghany et al. (30), 'Health insurance coverage is a family rather than an individual decision therefore, it is essential to examine the socioeconomic variables of a family unit'. Even with the low uptake of health insurance, households' enrolment on health insurance in Malawi rarely covers all family members despite it being a family rather than an individual decision bringing in the concept of partial coverage. In this study, households are classified as partially insured, where at least one member but not all are insured, fully insured (all members insured), and completely uninsured (no members insured). The lack of studies on determinants of intrahousehold health insurance coverage in Malawi, highlights the gap in the literature and presents an opportunity to assess factors associated with partial health insurance coverage among households, which this study will explore.

2.3 Methods

2.3.1 Data

This study used data from the Multiple Indicator Cluster Survey (MICS) which was collected between December 2019 and August 2020. Conducted every three years, the survey provides internationally comparable data to track progress on national goals and global commitments and inform evidence-based policy making (31). The survey focuses on providing data of key indicators on welfare of children, women and households. Additionally, in relevance to this study, the survey included data on health insurance coverage, capturing various types such as community-based, commercial, or employment-

linked insurance. The study sample comprised of men and women aged 15-49 years, and children aged 0-14 years.

The survey employed a two-stage sampling design, first stratifying the population into rural and urban clusters based on the 2018 population and housing census, then systematically selecting 1,112 enumeration areas and 24 households per area ensuring proportional representation of larger and smaller areas (31). The selection of urban and rural areas recognised the variation in needs for the two groups, ensuring an adequate representation and stratification and also reducing bias (32). The sample was, therefore, representative, efficient, and precise, allowing for more accurate estimates and ensured generalizability of findings to Malawi's broader population. The total sample size at national level was 26,904 households with 66,921 people identified as eligible, and out of these, 22,886 households with 64,615 individuals were interviewed and responded to the questions making the sample size of this study.

2.3.2 Outcome variables

In this study, health insurance status was defined as coverage by any type of health insurance. The study focused on two primary outcome variables, one measured at the household level and the other at an individual level. At the household level, the outcome variable was categorised into three; partially insured, fully insured and completely uninsured households. Using unique identifiers (cluster number, household number and line number), every individual was grouped into their respective households. This approach ensured accurate categorization and avoided misclassification errors in determining household insurance status. Consequently, household size was used to determine a household's health insurance coverage status. Households were categorized as fully insured (all members insured), partially insured (at least one but not all members insured), or completely uninsured (no members insured). At an individual level, the outcome was a binary variable of whether or not an individual within a partially insured household has health insurance. Partial coverage was analysed separately as it

highlights intra-household disparities, a key area of interest given its implications for equity in health insurance access.

2.3.3 Independent variables

A comprehensive literature review informed independent variable selection on the subject matter of health insurance ownership. The following were the variables of interest for the analysis at a household level; household heads' education level, household heads' gender, household heads' age, households' area of residence and households' economic status and at an individual level, these included; sex, age, media exposure and education level (11, 25, 30). Specifically, variables like media access and economic status were included as the former influences awareness of health insurance, and the latter affects the ability to afford health insurance premiums, which are critical factors in decision-making, particularly in resource-limited settings. Additionally, data availability in the MICS dataset influenced variable selection as well as context relevance for sub-Saharan Africa and Malawi.

2.3.4 Data analysis

This study evaluated the factors affecting Malawian households' health insurance coverage status, where coverage was defined by three categories: fully insured households, partially insured households and completely uninsured households. Descriptive statistics for each variable were reported by category, incorporating sample weights. Chi-squared and Kruskal-Wallis tests were chosen to assess associations between categorical and continuous variables with particular categories respectively, ensuring appropriate handling of non-normal data distributions. Descriptive data stratified by individual health insurance status was also reported for partially insured households. The variables were weighted using the sample weights provided in the data set to allow representation of the results.

The age of an individual and the household head was included in the model as a continuous covariate to preserve the information, retaining the full range of variation and granularity of the data and a one-year increment was meaningful in the context of this paper. Household size and dependency ratio were

also continuous covariates. The latter was formed by calculating the total number of children (less than 14 years) and then dividing this number by the total individuals in the working-age population (14-64 years) in that household. According to the Malawi Employment Act, the minimum employment age is 14 years (33), which informed the age categories as those under 14 years are likely to be dependents in their respective households. Sex of an individual as well as of household head including area of residence were dichotomized variables (0,1) if sex is male or female and urban or rural respectively. Education level was a self-reported measure indicative of highest qualification as at time of the survey and it was classified into 5 groups (no education, primary education, secondary education(collapsed from upper secondary and lower secondary in the main dataset), tertiary education and vocational), the last education level was maintained as it was distinct and couldn't be collapsed into either of the categories therefore it was left as a stand-alone. However, education levels were collapsed into broader categories to simplify analysis and address low representation in some subgroups. Media access was derived from a household's access to internet, television or radio ownership. These are all sources of information including health insurance information, and as such they were all collapsed into one variable, media access. The wealth index was provided in the data and was calculated using principal component analysis utilising information on ownership of consumer goods, dwelling characteristics, water and sanitation, and other characteristics that are related to the household's wealth (31). Households were then divided into wealth quintiles; poorest, second poorest (poorer), middle, richer and richest which are the groups that were utilised in the analysis. The geographical household region was the other multilevel categorical variable grouped into North, Central and South. The data analysis was conducted using STATA version 18 (Stata Corp, Texas, United States). STATA was chosen for its robust capabilities in handling complex survey data and regression modelling (34).

Part B: Table 1 below summarises the final variables included in the data analysis, their definitions and how they were coded.

198

199 *Part B: Table 1: Dependent and Independent variables' definitions and measurements*

Variable	Definition and measurements
Age (Household heads and Individual's)	Continuous variable from age 0 to 49 years
Sex (Household heads and Individual's)	Binary variable coded 0 if male and 1 if female
Education level	Categorical variable, defined as 0 for "No education", 1 for "Primary education", 2 for "Secondary education", 3 for "Higher education" and 4 for "Vocational"
Media access	Binary variable, defined as 0 "No media access" if the individual had no internet access, did not own a television, did not own a radio" and as 1 "Yes to media access" if the individual had access to either of the aforementioned items
Household size	Continuous variable ranging from 1 to 15 household members
Area of residence	Binary variable defined as 0 for "Urban" and 1 for "Rural"
Household region	Categorical variable defined as 0 for households in the "North", 1 for those in the "Central" region and 2 for those in the "South"
Dependency ratio	Continuous variable, calculated the total number of children (less than 14 years) then divided this number by total individuals in the working age population (14-64) in that household
Socioeconomic status	Categorical variable defined as 0 for "Poorest", 1 for "Poorer", 2 for "Middle", 3 for "Wealthier" and 4 for "Richest"

200

201 Limited by the number of observations in the fully insured households, the study did not carry out a
202 multivariable logistic regression at the household level as such class imbalance (9 vs 228 vs 22,649)
203 would have caused quasi separation therefore misleading the interpretation of the results (35). Only

descriptive statistics were reported at this level. While descriptive statistics provide insights, the inability to model fully insured households limits the analysis of factors contributing to comprehensive coverage.

Focusing on partially insured households allows for targeted policy recommendations addressing gaps in partial coverage. Therefore, within partially insured households, a binary logistic regression was carried out to investigate the association of the multiple selected variables on an individual's insurance status (insured or not insured). Bivariate analysis for each variable was also done before the multivariable analysis. To account for the complexity of the survey sampling design, the svy function was used in STATA when running the regression model, allowing incorporation of sample weights and generalisability of the findings. Independent variables with a p-value of less than or equal to 0.05 were considered statistically significant and adjusted odds ratios as well as 95% confidence intervals were reported. A 0.05 threshold was selected to reduce the likelihood of Type 1 errors enhancing the reliability of the results and the study's methodological rigour (36). The F-statistic of the binary logistic regression model was reported to show the goodness of model fit by evaluating the significance of its associated p-value. Odds ratios were also reported indicating the probability of an individual within a partially insured household having health insurance given the selected covariates.

2.4 Results

This study revealed significant disparities in health insurance coverage across households in Malawi, with the majority being completely uninsured (22,649; 98.96%), 228 households (1%) being partially insured and the remaining 9 households (0.04%) were fully insured. Health insurance coverage was remarkably low, with only 0.6% of insured individuals. The median age of the household head was 39 years with an interquartile range (IQR) of 30-51 years and there was no statistical difference in the distribution of age of household head among the 3 household categories. 69% and 79% of the overall households and partially insured households were male headed respectively. There was a statistically significant difference in the household size distribution across the fully, partially insured and completely uninsured households (median of 1, 5, & 4 respectively; p-value=<0.001). Higher levels of education for

229 the household head were strongly associated with full and partial insurance coverage whereas lower
230 levels of education like no and primary education were linked with no insurance coverage (89% vs 50%
231 vs 72%; p-value=<0.001). All fully insured households were from the richest quintile, had media access
232 and had no dependents. This is summarized in Part B: Table 2 below.

Part B: Table 2: Demographic and socioeconomic characteristics of households by health insurance status.

Characteristic	Overall N = 22,886[1]	Fully Insured N = 9[1]	Partially Insured N = 228[1]	None Insured N = 22,649[1]	p-value[2]
Age of household head	39 (30-51)	35 (30-44)	40 (33-46)	39 (30-51)	0.7
Sex of household head					<0.001
Male	15,593 (67)	3 (33)	181 (79)	15,409 (68)	
Females	7,293 (31)	6 (67)	47 (21)	7,240 (32)	
Number of household members	4.00 (3.00-6.00)	1.00 (1.00- 2.00)	5.00 (4.00-6.00)	4.00 (3.00-6.00)	<0.001
Area of residence					<0.001
Urban	3,327 (15%)	8 (89%)	135 (59%)	3,184 (14%)	
Rural	19,559 (85%)	1 (11%)	93 (41%)	19,465 (86%)	
Dependency ratio	1.00 (0.50-2.00)	0.00 (0.00-0.00)	0.67 (0.33-1.00)	1.00 (0.50-2.00)	<0.001
Household media access					<0.001
No	14,048 (61%)	0 (0%)	30 (13%)	14,018 (62%)	
Yes	8,838 (39%)	9 (100%)	198 (87%)	8,631 (38%)	
Household head Education level					<0.001
No education	3,040 (13%)	0 (0%)	5 (2.2%)	3,035 (13%)	
Primary	13,474 (59%)	0 (0%)	28 (12%)	13,446 (59%)	
Secondary	5,348 (23%)	1 (11%)	73 (32%)	5,274 (23%)	
Higher	890 (3.9%)	8 (89%)	115 (50%)	767 (3.4%)	
Vocational	134 (0.6%)	0 (0%)	7 (3.1%)	127 (0.6%)	
Household Socioeconomic status					<0.001
Poorest	4,549 (20%)	0 (0%)	2 (0.9%)	4,547 (20%)	
Poorer	4,477 (20%)	0 (0%)	8 (3.5%)	4,469 (20%)	
Middle	4,606 (20%)	0 (0%)	13 (5.7%)	4,593 (20%)	
Wealthier	4,677 (20%)	0 (0%)	18 (7.9%)	4,659 (21%)	
Richest	4,577 (20%)	9 (100%)	187 (82%)	4,381 (19%)	

Note:
[1]Median (IQR) where; IQR is Interquartile range, n (%); frequency (proportion)
[2]Kruskal-Wallis rank sum test; Fisher's exact test

Delving into partially insured households, 768 individuals were from this category with 45% of them being insured. The median age of this sub sample was 18 years (IQR; 7-31 years). Notably, within this subgroup, the uninsured also had a median age of 18 years (IQR: 8-27), reflecting that many of the uninsured were children and adolescents. A higher percentage of the insured were females (63%). Media access differed significantly among the insured and the non-insured groups (90% vs 85%; p-

value=0.02) with individuals having media access having a more likelihood of being insured relative to those without media access. Like at the household level, individuals with higher education were strongly associated with being insured. Part B**:** Table 3 highlights the significant role of an individuals' education, age, and media access in determining individual insurance status within partially insured households.

Part B: Table 3: Descriptive statistics of individuals from partially insured households

Variable	**Overall** N = 768[1]	**Uninsured** N = 421[1]	**Insured** N = 347[1]	**p-value**[2]
Age of an individual	18 (7-31)	18 (8-27)	19 (7-35)	0.026
Sex of an individual				
Males	277 (36%)	149 (35%)	128 (37%)	
Females	491 (64%)	272 (65%)	219 (63%)	
Media access				0.020
No	99 (13%)	65 (15%)	34 (9.8%)	
Yes	669 (87%)	356 (85%)	313 (90%)	
Education level of an individual				
No Education	18 (2.9%)	10 (2.9%)	8 (2.9%)	<0.001
Primary	218 (35%)	138 (41%)	80 (29%)	
Secondary	220 (36%)	138 (41%)	82 (30%)	
Higher	152 (25%)	51 (15%)	101 (37%)	
Vocational	8 (1.3%)	3 (0.9%)	5 (1.8%)	

Note:
[1]Median (IQR) where; IQR is Interquartile range, n (%); frequency (proportion)
[2]Fisher's exact test; Wilcoxon rank sum test; Pearson's Chi-squared test

Part B: Table 4 shows the results of the binary logistic regression model. The model utilised the Svy prefix in Stata to accommodate the complexity design of the survey data and in doing so, the issue of heteroskedasticity was handled as the prefix automatically adjusts for robust standard errors (34). The application of sample weights helped address potential bias. Additionally, since the *svyset* command was used, the F-statistic assessed the model's goodness of fit, which assessed how well the predicted probabilities aligned with the observed data with the null hypothesis stating that the model fits the data well. The test result was 1.21 with a p-value of 0.297. Given this p-value, there was no significant evidence of a lack of fit, indicating that the model's predicted probabilities aligned well with the

observed data. This also meant that the variables included as informed by literature were appropriate as the goodness of fit test indicated the model performed well.

After the univariable analysis, the age of an individual, being households from the poorer, middle, and richest wealth quintiles showed a statistically significant association with being insured. However, after adjusting for other covariates, this effect was not present suggesting a confounding effect at the univariable analysis level. At the multivariable level, the age of the household head, higher education level, and dependency ratio were statistically significant despite showing no effect at the univariable level. This was suggestive of a masked effect due to omitted variable bias or interactions effects at the univariable level. For both the univariable and multivariable models, household size and being a household from the wealthier quintile showed statistically significant associations with being insured.

On average, for every one-year increase in the age of the household head, the odds of an individual in the household being insured increased 1.025 times [(95%CI:1.000-1.050); p-value=0.045] while holding other covariates constant. Relative to individuals with no education, those with higher education levels had 4.470 times [95%CI:1.519-13.154); p-value=0.007] higher likelihood of owning health insurance keeping other covariates constant. Additionally, an individual with access to any type of media was 2.276 [95%CI: 1.050-4.931); p-value=0.037] times more likely to be insured compared to those without any media access.

On average, as the household size increased, the odds of being insured decreased by 0.813 times [95%CI:0.682-0.969); p-value=0.022] keeping all covariates constant. Contrary to this, notably a higher dependency ratio was positively associated with being insured. For every one unit increase in the dependency ratio, the odds of being insured increased 1.655 times, holding other variables constant.

The odds of being insured among those from the richest quintile was 1.923 [95%CI:1.470-2.516); p-value=<0.001] times the odds of those from the poorest quintile. When adjusted with other covariates, the odds were only significant at the 0.1 alpha level and were comparable with 0.404 times less than those from the poorest quintile [95%CI:0.144-1.132); p-value=0.084]. In summary, increased age of

household head, higher education and media access significantly increased the likelihood of being insured, while larger household size was a barrier. On the other hand, residential area, sex of an individual and region were not associated with health insurance ownership in partially insured households. Households, therefore, were partially insured mainly because of being with large household members (median size of 5), higher dependency ratio, media access, individuals having no or primary education and being from the poorest quintile.

Part B: Table 4: Simple and multivariable logistic regression: predictors of household members in partially insured households.

	Simple logistic regression		Multivariable logistic regression	
Characteristic	**Odds ratio**	**95% CI**	**Odds ratio**	**95% CI**
Age of an individual (Years)	1.017***	1.005-1.029	1.014	0.996-1.031
Age of household head (Years)	1.002	0.984-1.020	1.025**	1.000-1.050
Sex of an individual				
Males	-	-	-	-
Females	1.189	0.690-2.048	0.829	0.443-1.552
Sex of Household head				
Males	-	-	-	-
Females	0.843	0.549-1.294	0.616	0.318-1.194
Education Level of an individual				
No Education	-	-	-	-
Primary	0.927	0.378-2.273	1.368	0.451-4.149
Secondary	0.933	0.311-2.797	1.881	0.576-6.146
Higher	2.308	0.746-7.144	4.470***	1.519-13.154
Vocational	4.430	0.442-44.374	7.433	0.537-102.868
Media access				
No	-	-	-	-
Yes	1.434	0.851-2.417	2.276**	1.050-4.931
Household Size	0.857***	0.788-0.932	0.813**	0.682-0.969
Region				
North	-	-	-	-
Central	0.609	0.324-1.147	0.706	0.486-1.804
South	0.905	0.671-1.673	0.936	0.486-1.804
Household Area of residence				
Urban	-	-	-	-
Rural	0.900	0.462-1.750	0.897	0.500-1.610
Dependency Ratio	1.262	0.954-1.671	1.655**	1.111-2.466
Household Wealth Index				
Poorest	-	-	-	-
Poorer	2.089***	1.492-2.924	1.785	0.817-3.901
Middle	5.645**	1.400-22.772	2.803	0.407-19.302
Wealthier	0.683**	0.473-0.987	0.326	0.115-0.929**
Richest	1.923***	1.470-2.516	0.404	0.144-1.132

Note:

Odds ratio: effect of exposure on outcome

95%CI; 95% Confidence Interval, a range where true value lies

***p<0.01, **p<0.05.

2.5 Discussion

This study provides insights into the determinants of partial health insurance coverage, addressing a critical gap in the literature on intra-household health insurance coverage in Malawi. Firstly, this study found that a large percentage of the households did not have health insurance (98.98%) which is consistent with the findings by Govender et al. (13). This study also found a health insurance uptake of 0.6%, reflecting a very low level of coverage, and this is significantly below the average uptake for LMICs which is 27.3%(10). The stark contrast between Malawi's health insurance uptake and the LMICs average highlights structural and systemic barriers unique to Malawi, such as health insurance illiteracy and reliance on donor funding. It should also be noted that this percentage uptake for Malawi was lower than that reported by the National Statistical Office in 2015 (3%).

Predominantly, most households were male-headed, with most of the heads having primary education. Notably, vocational skills were also critically low, at only 0.6%. Limited education and vocational training opportunities contribute to lower socioeconomic mobility due to lack of employment opportunities, limiting households' ability to afford health insurance premiums. The findings of all fully insured households being from the richest quintile as well as having media access and a higher number of the completely uninsured households being from the poorest quintile, aligns with prior studies (37-41) highlighting the affordability barrier faced by poorer households. Additionally, media exposure likely increases access to information about insurance benefits and enrolment procedures hence the observed increased insurance uptake among those with media access.

Having an older household head was associated with being an insured individual from a partially insured household. These findings are consistent with other studies that found a similar association (13, 30, 42). With their median age of 40 years, this trend can be attributed to greater financial stability as household heads in this age group are more likely to have accumulated assets or stable income and are typically in their working prime, enabling them to afford health insurance premiums. Older household heads may also prioritize health insurance due to their heightened health risks and life experience, underscoring

315 health investments' importance. They are also likely to have a higher dependency ratio, prompting them
316 to insure dependents, such as children, as a financial safety net.

317 An individual’s age was statistically significant at the univariable level while at the multivariable level it
318 only remained significant at the 0.1 alpha level showing a positive association with health insurance
319 ownership. As Kirigia et al. (43) and Jehu-Appiah et al. (44) explain, this is attributable to Grossman’s
320 theory, which posits that as individuals age, their health stock depreciates, prompting them to invest in
321 replenishing these depleted health resources (45). This process, in turn, leads to an increased demand
322 for health insurance as individuals seek to mitigate the costs associated with maintaining and restoring
323 their health. However, the lack of statistical significance after adjustment of other covariates may reflect
324 the interplay of other factors, such as income or education, which may mediate the relationship between
325 age and health insurance ownership.

326 Household size emerged as a strong predictor of health insurance ownership, as evidenced by its
327 statistically significant negative association with the outcome in both univariable and multivariable
328 analyses. This negative relationship is consistent with findings from other studies(13, 43, 44, 46-48),
329 further validating the observed pattern. A larger household size lowers the likelihood of all members
330 being insured because of the financial strain associated with paying insurance premiums for all. This in
331 turn leads to partial health insurance coverage aligning with the concept of moral hazard, where
332 households prioritize insuring members perceived as higher risk, exacerbating partial coverage trends.
333 Subsidizing health insurance premiums for such selected households can promote its uptake in Malawi
334 or similar context.

335 Additionally, this study found a positive association between the dependency ratio and health insurance
336 ownership, reinforcing this reasoning. This positive association suggests that households with more
337 dependents prioritize insuring vulnerable members, such as children or the elderly which can be
338 attributed to their higher susceptibility to illness compared to other household members. This risk
339 increases the potential financial burden on the household if they were to fall ill, making insuring them a

prudent choice. For example, households with young children or elderly dependents may perceive health insurance as essential to mitigate high healthcare costs. Consequently, this focus on insuring dependents may lead to partial insurance coverage within households, as other members may not be prioritized.

Contrary to other studies (13, 30, 44), this study found no significant association between the sex of household head or individual and insurance ownership, suggesting a consistent appreciation of health insurance across genders. This aligned with findings from other studies conducted in Malawi and Kenya (25, 49, 50). Furthermore, region and area of residence did not have a significant impact on health insurance ownership as found by this study and this resonates with findings by Salari et al. (51). This finding suggests that regional disparities in health infrastructure or insurance access may be less pronounced in Malawi compared to other settings, but further qualitative research is needed to confirm this. However, several studies (13, 25, 30, 43, 44) have found an association where individuals from urban areas are more likely to enrol on health insurance. Therefore, further exploration of these variables is required.

The analysis further showed that individuals within a partially insured household with higher education levels were 4.47 times more likely to own health insurance relative to those with no education, which is in line with findings by other studies(13, 25, 44, 51) that observed a similar trend. This can be attributed to the correlation between high levels of education with higher income, which enhances one's financial means to afford coverage. Furthermore, as Grossman highlights, educated individuals are efficient producers of health (52) due to their superior health knowledge and decision-making skills. These abilities allow them to make informed choices regarding health insurance as higher education likely increases awareness of health insurance benefits. Consequently, households with educated members are more likely to have comprehensive insurance coverage, while less or non-educated individuals are more prone to experiencing partial or no coverage. Policies aimed at improving educational attainment,

particularly for women and rural populations, could have a dual impact by increasing financial literacy and health insurance enrolment.

A households' socioeconomic status (SES) was another significant predictor of health insurance ownership among individuals in a partially insured household. All fully insured households were from the richest category, and 82% of partially insured households also belonged to this group. This is highly suggestive that individuals or households in this category have a higher likelihood of purchasing and owning health insurance which aligns with findings from other studies (13, 25, 37, 38, 48, 53). According to the consumer theory, individuals make purchasing decisions based on their income, budget constraints, and the expected utility of the purchase (54). Households with high SES are more likely to afford health insurance premiums and, as a result, are more likely to purchase coverage. In contrast, lower-income households may face financial barriers that prevent them from affording premiums, leading to disparities in insurance coverage and partial uptake among the poor.

At the univariable analysis level, relative to households from the poorest quintile, those in the richest quintile were 1.923 times more likely to own health insurance. However, this effect was opposite after adjusting for other variables where richest households were less likely to own health insurance compared to the poorer. Nonetheless, there was no positive significant association with the poorer quintile and health insurance ownership as such it cannot be confidently said that the poorest were insuring more than the richest. The inverse association observed after adjustment may reflect sampling variability or contextual factors that warrant further exploration, such as regional disparities or differences in employment-linked insurance availability. This is supported by findings from other studies that found the wealthier individuals or households enrolling more than the poor in the same context (11, 25). However, further investigation on what might influence insurance behaviour across income groups is preferable. Consequently, when designing social health insurance, the Government of Malawi should consider wealth-based premiums, with the rich paying more and the poor paying less, to enable income cross-subsidization and promote comprehensive household coverage.

Like other studies(11, 39-41), this study highlights a positive association between media access and health insurance ownership. Individuals with media access were 2.276 times more likely to own health insurance relative to those without media access. This can be attributed to the role media plays in disseminating health insurance information including insurance benefits and enrolment procedures hence those with access to it are more likely to enrol in health insurance. This finding underscores the need for Malawi and similar contexts to leverage diverse media channels, including mass campaigns, to raise awareness about health insurance benefits, especially in rural and underserved areas.

2.6 Study strengths and limitations

To the best of our knowledge, this is the earliest study to explore the determinants of partial health insurance coverage at a household level in Malawi. However, the cross-sectional nature of the data used limits the study to only infer associations rather than causation. As noted by Wang (55), a key limitation of cross-sectional studies is their inability to establish temporal relationships, which restricts causal interpretation. Future research should consider longitudinal or panel data to better understand causal pathways in household insurance coverage. Furthermore, the education variable was self-reported which makes it prone to social desirability bias. Additionally, limited by the number of observations in the fully insured households, a multivariable analysis was not conducted at household level rather, only descriptive statistics were reported. The study's use of a single dataset limited the number of observations, particularly for partially and fully insured households. The 2019-2020 MICS was the most recent dataset available for Malawi that included variables aligned with the study's objectives. Future research could strengthen statistical power and generalizability by pooling data from multiple survey rounds. The lack of variables like health status and insurance premiums in the MICS dataset was another limitation. The exclusion of these variables may underestimate the role of health status and affordability which are critical determinants of health insurance uptake. Despite its limitations, the study's use of nationally representative data with robust methodology enhances the generalizability of its findings to similar LMIC contexts. It also provides a basis to qualitatively explore

these partially insured households beyond the variables assessed in this study as limited by the dataset. Importantly, while this study focused on household and individual-level factors within Malawi, the findings lay groundwork for future research to explore geoeconomic disparities in health insurance coverage across Southern Africa, in line with regional UHC and SDG 3 commitments.

2.7 Conclusion

Socioeconomic factors and household dynamics influence health insurance coverage. This study highlighted education, household size, wealth, dependency ratio, and media exposure as significant determinants influencing partial household health insurance coverage. Partially insured households remain particularly vulnerable as they continue to face financial risks due to uninsured members, highlighting the need for targeted interventions to facilitate their transition to full coverage. The findings emphasize socioeconomic and informational disparities, revealing policy gaps in affordability and awareness that hinder comprehensive coverage. This underscores the need for targeted policies and efforts to enhance education, reduce financial barriers for larger households, and leverage media campaigns to raise awareness about the benefits of comprehensive health insurance coverage hence promoting health insurance uptake in Malawi. Implementing policies that enhance affordability, and accessibility will also be essential in achieving universal coverage and reducing financial vulnerability among households. Moreover, these findings are timely given Malawi's commitment to UHC, SDG 3, and regional targets such as the Abuja Declaration, reinforcing the need for equitable health financing policies that address partial household insurance coverage.

2.8 Declarations

2.8.1 Ethics approval and consent to participate

This study utilized secondary analysis based on publicly available Multiple Indicator Cluster Survey (MICS) datasets. Nonetheless, ethics approval was obtained from the Human Research Ethics Committee (HREC) at the University of Cape Town (HREC REF: 635/2024).

2.8.2 Consent for publication

Not applicable

2.8.3 Availability of data and materials

The datasets used for this study are publicly available at the UNICEF-Multiple Indicator Cluster Survey website at https://mics.unicef.org/surveys and can be accessed upon request**.**

2.8.4 Competing interests

The author declares that they have no competing interests.

2.8.5 Funding

The research was self-funded by the corresponding author. No research funding was received from any entity.

2.8.6 Authors' contributions

JP designed the study, analysed the results, wrote the article, reviewed and submitted it for publication.

2.8.7 Acknowledgements

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3. PART C: POLICY BRIEF

PROMOTION OF FULL HOUSEHOLD HEALTH INSURANCE COVERAGE IN MALAWI

This policy brief explores household and individual characteristics associated with partially insured households: evidence from Malawi's 2019-2020 Multiple Indicator Cluster Survey (MICS).

KEY POINTS

- Health Insurance uptake has consistently remained remarkably low in Malawi with only 0.6% being insured.
- Intrahousehold health insurance coverage has shown existing disparities in terms of household member enrolment leading to partial household health insurance coverage.
- Malawi's healthcare financing system is highly reliant on donor aid (54.5% of the total health expenditure), and this coupled with low health insurance uptake has led to an increase in household contribution towards health expenditure to 11.9% potentially predisposing people to financial risk and poverty.
- A reliable prepayment mechanism like health insurance is ideal, with coverage extending to all household members. Key determinants promoting partial uptake include large household size, lack of media exposure, high dependency ratio, low education and socioeconomic status. Policies, therefore, should focus on improving education, leveraging media to raise awareness about health insurance benefits, and subsidizing premiums for large, economically disadvantaged households.

Background and context

Health insurance uptake remains low in Malawi with only 1% of the total population being insured. This is despite the existing evidence of health insurance reducing household contribution towards health expenditure. Additionally, only a small proportion of households have all their members covered by health insurance, referred to as full health insurance coverage, while a significant percentage lack any coverage, and some have partial coverage. As a result, household health expenditure has been increasing steadily. Partially insured households (at least one but not all household members insured) indicate intra-household disparities, a key area of interest given its implications for equity in health insurance access. This focus also allows for targeted policy recommendations addressing gaps in partial coverage.

Thus, partial insurance uptake is a public health concern as it poses significant challenges in attaining universal health coverage goals of equity in health access and financial protection. Malawi's out of pocket expenditure towards health as reported by the Malawi National Health Accounts is at 11.9% and a significant portion (54.4%) of the healthcare system is donor funded (1). This threatens the sustainability of the current health financing system. An example is the United States government's recent funding withdrawal(2), impacting Malawi's $350 million annual aid for different sectors, health inclusive (3). This further highlights the need to transition to a more reliable mechanism, such as health insurance.

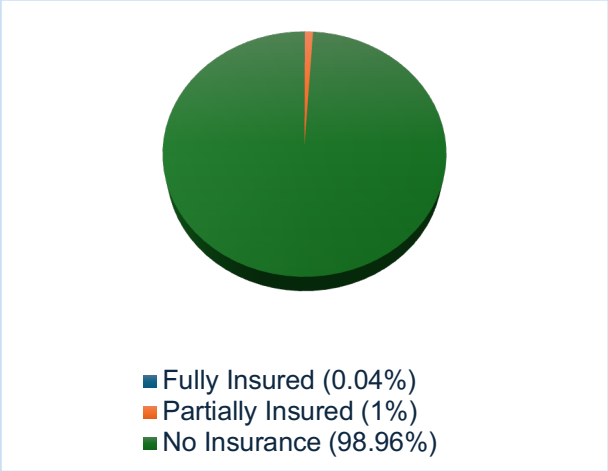
Research approach

MICS is a nationally representative cross sectional household survey that provides internationally comparable data to track progress on national goals and global commitments and inform evidence-based policy making. The survey includes data on health insurance coverage, capturing various types such as community-based, commercial, or employment-linked insurance. The analysis presented in this brief used 2019-2020 MICS data. Firstly, during the analysis, households were categorized as fully insured (all members insured), partially insured (at least one member insured), or completely uninsured (no members insured). Subsequently, partially insured households were assessed to determine the household and individual factors influencing individuals within these households to secure insurance coverage.

Key findings

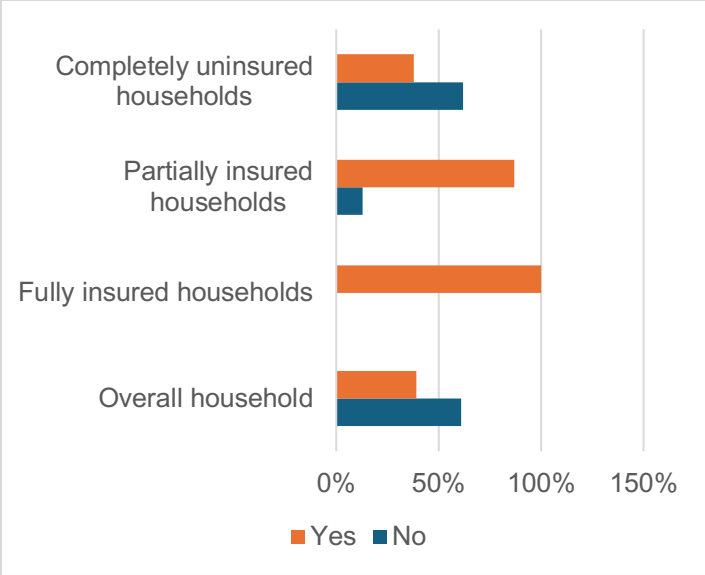
22,649 households were completely uninsured representing 98.96%, with 228 households (1%) being partially insured and the remaining 9 households (0.04%) were fully insured. The study also found a health insurance uptake of 0.6%, reflecting a very low level of coverage, and this is significantly below the average

uptake for Low Middle Income Countries (LMICs) which is 27.3%(4). The stark contrast between Malawi's health insurance uptake and the LMICs average highlights structural and systemic barriers unique to Malawi, such as health insurance illiteracy and reliance on donor funding. It should also be noted that this percentage uptake for Malawi was lower than that reported by Ng'ambi et al. and the National Statistical Office in 2015 (5, 6) (1% vs 3% respectively). This continued trend of low uptake indicates that current policies and recommendations are not driving significant change, highlighting the need for more effective action. This is coupled with a large percentage of households being completely uninsured as summarised in Part C: Figure 5 below.



Part C: Figure 5: A pie chart indicating household health insurance categories

Media access differed significantly among the three household categories as summarized in Part C: Figure 6. All fully insured households had access to media seconded by a significant portion of the partially insured households. Additionally, all fully insured households were from the richest socioeconomic status (SES) category.



Part C: Figure 6: A bar chart showing household media access by category.

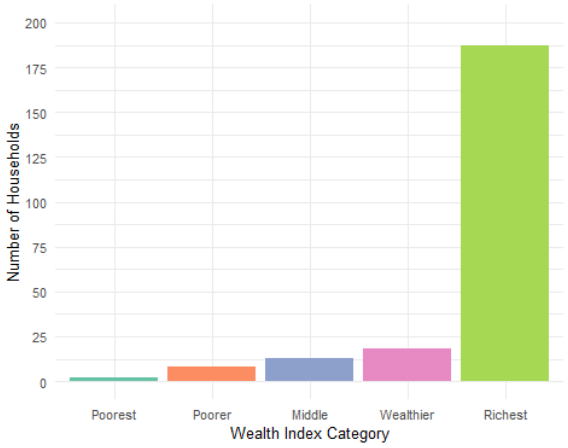
Observations in partially insured households

Delving into partially insured households, out of the 768 individuals from this category, 347 were insured representing a 45% insurance coverage. A higher percentage of the insured were females (63%). A larger household size lowered the likelihood of all household members being insured. These findings suggest that larger households face financial barriers to insure all members.

As illustrated in Part C: Figure 7, a higher proportion (82%) of the partially insured households were from the richest quintile with

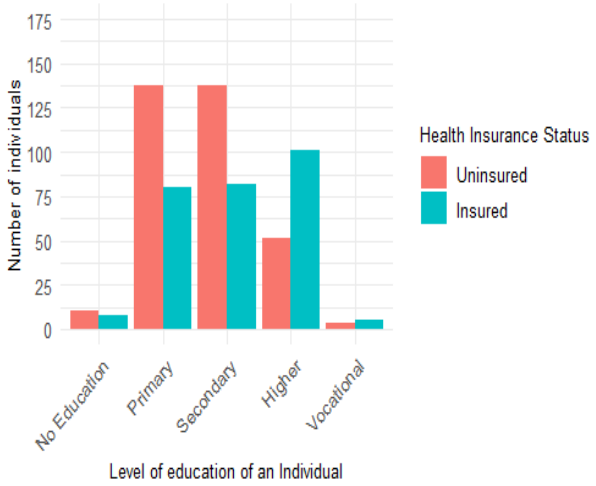
relatively low number of households in the lower quintiles. This is highly suggestive of the disparities in access to healthcare and ability to afford health insurance.

Households with high SES are more likely to afford health insurance premiums and, as a result, are more likely to purchase coverage. In contrast, lower-income households may face financial barriers that prevent them from affording premiums, leading to disparities in insurance coverage and partial uptake among the poor.



Part C: Figure 7: Socioeconomic status of partially insured households.

Additionally, partially insured households were 1.655 times more likely to insure their dependents. This can be attributed to the effort to reduce the financial burden of healthcare costs for dependents, which contributes to partial insurance uptake.



Part C: Figure 8: Education level of individuals from partially insured households by health insurance status.

Individuals with a higher level of education from partially insured households were also associated with insurance uptake as shown in Part C: Figure 8. They were 4.47 times likely to be insured relative to those with no education which is in line with findings by other studies(7-10). Higher education likely increases awareness of health insurance benefits enhancing the ability to navigate insurance options and offers the financial means to afford coverage.

Individuals with media exposure were 2.276 times more likely to be insured. This can be attributed to the media's role in disseminating health insurance information including insurance benefits and enrolment procedures hence those with access to it are more likely to enrol on health insurance. This demonstrates the impact of media access in promoting insurance uptake. Awareness of health

insurance is therefore another critical factor in decision-making, particularly in resource-limited settings.

Policy recommendations

Given the study findings it would be imperative to do the following:

- Design targeted and inclusive health insurance awareness campaigns emphasising the benefits of full household coverage.
- To bridge the information gap, leverage popular media platforms and tailor messaging for lower-educated groups.
- Policymakers can also consider subsidizing health insurance premiums for large and economically disadvantaged households.
- Given the proven feasibility of National Health Insurance, Malawi can consider adopting it and incorporating subsidies, sliding-scale premiums (income-adjusted premiums), or fully subsidized insurance for large and low-income households. This will make full coverage more affordable for vulnerable populations.
- A multisectoral approach is also essential, focusing on enhancing public education by improving access to quality education and promoting vocational skills training. This dual strategy can increase individuals' financial literacy, empower them with the skills needed to secure income-generating jobs, enable them to afford insurance premiums, and achieve comprehensive household coverage.

In summary, the findings suggest that improving household insurance coverage requires a multifaceted approach addressing affordability, awareness, and accessibility while specifically targeting large and low-income households.

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4. PART D: APPENDICES

Part D: Appendix1: Research proposal

1.0 INTRODUCTION

The sustainable development agenda was ratified by United Nations member states in 2015 where they outlined 30 Sustainable Development Goals (SDGs) that are to be achieved by 2030. One of these SDGs is SDG three which states that countries should ensure healthy lives and promote wellbeing for all at all ages (1) . Globally, what has become a key public health priority and has gained attention from the different member states among the targets of attaining this goal number three is target 3.8 which is Universal Health Coverage (UHC) (1).

UHC is described as having equal access to quality health care needs without facing financial hardships (2). SDG three, target 3.8 states that countries should achieve UHC, including financial risk protection, access to quality essential health care services and access to safe, effective, quality, affordable essential medicines and vaccines for all (1). The World Health Organization (WHO) recommends that UHC is to be achieved through increasing population coverage, service coverage and lowering financial costs towards healthcare using different mechanisms (3). One goal of UHC is financial risk protection; evidence has suggested that it can be achieved through sustainable prepayment mechanisms such as health insurance as opposed to Out of Pocket (OOP) payments (4).

Health insurance is a form of financing medical costs with pre-arranged payments known as premiums (5) and it facilitates risk pooling as well as redistribution of financial resources to secure financial protection against treatment costs (6). Health insurance takes several forms like private health insurance (can be voluntary or compulsory), social health insurance, community-based health insurance (4). Countries in Sub Saharan Africa (SSA) are progressing in implementing several forms of health insurance to achieve UHC, eight countries have a form of national health insurance; Benin, Ghana, Kenya, Nigeria, Rwanda, Tanzania, and Zambia with the following seven countries planning to introduce the same; Burkina Faso, Cameroon, Ethiopia, Mali, South Africa, Uganda, and Togo (7).

In Africa, the existing healthcare financing constraints arising from the respective health financing strategies and mechanisms has led to an increase in out-of-pocket expenditure (OOPE) (8). This increases household contribution towards health expenditure. The introduction of health insurance in several SSA countries such as Ivory coast has proven to be effective in reducing the proportion of household expenditures towards health (9). However, in some countries such as Malawi, the uptake of health insurance has been low. Ng'ambi et al. (10) found that 205 of the 31,259 participants in the Multiple Indicator Cluster Survey (MICS) 2019-2020 had health insurance in Malawi representing 1% uptake. This low uptake in Malawi as found by Ng'ambi et al. (10), has been attributed to factors like age, wealth status, education level and marital status.

Existing research in countries like South Africa has shown that there are disparities regarding health insurance coverage among members within the same household. The Institute of Medicine also explains that there is variation of health insurance coverage among different types of households (11). Such situation where at least one member or not all household members are being covered on health insurance is called partial health insurance coverage (12).

Partial health insurance coverage increases the likelihood of inequalities at the household level. A study by Govender et al. (12) found that children and women, who are among the most vulnerable groups, are often the ones excluded from health insurance enrolment at the household level. This is regardless of their increased health care needs that requires them to consistently utilize healthcare services. This is also consistent with the findings by McLeod and Ramjee (13) who found that, when households are faced with affordability problems, children are often left out of health insurance subscriptions. Uninsured household members are less likely to seek timely medical care, which can result in untreated conditions worsening over time. This lack of access can lead to more severe health issues and higher costs when care is eventually sought.

Healthcare expenditure should be a concern for all household members. This is because the illness of an individual has an impact on the entire household, and the assessments of health expenditure impact are conducted at the household level as proposed by Wagstaff (14). In Malawi, there's little information on the inequality household members face to enrol on health insurance therefore, it is necessary to address this gap in the literature and

investigate the factors associated with partial health insurance coverage among households in Malawi.

Partial health insurance coverage can lead to increased healthcare expenses due to higher OOPE. These costs can be catastrophic, which is a situation where the OOP healthcare costs exceed 10% and 40% of total household spending or income and non-food consumption respectively (15), potentially leading to impoverishment. Impoverishment occurs when a household is pushed below the poverty line due to OOP healthcare expenditure (15). Therefore, when an uninsured household member falls ill, the financial burden often falls on other family members, which can strain household financial resources, further emphasizing the need for comprehensive health insurance coverage to protect all members from significant financial and health-related risks.

Globally little is known on the magnitude of this problem as little has been done to investigate the number of household members enrolled on health insurance. Several studies have investigated how the household size determines if the family purchases health insurance. In Ghana, a study done by Jehu-Appiah et al. (16) found that larger households, with 5 household members or more were less likely to enrol on health insurance. A Cambodian study also investigated the influence of household size in purchasing health insurance (17).

1.0.1 MALAWI: COUNTRY CONTEXT

The Malawi health system is financed through four main channels: donor aid which accounts for 54.5% of the Total Health Expenditure (THE), government contributions (24.1% of THE), OOPE contributions (11.9% of THE), private health insurance (9.1% of THE) (18). Its healthcare delivery system is publicly funded with the government offering 63% of health services (19). The General Government Health Expenditure expressed as percentage of the total government expenditure was 8.4% in the 2018/19 fiscal years (18). This is below the Abuja Declaration set target where African governments pledged to allocate 15% of the total budget to health (20). These health financing constraints have led to inefficiencies like failure to provide adequate medicines and health workers, insufficient equipment, and poor access to emergency services, which has necessitated the use of OOPE to access quality healthcare raising household contribution to total healthcare to 11.9% (18, 21). Amidst such financing challenges, a lot of advocacies for improvement is to move towards a prepayment mechanism like health insurance to complement the public sector. Over reliance on donor aid is unsustainable (22). A study done by Gheorghe et al. (23) found that a National Health Insurance is feasible in Malawi. This was done following efforts by the Ministry of Health (MOH) to move towards a prepayment scheme and move away from donor dependence.

However, despite all this, a very small percentage of the population is on private health insurance in Malawi. A study done by Ng'ambi et al. (10) using the MICS found that 1% of the 31,259 respondents had health insurance. The Malawi Demographic Health Survey 2015 (24) showed that about 3% of the total population is on health insurance. With social health insurance being a consistent health reform for Malawi due to growing demands of providing increased adequate healthcare, evaluating the factors associated with the uptake of the current private health insurance schemes is key to understand the current low uptake.

Currently, private health insurance is voluntary in Malawi and under the private sector. A higher percentage of those on health insurance have it through their employer, with smaller percentages having it through community-based insurance and private purchasing (25). In December 2023, there was a launch for civil servants' medical scheme which was also voluntary and at the time had 26,000 members (26). As of 2022, the informal sector had about 89% of the population (27) and the newly launched scheme excludes almost a third quarter of the population from private health insurance. This poses a significant challenge in terms of the pool as the civil servants are low in number and are only being enrolled on a voluntary basis. 70.1% of the population lives in monetary poverty; less than 2.15 US Dollars a day (22) of which an increase in OOPE predisposes these people to catastrophic health care expenditure as they are further pushed below the poverty line.

High inflation rates in Malawi have also exacerbated the conditions of the people to live below the poverty line (22). Given the high formal unemployment levels and low-income levels, accessing basic needs is challenging for average Malawians. This also affects their ability to enrol in health insurance that will protect them from further impoverishment. As argued by McIntyre et al. and Ramjee et al. (13, 28), the cost spiral in health insurance contributions or premiums is associated with the rates in enrolling on health insurance.

Different factors associated with uptake of health insurance at an individual level in Malawi as investigated by Ng'ambi et al. (10) included age, wealth status, education level and marital status. The factors affecting household uptake of health insurance are yet to be explored. According to Abdel-Ghany et al. (29), 'Health

insurance coverage is a family rather than an individual decision therefore, it is essential to examine the socioeconomic variables of a family unit'. Even with the low uptake of health insurance, households' enrolment on a health insurance in Malawi rarely covers the entire family members despite it being a family rather than an individual decision bringing in the concept of partial coverage. In the proposed study, households are classified as follows: partial coverage (at least one member insured), full coverage (all members insured), and no coverage (no insured members).

Although there have been such studies, there is limited focus on partial coverage of households. Ataguba and Goudge argued that discussions on health insurance have tended to focus on affordability and inter household coverage neglecting the determinants of coverage at a household level (30). This highlights the gap in the literature and presents an opportunity to assess factors affecting partial health insurance coverage among households specifically because there might be underlining inequalities associated with the coverage right at the family level affecting the vulnerable groups such as women or children under 5. Thus, the aim of the proposed study is to explore the demographic and socioeconomic factors associated with partial coverage of health insurance among households in Malawi. The proposed study will provide guidance and knowledge on potential inequity issues that can be addressed in improving health financing alternatives.

1.1 PROBLEM STATEMENT

There is a notable gap in research on intrahousehold health insurance coverage in Malawi. While existing studies largely focus on health insurance uptake in the general population (10) or at the individual level, particularly among women (25), and assess households' willingness to pay for micro-health insurance (31), they do not address health insurance coverage within households. This study aims to address this gap in the literature.

Despite efforts to expand health insurance in SSA, coverage remains low and pro rich (32). This has led to increased OOPE, a financing mechanism that is regressive (8, 33). Such an increase in OOPE has led to reduced progress in attaining UHC goals, specifically that of financial protection which countries are aiming to achieve by 2030. In Malawi, there is an increased OOPE as evidenced by the indicator being 11.9% of THE as of 2018/2019. Being a low income country with high poverty rates, the risk for catastrophic health expenditure and impoverishment from OOPE is high especially for the people in rural areas and the socioeconomically disadvantaged households (34).

Malawi faces a low uptake of health insurance as found by Ng'ambi et al. (10) in 2022. Only 1% of the survey participants had health insurance. Such lower numbers suggest that they are factors that impede individuals from enrolling on health insurance which in Malawi a study by N'gambi et al. (10) found them to include socioeconomic status (SES), education level among others. The decision to purchase health insurance is subject to moral hazards and is likely to face household level inequality enrolment as many households experience partial coverage according to existing research (11, 12). While there has been proliferation of the factors that affect uptake of health insurance, few attempts exist to understand its uptake at household level in Malawi which can be a source of inequality.

The presence of such inequalities, if not known, will not be addressed and that in turn has a bearing on health indicators. Malawi has one of the highest maternal mortality ratios globally and it is estimated at 5.7 deaths per 1000 live births with neonatal and under-five mortality estimated at 29 and 84 per 1000 live births respectively (35). Understanding the factors contributing to this partial coverage is crucial for addressing disparities in access to healthcare and ensuring comprehensive health and financial protection for all individuals and families. It will also complement the efforts by the Malawi MOH that found a social health insurance in the country to be feasible and viable (23) highlighting the importance of exploring innovative financing mechanisms to enhance healthcare access and affordability for all segments of the population.

This study therefore seeks to identify and analyse the key factors associated with partial health insurance coverage at the household level thereby informing policy interventions aimed at achieving UHC and reducing partial health insurance rates.

2.0 AIM

The main aim of this study is to explore demographic and socioeconomic factors that are associated with partial health insurance coverage among households in Malawi.

2.0.1 RESEARCH OBJECTIVES

The specific objectives of this study are to:

1. Determine prevalence of health insurance coverage status in Malawi
2. Analyse demographic and socioeconomic factors that are associated with health insurance coverage at the household level: fully insured households, partially insured households fully uninsured households.
3. Examine socioeconomic and demographic factors that are associated with health insurance coverage within partially insured households.

2.0.2 SIGNIFICANCE OF THE STUDY

With UHC being a core agenda for every country, Malawi inclusive (36), assessing factors associated with partial health insurance coverage among households is vital to ensure it is achieved in the country. Health equity and financial risk protection are among other UHC goals (37) and key policy issues that will be addressed by this study. With every household member enrolled in health insurance, inequality will be reduced which will promote healthcare access and utilization. Healthcare expenditure through OOP payments will also be reduced, hence promoting financial protection.

They are increasing advocacies towards prepayment mechanisms like health insurance (2) which this study seeks to contribute to by increasing the number of household members enrolled in health insurance if the enabling and impeding factors are known.

Regionally, African countries are continuously falling into poverty every year due to high OOPE (38). Protecting people against such impoverishing effects is one of the key African health systems policies being advocated for to be achieved by 2030 (38) and one of the ways of achieving that is increasing number of household members covered on health insurance.

The Malawi MOH also aims to achieve UHC by 2030 (36). The Malawi National Health Financing Strategy for 2023 to 2030 (22) targets to reduce the percentage of households making catastrophic payments for healthcare using 10% consumption basket spent on healthcare to 2.1% from the 4.2% reported in 2023 and the proportion of households with catastrophic OOPE exceeding 40% of non-food expenditure to 0.67% from 1.34% as at 2023. This study therefore aligns with the current goals and strategies by the Malawi MOH as the study's main goal is to design policies that aim to increase number of household members on health insurance hence lowering OOPE which will reduce catastrophic healthcare expenditure and impoverishment. Malawi aims to reduce the latter to 1.88% in 2030 from the 3.75% as at 2023 (22).

Assessing these factors affecting health insurance enrolment also promotes identification of the perpetuating factors of any inequality and tailoring specific policy interventions that address the issues identified or target the vulnerable groups affected like women and Under Five children. Being those with most healthcare needs addressing their barriers to enrolling in health insurance will in turn promote their access to quality healthcare hence improving the healthcare indicators and their health at large. The best evidence suggests that health insurance is associated with more appropriate use of health care services and better health outcomes (11).

3.0 BRIEF LITERATURE REVIEW

This section explores key theories on health insurance determinants, along with a brief empirical and methodological review.

3.0.1 THEORETICAL FRAMEWORKS

3.0.1.0 UHC

WHO designed the UHC action framework to aid countries in attaining better health for all. The framework has 15 action domains and related priority actions organized according to 5 essential attributes, which include quality, efficiency, equity, accountability, good governance and sustainability, and resilience (37). This study adapts the equity essential attribute recognizing that no single approach can address all attributes effectively. Equity means everyone has a fair chance to achieve full health, regardless of their background or circumstances (37). Equity in health can only be achieved if every individual has the potential to attain his or her full health.

The 3 action domains in attaining equity in the framework include financial protection, service coverage and access, and non-discrimination. One mechanism for attaining financial protection is health insurance that allows

to pool resources and later promote both income and health risk cross subsidization. This removes economic barriers to healthcare access, and if it extends to all household members, it ensures non-discriminatory measures for vulnerable groups, addressing access barriers at a fundamental level hence tackling action domain 3.

The UHC cube as seen in Figure 9, summarizes how UHC is to be attained. It targets an increase in population coverage, service coverage and a reduction in costs. This is dependent on the centre which is the pool of funds. Enrolling more household members on health insurance means increasing the population coverage and the higher the numbers in a pool the greater the income and risk cross subsidization which can increase the services covered and lower the healthcare costs. This is summarized in Figure 10.

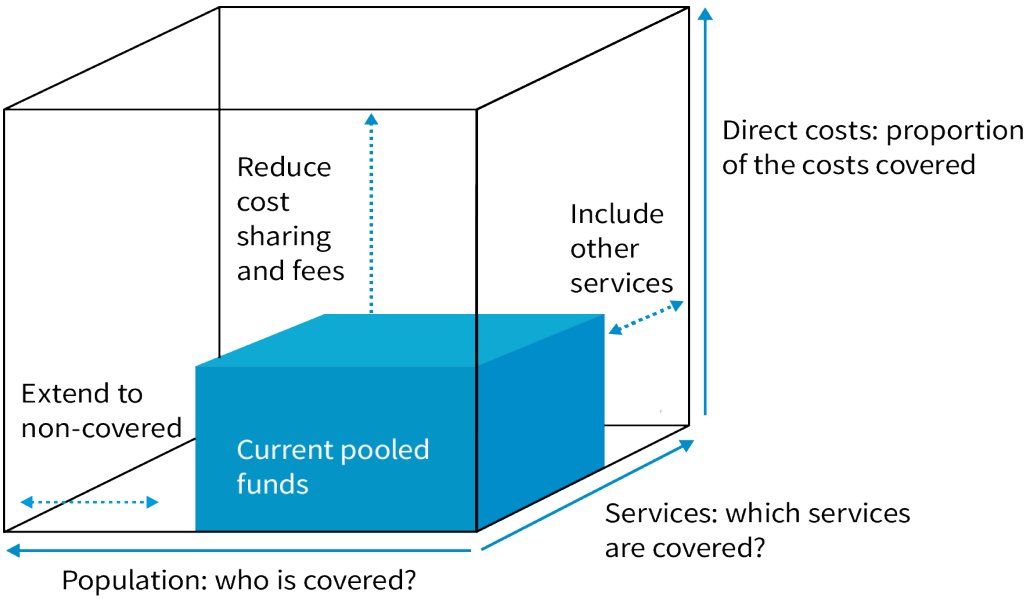

Figure 9: *Three dimensions to consider when moving towards UHC. Source: (WHO, 2015)*

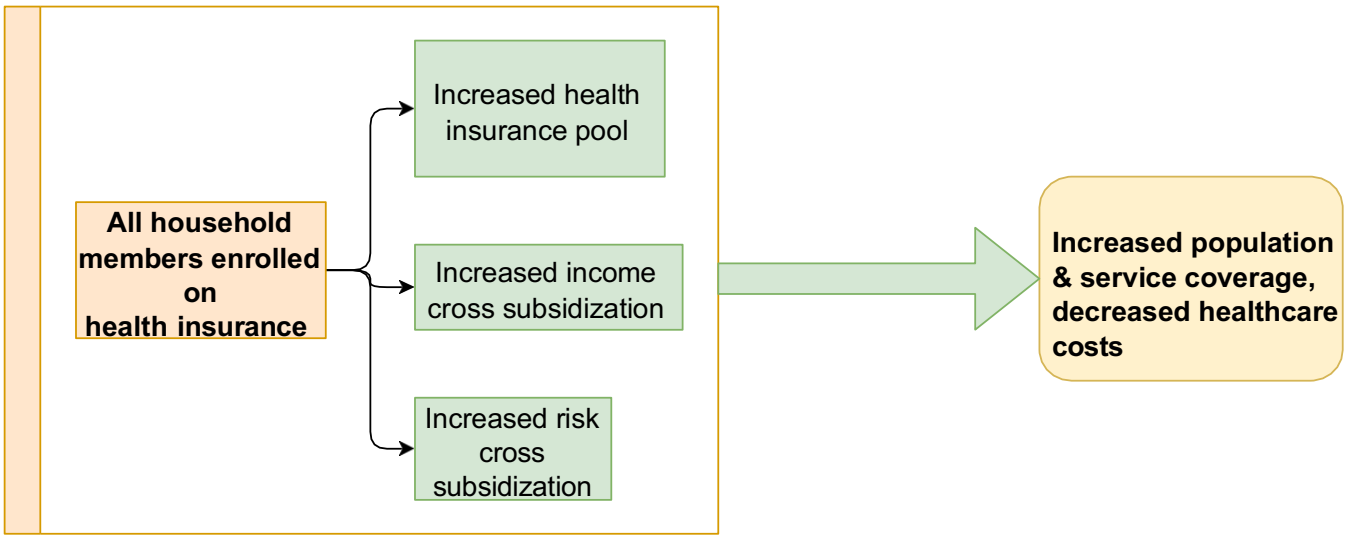

Figure 10: *Summary of attaining UHC Cube goals through increased household member enrolment on HI (Adapted from the UHC Cube explained)*

3.0.1.1 THE CONSUMER THEORY

Levin and Milgrom (39) explain the consumer theory as how a consumer makes rational consumption decisions based on individual preferences and budget constraints. One's income is allocated across a wide range of goods available to an extent that attempts to maximize the consumer's utility. A consumer therefore maximizes their utility when the ratio of marginal utility to price is equal (40) for all goods they consume. Marginal utility is defined as the additional satisfaction or benefit a consumer gets from consuming one more unit of a good or service (40). Given a range of goods to choose from therefore, a consumer weighs the utility from each extra unit of good purchased to the respective price. If these are equal, maximum utility is achieved by the consumer.

Families are likely to purchase health insurance based on their income or budget constraint and the utility expected thereof. Health insurance provides a role in financial protection against unpredictable and potentially increased medical costs hence allowing consumers to manage their health-related risks and maintain overall utility.

Purchasing decisions by the consumer as explained in the consumer theory are based on the income and prices of goods and services. The concepts of income and substitution effect then come into play. Income effect occurs due to change in real income when the price of a good changes(40). The purchaser is not able to buy the same bundles as he or she would have before the price change. If the price of a good goes up, the bundles purchased are likely to decrease compared to when the price of a good goes down as the purchasing power in the latter increases allowing one to purchase more or even a range of goods. In health insurance, health premiums are likely to determine if one will purchase health insurance and if this individual has dependents, how many members should be enrolled subject to the purchasing power. If the premiums are higher, the more likely bundles of insurance are to be purchased for the different family members.

Substitution effect also occurs when a change in price of a good affects the consumers attractiveness to it compared to other goods leading to consumers substituting it for another good (40). An increase in healthcare costs, for example, might lead to purchasing health insurance, which lowers healthcare expenditure, which fulfils the substitution effect.

3.0.1.2 GROSSMAN THEORY (THE DEMAND FOR HEALTHCARE THEORY)

The Grossman model of health demand highlights that health is a capital that individual's initially stock which deteriorates as age increases and its main output is healthy times (41). As stocks of health deplete with age, the old household members are more likely to require healthcare services than the young ones. They are

prone to having chronic conditions subjecting the household to adverse selection when purchasing health insurance for the household members as the aged household members will more likely be on health insurance compared to the young.

The model also explains that health is produced after a combination of inputs like time of the consumer, medical treatment, diet, exercise, recreation and housing (41). According to Grossman (42), the other variable that modifies health stock is level of education or knowledge with those having more education seen as the more efficient producers of health. The highly educated household members are therefore more likely to purchase health insurance to maximize their utility and ensure their health stocks are not depleted.

3.0.1.3 INTRAHOUSEHOLD BARGAINING AND RESOURCE ALLOCATION

A household includes a number of adults and children especially in the developing countries. According to Doss (43), empirical studies often consider the two household decision makers to be husband and wife, therefore bargaining is between husband and wife, and these have more bargaining power. Other members are assumed to be passive or unimportant (43).

Decisions in the household are therefore likely to be made by the household head on how household resources will be allocated. The decision on which member will be enrolled in health insurance in this case, will be determined by them and household members with less bargaining power will have minimal or no say.

3.0.2 METHODOLOGICAL REVIEW

Studies analysing factors associated with partial health insurance coverage mostly used econometric analysis. This is explained as the use of statistical models to test existing hypothesis and forecast future trends from data (44).

The study by Govender et al. (12) used data from a nationally representative household survey of 4800 households and 21,593 individuals in South Africa. The dependent variables were derived from the question regarding household members' enrolment in a medical scheme or sick fund. This was used to generate two types of variables for analysis: a categorical variable at the household level and a binary variable at the individual level. The categorical variable classified households as completely uninsured, completely insured, or partially insured, based on the insurance status of household members (12). Additionally, a dichotomous variable was created to indicate whether an individual within a partially insured household was insured or not, focusing on the primary interest of the study which was partially insured households (12). The independent variables included categorical variables like households SES constructed using the Principal Component Analysis (PCA) methodology, household-heads educational level, employment status, health status and the individuals' or household members health status (12). Data was analysed in two independent parts, the first part was estimated via a multinomial logit model where a household would choose between three mutually exclusive options; partial, complete or no coverage and the equation had a vector of household head and household characteristics (12). A sub sample of partially insured individuals comprised the second part, which was analysed using a logit regression. The methods used in this study were sufficient and appropriate for achieving the research objectives. The sample size was adequate and detected the effect change with the highest alpha set at 0.1. Serdar et al. (45) explains that large sample sizes and smaller alphas are associated with higher statistical power. The Multinomial logistic regression was also suitable for categorical data making the overall findings to be rigour and valid.

Another study in the United States of America by Abdel Ghany et al. (29) also investigated factors associated with the different degrees of health insurance coverage. This study used data from the National Health Interview Survey, and it was comprised of 31,527 families. It utilised logistic regression to determine the probability of one's insurance coverage status; partial, full and no insurance coverage. These were the dependent categorical variables for the model which were defined as; insurance that covers substantial fraction of medical expenditure, insurance that covers every medical expenditure and when insurance does not cover any medical expenditure respectively (29). The independent variables in the model were also guided by research. These are consistent with some of the variables that were used in the study by Govender et al. (12), and they included education and age of reference person, area of residence, health status, employment status, race, presence of children as categorical variables, poverty status and type of family were binary variables. The authors (29) then applied the model and found the predictive values. However, they clearly pointed out that they did not control for other variables which makes their methodology insufficient as the results cannot be explicitly said to be due to the factors that they had explored. Nonetheless, like the study by Govender et al. (12), they had enough statistical power due to an adequate sample size and smaller alphas to detect an effect change (45).

A study Jehu-Appiah et al. (16) explored reasons why households were or were not enrolling on the National Health Insurance Scheme (NHIS) in Ghana. The 2009 household survey data was used, and it included 3,301 households comprising of 13,865 individuals (16). The outcome variable was categorical, and it was whether the household's insurance status was currently enrolled, previously enrolled and never enrolled. The independent variables used included age, gender, education, occupation, family size, marital status, peer pressure, health beliefs, income place of residence, health status and perceptions (premium costs). Respondents' perceptions were first evaluated using the PCA to remain with factors that can be fitted in the model. Like the other previous two studies, a multinomial logistic regression model was used to analyse the data with the reference category as the never enrolled in the NHIS. With a sufficient sample size, smaller alphas the study had enough statistical power and utilising the multinomial logistic regression for a categorical variable with three outcomes, indicated right methodology choice.

Another study by Chauluka et al. (25) examined factors associated with coverage of health insurance among women in Malawi utilising the Malawi Demographic Health Survey data with a sample size of 24,562 women. The dependent variable was health insurance ownership or not, which was binary. Informed by literature and the dataset used, the authors used a woman's education, area of residence, age, work, marital status, household head and level of wealth as independent variables in the binary logistic regression model. This model was a good choice as the outcome variable was binary and categorical. Sample size was also sufficient like for other studies described above and there was enough statistical power with the P-values used as <0.01 (45).

A study by Ng'ambi et al. (10) investigated factors associated with uptake of health insurance in Malawi. This study used the MICS with a total of 31,259 individuals. The binary outcome variable for this study was health insurance coverage or no health insurance coverage. The dependent variables used are consistent with those used by other studies (12, 16, 25, 29) as they included age, wealth status, level of education, marital status, frequency of reading newspapers or magazines, frequency of listening to the radio, and frequency of watching television (10). However, the authors only analysed percentages and frequencies. They did not analyse if these factors are predictors of enrolment of Health Insurance in Malawi constrained by the small number of persons on health insurance to do a multivariate analysis (10) limiting the ability of the study to detect meaningful association.

3.0.3 EMPIRICAL REVIEW

The empirical literature discusses evidence on factors associated with partial health insurance coverage among households including household SES, household heads (age, gender, level of education and employment status), and individual household members age, level of education and health status. Findings will be presented thematically as demographic factors and socioeconomic factors.

3.0.3.0 SOCIOECONOMIC FACTORS ASSOCIATED WITH PARTIAL HEALTH INSURANCE

A study by Govender et al. (12) established SES as a factor that determines partial health insurance coverage. It found that household SES was among the predictors of the likelihood of individual household members to enrol on health insurance. The same study also found that these socioeconomic factors influenced partial health insurance coverage among the households; household heads educational level, employment status, health status and the individuals' health status which was ascertained by being on chronic medication or not. These findings are consistent with those found by Abdel-Ghany et al. (29) where the likelihood of full insurance coverage was positively related to the level of education of reference person, and it was negatively associated with a family below the poverty line as well a household head who is self-employed. A systematic review done by Miti et al. (46) found that in a total of 34 studies from 17 low-middle income countries (LMICs) with 23 studies focusing on health insurance; income, education, trust and credibility of the health insurance affected the willingness to pay for health insurance. In addition to this, Miti et al. (46) also found that experience of sickness, attitude of healthcare workers, and distance from the medical facility determined one's willingness to pay for health insurance. A study by Jehu-Appiah et al. (16) evaluated how different predisposing, enabling and social factors affects household decision to enrol and remain in the NHIS in Ghana. It was evidently noted that both current and previous enrolment is influenced by age, gender family size, marital status, peer pressure, income, health status and perceptions. The above studies show that there is a limitation in terms of geographic scope, for in Malawi such studies are limited.

In Malawi, the empirical review showed that several studies have only focused on uptake of health insurance and not partial household health insurance coverage. For instance, a study by Chauluka et al. (25) explored factors associated with coverage of health insurance among women in Malawi of which the following were found to be highly associated with ownership of health insurance; education, wealth and occupation. To the contrary,

the same study found that a woman's residence, marital status and who heads a household was not associated with being on a health insurance. A study by Ng'ambi et al. (10) established that media exposure, individuals' wealth and education level influenced the uptake of health insurance in Malawi. It established that persons with media exposure had a positive association with being on medical insurance whereas the poor and individuals with no education were less likely to be on a health insurance. Willingness to pay for micro health insurance in Malawi was also explored by Phiri et al. (31) where they established that perceived quality of public healthcare as good and presence of social capital reduced a household's willingness to pay for health insurance.

3.0.3.1 DEMOGRAPHIC FACTORS ASSOCIATED WITH PARTIAL HEALTH INSURANCE

Apart from socioeconomic factors, the studies explained above also explored demographic factors associated with health insurance coverage. Govender et al. (12), found that household size and household place of residence, household-head's age and sex, individual's relationship to household head were significant predictors of households' health insurance coverage. Smaller urban households, and older, male-headed households were more likely to be insured compared to their counterparts, spouses were also more likely to be insured compared to children. These findings are consistent with those by Miti et al. (46) where family size, age and residential area affected the willingness to pay for health insurance. Abdel-Ghany et al. (29) also found old age of the reference person and having children younger than 6 years to increase the likelihood to be fully covered on health insurance.

With Ghana introducing the NHIS, Jehu-Appiah et al. (16) explored reasons why households enrol or remain in the NHIS. Age, gender family size, marital status, place of residence are some of the demographic factors that were found to influence the pattern. A study by Ng'ambi et al.(10) established that men, residents of urban areas and persons with media exposure had a positive association with being on medical insurance in Malawi.

To the best of my knowledge, from the brief literature review above, most studies on health insurance uptake in Malawi have focused on inter-household coverage status. This study therefore seeks to make a new contribution to the literature in the Malawi context by examining empirically intra household health insurance coverage.

3.0.4 CONCEPTUAL FRAMEWORK

This study will investigate the subject matter of whether a household enrols all its members on health insurance, just some members or no member at all. The households with partial health insurance coverage will further be investigated on the individual characteristics of the household members with and without health insurance.

The decision to purchase health insurance, as explained by the consumer theory, is subject to income or budget constraints and preferences (39). At a household level, the decision to purchase health insurance for the household members is influenced by households' economic status, area of residence and the household heads' education level, age, as well as gender. Households with higher SES, located in urban areas are hypothesized to be more likely to purchase health insurance for all household members compared to those with low SES and located in rural areas. Households headed by old men with higher education level are also hypothesized to enrol all household members on health insurance.

Information asymmetries also come into play where the concept of adverse selection is more likely to be prevalent. It is defined as the tendency of a party to use their private information to the disadvantage of the other party before entering the agreement (40). At an individual level in partially insured households, high-risk household members with frequent healthcare needs are more likely to purchase health insurance (47) if they are knowledgeable about their health risk. Level of knowledge therefore influences the purchase decisions of health insurance. Individuals with higher education or knowledge about health risks understand their health needs and the benefits of health insurance. Therefore, they can make informed decisions about purchasing health insurance and are more aware of healthcare costs and the financial protection insurance offers, making them more likely to purchase health insurance if they are high risk individuals. The age of the household members also influences whether to purchase health insurance or not. With deteriorating stocks of health associated with aging (41), older individuals are more likely to purchase health insurance compared to the young ones.

Other variables that are associated with enrolling on a health insurance at an individual level in partially insured households include gender as well as area of residence. As indicated by other studies, women are mostly left out of enrolling on health insurance (12) and area of residence, can be hypothesized that individuals in urban areas are more likely to have access to information regarding health insurance and are therefore more likely to purchase health insurance.

The household as well as individual enabling and impeding factors to purchase health insurance are summarized in

Figure 11.

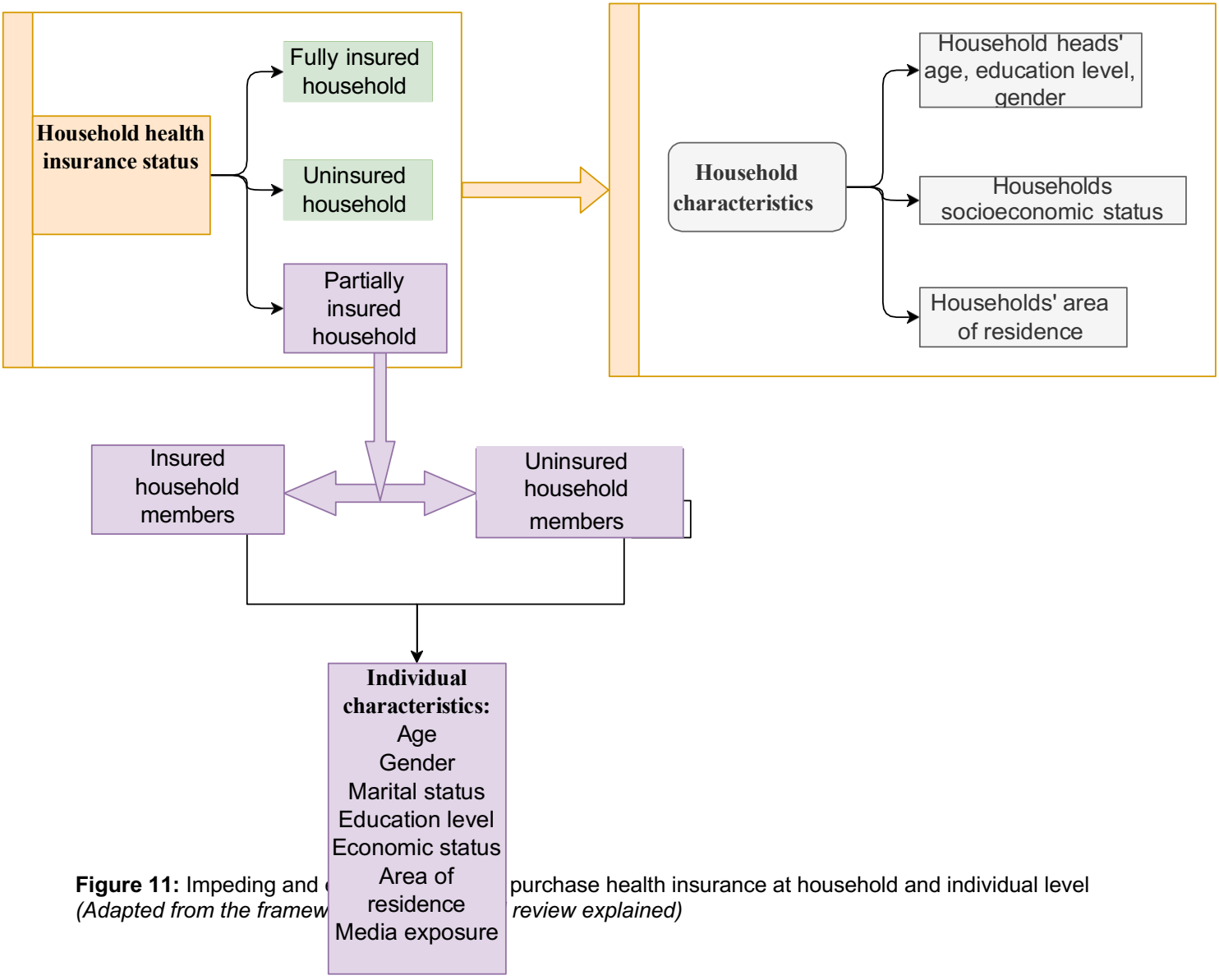

Figure 11: Impeding and purchase health insurance at household and individual level *(Adapted from the framew review explained)*

4.0 METHODOLOGY

4.0.1 DATA SOURCE

The proposed study will use secondary data obtained from the December 2019-August 2020 Malawi MICS carried out by the National Statistical Office as part of the Global MICS Program (48). The objective of the MICS is to generate data on key indicators for monitoring progress towards the SDGs, the Malawi Growth and Development Strategy and other development initiatives (48). MICS is a nationally representative sample survey collecting internationally comparable data on a wide range of indicators about children and women (48). The survey has a cross-sectional study design as data is collected at a single point in time from household clusters or individuals in that cluster. The survey collects data on households, household members, women and men aged 15-49 years, and children. The data from MICS has been selected as the dataset of choice for this study because it contains the information relevant to the research question about household members' health insurance coverage status.

The parent survey used a two-stage sample based on the 2018 population and housing census sample, grouping the population into two large clusters, rural and urban areas representing the three regions, and the 28 districts in Malawi (48). Urban and rural areas within each district were identified as the main sampling strata which is justifiable as it acknowledged the variation in needs for the groups ensuring an adequate representation and stratification also reduces bias. Within each stratum, several census enumeration areas were chosen systematically ensuring proportional representation of larger and smaller areas. This was important as it ensured that the sample was representative, efficient, and precise, allowing for more accurate estimates. Household listing was then done in the selected enumeration areas followed by a systematic sampling of 24 households from each selected area. The total sample size at national level was 1,112 sample enumeration areas and 26,904 households. 66,921 people were identified as eligible, and out of these, 64,615 were interviewed and responded to the questions.

4.0.2 STUDY VARIABLES

Outcome variables and definitions

There are two main outcomes for this study, one at a household level and the other at an individual level**.**

The outcome variable at a **household level** is health insurance coverage status which will be coded into a categorical variable with three categories: no coverage, partial coverage and full coverage. These categories will be defined as follows:

- ***No coverage***: No member of the household is covered.
- ***Partial coverage***; at least one member of the household is covered.
- ***Full coverage***: All household members are covered.

At an **individual level**, the outcome variable will be a binary variable of whether an individual from a partially insured household has health insurance or not.

Independent Variables

The independent variables will be informed by literature and the dataset. Preliminary literature search has identified the following variables as variables of interest for the analysis at a household level; household heads' education level, household heads' gender, household heads' age, households' area of residence and households' economic status(10, 25, 29). At individual level the variables for analysis will include individuals' marital status, sex, age, media exposure: newspaper or magazine, radio, television and the internet. Detailed description of these variables is given in

Table 5.

Table 5: Variables to be included in analysis.

Variable	Scale	Category proportions or measurement
Age of an individual and household head (years)	Continuous	0-49
Gender	Categorical-Nominal	Male, female
Socioeconomic status	Categorical-Ordinal	Poorest, poorer, middle, richer, richest
Education level	Categorical-Ordinal	No education, primary, secondary, higher education
Area of residence	Categorical-Nominal	Rural, urban
Media exposure	Categorical-binary	Yes or no
Health insurance coverage status	Categorical-Nominal	Partial, Full, No coverage
Partially insured household member health insurance status	Categorical-binary	Partially insured household member has health insurance, partially insured household member does not have health insurance

4.0.3 DATA ANALYSIS

For the proposed study, data will be analysed using Stata 18 College station, Tx. Firstly, data will be merged using household cluster, household number, and member line numbers as key identifiers. This will be integrated with men's, women's, and children's datasets to determine household health insurance membership, as the original dataset collected this information only at the individual level. This integration will facilitate the analysis of health insurance coverage at the household level. Categorical outcome variables (partial, full, no coverage) will be calculated using frequencies and percentages of households falling into each category for each independent variable (household heads' education level, gender, and age, households' area of residence and economic status) therefore producing a table of descriptive statistics. A binary outcome from the sub sample of the partially insured households (individual is insured or not) will also be analysed and described using these independent variables: an individual's age, gender, education level, marital status, economic status, area of residence and media exposure.

As illustrated in

Table 5, age will be continuous while area of residence and gender will be a dichotomized variable [1,0] as rural or urban and male or female, respectively. Education level, a self-reported measure of highest qualification at survey time, will be categorical. Economic status was already constructed in the dataset based on a household questionnaire that asked households ownership of consumer items and with that information categories were assigned. For analysis purposes, the categories will be coded as 0 if poorest, 1 if poorer, 2 if

middle class,3 if rich and 4 if richest.

4.0.4 ECONOMETRIC ANALYSIS

The analysis will be modelled into two independent parts. Depending on the sample size in the three categories of partial coverage, full coverage and no coverage, a multinomial logistic regression will be used in the first part as the dependent variable has more than 2 categories. This type of regression will help understand how the independent variables influence the likelihood of a household falling into the specific categories. The model will be expressed in the equation where household *j* will choose between three mutually exclusive health insurance coverage statuses *m*: partial, full and no coverage as below:

$$U_{jm} = \beta_m X_{jm} + \varepsilon_{jm}$$

where X_m is a vector of household head and household characteristics with the random component ε_{jm} and the reference category will be 'no health insurance coverage'.

The second part will extract the sub sample of the partially insured households, which is the key sample of interest to meet this proposed study's objectives and analyse it using the binary logit model. A dichotomous variable will be created which will be whether an individual in a partially insured household has health insurance or not. The probability P that an individual *i* in a partially insured household *j* was insured would be expressed in the equation below:

$$P_{ij} = Z_{ij}\alpha_j + X_{ij}\beta_i + \varepsilon_{ij}$$

hence examining factors associated with this probability based on household level variables Z and individual level variables X. α and β are the parameter vectors and ε is the error term.

Pearson's chi- squared test and the F-statistic will be used to show goodness of fit of the model, p-values will be used to represent significance of covariates in addition to odds ratio that will show the likelihood of occurrence of partial, full or no coverage given a value.

The strengths of the multinomial logistic regression model include among others the versatility to allow both continuous and categorical independent variables, handle multiple outcome variables as is the case of this proposed study and the ability to capture non-linear patterns (49). However it requires a larger sample size to have sufficient cases in a category and have enough statistical power, it is also complex to interpret how the changes in predictor variables impact multiple categories simultaneously (35).

5.0 ETHICAL CONSIDERATIONS

This study will not involve any primary data collection. Permission to use this secondary data was sought from the United Nations Children's Fund (UNICEF). Approval of the original study was given by the ethics review board of Malawi responsible for approving and reviewing research involving humans, The National Health Sciences Research Committee (NHSRC). This helps to ensure ethical principles of privacy, confidentiality, informed consent is followed and above all protection of the study participants from any harm. Ethics approval will be sought from the University of Cape Town Human Research Ethics Committee for this proposed study.

6.0 PUBLICATION AND DISSEMINATION

The study results will be submitted as a fulfilment for completing master's in public health, Health Economics degree. A manuscript of this study will also be published in a peer-reviewed journal.

7.0 STUDY TIMEFRAME

	July	Aug	Sep	Oct	Nov	Dec
Activity						
Protocol writes-up and ethical approval						
Literature review						
Data analysis, manuscript write up, submission and review of mini dissertation parts to supervisor						
Corrections based on supervisor's comments						
Submission of minor dissertation						

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Part D: Appendix 2: Summary of studies that examined the association between socioeconomic and demographic determinants and health insurance.

TITLE OF STUDY, AUTHOR AND YEAR	POPULATION AND COUNTRY	DEPENDENT VARIABLE	INDEPENDENT VARIABLE	METHODOLOGY	RESULTS	LIMITATIONS
Health Insurance Coverage Within Households : The Case of Private Health Insurance in South Africa By Veloshnee Govender, John E. Ataguba, Olufunke A. Alaba 2014	4,800 households consisting of 21,593 individuals using a two-stage sampling procedure across SA's nine provinces between April and July 2008. South Africa	. Completely uninsured households . Completely insured households . Partially insured households Among the partially insured households: . Insured individuals . Uninsured individuals	Household characteristics like household size, socio-economic status, place of residence, household-head's age, sex, educational level, employment status, health status and individual characteristics like age, relationship to household head and health status	Multinomial logistic regression analysis to evaluate the factors influencing health insurance coverage among different household types. A binary logistic regression was also utilized among the partially insured households, to determine the factors associated with insured or uninsured individuals to be in a partially insured household.	80.1% of the households were completely uninsured, 10.4% were completely insured and 9.6% were partially insured. Employed, older household heads with tertiary education were positively associated with household members being insured. Male headed households were also more likely to be insured than female headed households. Households with better socio-economic conditions were more likely to be completely insured. Large households were highly likely to be partially insured. At an individual level in partially insured households, spouses to	Exclusion of the cost of premiums a key predictor potentially overestimates the magnitude of the effect of the other covariates, use of chronic medication as the only proxy for health status was an issue, inability to explore deeper intrahousehold bargaining decisions, as resource allocation ultimately depends on household dynamics and decision-making processes.

					the household head, individuals aged 19 or older, those with tertiary education, being a household head was positively associated with being insured.	
Factors Associated with Different Degrees of Health Insurance Coverage By Mohamed Abdel-Ghany, Min Qi Wang 2001	Data from the 1996 National Health Interview Survey with 31,527 families. United States of America	. Full health insurance coverage . Partial health insurance coverage .No insurance.	Race, education of reference person, poverty status, work status, type of employment, presence of children, health status, region, Metropolitan Standard area, type of family, and age of reference person	Logistic regression	72.8% of the families were fully covered by health insurance, 14.5 % were partially covered, and 12.7% had no coverage. Relative to families whose household heads had high school education, families whose heads had college education and post college education were 1.88 times as likely to be completely insured. Families below the poverty level were 1.25 times more likely to have partial insurance relative to those above the poverty level. Families headed by an individual aged 65 or older were	The limitation of the study is that it classifies individuals as employed, unemployed, or not in the labour force, rather than distinguishing between full-time and part-time work. This is important in the U.S. because part-time workers often face different economic conditions, job security, and access to benefits, which can impact policy insights and labour market analysis. Furthermore, no significant relationship was noticed in the work status, likely due to the masking of full-time or part-time categories.

					14.35 and 2.78 times likely to be completely and partially insured respectively, compared to those headed by an individual less than 25 years.	
Equity aspects of the National Health Insurance Scheme in Ghana: Who is enrolling, who is not and why? By: Caroline Jehu-Appiah, Genevieve Aryeetey, Ernst Spaan, Thomas de Hoop, Irene Agyepong, Rob Baltussen 2011	Data from a household survey of 3301 households conducted in 2009. Ghana	. currently enrolled, previously enrolled, never enrolled in NHIS.	Sex of household head, age, marital status, household size, education level, residential area, employment status, religion, SES, perceptions (benefits, convenience, price of NHIS)	Multinomial logit regression	30% were currently enrolled, 14% were previously enrolled and 56% had never enrolled in the NHIS. Higher education, female headed households, and favourable perceptions about NHIS was positively associated with enrolling and remaining in the NHIS. Urban residence and perception that the price is high for poorest households decreased the odds of enrolment. Among the richest quintile, the odds of currently enrolling on NHIS increased with mean age above 70 and significantly decreased with large	Variables like distance to the health facilities were omitted. Use of proxies for political factors to determine their influence on health insurance enrolment might have not captured the true impact of political factors given the political nature of health insurance in Ghana. This in turn, could lead to omitted variable bias, potentially causing a slight overestimation of the impact of other determinants.

					household size and peer pressure.	
Factors Associated with Coverage of Health Insurance Among Women in Malawi By: Margaret Chauluka, Benjamin S. C. Uzochukwu, Jobiba Chinkhumba 2022	Data from the 2015 to 2016 Malawi Demographic and Health Survey. Malawi	Health insurance ownership or not	Age, residence, education, occupation, marital status, household head and wealth.	Binary logistic regression	1.5% of the 24,562 women had health insurance. An increase in age, living in an urban area was positively associated with health insurance ownership. Women from the richest quintile were 15.98 times likely to own health insurance relative to those in the poorest quintile. High education was also positively associated with health insurance with occupation also increasing the odds of the same by 2.40 times. Male household heads were more likely to own health insurance compared to female household heads. Married women were 1.4 times likely to own health insurance relative to unmarried women.	The findings are limited to local-level inferences and are not powered for district-level analysis. Additionally, they infer association, not causation, due to the use of secondary data.

Uptake of health insurance in Malawi in 2019-2020: evidence from the multiple indicator cluster survey. By: Wingston Felix Ng'ambi, Takondwa Mwase, Cosmas Zyambo, Farai Chigaru, Agnes Jack Banda, Joseph Mfutso-Bengo 2023	Data from the 2019-2020 Multiple Indicator Cluster Survey. Malawi	Health insurance coverage (Covered or not covered)	age, wealth status, level of education, marital status, frequency of reading newspapers or magazines, frequency of listening to the radio, and frequency of watching television.	Weighted frequencies and percentages	205 (1%) of the 31,259 men and women had health insurance in Malawi in 2019. Males had a higher insurance uptake relative to females (1% vs 0.7%). Individuals with media exposure were more likely to have health insurance coverage. Urban residents were more likely to have health insurance than rural residents. Richest and educated individuals (tertiary) had a higher insurance uptake relative to poorest individuals and those with no education.	Non-use of the multivariate analysis due to limited number of observation s with health insurance which prevents controlling for multiple confounding factors, reducing the depth of the findings which may be less precise or biased.
Willingness to pay for Micro health insurance in Malawi By: Innocent Phiri, Winford Masanjala 2012	Data obtained in 2009, from 829 households from 3 districts: Blantyre, Lilongwe and Thyolo. Malawi	. Willing to pay for health insurance or not . Amount one is willing to pay for health insurance	Household head characteristic s; age, sex, education level, employment status, number of household members belonging to a credit union, number of illness episodes in the preceding three months, assessment	Binary logistic regression ordinary least squares linear regression	Assessment of the quality of public health care and increased age of the household head lowered the willingness to buy micro health insurance. Household income, education of household head and household size had a significant	The sampled districts are not a national representati on, limiting the generalizabi lity of the findings to the overall Malawi population. Questioning the amount, one is willing to pay is prone to strategic and information

			of quality of public health care, chronic illness, whether a household member belongs to a community group, area of residence, awareness of any insurance scheme, annual household income.		positive impact on the amount one was willing to pay for health insurance. Household heads employed or otherwise engaged in the formal sector had a 2.06 times higher willingness to pay for micro health insurance relative to those not employed.	bias. Respondent s' willingness to pay differs significantly between hypothetical and real-life situations, reducing confidence in data from hypothetical scenarios.
Determinant s of health insurance enrolment in Ghana: evidence from three national household surveys By: Paola Salari, Patricia Akweongo, Moses Aikins, Fabrizio Tediosi 2019	Data from three household surveys: 2011 MICS comprising of 10,963 women and 3,511 men from 12,150 households, the 2014 Demographic Health Survey with 12,831 households and the Ghana Living Standard Survey with 18,000 households. Ghana	Enrolment in the Ghana NHIS or not	Marital status, sex of household head, presence of children, age of an individual, wealth index, education, employment status, pregnancy status, area of residence, having hypertension	Multilevel logistic regression	Beig a married woman increased the likelihood of enrolling in the NHIS compared. Having children under 5 years old also increased enrolment. Women and men with highest education (odds ratio; 1.35) or of the highest wealth category (odds ratio; 1.82) had a higher likelihood of enrolling in the NHIS compared to their counterparts . Those employed in the professional sector had 2.20 times the	Use of multiple surveys is robust, but like any cross-sectional data, it can only infer association and not causation.

					likelihood of enrolling in the NHIS compared to those working in the agricultural sector. Men aged 25–29 were the least likely to register (OR = 0.551, 99% CI: 0.388–0.784), while those over 45 had higher enrolment odds (OR = 1.909, 99% CI: 1.234–2.952) compared to the reference group (age 18-24). Individuals with higher education levels had a higher likelihood of being registered in the NHIS. The demographic health survey and the Ghana living study found no significant association between NHIS enrolment and area of residence. The MICS, however, indicated a negative correlation between living in the urban area and health insurance enrolment.	

Willingness To Pay for Social Health Insurance in Iran Shirin Nosratnejad, Arash Rashidian, Mohsen Mehrara, Ali Akbari Sari, Ghadir Mahdavi & Maryam Moeini 2014	300 urban household heads in all Iranian provinces. Iran	Maximum amount one was willing to pay for social health insurance.	Geder, family size, previous use of health insurance, number of insured members, health status, age and education of household head, future and past family's utilisation of inpatient services, under 5 and above 65 years old household members, number of patients, disabled members, drug users in the family.	Contingent valuations-Double-bounded dichotomous choices Interval regression	98.62% of the households were willing to pay for health insurance. On average, $5.5 was the amount households were willing to pay for SHI per person per month. Educated and employed household heads were willing to pay more for SHI compared to their counterparts. Additionally, both higher income and a greater number of insured family members significantly increased a household's willingness to pay. Conversely, increase in family size lowered the willingness to pay for SHI with health status having no significant impact.	The findings may not generalize to rural areas, limiting nationwide applicability. The small sample may miss regional economic and social variations, while the urban focus overlooks challenges faced by lower-income or rural households. Additionally, relying only on household heads may introduce bias, as their perspectives may not fully represent those of other family members.
Willingness to pay for social health insurance among informal sector workers in Wuhan, China: a contingent	The survey was conducted between September 1999 and January 2000 in Wuhan City, Hubei Province, China.	Maximum WTP for baseline basic health insurance (BHI)	Age, sex, education level, migration status, employment status, health expenditure in the past year, income.	Contingent valuation method and Interval regression	Compared to women, men exhibited a lower willingness to pay (WTP). An increase in age further decreased WTP for	Limited generalizability of findings as sample was only from Wuhan.

valuation study By: Till Bärnighausen, Yuanli Liu, Xinping Zhang and Rainer Sauerborn 2007					health insurance. Residents demonstrated a higher WTP than migrants, with migrants' WTP being 17.4% to 37.3% lower. Additionally, informal workers in permanent employment had a greater WTP than those in temporary employment, ranging from 19.1% to 30.0% higher. A 1% rise in monthly income led to a 0.434% to 0.499% increase in WTP, while a 1% increase in health expenditure over the past year raised WTP by 0.076% to 0.148%.	
Willingness to pay for National Health Insurance Services and associated Factors in Africa and Asia: a systematic review and meta-analysis By:	Individuals from Africa and Asia who were evaluated in the included 19 studies regarding their willingness to pay (WTP) for National Health Insurance (NHI).	Proportion of individuals WTP for NHI.	Family size, household head's age, marital status, gender, place of residence, education level, income level, government taxation, employment status, awareness and knowledge about NHI, perception of	Systematic review and meta-analysis of 19 studies. sensitivity and subgroup analyses, with a random-effects model estimating WTP proportions and odds ratios.	The overall WTP for NHI in Africa and Asia was 71.0% (95% CI: 68–75%) with no significant difference in the two regions but rating at 73% and 71% respectively. There was mixed evidence on the	Limited generalizability to other contexts as the included studies were few. Prone to publication bias as only published data is used limiting findings from unpublished data.

Ewunetie Mekashaw Bayked, Abebe Kibret Assfaw, Husien Nurahmed Toleha, Segenet Zewdie, Gebeyaw Biset, Demilade Olusola Ibirongbe and Mesfin Haile Kahissay 2024			financing health, insurance literacy, internet access, illness experience, previous healthcare expenditure, hospital availability at district, type of healthcare provider, health service utilisation and quality, scheme trust and preference, impression of paying more, level of health insurance plan, having alternative health insurance, religious affiliation, level of empowerment, group and network connection, social capital cohesion and inclusion.		association between place of residence, gender, family size, employment status and WTP for NHI with studies reporting both negative and positive association. Age was consistently negatively associated with WTP for NHI as increased age lowered the WTP for NHI. A few studies found the relationship to be otherwise. Additionally, relative to the singles or unmarried households, married households were less likely to pay for NHI. Higher education and income levels was consistently associated with increased WTP for NHI. There was a positive association with knowledge and awareness about the scheme as well as access to internet with	

					WTP for NHI.	
Determinants of health insurance ownership among South African women By: Joses M Kirigia, Luis G Sambo, Benjamin Nganda, Germano M Mwabu, Rufaro Chatora and Takondwa Mwase. 2005	Data from the 1994 South African Health Inequalities Survey. 3,849 women were included. South Africa	Health insurance ownership or not.	Health rating, environment rating, residence, income, education, age, race, household size, occupation, employment status, smoking, alcohol use, contraceptive use, marital status	Logistic regression model	Relative to those who rated their health as poor or fair, those with excellent and good health were less likely to own health insurance. High income and increased age was positively associated with health insurance ownership whereas household size had a negative impact. Additionally, women who had completed at least a secondary (matriculation) education were twice as likely to have a health insurance policy compared to those with a lower level of education. Unlike single people, married women were more likely to have health insurance.	The dataset was not health insurance-specific, missing key details like premiums, co-payments, deductibles, covered benefits, and care quality.
Predicting health insurance uptake in Kenya using Random Forest: An	Data from 2021 FinAccess household Survey. Kenya	Whether an individual has health insurance or not	age, gender, income, and education level, savings usage, wealth quintile, and	Random Forest, XGBoost, and Logistic Regression.	Older individuals and those who were married were more likely to enrol in	Cross sectional data can only infer association and not causation.

analysis of socioeconomic and demographic factors By: Nelson Kimeli Kemboi Yego, Joseph Nkurunziza, Juma Kasozi 2023			geographic location		health insurance schemes. Furthermore, higher income levels/wealthier individuals and tertiary education were positively correlated with health insurance uptake. Rural residents (82.9%) were less likely to have health insurance than urban residents (71.1%). Those without savings (90.4%) were the least likely to take up insurance, compared to those with current (74.9%) or past savings (84.9%).	
Examining the level and inequality in health insurance coverage in 36 sub-Saharan African countries By: Edwine Barasa, Jacob Kazungu, Peter Nguhiu, Nirmala Ravishankar 2021	Recent demographic health surveys for 36 Sub-Saharan African countries.	Proportion of the population covered by health insurance and health insurance inequality.	Media exposure, socioeconomic status, education level, employment status	weighted proportions, concentration curves and concentration indices and a decomposition analysis using a generalized linear model.	Health insurance coverage in sub-Saharan Africa was generally low, with only four countries exceeding 20% coverage: Rwanda (78.7%), Ghana (58.2%), Gabon (40.8%), and Burundi (22.0%). The overall regional coverage	The cross-sectional design limits causal interpretations, while the exclusion of informal insurance schemes may underestimate coverage.

					was 7.9%, and insurance uptake was found to be pro-rich, as indicated by a concentration index of 0.4 ($p<0.001$). The primary contributors to this inequality were media exposure (50.3%), socioeconomic status (44.3%), and education level (41.6%).	
Willingness-to-Pay for Community-Based Health Insurance (CBHI) among Informal Workers in Urban Bangladesh. By: Sayem Ahmed, Mohammad Enamul Hoque, Abdur Razzaque Sarker, Marufa Sultana, Ziaul Islam, Rukhsana Gazi, Jahangir A. M. Khan. 2016	557 urban informal workers from Dhaka (a metropolitan city), Chandpur (a district town) and Nobinagar/Savar (a sub-district) in Bangladesh.	WTP for CBHI	Age, gender, marital status, household size, occupation, education level, monthly income of worker, household income, location.	Contingent valuation method and Multiple-regression analysis	Educational level, monthly income, location, and occupation significantly impacted WTP for CBHI. Workers with up to a primary education were willing to pay 26.9% less than those with less than a year of education. WTP increased by 0.196% for each 1% rise in monthly income. Workers in sub-district and district towns had significantly lower WTP (1.4% and 48.7% less)	Limited generalizability to the broader population as the study focused on urban informal workers.

					compared to those in metropolitan cities. Additionally, shopkeepers and restaurant workers were willing to pay significantly less than rickshaw-pullers (68.5% and 38.6% less, respectively).	

Part D: Appendix 3: Ethical approval letter

UNIVERSITY OF CAPE TOWN
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02 September 2024

HREC REF: 635/2024

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Dear Dr Alaba

PROJECT TITLE: FACTORS ASSOCIATED WITH PARTIAL HEALTH INSURANCE COVERAGE AMONG HOUSEHOLDS IN MALAWI-
(MASTER OF PUBLIC HEALTH-MISS JANE PHIRI)

Thank you for your response letter received 27 August 2024, addressing the issues raised by the Faculty of Health Sciences Human Research Ethics Committee (HREC).

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year until the 30 September 2025

Please submit a progress form, using the standardised Annual Report Form (FHS016) or FHS017 if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.
(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

The HREC acknowledge that the student: -Miss Jane Phiri will also be involved in this study.

Please quote HREC REF 635/2024 in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval, where necessary, before the research may occur.

Yours sincerely

pp **PROFESSOR MARC BLOCKMAN**
CHAIRPERSON, FACULTY OF HEALTH SCIENCES HUMAN RESEARCH ETHICS COMMITTEE

Federal Wide Assurance Number: FWA00001637. Institutional Review Board (IRB) number: IRB00001938 NHREC-registration number: REC-210208-007
This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Council for Harmonisation of

Technical Requirements for Pharmaceuticals for Human Use: Good Clinical Practice (ICH GCP), South African Good Clinical Practice Guidelines (DoH 2020), based on the Association of the British Pharmaceutical Industry Guidelines (ABPI), and Declaration of Helsinki (2013) guidelines. The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.

HREC/ref 635.2024

Part D: Appendix 4: BMC Public Health journal requirements

Available on: https://bmcpublichealth.biomedcentral.com/submission-guidelines/preparing-your-manuscript/research-article

Criteria

Research articles should report on original primary research or new experimental or computational methods, tests or procedures. Manuscripts reporting results of a clinical trial must conform to CONSORT 2010 guidelines. Authors of randomized controlled trials should submit a complete CONSORT checklist alongside their manuscript, available at www.consort-statement.org. Research articles may also report on systematic reviews of published research provided they adhere to the appropriate reporting guidelines which are detailed in our editorial policies. Please note that non-commissioned pooled analyses of selected published research and bibliometric analyses will not be considered. Studies reporting descriptive results from a single institution or region will only be considered if analogous data have not been previously published in a peer reviewed journal and the conclusions provide distinct insights that are of relevance to a regional or international audience.

Data sharing

BMC Public Health strongly supports open research, including transparency and openness in reporting. Further details of our Data availability policy can be found on the journal's About page.

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BMC Public Health will consider visual abstracts. As an author submitting to the journal, you may wish to make use of services provided at Springer Nature for high quality and affordable visual abstracts where you are entitled to a 20% discount. Click here to find out more about the service, and your discount will be automatically be applied when using this link.

Preparing your manuscript

The information below details the section headings that you should include in your manuscript and what information should be within each section.

Please note that your manuscript must include a 'Declarations' section including all of the subheadings (please see below for more information).

Title page

The title page should:

- present a title that includes, if appropriate, the study design e.g.:
    - "A versus B in the treatment of C: a randomized controlled trial", "X is a risk factor for Y: a case control study", "What is the impact of factor X on subject Y: A systematic review"
    - or for non-clinical or non-research studies a description of what the article reports
- list the full names and institutional addresses for all authors
    - if a collaboration group should be listed as an author, please list the Group name as an author. If you would like the names of the individual members of the Group to be searchable through their individual PubMed records, please include this information in the “Acknowledgements” section in accordance with the instructions below
    - Large Language Models (LLMs), such as ChatGPT, do not currently satisfy our authorship criteria. Notably an attribution of authorship carries with it accountability for the work, which cannot be effectively applied to LLMs. Use of an LLM should be properly documented in the Methods section (and if a Methods section is not available, in a suitable alternative part) of the manuscript.
- indicate the corresponding author

Abstract

The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the CONSORT extension for abstracts. The abstract must include the following separate sections:

- **Background:** the context and purpose of the study
- **Methods:** how the study was performed and statistical tests used
- **Results:** the main findings
- **Conclusions:** brief summary and potential implications

- **Trial registration:** If your article reports the results of a health care intervention on human participants, it must be registered in an appropriate registry and the registration number and date of registration should be stated in this section. If it was not registered prospectively (before enrollment of the first participant), you should include the words 'retrospectively registered'. See our editorial policies for more information on trial registration

Keywords
Three to ten keywords representing the main content of the article.
Background
The Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.
Methods
The methods section should include:

- the aim, design and setting of the study
- the characteristics of participants or description of materials
- a clear description of all processes, interventions and comparisons. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses
- the type of statistical analysis used, including a power calculation if appropriate

Results
This should include the findings of the study including, if appropriate, results of statistical analysis which must be included either in the text or as tables and figures.
Discussion
This section should discuss the implications of the findings in context of existing research and highlight limitations of the study.
Conclusions
This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study reported.
List of abbreviations
If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations should be provided.
Declarations
All manuscripts must contain the following sections under the heading 'Declarations':

- Ethics approval and consent to participate
- Consent for publication
- Availability of data and materials
- Competing interests
- Funding
- Authors' contributions
- Acknowledgements
- Authors' information (optional)

Please see below for details on the information to be included in these sections.
If any of the sections are not relevant to your manuscript, please include the heading and write 'Not applicable' for that section.
Ethics approval and consent to participate
Manuscripts reporting studies involving human participants, human data or human tissue must:

- include a statement on ethics approval and consent (even where the need for approval was waived)
- include the name of the ethics committee that approved the study and the committee's reference number if appropriate

Studies involving animals must include a statement on ethics approval and for experimental studies involving client-owned animals, authors must also include a statement on informed consent from the client or owner. See our editorial policies for more information.
If your manuscript does not report on or involve the use of any animal or human data or tissue, please state "Not applicable" in this section.
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If your manuscript contains any individual person's data in any form (including any individual details, images or videos), consent for publication must be obtained from that person, or in the case of children, their parent or legal guardian. All presentations of case reports must have consent for publication.
You can use your institutional consent form or our consent form if you prefer. You should not send the form to us on submission, but we may request to see a copy at any stage (including after publication).
See our editorial policies for more information on consent for publication.
If your manuscript does not contain data from any individual person, please state "Not applicable" in this section.

Availability of data and materials

All manuscripts must include an 'Availability of data and materials' statement. Data availability statements should include information on where data supporting the results reported in the article can be found including, where applicable, hyperlinks to publicly archived datasets analysed or generated during the study. By data we mean the minimal dataset that would be necessary to interpret, replicate and build upon the findings reported in the article. We recognise it is not always possible to share research data publicly, for instance when individual privacy could be compromised, and in such instances data availability should still be stated in the manuscript along with any conditions for access.
Authors are also encouraged to preserve search strings on searchRxiv https://searchrxiv.org/, an archive to support researchers to report, store and share their searches consistently and to enable them to review and re-use existing searches. searchRxiv enables researchers to obtain a digital object identifier (DOI) for their search, allowing it to be cited.
Data availability statements can take one of the following forms (or a combination of more than one if required for multiple datasets):

- The datasets generated and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS]
- The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.
- All data generated or analysed during this study are included in this published article [and its supplementary information files].
- The datasets generated and/or analysed during the current study are not publicly available due [REASON WHY DATA ARE NOT PUBLIC] but are available from the corresponding author on reasonable request.
- Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.
- The data that support the findings of this study are available from [third party name] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of [third party name].
- Not applicable. If your manuscript does not contain any data, please state 'Not applicable' in this section.

More examples of template data availability statements, which include examples of openly available and restricted access datasets, are available here.
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Hao Z, AghaKouchak A, Nakhjiri N, Farahmand A. Global integrated drought monitoring and prediction system (GIDMaPS) data sets. figshare. 2014. http://dx.doi.org/10.6084/m9.figshare.853801
With the corresponding text in the Availability of data and materials statement:
The datasets generated during and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS].[Reference number]
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Competing interests

All financial and non-financial competing interests must be declared in this section.
See our editorial policies for a full explanation of competing interests. If you are unsure whether you or any of your co-authors have a competing interest please contact the editorial office.

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Funding

All sources of funding for the research reported should be declared. If the funder has a specific role in the conceptualization, design, data collection, analysis, decision to publish, or preparation of the manuscript, this should be declared.

Authors' contributions

The individual contributions of authors to the manuscript should be specified in this section. Guidance and criteria for authorship can be found in our editorial policies.
Please use initials to refer to each author's contribution in this section, for example: "FC analyzed and interpreted the patient data regarding the hematological disease and the transplant. RH performed the histological examination of the kidney, and was a major contributor in writing the manuscript. All authors read and approved the final manuscript."

Acknowledgements

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Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.
Always use footnotes instead of endnotes.

Preparing main manuscript text

Quick points:

- Use double line spacing
- Include line and page numbering
- Use SI units: Please ensure that all special characters used are embedded in the text, otherwise they will be lost during conversion to PDF
- Do not use page breaks in your manuscript

Preparing figures

Back to top

When preparing figures, please follow the formatting instructions below.

- Figures should be numbered in the order they are first mentioned in the text, and uploaded in this order. Multi-panel figures (those with parts a, b, c, d etc.) should be submitted as a single composite file that contains all parts of the figure.
- Figures should be uploaded in the correct orientation.
- Figure titles (max 15 words) and legends (max 300 words) should be provided in the main manuscript, not in the graphic file.

- Figure keys should be incorporated into the graphic, not into the legend of the figure.
- Each figure should be closely cropped to minimize the amount of white space surrounding the illustration. Cropping figures improves accuracy when placing the figure in combination with other elements when the accepted manuscript is prepared for publication on our site. For more information on individual figure file formats, see our detailed instructions.
- Individual figure files should not exceed 10 MB. If a suitable format is chosen, this file size is adequate for extremely high quality figures.
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- Tables larger than one A4 or Letter page in length can be placed at the end of the document text file. Please cite and indicate where the table should appear at the relevant location in the text file so that the table can be added in the correct place during production.
- Larger datasets, or tables too wide for A4 or Letter landscape page can be uploaded as additional files. Please see [below] for more information.
- Tabular data provided as additional files can be uploaded as an Excel spreadsheet (.xls) or comma separated values (.csv). Please use the standard file extensions.
- Table titles (max 15 words) should be included above the table, and legends (max 300 words) should be included underneath the table.
- Tables should not be embedded as figures or spreadsheet files, but should be formatted using 'Table object' function in your word processing program.
- Color and shading may not be used. Parts of the table can be highlighted using superscript, numbering, lettering, symbols or bold text, the meaning of which should be explained in a table legend.
- Commas should not be used to indicate numerical values.

NB; There was no word limit specified even when BMC journal was contacted. The main word limit required is stated for the abstract only.

Part D: Appendix 5: Multiple Indicator Cluster Survey questionnaires.

MALAWI MICS 2019-20 QUESTIONNAIRES

The questionnaires of the Malawi MICS 2019-20 are presented in the Appendix

- Household questionnaire
- Questionnaire for Individual Women -
  Questionnaire for Individual Men
- Questionnaire for Children Under Five
- Questionnaire for Children Age 5-17

APPENDIX A

MICS

HOUSEHOLD QUESTIONNAIRE

Malawi Multiple Indicator Cluster Survey (MICS) 2019-20

HOUSEHOLD INFORMATION PANEL			HH
HH1. *Cluster number:* ___ ___ ___ ___		**HH2**. *Household number:* ___ ___	
HH3. *Interviewer's name and number:* NAME _____ ___ ___ ___		**HH4**. *Supervisor's name and number:* NAME _____ ___ ___ ___	
HH5. *Day / Month / Year of interview:* ___ ___ /___ ___ / 2 0 ___		**HH7**. *Districts:* CHITIPA....101 KARONGA....102 NKHATA BAY....103 RUMPHI....104 MZIMBA....105 LIKOMA....106 MZUZU CITY....107 KASUNGU....201 NKHOTAKOTA....202 NTCHISI....203 DOWA....204 SALIMA....205 LILONGWE RURAL....206 MCHINJI....207 DEDZA....208 NTCHEU....209 LILONGWE CITY....210 MANGOCHI....301 MACHINGA....302 ZOMBA RURAL....303 CHIRADZULU....304 BLANTYRE RURAL....305 MWANZA....306 THYOLO....307 MULANJE....308 PHALOMBE....309 CHIKWAWA....310 NSANJE....311 BALAKA....312 NENO....313 ZOMBA CITY....314 BLANTYRE CITY....315	
HH6. *Area:*	URBAN....1 RURAL....2		
HH8. *Is the household selected for Questionnaire for Men?*	YES....1 NO....2		
HH9. *Is the household selected for Water Quality Testing?*	YES....1 NO....2	**HH10**. *Is the household selected for blank water testing?*	YES....1 NO....2

Check that the respondent is a knowledgeable member of the household and at least 18 years old before proceeding. You may only interview a child age 15-17 if there is no adult member of the household or all adult members are incapacitated. You may not interview a child under age 15.	**HH11**. *Record the time.* HOURS : MINUTES __ __ : __ __
HH12. Hello, my name is (***your name***). We are from the National Statistical Office. We are conducting a survey about the situation of children, families and households. I would like to talk to you about these subjects. This interview usually takes about **40** minutes. Following this, I may ask to conduct additional interviews with you or other individual members of your household. All the information we obtain will remain strictly confidential and anonymous. If you do not wish to answer a question or stop the interview, please let me know. May I start now?	
YES....1 NO / NOT ASKED....2	1⇨*LIST OF HOUSEHOLD MEMBERS* 2⇨*HH46*

HH46. *Result of Household Questionnaire interview:* *Discuss any result not completed with Supervisor.*	COMPLETED ..... 01 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT ..... 02 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME ..... 03 REFUSED ..... 04 DWELLING VACANT OR ADDRESS NOT A DWELLING ..... 05 DWELLING DESTROYED ..... 06 DWELLING NOT FOUND ..... 07 OTHER (*specify*) _____ 96

HH47. *Name and line number of the respondent to Household Questionnaire interview:* NAME_____ ___ ___
~~HOUSEHOLD MEMBERS~~
~~WOMEN AGE 15-49~~
If household is selected for Questionnaire for Men: ~~MEN AGE 15-49~~
~~CHILDREN UNDER AGE 5~~
CHILDREN AGE 5-17

To be filled after the Household Questionnaire is completed	
TOTAL NUMBER	
~~**HH48**~~	
HH49	__ __
HH50	__ __
HH51	__ __
HH52	__ __

To be filled after <u>all</u> the questionnaires are completed	
COMPLETED NUMBER	
HH53	__ __
HH54	__ __
HH55	__ __
HH56	ZERO ..... 0 ONE..... 1

LIST OF HOUSEHOLD MEMBERS **HL**

First complete HL2-HL4 vertically for all household members, starting with the head of the household. Once HL2-HL4 are complete for all members, make sure to probe for additional members: Those that are not currently at home, any infants or small children and any others who may not be family (such as servants, friends) but who usually live in the household.

Then, ask questions HL5-HL20 for each member one at a time. If additional questionnaires are used, indicate by ticking this box:..... ☐

HL1. *Line number*	**HL2**. First, please tell me the name of each person who usually lives here, starting with the head of the household. *Probe for additional household members.*	**HL3**. What is the relationship of (***name***) to (***name of the head of household***)?	**HL4**. Is (***name***) male or female? 1 MALE 2 FEMALE	**HL5**. What is (***name***)'s date of birth? 98 DK		**HL6**. How old is (***name***)? *Record in completed years.* *If age is 95 or above, record '95'.*	**HL7**. Did (***name***) stay here last night? 1 YES 2 NO	**HL8**. *Record line number if woman and age 15-49.*	**HL9**. *Record line number if man, age 15-49 and HH8 is yes.*	**HL10**. *Record line number if age 0-4.*	**HL11**. *Age 0-17?* 1 YES 2 NO ↘ *Next Line*	**HL12**. Is (***name***)'s natural mother alive? 1 YES 2 NO ↘ *HL16* 8 DK ↘ *HL16*	**HL13**. Does (***name***)'s natural mother live in this household? 1 YES 2 NO ↘ *HL15*	**HL14**. *Record the line number of mother and go to HL16.*	**HL15**. Where does (***name***)'s natural mother live? 1 ABROAD 2 IN ANOTHER HOUSEHOLD IN THE SAME DISTRICT 3 IN ANOTHER HOUSEHOLD IN ANOTHER DISTRICT 4 INSTITUTION IN THIS COUNTRY DK	**HL16**. Is (***name***)'s natural father alive? 1 YES 2 NO ↘ *HL20* 8 DK ↘ *HL20*	**HL17**. Does (***name***)'s natural father live in this household? 1 YES 2 NO ↘ *HL19*	**HL18**. *Record the line number of father and go to HL20.*	**HL19**. Where does (***name***)'s natural father live? 1 ABROAD 2 IN ANOTHER HOUSEHOLD IN THE SAME DISTRICT 3 IN ANOTHER HOUSEHOLD IN ANOTHER DISTRICT 4 INSTITUTION IN THIS COUNTRY 8 DK	**HL20**. *Copy the line number of mother from HL14. If blank, ask:* Who is the primary caretaker of (***name***)? *If 'No one' for a child age 15-17, record '90'.*
LINE	NAME	RELATION*	M F	MONTH	YEAR	AGE	Y N	W 15-49	M 15-49	0-4	Y N	Y N DK	Y N	MOTHER		Y N DK	Y N	FATHER		
01		0 1	1 2	__ __	__ __	__ __	1 2	01	01	01	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
02		__ __	1 2	__ __	__ __	__ __	1 2	02	02	02	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
03		__ __	1 2	__ __	__ __	__ __	1 2	03	03	03	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
04		__ __	1 2	__ __	__ __	__ __	1 2	04	04	04	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
05		__ __	1 2	__ __	__ __	__ __	1 2	05	05	05	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
06		__ __	1 2	__ __	__ __	__ __	1 2	06	06	06	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
07		__ __	1 2	__ __	__ __	__ __	1 2	07	07	07	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
08		__ __	1 2	__ __	__ __	__ __	1 2	08	08	08	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
09		__ __	1 2	__ __	__ __	__ __	1 2	09	09	09	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
10		__ __	1 2	__ __	__ __	__ __	1 2	10	10	10	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
11		__ __	1 2	__ __	__ __	__ __	1 2	11	11	11	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
12		__ __	1 2	__ __	__ __	__ __	1 2	12	12	12	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
13		__ __	1 2	__ __	__ __	__ __	1 2	13	13	13	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
14		__ __	1 2	__ __	__ __	__ __	1 2	14	14	14	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___
15		__ __	1 2	__ __	__ __	__ __	1 2	15	15	15	1 2	1 2 8	1 2	__ __	1 2 3 4 8	1 2 8	1 2	__ __	1 2 3 4 8	___ ___

* *Codes for **HL3**: Relationship to head of household:*

01 HEAD
02 SPOUSE / PARTNER
03 SON / DAUGHTER
04 SON-IN-LAW / DAUGHTER-IN-LAW
05 GRANDCHILD
06 PARENT
07 PARENT-IN-LAW
08 BROTHER / SISTER
09 BROTHER-IN-LAW / SISTER-IN-LAW
10 UNCLE/AUNT
11 NIECE / NEPHEW
12 OTHER RELATIVE
13 ADOPTED / FOSTER / STEPCHILD
14 SERVANT (LIVE-IN)
96 OTHER (NOT RELATED)
98 DK

EDUCATION 1 — ED

ED1. Line number	ED2. Name and age. Copy names and ages of all members of the household from HL2 and HL6 to below and to next page of the module.		ED3. Age 3 or above? 1 YES 2 NO↘ Next Line		ED4. Has (**name**) ever attended school or any Early Childhood Education programme? 1 YES 2 NO↘ Next Line		ED5. What is the highest level and grade or year of school (**name**) has ever attended?		ED6. Did (**name**) ever complete that (grade/ year)? 1 YES 2 NO 8 DK			ED7. Age 3-24? 1 YES 2 NO↘ Next Line		ED8. Check ED4: Ever attended school or ECE? 1 YES 2 NO↘ Next Line	
LINE	NAME	AGE	YES	NO	YES	NO	LEVEL: 0 ECE↘ ED7; 1 PRIMARY; 2 LOWER SECONDARY; 3 UPPER SECONDARY; 4 HIGHER; 5 VOCATION TRAINING; 8 DK — LEVEL		CLASS/GRADE/YEAR: 98 DK↘ ED7 — CLASS/GRADE/YEAR		Y	N	DK	YES	NO	YES	NO
01		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
02		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
03		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
04		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
05		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
06		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
07		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
08		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
09		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
10		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
11		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
12		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
13		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
14		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2
15		__ __	1	2	1	2	0 1 2 3 4 5 8		__ __		1	2	8	1	2	1	2

EDUCATION 2 **ED**

ED1. *Line number*	**ED2**. *Name and age.*		**ED9**. At any time during the 2019/2020 school year did (***name***) attend school or any Early Childhood Education programme? 1 YES 2 NO ⇘ *ED15*	**ED10**. During this 2019/2020 school year, which level and grade or year is (***name***) attending? LEVEL: 0 ECE ⇘ *ED15* 1 PRIMARY 2 LOWER SECONDARY 3 UPPER SECONDARY 4 HIGHER 5 VOCATION TRAINING 8 DK	CLASS/ YEAR: 98 DK	**ED11**. Is (he/she) attending a public school? *If "Yes", record '1'. If "No", probe to code who controls and manages the school.* 1 GOVT./ PUBLIC 2 RELIGIOUS/ FAITH ORG. 3 PRIVATE 6 OTHER 8 DK	**ED12**. In the 2019/2020 school year, has (***name***) received any school tuition support? *If "Yes", probe to ensure that support was not received from family, other relatives, friends or neighbours.* 1 YES 2 NO ⇘ *ED14* 8 DK ⇘ *ED14*	**ED13**. Who provided the tuition support? *Record all mentioned.* A GOVT. / PUBLIC B RELIGIOUS/ FAITH ORG. C PRIVATE. X OTHER Z DK	**ED14**. For the 2019/2020 school year, has (***name***) received any material support or cash to buy shoes, exercise books, notebooks, school uniforms or other school supplies? *If "Yes", probe to ensure that support was not received from family, other relatives, friends or neighbours.* 1 YES 2 NO 8 DK	**ED15**. At any time during the previous 2018/2019 school year did (***name***) attend school or any Early Childhood Education programme? 1 YES 2 NO ⇘ *Next Line* 8 DK ⇘ *Next Line*	**ED16**. During previous 2018/2019 school year, which level and grade or year did (***name***) attend? LEVEL: 0 ECE ⇘ *Next Line* 1 PRIMARY 2 LOWER SECONDARY 3 UPPER SECONDARY 4 HIGHER 5 VOCATION TRAINING 8 DK	CLASS/ YEAR: 98 DK
LINE	NAME	AGE	YES NO	LEVEL	CLASS/ YEAR	AUTHORITY	YES NO DK	TUITION	YES NO DK	YES NO DK	LEVEL	CLASS/ YEAR
01		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
02		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
03		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
04		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
05		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
06		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
07		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
08		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
09		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
10		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
11		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
12		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
13		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
14		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___
15		___ ___	1 2	0 1 2 3 4 5 8	___ ___	1 2 3 6 8	1 2 8	A B C X Z	1 2 8	1 2 8	0 1 2 3 4 5 8	___ ___

HOUSEHOLD CHARACTERISTICS		H
HC1A. What is the religion of (***name of the head of the household from HL2***)?	CHRISTIANITY ..... 01 ISLAM ..... 02 HINDUISM ..... 03 BUDDHISM ..... 04 TRADITION ..... 05 OTHER RELIGION (*specify*) _____ 06 NO RELIGION 07	
HC1B. What is the mother tongue language of (***name of the head of the household from HL2***)?	CHICHEWA ..... 01 CHITUMBUKA ..... 02 CHIYAO ..... 03 CHILOMWE ..... 04 CHITONGA ..... 05 CHISENA ..... 06 CHINKHONDE ..... 07 CHINGONI ..... 08 OTHER LANGUAGE (*specify*) _____ 96	
HC2. To what ethnic group/tribe does (***name of the head of the household from HL2***) belong?	CHEWA ..... 01 TUMBUKA ..... 02 YAO ..... 03 LOMWE ..... 04 TONGA ..... 05 SENA ..... 06 NKHONDE ..... 07 NGONI ..... 08 OTHER (*specify*) _____ 96	
HC3. How many rooms do members of this household usually use for sleeping? *Probe for rooms build for sleeping by children when they reach puberty (around age 12) and include them as part of the household.*	NUMBER OF ROOMS ..... __ __	
HC4. *Main material of the dwelling floor.* *Record observation.* *If observation is not possible, ask the respondent to determine the material of the dwelling floor.*	**NATURAL FLOOR** EARTH / SAND ..... 11 DUNG ..... 12 **RUDIMENTARY FLOOR** WOOD PLANKS ..... 21 PALM / BAMBOO ..... 22 **FINISHED FLOOR** PARQUET OR POLISHED WOOD ..... 31 VINYL OR ASPHALT STRIPS ..... 32 CERAMIC TILES ..... 33 CEMENT ..... 34 CARPET ..... 35 OTHER (*specify*) _____ 96	

HC5. *Main material of the roof.* *Record observation.*	NO ROOF ..... 11 **NATURAL ROOFING** THATCH / PALM LEAF ..... 12 **RUDIMENTARY ROOFING** RUSTIC MAT ..... 21 PALM / BAMBOO ..... 22 WOOD PLANKS ..... 23 CARDBOARD ..... 24 **FINISHED ROOFING** IRON SHEETS/METAL/TIN ..... 31 WOOD ..... 32 CALAMINE / CEMENT FIBRE ..... 33 CERAMIC TILES ..... 34 CEMENT ..... 35 ROOFING SHINGLES ..... 36 OTHER (*specify*)_____ 96	
HC6. *Main material of the exterior walls.* *Record observation.*	NO WALLS ..... 11 **NATURAL WALLS** CANE / PALM / TRUNKS ..... 12 DIRT ..... 13 **RUDIMENTARY WALLS** BAMBOO WITH MUD ..... 21 STONE WITH MUD ..... 22 UNCOVERED ADOBE (UNBURNT BRICKS) ..... 23 PLYWOOD ..... 24 CARDBOARD ..... 25 REUSED WOOD ..... 26 **FINISHED WALLS** CEMENT ..... 31 STONE WITH LIME / CEMENT ..... 32 BRICKS (BURNT) ..... 33 CEMENT BLOCKS ..... 34 COVERED ADOBE ..... 35 WOOD PLANKS / SHINGLES ..... 36 OTHER (*specify*)_____ 96	
HC7. Does your household have	YES NO	
[A] A fixed telephone line?	FIXED TELEPHONE LINE 1 2	
[B] A radio?	RADIO 1 2	
[C] Bed?	BED 1 2	
[D] A Sofa?	SOFA 1 2	
[E] A Chair?	CHAIR 1 2	
[F] A water storage tank?	WATER STORAGE TANK 1 2	
[G] Watch?	WATCH 1 2	
HC8. Does your household have electricity?	YES, INTERCONNECTED GRID ..... 1 YES, OFF-GRID (GENERATOR/ISOLATED SYSTEM/SOLAR) ..... 2 NO 3	3⇨*HC10*

HC9. Does your household have: [A] A television? [B] A refrigerator? [C] A water pump? [D] A sewing machine? [E] A DVD player/Home theater?	YES NO TELEVISION.....1 2 REFRIGERATOR .....1 2 WATER PUMP.....1 2 SEWING MACHINE.....1 2 DVD PLAYER.....1 2	
HC10. Does any member of your household own: [A] [A] Torch/Battery lamp/Bulb [B] A bicycle? [C] A motorcycle or scooter? [D] An animal-drawn cart? [E] A car, truck or van? [F] A boat with a motor? [G] A fishing net? [H] A canoe	**YES NO** TOURCH/BATTERY LAMP/BULB .....1 2 BICYCLE .....1 2 MOTORCYCLE / SCOOTER .....1 2 ANIMAL-DRAWN CART .....1 2 CAR / TRUCK / VAN.....1 2 BOAT WITH MOTOR.....1 2 FISHING NET .....1 2 CANOE.....1 2	
HC11. Does any member of your household have a computer or a tablet?	YES .....1 NO 2	
HC12. Does any member of your household have a mobile telephone?	YES .....1 NO 2	
HC13. Does your household have access to internet at home?	YES .....1 NO 2	
HC14. Do you or someone living in this household own this dwelling? *If 'No', then ask:* Do you rent this dwelling from someone not living in this household? *If 'Rented from someone else', record '2'. For other responses, record '6' and specify.*	OWN.....1 RENT.....2 OTHER (*specify)*_____ 6	
HC15. Does any member of this household own any land that can be used for agriculture?	YES .....1 NO 2	2⇨*HC17*
HC16. How many hectares/acres/football pitches of agricultural land do members of this household own? *If less than 1, record '00'.*	HECTARE…… .___ ___. ___ ACRES .....___ ___. ___ FOOTBALL PITCHES.....___ ___. ___ 95 OR MORE.....95 DK 98	

HC17. Does this household own any livestock, herds, other farm animals, or poultry?	YES .....1 NO 2	2⇨*HC19*
HC18. How many of the following animals does this household have? [A] Milk cows or bulls? [B] Other cattle? [C] Horses, donkeys or mules [D] Goats? [E] Sheep? [F] Chickens? [G] Pigs? [H] Other poultry (Turkey, Quails, Guinea fowl) *If none, record '00'. If 95 or more, record '95'.* *If unknown, record '98'.*	 MILK COWS OR BULLS.....___ ___ OTHER CATTLE.....___ ___ HORSES, DONKEYS OR MULES.....___ ___ GOATS.....___ ___ SHEEP .....___ ___ CHICKENS .....___ ___ PIGS.....___ ___ OTHER POULTRY .....___ ___	
HC19. Does any member of this household have a bank account?	YES .....1 NO 2	

SOCIAL TRANSFERS						ST
ST1. I would like to ask you about various external economic assistance programmes provided to households. By external assistance I mean support that comes from the government or from non-governmental organizations such as religious, charitable, or community-based organizations. This excludes support from family, other relatives, friends or neighbours.						
	[A] SOCIAL CASH TRANSFER	[B] FARM INPUTS (SUBSIDISED OR FREE) (ZIPANGIZO ZA ULIMI)	[C] PUBLIC WORKS (MASAF)	[D] ANY RETIREMENT PENSION	[X] ANY OTHER EXTERNAL ASSISTANCE PROGRAMME (CHITHANDIZO CHINA CHILICHONSE)	
ST2. Are you aware of (***name of programme***)?	YES ..... 1 NO ..... 2 ↘ *[B]*	YES ..... 1 NO ..... 2 ↘ *[C]*	YES ..... 1 NO ..... 2 ↘ *[D]*	YES ..... 1 NO ..... 2 ↘ *[X]*	YES (*specify*)_____ 1 NO ..... 2 ↘ *End*	
ST3. Has your household or anyone in your household received assistance through (***name of programme***)?	YES ..... 1 ↘ *ST4* NO ..... 2 ↘ *[B]* DK ..... 8 ↘ *[B]*	YES ..... 1 ↘ *ST4* NO ..... 2 ↘ *[C]* DK ..... 8 ↘ *[C]*	YES ..... 1 ↘ *ST4* NO ..... 2 ↘ *[D]* DK ..... 8 ↘ *[D]*	YES ..... 1 ↘ *ST4* NO ..... 2 ↘ *[X]* DK ..... 8 ↘ *[X]*	YES ..... 1 ↘ *ST4* NO ..... 2 ↘ *End* DK ..... 8 ↘ *End*	
ST4. When was the last time your household or anyone in your household received assistance through (***name of programme***)? *If less than one month, record '1' and record '00' in Months.* *If less than 12 months, record '1' and record in Months.* *If 1 year/12 months or more, record '2' and record in Years.*	MONTHS AGO ..... **1** __ __ ↘ *[B]* YEARS AGO ..... **2** __ __ ↘ *[B]* DK ..... 998 ↘ *[B]*	MONTHS AGO ..... **1** __ __ ↘ *[C]* YEARS AGO ..... **2** __ __ ↘ *[C]* DK ..... 998 ↘ *[C]*	MONTHS AGO ..... **1** __ __ ↘ *[D]* YEARS AGO ..... **2** __ __ ↘ *[D]* DK ..... 998 ↘ *[D]*	MONTHS AGO ..... **1** __ __ ↘ *[X]* YEARS AGO ..... **2** __ __ ↘ *[X]* DK ..... 998 ↘ *[X]*	MONTHS AGO ..... **1** __ __ ↘ *End* YEARS AGO ..... **2** __ __ ↘ *End* DK ..... 998 ↘ *End*	

HOUSEHOLD ENERGY USE		EU
EU1. In your household, what type of cookstove is mainly used for cooking?	ELECTRIC STOVE ..... 01 SOLAR COOKER ..... 02 LIQUEFIED PETROLEUM GAS (LPG)/ COOKING GAS STOVE..... 03 PIPED NATURAL GAS STOVE ..... 04 BIOGAS STOVE ..... 05 LIQUID FUEL STOVE ..... 06 MANUFACTURED SOLID FUEL STOVE ..... 07 TRADITIONAL SOLID FUEL STOVE ..... 08 THREE STONE STOVE / OPEN FIRE ..... 09 OTHER (*specify*) _____ 96 NO FOOD COOKED IN HOUSEHOLD 97	01⇨*EU5* 02⇨*EU5* 03⇨*EU5* 04⇨*EU5* 05⇨*EU5* 06⇨*EU4* 09⇨*EU4* 96⇨*EU4* 97⇨*EU6*
EU2. Does it have a chimney?	YES..... 1 NO ..... 2 DK..... 8	
EU3. Does it have a fan?	YES..... 1 NO ..... 2 DK..... 8	
EU4. What type of fuel or energy source is used in this cookstove? *Probe to specify the exact type if energy used.* *If more than one, record the main energy source for this cookstove.*	ALCOHOL / ETHANOL ..... 01 GASOLINE / DIESEL ..... 02 KEROSENE / PARAFFIN..... 03 COAL / LIGNITE ..... 04 CHARCOAL ..... 05 WOOD ..... 06 CROP RESIDUE / GRASS / STRAW / SHRUBS ..... 07 ANIMAL DUNG / WASTE..... 08 PROCESSED BIOMASS (PELLETS) OR WOODCHIPS/BRIQUETTES..... 09 GARBAGE / PLASTIC..... 10 SAWDUST ..... 11 OTHER (*specify*) _____ 96	
EU5. Is the cooking usually done in the house, in a separate building, or outdoors? *If in main house, probe to determine if cooking is done in a separate room.* *If outdoors, probe to determine if cooking is done on veranda, covered porch, or open air.*	IN MAIN HOUSE NO SEPARATE ROOM..... 1 IN A SEPARATE ROOM..... 2 IN A SEPARATE BUILDING..... 3 OUTDOORS OPEN AIR..... 4 ON VERANDA OR COVERED PORCH ..... 5 OTHER (*specify*) _____ 6	
~~**EU6**. What does your household mainly use for space heating~~ when needed?	CENTRAL HEATING..... 01 MANUFACTURED SPACE HEATER ..... 02 TRADITIONAL SPACE HEATER ..... 03 MANUFACTURED COOKSTOVE..... 04 TRADITIONAL COOKSTOVE ..... 05 THREE STONE STOVE / OPEN FIRE ..... 06 OTHER (*specify*) _____ 96 NO SPACE HEATING IN HOUSEHOLD 97	01⇨*EU8* 06⇨*EU8* 96⇨*EU8* 97⇨*EU9*
EU7. Does it have a chimney?	YES..... 1 NO ..... 2 DK..... 8	

EU8. What type of fuel and energy source is used in this heater? *If more than one, record the main energy source for this heater.*	SOLAR AIR HEATER ..... 01 ELECTRICITY ..... 02 PIPED NATURAL GAS ..... 03 LIQUEFIED PETROLEUM GAS (LPG)/ COOKING GAS ... 04 BIOGAS ..... 05 ALCOHOL / ETHANOL ..... 06 GASOLINE (PETROL) / DIESEL ..... 07 KEROSENE / PARAFFIN ..... 08 COAL / LIGNITE ..... 09 CHARCOAL ..... 10 WOOD ..... 11 CROP RESIDUE / GRASS / STRAW / SHRUBS ..... 12 ANIMAL DUNG / WASTE ..... 13 PROCESSED BIOMASS (PELLETS) OR WOODCHIPS/BRIQUETTES ..... 14 GARBAGE / PLASTIC ..... 15 SAWDUST ..... 16 OTHER (*specify*) _____ 96	
EU9. At night, what does your household <u>mainly</u> use to <u>light</u> the household?	ELECTRICITY ..... 01 SOLAR LANTERN ..... 02 RECHARGEABLE FLASHLIGHT, TORCH OR LANTERN ..... 03 BATTERY POWERED FLASHLIGHT, TORCH OR LANTERN ..... 04 BIOGAS LAMP ..... 05 GASOLINE LAMP ..... 06 KEROSENE OR PARAFFIN LAMP ..... 07 CHARCOAL ..... 08 WOOD ..... 09 CROP RESIDUE / GRASS / STRAW / SHRUBS ..... 10 ANIMAL DUNG / WASTE ..... 11 OIL LAMP ..... 12 CANDLE ..... 13 OTHER (*specify*) _____ 96 NO LIGHTING IN HOUSEHOLD 97	

INSECTICIDE TREATED NETS		TN
TN1. Does your household have any mosquito nets?	YES ..... 1 NO 2	2⇨*End*
TN2. How many mosquito nets does your household have?	NUMBER OF NETS ..... ___ ___	

	1ST NET	2ND NET	3RD NET
TN3. *Ask the respondent to show you all the nets in the household.*	OBSERVED ..... 1 NOT OBSERVED 2	OBSERVED ..... 1 NOT OBSERVED 2	OBSERVED ..... 1 NOT OBSERVED 2
TN4. How many months ago did your household get the mosquito net? *If less than one month, record '00'.*	MONTHS AGO ..... ___ ___ MORE THAN 36 MONTHS AGO ..... 95 DK / NOT SURE 98	MONTHS AGO ..... ___ ___ MORE THAN 36 MONTHS AGO ..... 95 DK / NOT SURE 98	MONTHS AGO ..... ___ ___ MORE THAN 36 MONTHS AGO ..... 95 DK / NOT SURE 98
TN5. *Observe or ask the brand/type of mosquito net.* *If brand is unknown and you cannot observe the net, show pictures of typical net types/brands to respondent.*	**LONG-LASTING INSECTICIDE TREATED NETS (LLIN)** DAWA ..... 11 OLYSET ..... 12 OLYSET PLUS ..... 13 CHITETEZO NET ..... 14 DURA NET ..... 15 PERMA NET ..... 16 OTHER BRAND (*specify*) _____ 26 DK BRAND ..... 28 OTHER TYPE (*specify*) _____ 36 DK BRAND/TYPE 98	**LONG-LASTING INSECTICIDE TREATED NETS (LLIN)** DAWA ..... 11 OLYSET ..... 12 OLYSET PLUS ..... 13 CHITETEZO NET ..... 14 DURA NET ..... 15 PERMA NET ..... 16 OTHER BRAND (*specify*) _____ 26 DK BRAND ..... 28 OTHER TYPE (*specify*) _____ 36 DK BRAND/TYPE 98	**LONG-LASTING INSECTICIDE TREATED NETS (LLIN)** DAWA ..... 11 OLYSET ..... 12 OLYSET PLUS ..... 13 CHITETEZO NET ..... 14 DURA NET ..... 15 PERMA NET ..... 16 OTHER BRAND (*specify*) _____ 26 DK BRAND ..... 28 OTHER TYPE (*specify*) _____ 36 DK BRAND/TYPE 98
TN10. Did you get the net through a ITN Mass distribution campaign, during an antenatal care visit, or during an immunization visit?	YES, ITN MASS DISTRIBUTION CAMPAIGN ..... 1 YES, ANC ..... 2 YES, IMMUNIZATION ..... 3 NO ..... 4 DK 8	YES, ITN MASS DISTRIBUTION CAMPAIGN ..... 1 YES, ANC ..... 2 YES, IMMUNIZATION ..... 3 NO ..... 4 DK 8	YES, ITN MASS DISTRIBUTION CAMPAIGN ..... 1 YES, ANC ..... 2 YES, IMMUNIZATION ..... 3 NO ..... 4 DK 8
TN11. *Check TN10: Is TN10=4 or 8?*	YES ..... 1 NO ..... 2 ↘ *TN13*	YES ..... 1 NO ..... 2 ↘ *TN13*	YES ..... 1 NO ..... 2 ↘ *TN13*
TN12. Where did you get the net?	GOVERNMENT HEALTH FACILITY ..... 01 PRIVATE HEALTH FACILITY ..... 02 PHARMACY ..... 03 SHOP / MARKET /STREET ..... 04 COMMUNITY HEALTH WORKER (HAS) ..... 05 RELIGIOUS INSTITUTION ..... 06 SCHOOL ..... 07 OTHER ..... 96 DK 98	GOVERNMENT HEALTH FACILITY ..... 01 PRIVATE HEALTH FACILITY ..... 02 PHARMACY ..... 03 SHOP / MARKET / STREET ..... 04 COMMUNITY HEALTH WORKER (HAS) ..... 05 RELIGIOUS INSTITUTION ..... 06 SCHOOL ..... 07 OTHER ..... 96 DK 98	GOVERNMENT HEALTH FACILITY ..... 01 PRIVATE HEALTH FACILITY ..... 02 PHARMACY ..... 03 SHOP / MARKET / STREET ..... 04 COMMUNITY HEALTH WORKER (HAS) ..... 05 RELIGIOUS INSTITUTION ..... 06 SCHOOL ..... 07 OTHER ..... 96 DK 98
TN13. Did anyone sleep under this mosquito net last night?	YES ..... 1 NO ..... 2 DK / NOT SURE 8	YES ..... 1 NO ..... 2 DK / NOT SURE 8	YES ..... 1 NO ..... 2 DK / NOT SURE 8
TN14. *Check TN13: Did anyone sleep under the net (TN13=1)?*	YES ..... 1 NO ..... 2 ↘ *TN16*	YES ..... 1 NO ..... 2 ↘ *TN16*	YES ..... 1 NO ..... 2 ↘ *TN16*

TN15. Who slept under this mosquito net last night? *Record the person's line number from the LIST OF HOUSEHOLD MEMBERS.* *If someone not in the LIST OF HOUSEHOLD MEMBERS slept under the mosquito net, record '00'.*	NAME #1 _____ LINE NUMBER ..... ___ ___ NAME #2 _____ LINE NUMBER ..... ___ ___ NAME #3 _____ LINE NUMBER ..... ___ ___ NAME #4 _____ LINE NUMBER ..... ___ ___	NAME #1 _____ LINE NUMBER ..... ___ ___ NAME #2 _____ LINE NUMBER ..... ___ ___ NAME #3 _____ LINE NUMBER ..... ___ ___ NAME #4 _____ LINE NUMBER ..... ___ ___	NAME #1 _____ LINE NUMBER ..... ___ ___ NAME #2 _____ LINE NUMBER ..... ___ ___ NAME #3 _____ LINE NUMBER ..... ___ ___ NAME #4 _____ LINE NUMBER ..... ___ ___
TN16. *Is there another net?*	YES ..... 1 ↘ *Next Net* NO ..... 2 ↘ *End*	YES ..... 1 ↘ *Next Net* NO ..... 2 ↘ *End*	YES ..... 1 ↘ *Next Net* NO ..... 2 ↘ *End*
			Tick here if additional questionnaire used: ..... ☐

WATER AND SANITATION		WS
WS1. What is the main source of drinking water used by members of your household? *If unclear, probe to identify the place from which members of this household most often collect drinking water (collection point).*	**PIPED WATER** PIPED INTO DWELLING ..... 11 PIPED TO YARD / PLOT ..... 12 PIPED TO NEIGHBOUR ..... 13 PUBLIC TAP / STANDPIPE ..... 14 TUBE WELL / BOREHOLE ..... 21 **DUG WELL** PROTECTED WELL ..... 31 UNPROTECTED WELL ..... 32 **SPRING** PROTECTED SPRING ..... 41 UNPROTECTED SPRING ..... 42 RAINWATER ..... 51 TANKER-TRUCK ..... 61 CART WITH SMALL TANK ..... 71 SURFACE WATER (RIVER, DAM, LAKE, POND, STREAM, CANAL, IRRIGATION CHANNEL) ..... 81 **PACKAGED WATER** BOTTLED WATER ..... 91 SACHET WATER ..... 92 OTHER (*specify*) _____ 96	11⇨*WS7* 12⇨*WS7* 13⇨*WS3* 14⇨*WS3* 21⇨*WS3* 31⇨*WS3* 32⇨*WS3* 41⇨*WS3* 42⇨*WS3* 51⇨*WS3* 61⇨*WS4* 71⇨*WS4* 81⇨*WS3* 96⇨*WS3*
WS2. What is the main source of water used by members of your household for other purposes such as cooking and handwashing? *If unclear, probe to identify the place from which members of this household most often collect water for other purposes.*	**PIPED WATER** PIPED INTO DWELLING ..... 11 PIPED TO YARD / PLOT ..... 12 PIPED TO NEIGHBOUR ..... 13 PUBLIC TAP / STANDPIPE ..... 14 TUBE WELL / BOREHOLE ..... 21 **DUG WELL** PROTECTED WELL ..... 31 UNPROTECTED WELL ..... 32 **SPRING** PROTECTED SPRING ..... 41 UNPROTECTED SPRING ..... 42 RAINWATER ..... 51 TANKER-TRUCK ..... 61 CART WITH SMALL TANK ..... 71 SURFACE WATER (RIVER, DAM, LAKE, POND, STREAM, CANAL, IRRIGATION CHANNEL) ..... 81 OTHER (*specify*) _____ 96	11⇨*WS7* 12⇨*WS7* 61⇨*WS4* 71⇨*WS4*
~~**WS3**. Where is that water source located?~~	~~IN OWN DWELLING ..... 1~~ IN OWN YARD / PLOT ..... 2 ELSEWHERE 3	~~1⇨*WS7*~~ 2⇨*WS7*
~~**WS4**. How long does it take for members of your household to~~ go there, get water, and come back?	~~MEMBERS DO NOT COLLECT ..... 000~~ NUMBER OF MINUTES ..... __ __ __ DK 998	~~000⇨*WS7*~~
~~**WS5**. Who usually goes to this source to collect the water for~~ your household? *Record the name of the person and copy the line number of this person from the LIST OF HOUSEHOLD MEMBERS Module.*	NAME _____ LINE NUMBER ..... __ __	
WS6. Since last (***day of the week***), how many times has this person collected water?	NUMBER OF TIMES ..... __ __ DK 98	

WS7. In the last month, has there been any time when your household did not have sufficient quantities of drinking water?	YES, AT LEAST ONCE .....1 NO, ALWAYS SUFFICIENT .....2 DK 8	 2⇨*WS9* 8⇨*WS9*
WS8. What was the main reason that you were unable to access water in sufficient quantities when needed?	WATER NOT AVAILABLE FROM SOURCE.....1 WATER TOO EXPENSIVE.....2 SOURCE NOT ACCESSIBLE.....3 OTHER (*specify*) _____ 6 DK 8	
WS9. Do you or any other member of this household do anything to the water to make it safer to drink?	YES .....1 NO.....2 DK 8	 2⇨*WS11* 8⇨*WS11*
WS10. What do you usually do to make the water safer to drink? *Probe:* Anything else? *Record all methods mentioned.*	BOIL..... A ADD WATER GUARD / CHLORINE ..... B STRAIN IT THROUGH A CLOTH ..... C USE WATER FILTER (CERAMIC, SAND, COMPOSITE, ETC.)..... D SOLAR DISINFECTION ..... E LET IT STAND AND SETTLE.....F COVERING THE CONTAINER.....G OTHER (*specify*) _____ X DK .....Z	
WS11. What kind of toilet facility do members of your household usually use? *If 'Flush' or 'Pour flush', probe:* Where does it flush to? *If not possible to determine, ask permission to observe the facility.*	**FLUSH / POUR FLUSH** FLUSH TO PIPED SEWER SYSTEM.....11 FLUSH TO SEPTIC TANK .....12 FLUSH TO PIT LATRINE .....13 FLUSH TO OPEN DRAIN.....14 FLUSH TO DK WHERE.....18 **PIT LATRINE** VENTILATED IMPROVED PIT LATRINE.....21 PIT LATRINE WITH SLAB.....22 PIT LATRINE WITHOUT SLAB / OPEN PIT .....23 COMPOSTING TOILET.....31 BUCKET.....41 HANGING TOILET / HANGING LATRINE.....51 NO FACILITY / BUSH / FIELD.....95 OTHER (*specify*) _____ 96	 11⇨*WS14* 14⇨*WS14* 18⇨*WS14* 41⇨*WS14* 51⇨*WS14* 95⇨*End* 96⇨*WS14*
WS12. Has your (***answer from WS11***) ever been emptied?	YES, EMPTIED .....1 NO, NEVER EMPTIED .....4 DK 8	 4⇨*WS14* 8⇨*WS14*
WS13. The last time it was emptied, where were the contents emptied to? *Probe:* Was it removed by a service provider?	**REMOVED BY SERVICE PROVIDER** TO A TREATMENT PLANT.....1 BURIED IN A COVERED PIT.....2 TO DON'T KNOW WHERE .....3 **EMPTIED BY HOUSEHOLD** BURIED IN A COVERED PIT.....4 TO UNCOVERED PIT, OPEN GROUND, ... WATER BODY OR ELSEWHERE.....5 OTHER (*specify*) _____ 6 DK 8	
WS14. Where is this toilet facility located?	IN OWN DWELLING.....1 IN OWN YARD / PLOT .....2 ELSEWHERE.....3	

WS15. Do you share this facility with others who are not members of your household?	YES.....1 NO.....2	 2⇨*End*
WS16. Do you share this facility only with members of other households that you know, or is the facility open to the use of the general public?	SHARED WITH KNOWN HOUSEHOLDS (NOT PUBLIC) .....1 SHARED WITH GENERAL PUBLIC.....2	 2⇨*End*
WS17. How many households in total use this toilet facility, including your own household?	NUMBER OF HOUSEHOLDS (IF LESS THAN 10)..... 0 __ TEN OR MORE HOUSEHOLDS.....10 DK.....98	

HANDWASHING		HW
HW1. We would like to learn about where members of this household wash their hands. Can you please show me where members of your household most often wash their hands? *Record result and observation.*	**OBSERVED** FIXED FACILITY OBSERVED (SINK / TAP/TIPPY TAP) IN DWELLING ..... 1 IN YARD /PLOT ..... 2 MOBILE OBJECT OBSERVED (BUCKET / JUG / KETTLE)..... 3 **NOT OBSERVED** NO HANDWASHING PLACE IN DWELLING / YARD / PLOT ..... 4 NO PERMISSION TO SEE ..... 5 OTHER REASON (*specify*) _____ 6	 4⇨*HW5* 5⇨*HW4* 6⇨*HW5*
HW2. *Observe presence of water at the place for handwashing.* *Verify by checking the tap/pump, or basin, bucket, water container or similar objects for presence of water.*	WATER IS AVAILABLE..... 1 WATER IS NOT AVAILABLE 2	
HW3. *Is soap or detergent or ash/mud/sand present at the place for handwashing?*	YES, PRESENT..... 1 NO, NOT PRESENT 2	1⇨*HW7* 2⇨*HW5*
HW4. Where do you or other members of your household most often wash your hands?	FIXED FACILITY (SINK / TAP) IN DWELLING ..... 1 IN YARD / PLOT..... 2 MOBILE OBJECT (BUCKET / JUG / KETTLE/TIPPY TAP)..... 3 NO HANDWASHING PLACE IN DWELLING / YARD / PLOT ..... 4 OTHER (*specify*) _____ 6	
HW5. Do you have any soap or detergent or ash/mud/sand in your house for washing hands?	YES ..... 1 NO 2	 2⇨*End*
HW6. Can you please show it to me?	YES, SHOWN..... 1 NO, NOT SHOWN 2	 2⇨*End*
HW7. *Record your observation.* *Record all that apply.*	BAR OR LIQUID SOAP..... A DETERGENT (POWDER / LIQUID / PASTE)..... B ASH / MUD / SAND..... C	

SALT IODISATION		SA
SA1. We would like to check whether the salt used in your household is iodised. May I have a sample of the salt used to cook meals in your household? *Apply 2 drops of test solution, observe the darkest reaction within 30 seconds, compare to the colour chart and then record the result (1, 2 or 3) that corresponds to test outcome.*	**SALT TESTED** 0 PPM (NO REACTION) ..... 1 BELOW 15 PPM (BETWEEN 0 AND 15 PPM) ..... 2 ABOVE 15 PPM (AT LEAST 15 PPM) ..... 3 **SALT NOT TESTED** NO SALT IN THE HOUSE ..... 4 OTHER REASON (*specify*) _____ 6	 2⇨*HH13* 3⇨*HH13* 4⇨*HH13* 6⇨*HH13*
SA2. I would like to perform one more test. May I have another sample of the same salt? *Apply 5 drops of recheck solution. Then apply 2 drops of test solution on the same spot. Observe the darkest reaction within 30 seconds, compare to the colour chart and then record the result (1, 2 or 3) that corresponds to test outcome.*	**SALT TESTED** 0 PPM (NO REACTION) ..... 1 BELOW 15 PPM (BETWEEN 0 AND 15 PPM) ..... 2 ABOVE 15 PPM (AT LEAST 15 PPM) ..... 3 **SALT NOT TESTED** OTHER REASON (*specify*) _____ 6	

HH13. *Record the time.*	HOUR AND MINUTES ..... __ __ : __ __	
HH14. *Language of the Questionnaire.*	ENGLISH ..... 1 CHICHEWA ..... 2 CHITUMBUKA 3	
HH15. *Language of the Interview.*	ENGLISH ..... 1 CHICHEWA ..... 2 CHITUMBUKA ..... 3 OTHER LANGUAGE (*specify*) _____ 6	
HH16. *Native language of the Respondent.*	ENGLISH ..... 1 CHICHEWA ..... 2 CHITUMBUKA ..... 3 OTHER LANGUAGE (*specify*) _____ 6	
HH17. *Was a translator used for any parts of this questionnaire?*	YES, ENTIRE QUESTIONNAIRE ..... 1 YES, PART OF QUESTIONNAIRE ..... 2 NO, NOT USED 3	
HH18. *Check HL6 in the LIST OF HOUSEHOLD MEMBERS and indicate the total number of children age 5-17 years:*	NO CHILDREN ..... 0 1 CHILD ..... 1 2 OR MORE CHILDREN (NUMBER) ..... __	0⇨*HH29* 1⇨*HH27*

HH19. *List each of the children age 5-17 years below in the order they appear in the LIST OF HOUSEHOLD MEMBERS. Do not include other household members outside of the age range 5-17 years. Record the line number, name, sex, and age for each child.*

HH20. *Rank number*	**HH21**. *Line number from HL1*	**HH22**. *Name from HL2*	**HH23**. *Sex from HL4*	**HH24**. *Age from HL6*
RANK	LINE	NAME	M F	AGE
1	__ __		1 2	___ ___
2	__ __		1 2	___ ___
3	__ __		1 2	___ ___
4	__ __		1 2	___ ___
5	__ __		1 2	___ ___
6	__ __		1 2	___ ___
7	__ __		1 2	___ ___
8	__ __		1 2	___ ___

HH25. *Check the last digit of the household number (HH2) from the HOUSEHOLD INFORMATION PANEL. This is the number of the row you should go to in the table below.*

Check the total number of children age 5-17 years in HH18 above. This is the number of the column you should go to in the table below.

Find the box where the row and the column meet and record the number that appears in the box. This is the rank number (HH20) of the selected child.

LAST DIGIT OF HOUSEHOLD NUMBER (FROM HH2)	TOTAL NUMBER OF ELIGIBLE CHILDREN IN THE HOUSEHOLD (FROM HH18)						
	2	3	4	5	6	7	8+
0	2	2	4	3	6	5	4
1	1	3	1	4	1	6	5
2	2	1	2	5	2	7	6
3	1	2	3	1	3	1	7
4	2	3	4	2	4	2	8
5	1	1	1	3	5	3	1
6	2	2	2	4	6	4	2
7	1	3	3	5	1	5	3
8	2	1	4	1	2	6	4
9	1	2	1	2	3	7	5

HH26. *Record the rank number (HH20), line number (HH21), name (HH22) and age (HH24) of the selected child.*

HH27. *(When HH18=1 or when there is a single child age 5-17 in the household): Record the rank number as '1'and record the line number (HL1), the name (HL2) and age (HL6) of this child from the LIST OF HOUSEHOLD MEMBERS.*

RANK NUMBER ..... __

LINE NUMBER ..... __ __

NAME_____

AGE..... __ __

HH28. *Issue a QUESTIONNAIRE FOR CHILDREN AGE 5-17 to be administered to the mother/caretaker of this child.*

HH29. *Check HL8 in the LIST OF HOUSEHOLD MEMBERS: Are there any women age 15-49?*

YES, AT LEAST ONE WOMAN AGE 15-49 1
NO ..... 2 ⇨ *HH34*

HH30. *Issue a separate QUESTIONNAIRE FOR INDIVIDUAL WOMEN for each woman age 15-49 years.*

HH31. *Check HL6 and HL8 in the LIST OF HOUSEHOLD MEMBERS: Are there any girls age 15-17?*

YES, AT LEAST ONE GIRL AGE 15-17 1
NO ..... 2 ⇨ *HH34*

HH32. *Check HL20 in the LIST OF HOUSEHOLD MEMBERS: Is consent required for interviewing at least one girl age 15-17?*

YES, AT LEAST ONE GIRL AGE 15-17 WITH HL20≠90 ... 1
NO, HL20=90 FOR ALL GIRLS AGE 15-17 ..... 2 ⇨ *HH34*

HH33. As part of the survey we are also interviewing women age 15-49. We ask each person we interview for permission. A female interviewer conducts these interviews.

For girls age 15-17 we must also get permission from an adult to interview them. As mentioned before, all the information we obtain will remain strictly confidential and anonymous.

May we interview (***name(s) of female member(s) age 15-17***) later?

☐ *'Yes' for all girls age 15-17 ⇨ Continue with HH34.*

☐ *'No' for at least one girl age 15-17 and 'Yes' to at least one girl age 15-17 ⇨ Record '06' in WM17 (also in UF17 and FS17, if applicable) on individual questionnaires for those adult consent was not given. Then continue with HH34.*

☐ *'No' for all girls age 15-17 ⇨ Record '06' in WM17 (also in UF17 and FS17, if applicable) on all individual questionnaires for whom adult consent was not given. Then continue with HH34.*

HH34. *Check HH8 in the HOUSEHOLD INFORMATION PANEL: Is the household selected for Questionnaire for Men?*

YES, HH8=1 1
NO, HH8=2 ..... 2 ⇨ *HH40*

HH35. *Check HL9 in the LIST OF HOUSEHOLD MEMBERS: Are there any men age 15-49?*

YES, AT LEAST ONE MAN AGE 15-49 1
NO ..... 2 ⇨ *HH40*

HH36. *Issue a separate QUESTIONNAIRE FOR INDIVIDUAL MEN for each man age 15-49 years.*

HH37. *Check HL6 and HL8 in the LIST OF HOUSEHOLD MEMBERS: Are there any boys age 15-17?*

YES, AT LEAST ONE BOY AGE 15-17 1
NO ..... 2 ⇨ *HH40*

HH38. *Check HL20 in the LIST OF HOUSEHOLD MEMBERS: Is consent required for interviewing at least one boy age 15-17?*	YES, AT LEAST ONE BOY AGE 15-17 WITH HL20≠90 .... 1 NO, HL20=90 FOR ALL BOYS AGE 15-17 2	2⇨*HH40*

HH39. As part of the survey we are also interviewing men age 15-49. We ask each person we interview for permission. A male interviewer conducts these interviews.

For boys age 15-17 we must also get permission from an adult to interview them. As mentioned before, all the information we obtain will remain strictly confidential and anonymous.

May we interview (***name(s) of male member(s) age 15-17***) later?

☐ *'Yes' for all boys age 15-17 ⇨ Continue with HH40.*

☐ *'No' for at least one boy age 15-17 and 'Yes' to at least one boy age 15-17 ⇨ Record '06' in MWM17 (also in UF17 and FS17, if applicable) on individual questionnaires for those adult consent was not given. Then continue with HH40.*

☐ *'No' for all boys age 15-17 ⇨ Record '06' in MWM17 (also in UF17 and FS17, if applicable) on all individual questionnaires for whom adult consent was not given. Then continue with HH40.*

HH40. *Check HL10 in the LIST OF HOUSEHOLD MEMBERS: Are there any children age 0-4?*	YES, AT LEAST ONE..... 1 NO 2	2⇨*HH42*

HH41. *Issue a separate QUESTIONNAIRE FOR CHILDREN UNDER FIVE for each child age 0-4 years.*

HH42. *Check HH9 in the HOUSEHOLD INFORMATION PANEL: Is the household selected for Water Quality Testing Questionnaire?*	YES, HH9=1..... 1 NO, HH9=2 2	2⇨*HH45*

HH43. *Issue a separate WATER QUALITY TESTING QUESTIONNAIRE for this household*

HH44. As part of the survey we are also looking at the quality of drinking water. We would like to do a simple test of your drinking water. A colleague will come and collect the water samples. May we do such a test?	YES, PERMISSION IS GIVEN..... 1 NO, PERMISSION IS NOT GIVEN..... 2	2⇨*Record '02' in WQ31 on the WATER QUALITY TESTING QUESTION-NAIRE*

If the respondent requests to learn the results, explain that results will not be shared with individual households but will be made available to local authorities.

HH45. *Now return to the HOUSEHOLD INFORMATION PANEL and,*

- *Record '01' in question HH46 (Result of the Household Questionnaire interview),*
- *Record the name and the line number (from the LIST OF HOUSEHOLD MEMBERS) of the Respondent to the Household Questionnaire interview in HH47,*
- *Fill the questions HH48 – HH52,*
- *Thank the respondent for his/her cooperation and then*
- *Proceed with the administration of the remaining individual questionnaire(s) in this household.*

If there is no individual questionnaire and no WATER QUALITY TESTING QUESTIONNAIRE to be completed in this household thank the respondent for his/her cooperation and move to the next household you have been assigned by your supervisor.

QUESTIONNAIRE FOR INDIVIDUAL

MEN Malawi Multiple Indicator Cluster Survey (MICS) 2019

1.1.1.2

MICS

MAN'S INFORMATION PANEL

MWM1. *Cluster number:* ___ ___ ___ ___	**MWM2**. *Household number:* ___ ___
MWM3. *Man's name and line number:* NAME _____ ___ ___	**MWM4**. *Supervisor's name and number:* NAME _____ ___ ___ ___
MWM5. *Interviewer's name and number:* NAME _____ ___ ___ ___	**MWM6**. *Day / Month / Year of interview:* ___ ___ / ___ ___ / 2 0 ___ ___

Check man's age in HL6 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE: If age 15-17, verify in HH39 that adult consent for interview is obtained or not necessary (HL20=90). If consent is needed and not obtained, the interview must not commence and '06' should be recorded in MWM17.	**MWM7**. *Record the time:* HOURS : MINUTES ___ ___ : ___ ___	
MWM8. *Check completed questionnaires in this household: Have you or another member of your team interviewed this respondent for another questionnaire?*	YES, INTERVIEWED ALREADY .... 1 NO, FIRST INTERVIEW 2	1⇨*MWM9B* 2⇨*MWM9A*
MWM9A. Hello, my name is (***your name***). We are from ***National Statistical Office***. We are conducting a survey about the situation of children, families and households. I would like to talk to you about your health and other topics. This interview usually takes about **30** minutes. We are also interviewing mothers about their children. All the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?	**MWM9B**. Now I would like to talk to you about your health and other topics in more detail. This interview will take about ***30*** minutes. Again, all the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?	
YES ..... 1 *NO / NOT ASKED 2*	1⇨*MAN'S BACKGROUND Module* 2⇨*MWM17*	

MWM17. *Result of man's interview.* *Discuss any result not completed with Supervisor.*	COMPLETED ..... 01 NOT AT HOME ..... 02 REFUSED ..... 03 PARTLY COMPLETED .....

MAN'S BACKGROUND		MWB
MWB1. *Check the respondent's line number (MWM3) in MAN'S INFORMATION PANEL and the respondent to the HOUSEHOLD QUESTIONNAIRE (HH47):*	MWM3=HH47 ..... 1 MWM3≠HH47 2	2⇨*MWB3*
MWB2. *Check ED5 in EDUCATION Module in the HOUSEHOLD QUESTIONNAIRE for this respondent: Highest level of school attended:*	ED5=2, 3 OR 4 ..... 1 ED5=0, 1, 8 OR BLANK 2	1⇨*MWB15* 2⇨*MWB14*
MWB3. In what month and year were you born?	DATE OF BIRTH MONTH ..... __ __ DK MONTH ..... 98 YEAR ..... __ __ __ __ DK YEAR 9998	
MWB4. How old are you? *Probe:* How old were you at your last birthday? *If responses to MWB3 and MWB4 are inconsistent, probe further and correct. Age must be recorded.*	AGE (IN COMPLETED YEARS) ..... __ __	
MWB5. Have you ever attended school or any early childhood education programme?	YES ..... 1 NO 2	2⇨*MWB14*
MWB6. What is the highest level and grade or year of school you have attended?	EARLY CHILDHOOD EDUCATION ..... 000 PRIMARY ..... 1 __ __ LOWER SECONDARY ..... 2 __ __ UPPER SECONDARY ..... 3 __ __ HIGHER ..... 4 __ __ VOCATIONAL ..... 5 __ __	000⇨*MWB14*
MWB7. Did you complete that (grade/year)?	YES ..... 1 NO 2	
MWB8. *Check MWB4: Age of respondent:*	AGE 15-24 ..... 1 AGE 25-49 2	2⇨*MWB13*
MWB9. At any time during the 2019/2020 school year did you attend school?	YES ..... 1 NO 2	2⇨*MWB11*
MWB10. During this 2019/2020 school year, which level and grade or year are you attending?	PRIMARY ..... **1** __ __ LOWER SECONDARY ..... **2** __ __ UPPER SECONDARY ..... **3** __ __ HIGHER ..... **4** __ __ VOCATIONAL ..... **5** __ __	
MWB11. At any time during the 2018/2019 school year did you attend school?	YES ..... 1 NO 2	2⇨*MWB13*
MWB12. During that 2018/2019 school year, which level and grade or year did you attend?	PRIMARY ..... **1** __ __ LOWER SECONDARY ..... **2** __ __ UPPER SECONDARY ..... **3** __ __ HIGHER ..... **4** __ __ VOCATIONAL ..... **5** __ __	
MWB13. *Check MWB6: Highest level of school attended:*	MWB6=2, 3 OR 4 ..... 1 MWB6=1 2	1⇨*MWB15*
MWB14. Now I would like you to read this sentence to me. *Show sentence on the card to the respondent.*	CANNOT READ AT ALL ..... 1 ABLE TO READ ONLY PARTS OF SENTENCE ..... 2 ABLE TO READ WHOLE SENTENCE 3	
If respondent cannot read whole sentence, probe: Can you read part of the sentence to me?	NO SENTENCE IN REQUIRED LANGUAGE / BRAILLE (*specify language*) _____ 4	
MWB15. How long have you been continuously living in (*name of current city, town or village of residence*)? *If less than one year, record '00' years.*	YEARS ..... __ __ ALWAYS / SINCE BIRTH 95	95⇨*MWB18*

MWB16. Just before you moved here, did you live in a city, in a town, or in a rural area? PROBE TO IDENTIFY THE TYPE OF PLACE. *If unable to determine whether the place is a city, a town or a rural area, write the name of the place and then temporarily record '9' until you learn the appropriate category for the response.*	CITY.....1 TOWN.....2 RURAL AREA.....3	
_____ *(Name of place)* **MWB17**. Before you moved here, in which district did you live in?	*DISTRICTS:* CHITIPA.....101 KARONGA.....102 NKHATA BAY.....103 RUMPHI.....104 MZIMBA.....105 LIKOMA.....106 MZUZU CITY.....107 KASUNGU.....201 NKHOTAKOTA.....202 NTCHISI.....203 DOWA.....204 SALIMA.....205 LILONGWE RURAL.....206 MCHINJI.....207 DEDZA.....208 NTCHEU.....209 LILONGWE CITY.....210 MANGOCHI.....301 MACHINGA.....302 ZOMBA RURAL.....303 CHIRADZULU.....304 BLANTYRE RURAL.....305 MWANZA.....306 THYOLO.....307 MULANJE.....308 PHALOMBE.....309 CHIKWAWA.....310 NSANJE.....311 BALAKA.....312 NENO.....313 ZOMBA CITY.....314 BLANTYRE CITY.....315 OUTSIDE MALAWI (*SPECIFY)* _____96	
MWB18. Are you covered by any health insurance?	YES.....1	
MWB19. What type of health insurance are you covered by? *Record all mentioned.*	NO.....2 MUTUAL HEALTH ORGANIZATION / COMMUNITY-BASED HEALTH INSURANCE.....A HEALTH INSURANCE THROUGH EMPLOYER.....B SOCIAL SECURITY.....C OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE.....D OTHER (*specify*)_____X	2⇨*End*

MASS MEDIA AND ICT		MMT
MMT1. Do you read a newspaper or magazine at least once a week, less than once a week or not at all? *If 'At least once a week', probe:* Would you say this happens almost every day? *If 'Yes' record 3, if 'No' record 2.*	NOT AT ALL ..... 0 LESS THAN ONCE A WEEK ..... 1 AT LEAST ONCE A WEEK ..... 2 ALMOST EVERY DAY 3	
MMT2. Do you listen to the radio at least once a week, less than once a week or not at all? *If 'At least once a week', probe:* Would you say this happens almost every day? *If 'Yes' record 3, if 'No' record 2.*	NOT AT ALL ..... 0 LESS THAN ONCE A WEEK ..... 1 AT LEAST ONCE A WEEK ..... 2 ALMOST EVERY DAY 3	
MMT3. Do you watch television at least once a week, less than once a week or not at all? *If 'At least once a week', probe:* Would you say this happens almost every day? *If 'Yes' record 3, if 'No' record 2.*	NOT AT ALL ..... 0 LESS THAN ONCE A WEEK ..... 1 AT LEAST ONCE A WEEK ..... 2 ALMOST EVERY DAY 3	
MMT4. Have you ever used a computer or a tablet from any location?	YES ..... 1 NO 2	2⇨*MMT9*
MMT5. During the last 3 months, did you use a computer or a tablet at least once a week, less than once a week or not at all? *If 'At least once a week', probe:* Would you say this happened almost every day? *If 'Yes' record 3, if 'No' record 2.*	NOT AT ALL ..... 0 LESS THAN ONCE A WEEK ..... 1 AT LEAST ONCE A WEEK ..... 2 ALMOST EVERY DAY 3	0⇨*MMT9*

MMT6. During the last 3 months, did you:	YES NO	
[A] Copy or move a file or folder?	COPY/MOVE FILE 1 2	
[B] Use a copy and paste tool to duplicate or move information within a document?	USE COPY/PASTE IN DOCUMENT 1 2	
[C] Send e-mail with attached file, such as a document, picture or video?	SEND E-MAIL WITH ATTACHMENT 1 2	
[D] Use a basic arithmetic formula in a spreadsheet?	USE BASIC SPREADSHEET FORMULA 1 2	
[E] Connect and install a new device, such as a modem, camera or printer?	CONNECT DEVICE 1 2	
[F] Find, download, install and configure software?	INSTALL SOFTWARE 1 2	
[G] Create an electronic presentation with presentation software, including text, images, sound, video or charts?	CREATE PRESENTATION 1 2	
[H] Transfer a file between a computer and other device?	TRANSFER FILE 1 2	
[I] Write a computer program in any programming language?	PROGRAMMING 1 2	
MMT7. *Check MMT6[C]: Is 'Yes' recorded?*	YES, MMT6[C]=1 ..... 1 NO, MMT6[C]=2 2	1⇨*MMT10*
MMT8. *Check MMT6[F]: Is 'Yes' recorded?*	YES, MMT6[F]=1 ..... 1 NO, MMT6[F]=2 2	1⇨*MMT10*
MMT9. Have you ever used the internet from any location and any device?	YES ..... 1 NO 2	2⇨*MMT11*
MMT10. During the last 3 months, did you use the internet at least once a week, less than once a week or not at all? *If 'At least once a week', probe:* Would you say this happens almost every day?	NOT AT ALL ..... 0 LESS THAN ONCE A WEEK ..... 1 AT LEAST ONCE A WEEK ..... 2 ALMOST EVERY DAY 3	
If 'Yes' record 3, if 'No' record 2. **MMT11**. Do you own a mobile phone?	YES ..... 1 NO 2	
MMT12. During the last 3 months, did you use a mobile telephone at least once a week, less than once a week or not at all? *Probe if necessary:* I mean have you communicated with someone using a mobile phone. *If 'At least once a week', probe:* Would you say this happens almost every day?	NOT AT ALL ..... 0 LESS THAN ONCE A WEEK ..... 1 AT LEAST ONCE A WEEK ..... 2 ALMOST EVERY DAY 3	

If 'Yes' record 3, if 'No' record 2.

FERTILITY		MCM
MCM1. Now I would like to ask about all the children you have had during your life. I am interested in all of the children that are biologically yours, even if they are not legally yours or do not have your last name. Have you ever fathered any children with any woman? *This module should only include children born alive. Any stillbirths should not be included in response to any question.*	YES..... 1 NO ..... 2 DK..... 8	2⇨*MCM8* 8⇨*MCM8*
MCM2. Do you have any sons or daughters that you have fathered who are now living with you?	YES..... 1 NO 2	2⇨*MCM5*
MCM3. How many sons live with you? *If none, record '00'.*	SONS AT HOME..... __ __	
MCM4. How many daughters live with you? *If none, record '00'.*	DAUGHTERS AT HOME..... __ __	
MCM5. Do you have any sons or daughters that you have fathered who are alive but do not live with you?	YES..... 1 NO 2	2⇨*MCM8*
MCM6. How many sons are alive but do not live with you? *If none, record '00'.*	SONS ELSEWHERE..... __ __	
MCM7. How many daughters are alive but do not live with you? *If none, record '00'.*	DAUGHTERS ELSEWHERE..... __ __	
MCM8. Have you ever fathered a son or daughter who was born alive but later died? *If 'No' probe by asking:* I mean, to any baby who cried, who made any movement, sound, or effort to breathe, or who showed any other signs of life even if for a very short time?	YES..... 1 NO 2	2⇨*MCM11*
MCM9. How many boys have died? *If none, record '00'.*	BOYS DEAD ..... __ __	
MCM10. How many girls have died? *If none, record '00'.*	GIRLS DEAD ..... __ __	
MCM11. Sum answers to MCM3, MCM4, MCM6, MCM7, MCM9 and MCM10.	SUM..... __ __	
MCM12. Just to make sure that I have this right, you have fathered (***total number in MCM11***) live births during your life. Is this correct?	YES..... 1 NO 2	1⇨*MCM14*
MCM13. Check responses to MCM1-MCM10 and make corrections as necessary until response in MCM12 is 'Yes'.		
MCM14. Check MCM11: How many live births fathered?	NO LIVE BIRTHS, MCM11=00..... 0 ONE LIVE BIRTH ONLY, MCM11=01 ..... 1 TWO OR MORE LIVE BIRTHS, MCM11=02 OR MORE 2	0⇨*End* 1⇨*MCM18A*
MCM15. Did all the children you have fathered have the same biological mother?	YES..... 1 NO 2	1⇨*MCM17*
MCM16. In all, how many women have you fathered children with?	NUMBER OF WOMEN..... __ __	
MCM17. How old were you when your first child was born?	AGE IN YEARS..... __ __	⇨*MCM18B*

MCM18A. In what month and year was the child you have fathered born? **MCM18B**. In what month and year was the last of these (***total number in MCM11***) children you have fathered born even if he or she has died? Month and year must be recorded.	DATE OF LAST BIRTH MONTH..... __ __ YEAR .....__ __ __ __	

ATTITUDES TOWARD DOMESTIC VIOLENCE				MDV
MDV1. Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations:	**YES**	**NO**	**DK**	
[A] If she goes out without telling him?	GOES OUT WITHOUT TELLING 1	2	8	
[B] If she neglects the children?	NEGLECTS CHILDREN 1	2	8	
[C] If she argues with him?	ARGUES WITH HIM 1	2	8	
[D] If she refuses to have sex with him?	REFUSES SEX 1	2	8	
[E] If she burns the food?	BURNS FOOD 1	2	8	

VICTIMISATION		MVT
MVT1. *Check for the presence of others. Before continuing, ensure privacy.* Now I would like to ask you some questions about crimes in which you personally were the victim. Let me assure you again that your answers are completely confidential and will not be told to anyone. In the last three years, that is since (***month of interview***) (***year of interview minus 3***), has anyone taken or tried taking something from you, by using force or threatening to use force? *Include only incidents in which the respondent was personally the victim and exclude incidents experienced only by other members of the household.* *If necessary, help the respondent to establish the recall period and make sure that you allow adequate time for the recall. You may reassure:* It can be difficult to remember this sort of incidents, so please take your time while you think about your answers.	YES ..... 1 NO ..... 2 DK 8	 2⇨*MVT9B* 8⇨*MVT9B*
MVT2. Did this last happen during the last 12 months, that is, since (***month of interview***) (***year of interview minus 1***)?	YES, DURING THE LAST 12 MONTHS ..... 1 NO, MORE THAN 12 MONTHS AGO ..... 2 DK / DON'T REMEMBER 8	 2⇨*MVT5B* 8⇨*MVT5B*
MVT3. How many times did this happen in the last 12 months? *If 'DK/Don't remember', probe:* Did it happen once, twice, or at least three times?	ONE TIME ..... 1 TWO TIMES ..... 2 THREE OR MORE TIMES ..... 3 DK / DON'T REMEMBER 8	
MVT4. Check MVT3: One or more times?	ONE TIME, MVT3=1 ..... 1 MORE THAN ONCE OR DK, MVT3=2, 3 OR 8 2	1⇨*MVT5A* 2⇨*MVT5B*
MVT5A. When this happened, was anything stolen from you? **MVT5B**. The last time this happened, was anything stolen from you?	YES ..... 1 NO ..... 2 DK / NOT SURE 8	
MVT6. Did the person(s) have a weapon?	YES ..... 1 NO ..... 2 DK / NOT SURE 8	 2⇨*MVT8* 8⇨*MVT8*
MVT7. Was a knife, a gun or something else used as a weapon? *Record all that apply.*	YES, A KNIFE ..... A YES, A GUN ..... B YES, SOMETHING ELSE X	
MVT8. Did you or anyone else report the incident to the police? *If 'Yes', probe:* Was the incident reported by you or someone else?	YES, RESPONDENT REPORTED ..... 1 YES, SOMEONE ELSE REPORTED ..... 2 NO, NOT REPORTED ..... 3 DK / NOT SURE 8	1⇨*MVT9A* 2⇨*MVT9A* 3⇨*MVT9A* 8⇨*MVT9A*

MVT9A. Apart from the incident(s) just covered, have you in the last three years, that is since (***month of interview***) (***year of interview minus 3***), been physically attacked? **MVT9B**. In the same period of the last three years, that is since (***month of interview***) (***year of interview minus 3***), have you been physically attacked? *If 'No', probe:* An attack can happen at home or any place outside of the home, such as in other homes, in the street, at school, on public transport, public restaurants, or at your workplace. *Include only incidents in which the respondent was personally the victim and exclude incidents experienced only by other members of the household. Exclude incidents where the intention was to take something from the respondent, which should be recorded under MVT1.*	YES ..... 1 NO ..... 2 DK 8	 2⇨*MVT20* 8⇨*MVT20*
MVT10. Did this last happen during the last 12 months, that is, since (***month of interview***) (***year of interview minus 1***)?	YES, DURING THE LAST 12 MONTHS ..... 1 NO, MORE THAN 12 MONTHS AGO ..... 2 DK / DON'T REMEMBER 8	 2⇨*MVT12B* 8⇨*MVT12B*
MVT11. How many times did this happen in the last 12 months? *If 'DK/Don't remember', probe:* Did it happen once, twice, or at least three times?	ONE TIME ..... 1 TWO TIMES ..... 2 THREE OR MORE TIMES ..... 3 DK / DON'T REMEMBER 8	1⇨*MVT12A* 2⇨*MVT12B* 3⇨*MVT12B* 8⇨*MVT12B*
MVT12A. Where did this happen? **MVT12B**. Where did this happen the last time?	AT HOME ..... 11 IN ANOTHER HOME ..... 12 IN THE STREET ..... 21 ON PUBLIC TRANSPORT ..... 22 PUBLIC RESTAURANT / CAFÉ / BAR ..... 23 OTHER PUBLIC (*specify*) _____ 26 AT SCHOOL ..... 31 AT WORKPLACE ..... 32 OTHER PLACE (*specify*) _____ 96	
MVT13. How many people were involved in committing the offence? *If 'DK/Don't remember', probe:* Was it one, two, or at least three people?	ONE PERSON ..... 1 TWO PEOPLE ..... 2 THREE OR MORE PEOPLE ..... 3 DK / DON'T REMEMBER 8	1⇨*MVT14A* 2⇨*MVT14B* 3⇨*MVT14B* 8⇨*MVT14B*
MVT14A. At the time of the incident, did you recognize the person? **MVT14B**. At the time of the incident, did you recognize at least one of the persons?	YES ..... 1 NO ..... 2 DK / DON'T REMEMBER 8	
MVT17. Did the person(s) have a weapon?	YES ..... 1 NO ..... 2 DK / NOT SURE 8	 2⇨*MVT19* 8⇨*MVT19*
MVT18. Was a knife, a gun or something else used as a weapon? *Record all that apply.*	YES, A KNIFE ..... A YES, A GUN ..... B YES, SOMETHING ELSE X	
MVT19. Did you or anyone else report the incident to the police? *If 'Yes', probe:* Was the incident reported by you or someone else?	YES, RESPONDENT REPORTED ..... 1 YES, SOMEONE ELSE REPORTED ..... 2 NO, NOT REPORTED ..... 3 DK / NOT SURE 8	

MVT20. How safe do you feel walking alone in your neighbourhood after dark?	VERY SAFE ..... 1 SAFE ..... 2 UNSAFE ..... 3 VERY UNSAFE ..... 4 NEVER WALK ALONE AFTER DARK 7	
MVT21. How safe do you feel when you are at home alone after dark?	VERY SAFE ..... 1 SAFE ..... 2 UNSAFE ..... 3 VERY UNSAFE ..... 4 NEVER ALONE AFTER DARK 7	
MVT22. In the past 12 months, have you <u>personally</u> felt discriminated against or harassed on the basis of the following grounds? [A] Ethnic or immigration origin? [B] Sex? [C] Sexual orientation? [D] Age? [E] Religion or belief? [F] Disability? [X] For any other reason?	YES NO DK ETHNIC / IMMIGRATION ..... 1 2 8 SEX ..... 1 2 8 SEXUAL ORIENTATION ..... 1 2 8 AGE ..... 1 2 8 RELIGION / BELIEF ..... 1 2 8 DISABILITY ..... 1 2 8 OTHER REASON 1 2 8	

MARRIAGE/UNION		MMA
MMA1. Are you currently married or living together with someone as if married?	YES, CURRENTLY MARRIED ..... 1 YES, LIVING WITH A PARTNER ..... 2 NO, NOT IN UNION 3	 3⇨*MMA5*
MMA3. Do you have other wives or do you live with other partners as if married?	YES ..... 1 NO 2	 2⇨*MMA7*
MMA4. How many other wives or live-in partners do you have?	NUMBER ..... __ __ DK 98	⇨*MMA7* 98⇨*MMA7*
MMA5. Have you ever been married or lived together with someone as if married?	YES, FORMERLY MARRIED ..... 1 YES, FORMERLY LIVED WITH A PARTNER ..... 2 NO 3	 3⇨*End*
MMA6. What is your marital status now: are you widowed, divorced or separated?	WIDOWED ..... 1 DIVORCED ..... 2 SEPARATED 3	
MMA7. Have you been married or lived with someone only once or more than once?	ONLY ONCE ..... 1 MORE THAN ONCE 2	1⇨*MMA8A* 2⇨*MMA8B*
MMA8A. In what month and year did you start living with your (wife/partner)? **MMA8B**. In what month and year did you start living with your <u>first</u> (wife/partner)?	DATE OF (FIRST) UNION MONTH ..... __ __ DK MONTH ..... 98 YEAR ..... __ __ __ __ DK YEAR 9998	
MMA9. *Check MMA8A/B: Is 'DK YEAR' recorded?*	YES, MMA8A/B=9998 ..... 1 NO, MMA8A/B≠9998 2	 2⇨*End*
MMA10. *Check MMA7: In union only once?*	YES, MMA7=1 ..... 1 NO, MMA7=2 2	1⇨*MMA11A* 2⇨*MMA11B*
MMA11A. How old were you when you started living with your (wife/partner)? **MMA11B**. How old were you when you started living with your <u>first</u> (wife/partner)?	 AGE IN YEARS ..... __ __	

ADULT FUNCTIONING		MAF
MAF1. *Check MWB4: Age of respondent?*	AGE 15-17 YEARS ..... 1 AGE 18-49 YEARS 2	1⇨*End*
MAF2. Do you use glasses or contact lenses? *Include the use of glasses for reading.*	YES ..... 1 NO 2	
MAF3. Do you use a hearing aid?	YES ..... 1 NO 2	
MAF4. I will now ask you about difficulties you may have doing a number of different activities. For each activity there are four possible answers: Please tell me if you have: 1) no difficulty, 2) some difficulty, 3) a lot of difficulty or 4) that you cannot do the activity at all. *Repeat the categories during the individual questions whenever the respondent does not use an answer category:* Remember, the four possible answers are: 1) no difficulty, 2) some difficulty, 3) a lot of difficulty, or 4) that you cannot do the activity at all.		
MAF5. *Check MAF2: Respondent uses glasses or contact lenses?*	YES, MAF2=1 ..... 1 NO, MAF2=2 2	1⇨*MAF6A* 2⇨*MAF6B*
MAF6A. When using your glasses or contact lenses, do you have difficulty seeing? **MAF6B**. Do you have difficulty seeing?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT SEE AT ALL 4	
MAF7. *Check MAF3: Respondent uses a hearing aid?*	YES, MAF3=1 ..... 1 NO, MAF3=2 2	1⇨*MAF8A* 2⇨*MAF8B*
MAF8A. When using your hearing aid(s), do you have difficulty hearing? **MAF8B**. Do you have difficulty hearing?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT HEAR AT ALL 4	
MAF9. Do you have difficulty walking or climbing steps?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT WALK/ CLIMB STEPS AT ALL 4	
MAF10. Do you have difficulty remembering or concentrating?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT REMEMBER/ CONCENTRATE AT ALL 4	
MAF11. Do you have difficulty with self-care, such as washing all over or dressing?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT CARE FOR SELF AT ALL 4	
MAF12. Using your usual language, do you have difficulty communicating, for example understanding or being understood?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY 3	

SEXUAL BEHAVIOUR		MSB
MSB1. *Check for the presence of others. Before continuing, make every effort to ensure privacy.* Now I would like to ask you some questions about sexual activity in order to gain a better understanding of some important life issues. Let me assure you again that your answers are completely confidential and will not be told to anyone. If we should come to any question that you don't want to answer, just let me know and we will go to the next question. How old were you when you had sexual intercourse for the very first time?	NEVER HAD INTERCOURSE ..... 00 AGE IN YEARS ..... __ __ FIRST TIME WHEN STARTED LIVING WITH (FIRST) WIFE / PARTNER 95	00⇨*End*
MSB2. I would like to ask you about your recent sexual activity. When was the last time you had sexual intercourse? *Record answers in days, weeks or months if less than 12 months (one year).* *If 12 months (one year) or more, answer must be recorded in years.*	DAYS AGO ..... **1** __ __ WEEKS AGO ..... **2** __ __ MONTHS AGO ..... **3** __ __ YEARS AGO ..... **4** __ __	4⇨*End*
MSB3. The last time you had sexual intercourse, was a condom used?	YES ..... 1 NO 2	
MSB4. What was your relationship to this person with whom you last had sexual intercourse? *Probe to ensure that the response refers to the relationship at the time of sexual intercourse* *If 'Girlfriend', then ask:* Were you living together as if married? IF 'YES', RECORD '2'. IF 'NO', RECORD '3'.	WIFE ..... 1 COHABITING PARTNER ..... 2 GIRLFRIEND ..... 3 CASUAL ACQUAINTANCE ..... 4 CLIENT / SEX WORKER ..... 5 OTHER (*specify*)_____ 6	3⇨*MSB6* 4⇨*MSB6* 5⇨*MSB6* 6⇨*MSB6*
MSB5. *Check MMA1: Currently married or living with a partner?*	YES, MMA1=1 OR 2 ..... 1 NO, MMA1=3 2	1⇨*MSB7*
MSB6. How old is this person? *If response is 'DK', probe:* About how old is this person?	AGE OF SEXUAL PARTNER ..... __ __ DK 98	
MSB7. Apart from this person, have you had sexual intercourse with any other person in the last 12 months?	YES ..... 1 NO 2	2⇨*End*
MSB8. The last time you had sexual intercourse with another person, was a condom used?	YES ..... 1 NO 2	

MSB9. What was your relationship to this person? *Probe to ensure that the response refers to the relationship at the time of sexual intercourse* *If 'Girlfriend' then ask:* Were you living together as if married? *If 'Yes', record '2'. If 'No', record '3'.*	WIFE ..... 1 COHABITING PARTNER ..... 2 GIRLFRIEND ..... 3 CASUAL ACQUAINTANCE ..... 4 CLIENT / SEX WORKER ..... 5 OTHER (*specify*)_____ 6	 3⇨*MSB12* 4⇨*MSB12* 5⇨*MSB12* 6⇨*MSB12*
MSB10. *Check MMA1: Currently married or living with a partner?*	YES, MMA1=1 OR 2 ..... 1 NO, MMA1=3 2	 2⇨*MSB12*
MSB11. *Check MMA7: Married or living with a partner only once?*	YES, MMA7=1 ..... 1 NO, MMA7≠1 2	1⇨*End*
MSB12. How old is this person? *If response is 'DK', probe:* About how old is this person?	AGE OF SEXUAL PARTNER ..... __ __ DK 98	

HIV/AIDS		MHA
MHA1. Now I would like to talk with you about something else. Have you ever heard of HIV or AIDS?	YES .....1 NO 2	2⇨*End*
MHA2. HIV is the virus that can lead to AIDS. Can people reduce their chance of getting HIV by having just one uninfected sex partner who has no other sex partners?	YES .....1 NO .....2 DK 8	
MHA3. Can people get HIV from mosquito bites?	YES .....1 NO .....2 DK 8	
MHA4. Can people reduce their chance of getting HIV by using a condom every time they have sex?	YES .....1 NO .....2 DK 8	
MHA5. Can people get HIV by sharing food with a person who has HIV?	YES .....1 NO .....2 DK 8	
MHA6. Can people get HIV because of witchcraft or other supernatural means?	YES .....1 NO .....2 DK 8	
MHA7. Is it possible for a healthy-looking person to have HIV?	YES .....1 NO .....2 DK 8	
MHA8. Can HIV be transmitted from a mother to her baby: [A] During pregnancy? [B] During delivery? [C] By breastfeeding?	YES NO DK DURING PREGNANCY ..... 1 2 8 DURING DELIVERY ..... 1 2 8 BY BREASTFEEDING 1 2 8	
MHA9. Check MHA8[A], [B] and [C]: At least one 'Yes' recorded?	YES .....1 NO 2	2⇨*MHA24*
MHA10. Are there any special drugs that a doctor or a nurse can give to a woman infected with HIV to reduce the risk of transmission to the baby?	YES .....1 NO .....2 DK 8	
~~**MHA24**. I don't want to know the results, but have you ever~~ been tested for HIV?	YES .....1 NO 2	2⇨*MHA27*
MHA25. How many months ago was your most recent HIV ~~test?~~	LESS THAN 12 MONTHS AGO .....1 ~~12-23 MONTHS AGO~~ .....2 2 OR MORE YEARS AGO 3	
MHA26. I don't want to know the results, but did you get the results of the test?	YES .....1 NO 2	1⇨*MHA28* 2⇨*MHA28*
MHA27. Do you know of a place where people can go to get an HIV test?	DK .....8 YES .....1 NO 2	8⇨*MHA28*
~~**MHA28**. Have you heard of test kits people can use to test~~ themselves for HIV?	YES .....1 NO 2	2⇨*MHA30*
~~**MHA29**. Have you ever tested yourself for HIV using a self-~~ test kit?	YES .....1 NO 2	

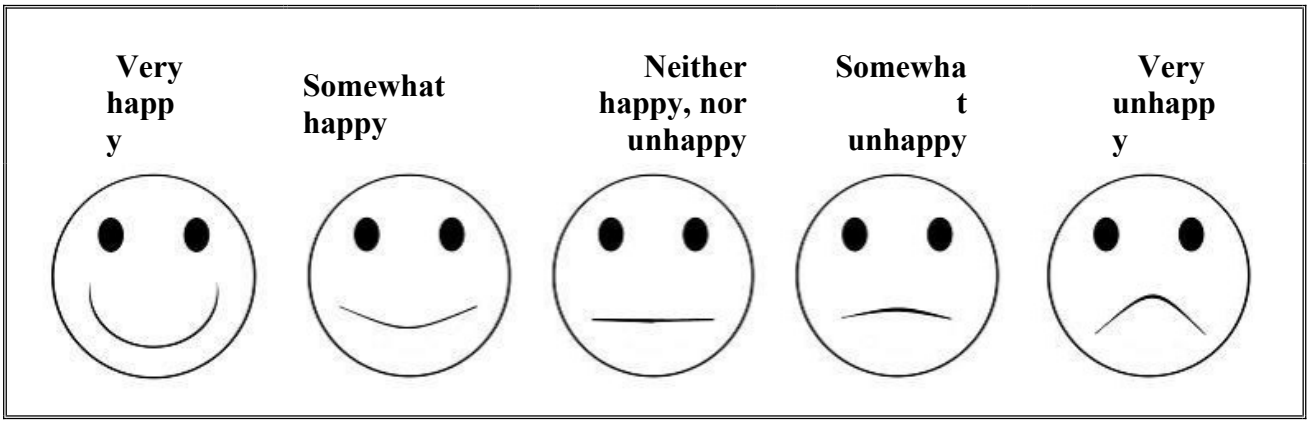
MHA30. Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had HIV?	YES .....1 NO .....2 DK / NOT SURE / DEPENDS 8	
MHA31. Do you think children living with HIV should be allowed to attend school with children who do not have HIV?	YES .....1 NO .....2 DK / NOT SURE / DEPENDS 8	
MHA32. Do you think people hesitate to take an HIV test because they are afraid of how other people will react if the test result is positive for HIV?	YES .....1 NO .....2 DK / NOT SURE / DEPENDS 8	
MHA33. Do people talk badly about people living with HIV, or who are thought to be living with HIV?	YES .....1 NO .....2 DK / NOT SURE / DEPENDS 8	
MHA34. Do people living with HIV, or thought to be living with HIV, lose the respect of other people?	YES .....1 NO .....2 DK / NOT SURE / DEPENDS 8	
MHA35. Do you agree or disagree with the following statement? I would be ashamed if someone in my family had HIV.	AGREE .....1 DISAGREE .....2 DK / NOT SURE / DEPENDS 8	
MHA36. Do you fear that you could get HIV if you come into contact with the saliva of a person living with HIV?	YES .....1 NO .....2 SAYS HE HAS HIV .....7 DK / NOT SURE / DEPENDS 8	

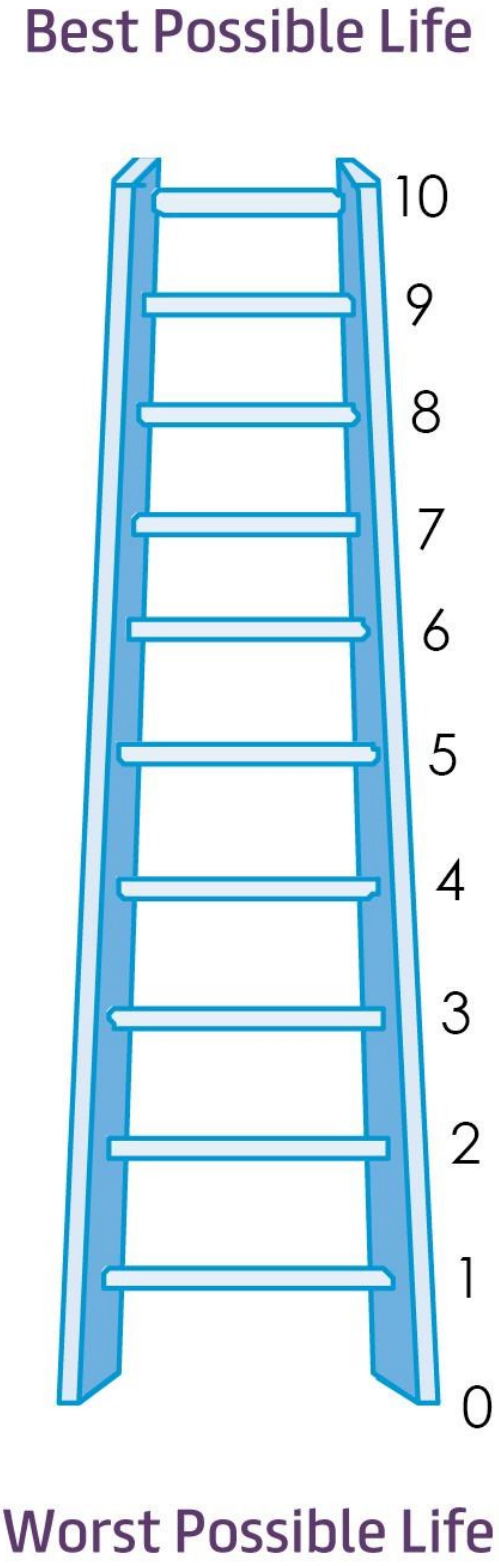
CIRCUMCISION		MMC
MMC1. Some men are circumcised, that is, the foreskin is completely removed from the penis.	YES ..... 1 NO 2	2⇨*End*
Are you circumcised? **MMC2**. How old were you when you got circumcised?	AGE IN COMPLETED YEARS ..... __ __	
MMC3. Who did the circumcision?	DK ..... 98 TRADITIONAL PRACTITIONER / FAMILY / FRIEND .. 1 HEALTH WORKER / PROFESSIONAL ..... 2 OTHER (*specify*) _____ 6	
MMC4. Where was it done?	DK ..... 8 HEALTH FACILITY ..... 1 HOME OF A HEALTH WORKER / PROFESSIONAL .. 2 AT HOME ..... 3 RITUAL SITE ..... 4 OUTREACH CLINIC ..... 5 OTHER HOME / PLACE (*specify*) _____ 6 DK 8	

TOBACCO AND ALCOHOL USE		MTA
MTA1. Have you ever tried cigarette smoking, even one or two puffs?	YES.....1 NO 2	2⇨*MTA10*
MTA2. How old were you when you smoked a whole cigarette for the first time?	NEVER SMOKED A WHOLE CIGARETTE .....00 AGE .....___ ___	00⇨*MTA6*
MTA3. Do you currently smoke cigarettes?	YES.....1 NO 2	2⇨*MTA6*
MTA4. In the last 24 hours, how many cigarettes did you smoke?	NUMBER OF CIGARETTES .....___ ___	
MTA5. During the last one month, on how many days did you smoke cigarettes? *If less than 10 days, record the number of days.* *If 10 days or more but less than a month, record '10'.* *If 'Every day' or 'Almost every day', record '30'.*	NUMBER OF DAYS .....0 ___ 10 DAYS OR MORE BUT LESS THAN A MONTH.....10 EVERY DAY / ALMOST EVERY DAY 30	
MTA6. Have you ever tried any smoked tobacco products other than cigarettes, such as cigars, water pipe (e.g., shisha/hookah), cigarillos or pipe?	YES.....1 NO 2	2⇨*MTA10*
MTA7. During the last one month, did you use any smoked tobacco products other than cigarettes?	YES.....1 NO 2	2⇨*MTA10*
MTA8. What type of smoked tobacco product did you use or smoke during the last one month? *Record all mentioned.*	CIGARS, CHEROOTS OR CIGARILLOS ..... A WATER PIPE ..... B HAND ROLLED CIGARETTE..... C PIPE..... D MANUFACTURED CIGARETTES..... E OTHER (*specify*) _____X	
MTA9. During the last one month, on how many days did you use (***names of products mentioned in MTA8***)? *If less than 10 days, record the number of days.* *If 10 days or more but less than a month, record '10'.* *If 'Every day' or 'Almost every day', record '30'.*	NUMBER OF DAYS .....0 ___ 10 DAYS OR MORE BUT LESS THAN A MONTH.....10 EVERY DAY / ALMOST EVERY DAY 30	
MTA10. Have you ever tried any form of smokeless tobacco products, such as chewing tobacco or snuff?	YES.....1 NO 2	2⇨*MTA14*
MTA11. During the last one month, did you use any smokeless tobacco products?	YES.....1 NO 2	2⇨*MTA14*

MTA12. What type of smokeless tobacco product did you use during the last one month? *Record all mentioned.*	CHEWING TOBACCO ..... A SNUFF ..... B DIP……..……C OTHER (*specify*) _____X	
MTA13. During the last one month, on how many days did you use (***names of products mentioned in MTA12***)? *If less than 10 days, record the number of days.* *If 10 days or more but less than a month, record '10'.* *If 'Every day' or 'Almost every day', record '30'.*	NUMBER OF DAYS ..... 0 ___ 10 DAYS OR MORE BUT LESS THAN A MONTH.....10 EVERY DAY / ALMOST EVERY DAY 30	
MTA14. Now I would like to ask you some questions about drinking alcohol. Have you ever drunk alcohol?	YES.....1 NO 2	2⇨*End*
MTA15. We count one drink of alcohol as one can or bottle of beer, one glass of wine, or one shot of cognac, vodka, whiskey or rum. How old were you when you had your first drink of alcohol, other than a few sips?	NEVER HAD ONE DRINK OF ALCOHOL .....00 AGE ..... ___ ___	00⇨*End*
MTA16. During the last one month, on how many days did you have at least one drink of alcohol? *If respondent did not drink, record '00'.* *If less than 10 days, record the number of days.* *If 10 days or more but less than a month, record '10'.* *If 'Every day' or 'Almost every day', record '30'.*	DID NOT HAVE ONE DRINK IN LAST ONE MONTH.....00 NUMBER OF DAYS ..... 0 ___ 10 DAYS OR MORE BUT LESS THAN A MONTH.....10 EVERY DAY / ALMOST EVERY DAY 30	00⇨*End*
MTA17. In the last one month, on the days that you drunk alcohol, how many drinks did you usually have per day?	NUMBER OF DRINKS ..... ___ ___	

LIFE SATISFACTION		MLS
MLS1. I would like to ask you some simple questions on happiness and satisfaction. First, taking all things together, would you say you are very happy, somewhat happy, neither happy nor unhappy, somewhat unhappy or very unhappy? I am now going to show you pictures to help you with your response. *Show smiley card and explain what each symbol represents. Record the response code selected by the respondent.*	VERY HAPPY .....1 SOMEWHAT HAPPY .....2 NEITHER HAPPY NOR UNHAPPY.....3 SOMEWHAT UNHAPPY .....4 VERY UNHAPPY 5	
MLS2. *Show the picture of the ladder.* Now, look at this ladder with steps numbered from 0 at the bottom to 10 at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder do you feel you stand at this time? *Probe if necessary:* Which step comes closest to the way you feel?	LADDER STEP ..... ___ ___	
MLS3. Compared to this time last year, would you say that your life has improved, stayed more or less the same, or worsened, overall?	IMPROVED .....1 MORE OR LESS THE SAME .....2 WORSENED 3	
MLS4. And in one year from now, do you expect that your life will be better, will be more or less the same, or will be worse, overall?	BETTER.....1 MORE OR LESS THE SAME .....2 WORSE.....3	


Very happy
Somewhat happy
Neither happy, nor unhappy
Somewhat unhappy
Very unhappy


Best Possible Life
10
9
8
7
6
5
4
3
2
1
0
Worst Possible Life

MWM10. *Record the time.*	HOURS AND MINUTES ..... __ __ : __ __	
MWM11. *Was the entire interview completed in private or was there anyone else during the entire interview or part of it?*	YES, THE ENTIRE INTERVIEW WAS COMPLETED IN PRIVATE .....1 NO, OTHERS WERE PRESENT DURING THE ENTIRE INTERVIEW (*specify*)_____ 2 NO, OTHERS WERE PRESENT DURING PART OF THE INTERVIEW (*specify*)_____ 3	
MWM12. *Language of the Questionnaire.*	ENGLISH.....1 CHICHEWA.....2 CHITUMBUKA.....3	
MWM13. *Language of the Interview.*	ENGLISH.....1 CHICHEWA.....2 CHITUMBUKA.....3 OTHER LANGUAGE (*specify*)_____ 6	
MWM14. *Native language of the Respondent.*	ENGLISH.....1 CHICHEWA.....2 CHITUMBUKA.....3 OTHER LANGUAGE (*specify*) _____ 6	
MWM15. *Was a translator used for any parts of this questionnaire?*	YES, THE ENTIRE QUESTIONNAIRE .....1 YES, PARTS OF THE QUESTIONNAIRE.....2 NO, NOT USED.....3	

MWM16. *Check columns HL10 and HL20 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE: Is the respondent the caretaker of any child age 0-4 living in this household?*

☐ *Yes ⇨ Go to MWM17 in MAN'S INFORMATION PANEL and record '01'. Then go to the QUESTIONNAIRE FOR CHILDREN UNDER FIVE for that child and start the interview with this respondent.*

☐ *No ⇨ Check HH26-HH27 in HOUSEHOLD QUESTIONNAIRE: Is there a child age 5-17 selected for QUESTIONNAIRE FOR CHILDREN AGE 5-17?*

☐ *Yes ⇨ Check column HL20 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE: Is the respondent the caretaker of the child selected for QUESTIONNAIRE FOR CHILDREN AGE 5-17 in this household?*

☐ *Yes ⇨ Go to MWM17 in MAN'S INFORMATION PANEL and record '01'. Then go to the QUESTIONNAIRE FOR CHILDREN AGE 5-17 for that child and start the interview with this respondent.*

☐ *No ⇨ Go to MWM17 in MAN'S INFORMATION PANEL and record '01'. Then end the interview with this respondent by thanking him for his cooperation. Check to see if there are other questionnaires to be administered in this household.*

☐ *No ⇨ Go to MWM17 in MAN'S INFORMATION PANEL and record '01'. Then end the interview with this respondent by thanking him for his cooperation. Check to see if there are other questionnaires to be administered in this household.*

INTERVIEWER'S OBSERVATIONS

SUPERVISOR'S OBSERVATIONS

QUESTIONNAIRE FOR CHILDREN UNDER FIVE Malawi Multiple Indicator Cluster Survey (MICS), 2019-20

UNDER-FIVE CHILD INFORMATION PANEL		UF
UF1. *Cluster number:* ___ ___ ___ ___	**UF2**. *Household number:* ___ ___	
UF3. *Child's name and line number:* NAME _____ ___	**UF4**. *Mother's / Caretaker's name and line number:* NAME _____ ___ ___	
UF5. *Interviewer's name and number:* NAME _____ ___ ___ ___	**UF6**. *Supervisor's name and number:* NAME _____ ___ ___ ___	
UF7. *Day / Month / Year of interview:* ___ ___ /___ ___ / 2 0 ___ ___	**UF8**. *Record the time:*	HOURS : MINUTES __ __ : __ __

Check respondent's age in HL6 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE:
If age 15-17, verify that adult consent for interview is obtained (HH33 or HH39) or not necessary (HL20=90). If consent is needed and not obtained, the interview must not commence and '06' should be recorded in UF17. The respondent must be at least 15 years old.

UF9. *Check completed questionnaires in this household: Have you or another member of your team interviewed this respondent for another questionnaire?*	YES, INTERVIEWED ALREADY ..... 1 NO, FIRST INTERVIEW 2	1 □ *UF10B* 2 □ *UF10A*
UF10A. Hello, my name is (***your name***). We are from National Statistical Office. We are conducting a survey about the situation of children, families and households. I would like to talk to you about (***child's name from UF3***)'s health and well-being. This interview will take about ***40*** minutes. All the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?	**UF10B**. Now I would like to talk to you about (***child's name from UF3***)'s health and well-being in more detail. This interview will take about ***40*** minutes. Again, all the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?	
YES ..... 1 *NO / NOT ASKED 2*	1 □ *UNDER FIVE'S BACKGROUND Module* 2 □ *UF17*	

UF17. *Result of interview for children under 5* Codes refer to mother/caretaker. Discuss any result not completed with Supervisor.	COMPLETED ..... 01 NOT AT HOME ..... 02 REFUSED ..... 03 PARTLY COMPLETED ..... 04 INCAPACITATED (*specify*) _____ 05 NO ADULT CONSENT FOR MOTHER/ CARETAKER AGE 15-17 ..... 06 OTHER (*specify*) _____ 96

UNDER-FIVE'S BACKGROUND		UB
UB0. *Before I begin the interview, could you please bring (**name**)'s Birth Certificate, Child Health Passport, and any immunisation record from a private health provider? We will need to refer to those documents.*		
UB1. On what day, month and year was (***name***) born? *Probe:* What is (his/her) birthday? If the mother/caretaker knows the exact date of birth, also record the day; otherwise, record '98' for day. Month and year must be recorded.	DATE OF BIRTH DAY ..... __ __ DK DAY ..... 98 MONTH ..... __ __ YEAR ..... 2 0 1 __	
UB2. How old is (***name***)? *Probe*: How old was (***name***) at (his/her) last birthday? Record age in completed years. Record '0' if less than 1 year. If responses to UB1 and UB2 are inconsistent, probe further and correct.	AGE (IN COMPLETED YEARS) ..... ____	
UB3. *Check UB2: Child's age?*	AGE 0, 1, OR 2 ..... 1 AGE 3 OR 4 2	1 *UB9*
UB4. *Check the respondent's line number (UF4) and the respondent to the HOUSEHOLD QUESTIONNAIRE (HH47):*	RESPONDENT IS THE SAME, UF4=HH47 ..... 1 RESPONDENT IS NOT THE SAME, UF4≠HH47 2	2 *UB6*
UB5. *Check ED10 in the EDUCATION MODULE in the HOUSEHOLD QUESTIONNAIRE: Is the child attending ECE in the current school year?*	YES, ED10=0 ..... 1 NO, ED10≠0 OR BLANK 2	1 *UB8B* 2 *UB9*
UB6. Has (***name***) ever attended any early childhood education programme, such as Public or Private kindergarten or community childcare centre?	YES ..... 1 NO 2	2 *UB9*
UB7. At any time since September, 2019-2020, did (he/she) attend (*programmes mentioned in UB6*)?	YES ..... 1 NO 2	1 *UB8A* 2 *UB9*
UB8A. Does (he/she) currently attend (*programmes mentioned in UB6*)? **UB8B**. You have mentioned that (***name***) has attended an early childhood education programme this school year. Does (he/she) currently attend this programme?	YES ..... 1 NO 2	
UB9. Is (***name***) covered by any health insurance?	YES ..... 1 NO 2	2 *End*
UB10. What type of health insurance is (***name***) covered by? *Record all mentioned.*	MUTUAL HEALTH ORGANIZATION / COMMUNITY-BASED HEALTH INSURANCE ..... A HEALTH INSURANCE THROUGH EMPLOYER ..... B SOCIAL SECURITY ..... C OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE ..... D OTHER (*specify*) _____ X	

BIRTH REGISTRATION		BR
BR1. Does *(**name**)* have a birth certificate? *If yes, ask:* May I see it?	YES, SEEN ..... 1 YES, NOT SEEN ..... 2 NO ..... 3 DK 8	1 *End* 2 *End*
BR2. Has (***name***)'s birth been registered with ***National Registration Bureau***?	YES ..... 1 NO 2	1 *End*
BR3. Do you know how to register (***name***)'s birth?	DK ..... 8 YES ..... 1 NO 2	

EARLY CHILDHOOD DEVELOPMENT **EC**

EC1. How many children's books or picture books do you have for (***name***)?

NONE 00

NUMBER OF CHILDREN'S BOOKS..... ____

TEN OR MORE BOOKS 10

EC2. I am interested in learning about the things that (***name***) plays with when (he/she) is at home.

Does (he/she) play with:

		Y	N	DK
[A] Homemade toys, such as dolls, cars, or other toys made at home?	HOMEMADE TOYS	1	2	8
[B] Toys from a shop or manufactured toys?	TOYS FROM A SHOP	1	2	8
[C] Household objects, such as bowls or pots, or objects found outside, such as sticks, rocks, animal shells or leaves?	HOUSEHOLD OBJECTS OR OUTSIDE OBJECTS	1	2	8

EC3. Sometimes adults taking care of children have to leave the house to go shopping, wash clothes, or for other reasons and have to leave young children.

On how many days in the past week was (***name***):

[A] Left alone for more than an hour? NUMBER OF DAYS LEFT ALONE FOR MORE THAN AN HOUR ..... __

[B] Left in the care of another child, that is, someone less than 10 years old, for more than an hour? NUMBER OF DAYS LEFT WITH ANOTHER CHILD FOR MORE THAN AN HOUR ..... __

If 'None' record '0'. If 'Don't know' record '8'. ☐

EC4. *Check UB2: Child's age?*

AGE 0 OR 1..... 1
AGE 2, 3 OR 4..... 2

1 *End*

EC5. In the past 3 days, did you or any household member age 15 or over engage in any of the following activities with (***name***):

If 'Yes', ask:
Who engaged in this activity with (***name***)?

A foster/step mother or father living in the household who engaged with the child should be coded as mother or father.

Record all that apply.

'No one' cannot be recorded if any household member age 15 and above engaged in activity with child.

		MOTHER	FATHER	OTHER	NO ONE	
[A] Read books or looked at picture books with (***name***)?	READ BOOKS	A	B	X	Y	
[B] Told stories to (***name***)?	TOLD STORIES	A	B	X	Y	
[C] Sang songs to or with (***name***), including lullabies?	SANG SONGS	A	B	X	Y	
[D] Took (***name***) outside the home?	TOOK OUTSIDE	A	B	X	Y	
[E] Played with (***name***)?	PLAYED WITH	A	B	X	Y	
						☐
[F] Named, counted, or drew things for or with (***name***)?	NAMED	A	B	X	Y	

	AGE 3 OR 4 2	
EC6. I would like to ask you some questions about the health and development of (***name***). Children do not all develop and learn at the same rate. For example, some walk earlier than others. These questions are related to several aspects of (***name***)'s development. Can (***name***) identify or name at least ten letters of the alphabet?	YES ..... 1 NO ..... 2 DK 8	
EC7. Can (***name***) read at least four simple, popular words?	YES ..... 1 NO ..... 2 DK 8	
EC8. Does (***name***) know the name and recognize the symbol of all numbers from 1 to 10?	YES ..... 1 NO ..... 2 DK 8	
EC9. Can (***name***) pick up a small object with two fingers, like a stick or a rock from the ground?	YES ..... 1 NO ..... 2 DK 8	
EC10. Is (***name***) sometimes too sick to play?	YES ..... 1 NO ..... 2 DK 8	
EC11. Does (***name***) follow simple directions on how to do something correctly?	YES ..... 1 NO ..... 2 DK 8	
EC12. When given something to do, is (***name***) able to do it independently?	YES ..... 1 NO ..... 2 DK 8	
EC13. Does *(**name***) get along well with other children?	YES ..... 1 NO ..... 2 DK 8	
EC14. Does (***name***) kick, bite, or hit other children or adults?	YES ..... 1 NO ..... 2 DK 8	
EC15. Does (***name***) get distracted easily?	YES ..... 1 NO ..... 2 DK 8	

CHILD DISCIPLINE			UCD
UCD1. Check UB2: Child's age?	**Age 0 1** **Age 1, 2, 3 or 4 2**	**1 End**	
UCD2. Adults use certain ways to teach children the right behavior or to address a behavior problem. I will read various methods that are used. Please tell me if you or any other adult in your household has used this method with *(**name**)* in the past month.	YES NO		
[A] Took away privileges, forbade something *(**name**)* liked or did not allow (him/her) to leave the house.	TOOK AWAY PRIVILEGES.....1 2		
[B] Explained why *(**name**)*'s behavior was wrong.	EXPLAINED WRONG BEHAVIOR.....1 2		
[C] Shook (him/her).	SHOOK HIM/HER 1 2		
[D] Shouted, yelled at or screamed at (him/her).	SHOUTED, YELLED, SCREAMED 1 2		
[E] Gave (him/her) something else to do.	GAVE SOMETHING ELSE TO DO 1 2		
[F] Spanked, hit or slapped (him/her) on the bottom with bare hand. .	SPANKED, HIT, SLAPPED ON BOTTOM WITH BARE HAND 1 2		
[G] Hit (him/her) on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object.	HIT WITH BELT, HAIRBRUSH, STICK OR OTHER HARD OBJECT 1 2		
[H] Called (him/her) dumb, lazy or another name like that.	CALLED DUMB, LAZY OR ANOTHER NAME 1 2		
[I] Hit or slapped (him/her) on the face, head or ears.	HIT / SLAPPED ON THE FACE, HEAD OR EARS 1 2		
[J] Hit or slapped (him/her) on the hand, arm, or leg.	HIT / SLAPPED ON HAND, ARM OR LEG 1 2		
[K] Beat (him/her) up, that is hit (him/her) over and over as hard as one could.	BEAT UP, HIT OVER AND OVER AS HARD AS ONE COULD.....1 2		
UCD3. *Check UF4: Is this respondent the mother or caretaker of any other children under age 5 or a child age 5-14 selected for the questionnaire for children age 5-17?*	YES.....1 NO.....2	2 *UCD5*	
UCD4. *Check UF4: Has this respondent already responded to the following question (UCD5 or FCD5) for another child?*	YES.....1 NO.....2	1 *End*	
UCD5. Do you believe that in order to bring up, raise, or educate a child properly, the child needs to be physically punished?	YES.....1 NO.....2 DK / NO OPINION.....8		

CHILD FUNCTIONING		UCF
UCF1. *Check UB2: Child's age?*	AGE 0 OR 1 ..... 1 AGE 2, 3 OR 4 2	1 □ *End*
UCF2. I would like to ask you some questions about difficulties (***name***) may have. Does (***name***) wear glasses?	YES ..... 1 NO 2	
UCF3. Does (***name***) use a hearing aid?	YES ..... 1 NO 2	
UCF4. Does (***name***) use any equipment or receive assistance for walking?	YES ..... 1 NO 2	
UCF5. In the following questions, I will ask you to answer by selecting one of four possible answers. For each question, would you say that (***name***) has: 1) no difficulty, 2) some difficulty, 3) a lot of difficulty, or 4) that (he/she) cannot at all. *Repeat the categories during the individual questions whenever the respondent does not use an answer category:* Remember the four possible answers: Would you say that (***name***) has: 1) no difficulty, 2) some difficulty, 3) a lot of difficulty, or 4) that (he/she) cannot at all?		
UCF6. *Check UCF2: Child wears glasses?*	YES, UCF2=1 ..... 1 NO, UCF2=2 2	1 □ *UCF7A* 2 *UCF7B*
UCF7A. When wearing (his/her) glasses, does (***name***) have difficulty seeing? **UCF7B**. Does (***name***) have difficulty seeing?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT SEE AT ALL 4	
UCF8. *Check UCF3: Child uses a hearing aid?*	YES, UCF3=1 ..... 1 NO, UCF3=2 2	1 □ *UCF9A* 2 *UCF9B*
UCF9A. When using (his/her) hearing aid(s), does (***name***) have difficulty hearing sounds like peoples' voices or music? **UCF9B**. Does (***name***) have difficulty hearing sounds like peoples' voices or music?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT HEAR AT ALL 4	
UCF10. *Check UCF4: Child uses equipment or receives assistance for walking?*	YES, UCF4=1 ..... 1 NO, UCF4=2 2	1 □ *UCF11* 2 *UCF13*
UCF11. Without (his/her) equipment or assistance, does (***name***) have difficulty walking?	SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT WALK AT ALL 4	
UCF12. With (his/her) equipment or assistance, does (***name***) have difficulty walking?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT WALK AT ALL 4	1 □ *UCF14* 2 □ *UCF14* 3 □ *UCF14* 4 □ *UCF14*
UCF13. Compared with children of the same age, does (***name***) have difficulty walking?	NO DIFFICULTY ..... 1 SOME DIFFICULTY ..... 2 A LOT OF DIFFICULTY ..... 3 CANNOT WALK AT ALL 4	

UCF14. Compared with children of the same age, does (***name***) have difficulty picking up small objects with (his/her) hand?	NO DIFFICULTY.....1 SOME DIFFICULTY.....2 A LOT OF DIFFICULTY.....3 CANNOT PICK UP AT ALL.....4	
UCF15. Does (***name***) have difficulty understanding you?	NO DIFFICULTY.....1 SOME DIFFICULTY.....2 A LOT OF DIFFICULTY.....3 CANNOT UNDERSTAND AT ALL.....4	
UCF16. When (***name***) speaks, do you have difficulty understanding (him/her)?	NO DIFFICULTY.....1 SOME DIFFICULTY.....2 A LOT OF DIFFICULTY.....3 CANNOT BE UNDERSTOOD AT ALL.....4	
UCF17. Compared with children of the same age, does (***name***) have difficulty learning things?	NO DIFFICULTY.....1 SOME DIFFICULTY.....2 A LOT OF DIFFICULTY.....3 CANNOT LEARN THINGS AT ALL.....4	
UCF18. Compared with children of the same age, does (***name***) have difficulty playing?	NO DIFFICULTY.....1 SOME DIFFICULTY.....2 A LOT OF DIFFICULTY.....3 CANNOT PLAY AT ALL.....4	
UCF19. The next question has five different options for answers. I am going to read these to you after the question. Compared with children of the same age, how much does (***name***) kick, bite or hit other children or adults? Would you say: not at all, less, the same, more or a lot more?	NOT AT ALL.....1 LESS.....2 THE SAME.....3 MORE.....4 A LOT MORE.....5	

BREASTFEEDING AND DIETARY INTAKE		BD
BD1. *Check UB2: Child's age?*	AGE 0, 1, OR 2 ..... 1 AGE 3 OR 4 2	2 □ *End*
BD2. Has (***name***) ever been breastfed?	YES ..... 1 NO ..... 2 DK 8	2 □ *BD3A* 8 □ *BD3A*
BD3. Is (***name***) still being breastfed?	YES ..... 1 NO ..... 2 DK 8	
BD3A. *Check UB2: Child's age?*	AGE 0 OR 1 ..... 1 AGE 2 2	2 □ *End*
BD4. Yesterday, during the day or night, did (***name***) drink anything from a bottle with a nipple?	YES ..... 1 NO ..... 2 DK 8	
BD5. Did (***name***) drink Oral Rehydration Salt Solution (ORS) yesterday, during the day or night?	YES ..... 1 NO ..... 2 DK 8	
BD6. Did (***name***) drink or eat vitamin or mineral supplements or any medicines yesterday, during the day or night?	YES ..... 1 NO ..... 2 DK 8	

BD7. Now I would like to ask you about all other liquids that (***name***) may have had yesterday during the day or the night.

Please include liquids consumed outside of your home.

Did (***name***) drink (***name of item***) yesterday during the day or the night:

		YES	NO	DK
[A] Plain water?	PLAIN WATER	1	2	8
[B] Juice or juice drinks?	JUICE OR JUICE DRINKS	1	2	8
[C] Soup?	SOUP/MSUZI	1	2	8
[D] Infant formula, such as Lactogen, S26, NAN, Nido?	INFANT FORMULA	1	2 *BD7[E]*	8 *BD7[E]*
[D1] How many times did (***name***) drink infant formula? *If 7 or more times, record '7'.* *If unknown, record '8'.*	NUMBER OF TIMES DRANK INFANT FORMULA ..... __		□	□
[E] Milk from animals, such as fresh, tinned, or powdered milk?	MILK	1	2 *BD7[X]*	8 *BD7[X]*
[E1] How many times did (***name***) drink milk? *If 7 or more times, record '7'.* *If unknown, record '8'.*	NUMBER OF TIMES DRANK MILK ..... __		□	□
[X] Any other liquids?	OTHER LIQUIDS	1	2 *BD8*	8 *BD8*
[X1] *Record all other liquids mentioned.*	(*Specify*) _____			

BD8. Now I would like to ask you about everything that (***name***) ate yesterday during the day or the night. Please include foods consumed outside of your home.

Think about when (***name***) woke up yesterday. Did (he/she) eat anything at that time?

If 'Yes' ask: Please tell me everything (***name***) ate at that time.

Probe: Anything else?
Record answers using the food groups below.

- What did (***name***) do after that? Did (he/she) eat anything at that time?

Repeat this string of questions, recording in the food groups, until the respondent tells you that the child went to sleep until the next morning.

For each food group not mentioned after completing the above ask: Just to make sure, did (***name***) eat (***food group items***) yesterday during the day or the night?		YES	NO	DK
[A] Yogurt made from animal milk? *Note that liquid/drinking yogurt should be captured in BD7[E] or BD7[X], depending on milk content.*	YOGURT	1	2 *BD8[B]*	8 *BD8[B]*
[A1] How many times did (***name***) eat yogurt? *If 7 or more times, record '7'.* *If unknown, record '8'.*	NUMBER OF TIMES ATE YOGURT..... __			
[B] Any baby food, such as Cerelac, phalalac, Gerber, Hero or Nestum, Likuni phala?	FORTIFIED BABY FOOD	1	2	8
[C] Nsima, porridge from maize, porridge from millet, bread, rice, noodles, porridge from sorghum?	FOODS MADE FROM GRAINS	1	2	8
[D] Pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside?	PUMPKIN, CARROTS, SQUASH, ETC.	1	2	8
[E] White potatoes, white yams, cassava, or any other foods made from roots?	FOODS MADE FROM ROOTS	1	2	8
[F] Any dark green, leafy vegetables, such as kholowa, mnkhwani, chisoso, bonongwe, chinese spinach?	DARK GREEN, LEAFY VEGETABLES	1	2	8
[G] Ripe mangoes or ripe papayas, peaches, watermelon, Tangerine, Guava, loquats?	RIPE MANGO, RIPE PAPAYA	1	2	8
[H] Any other fruits or vegetables, such as Oranges, Manyumwa, Mandimu, Bananas, Apples, Masuku, Chinese, Rape, Cabbage, Khwanya,?	OTHER FRUITS OR VEGETABLES	1	2	8
[I] Liver, kidney, heart or other organ meats?	ORGAN MEATS	1	2	8
[J] Any other meat, such as beef, pork, lamb, goat, chicken, duck or sausages made from these meats?	OTHER MEATS	1	2	8
[K] Eggs?	EGGS	1	2	8
[L] Fish or shellfish, either fresh or dried?	FRESH OR DRIED FISH	1	2	8
[M] Beans, peas, lentils or nuts, including any foods made from these?	FOODS MADE FROM BEANS, PEAS, NUTS, ETC.	1	2	8
[N] Cheese or other food made from animal milk?	CHEESE OR OTHER FOOD MADE FROM MILK	1	2	8
[X] Other solid, semi-solid, or soft food?	OTHER SOLID, SEMI-SOLID, OR SOFT FOOD	1	2 *END*	8 *END*

[X1] *Record all other solid, semi-solid, or soft food that do not fit food groups above.* (*Specify*) _____

BD9. How many times did (***name***) eat any solid, semi-solid or soft foods yesterday during the day or night? *If BD8[A] is 'Yes', ensure that the response here includes the number of times recorded for yogurt in BD8[A1].* *If 7 or more times, record '7'.*	NUMBER OF TIMES.....__ DK.....8	

IMMUNISATION		IM
IM1. *Check UB2: Child's age?*	AGE 0, 1, OR 2 ..... 1 AGE 3 OR 4 2	2 □ *End*
IM2. Do you have a Child Health Passport, immunisation records from a private health provider or any other document where (***name***)'s vaccinations are written down?	YES, HAS ONLY CARD(S) ..... 1 YES, HAS ONLY OTHER DOCUMENT ..... 2 YES, HAS CARD(S) AND OTHER DOCUMENT ..... 3 NO, HAS NO CARDS AND NO OTHER DOCUMENT 4	1 □ *IM5* 3 □ *IM5*
IM3. Did you ever have a Child Health Passport or immunisation records from a private health provider for (***name***)?	YES ..... 1 NO 2	
IM4. *Check IM2:*	HAS ONLY OTHER DOCUMENT, IM2=2 ..... 1 HAS NO CARDS AND NO OTHER DOCUMENT AVAILABLE, IM2=4 2	2 □ *IM11*
IM5. May I see the card(s) (and/or) other document?	YES, ONLY CARD(S) SEEN ..... 1 YES, ONLY OTHER DOCUMENT SEEN ..... 2 YES, CARD(S) AND OTHER DOCUMENT SEEN ..... 3 NO CARDS AND NO OTHER DOCUMENT SEEN 4	4 □ *IM11*

IM6.

(a) Copy dates for each vaccination from the documents.
(b) Write '44' in day column if documents show that vaccination was given but no date recorded.

		DATE OF IMMUNISATION							
		DAY		MONTH		YEAR			
~~BCG~~	~~BCG (at birth)~~					2	0	1	
~~Polio (OPV) (at birth)~~	~~OPV0~~					2	0	1	
~~Polio (OPV) 1~~	~~OPV1~~					2	0	1	
~~Polio (OPV) 2~~	~~OPV2~~					2	0	1	
~~Polio (OPV) 3~~	~~OPV3~~					2	0	1	
~~Polio (IPV)~~	~~IPV~~					2	0	1	
~~Pentavalent (DTPHibHepB) 1~~	~~Penta1~~					2	0	1	
~~Pentavalent (DTPHibHepB) 2~~	~~Penta2~~					2	0	1	
~~Pentavalent (DTPHibHepB) 3~~	~~Penta3~~					2	0	1	
~~Pneumococcal (Conjugate) 1~~	~~PCV1~~					2	0	1	
~~Pneumococcal (Conjugate) 2~~	~~PCV2~~					2	0	1	
~~Pneumococcal (Conjugate) 3~~	~~PCV3~~					2	0	1	
~~Rotavirus 1~~	~~Rota1~~					2	0	1	
~~Rotavirus 2~~	~~Rota2~~					2	0	1	
~~Measles-Rubella 1~~	~~MR1~~					2	0	1	
~~Measles-Rubella 2~~	~~MR2~~					2	0	1	
VITAMIN A (RECENT DOSE)						2	0	1	

IM7. *Check IM6: Are all vaccines (BCG to MR2) recorded?*	YES ..... 1 NO 2	1 *End*
IM8. Did (***name***) participate in any of the following campaigns;	Y N DK	
[A] 2019 CHILD HEALTH DAY/CAMPAIGN	2019 CHD / CAMPAIGN 1 2 8	
[B] 2018 CHILD HEALTH DAY/CAMPAIGN	2018 CHD / CAMPAIGN 1 2 8	
[C] 2017 CHILD HEALTH DAY/CAMPAIGN	2017 CHD / CAMPAIGN 1 2 8	
IM9. In addition to what is recorded on the document(s) you have shown me, did (***name***) receive any other vaccinations including vaccinations received during the campaigns just mentioned?	YES ..... 1 NO ..... 2 DK 8	2 *End* 8 *End*
IM10. *Go back to IM6 and probe for these vaccinations.* *Record '66' in the corresponding day column for each vaccine received. For each vaccination not received record '00' in day column.* *When finished, go to End of module.*		*End*
IM11. Has (***name***) ever received any vaccinations to prevent (him/her) from getting diseases, including vaccinations received in child health days or child health campaigns?	YES ..... 1 NO ..... 2 DK 8	
IM12. . Did (***name***) participate in any of the following child health days or child health campaigns;	Y N DK	
[A] 2019 CHILD HEALTH DAY/CAMPAIGN	2019 CHD / CAMPAIGN 1 2 8	
[B] 2018 CHILD HEALTH DAY/CAMPAIGN	2018 CHD / CAMPAIGN 1 2 8	
[C] 2017 CHILD HEALTH DAY/CAMPAIGN	2017 CHD / CAMPAIGN 1 2 8	
IM13. *Check IM11 and IM12:*	ALL NO OR DK..... 1 AT LEAST ONE YES 2	1 *End*
IM14. Has (***name***) ever received a BCG vaccination against tuberculosis – that is, an injection in the arm or shoulder that usually causes a scar? ***Probe**: is given just after birth*	YES ..... 1 NO ..... 2 DK 8	
IM15. Did (***name***) receive a Hepatitis B vaccination – that is an injection on the outside of the thigh to prevent Hepatitis B disease – within the first 24 hours after birth?	YES, WITHIN 24 HOURS ..... 1 YES, BUT NOT WITHIN 24 HOURS ..... 2 NO ..... 3 DK 8	
IM16. Has (***name***) ever received any vaccination drops in the mouth to protect (him/her) from polio? *Probe by indicating that the first drop is usually given at birth and later at the same time as injections to prevent other diseases.*	YES ..... 1 NO ..... 2 DK 8	2 *IM20* 8 *IM20*
IM17. Were the first polio drops received in the first two weeks after birth?	YES ..... 1 NO 2	

IM18. How many times were the polio drops received?	NUMBER OF TIMES ..... __ DK 8	
IM19. The last time (***name***) received the polio drops, did (he/she) also get an injection to protect against polio? *Probe to ensure that both were given, drops and injection.*	YES ..... 1 NO ..... 2 DK 8	
IM20. Has (***name***) ever received a Pentavalent DPT-HeB-Hib vaccination – that is, an injection in the thigh to prevent (him/her) from getting tetanus, whooping cough, diphtheria, Hepatitis B disease, and Haemophilus influenzae type b? *Probe by indicating that Pentavalent vaccination is sometimes given at the same time as the polio drops*	YES ..... 1 NO ..... 2 DK 8	 2 *IM22* 8 *IM22*
IM21. How many times was the Pentavalent DPT-HeB-Hib vaccine received? *Probe by indicating that Pentavalent vaccination is sometimes given at the same time as the Pneumococcal Conjugate.*	NUMBER OF TIMES ..... __ DK 8	
IM22. Has (***name***) ever received a Pneumococcal Conjugate Vaccination (PCV) – that is, an injection to prevent (him/her) from getting pneumococcal disease, including ear infections and meningitis caused by pneumococcus? *Probe by indicating that Pneumococcal Conjugate vaccination is sometimes given at the same time as the Pentavalent vaccination.*	YES ..... 1 NO ..... 2 DK 8	 2 *IM24* 8 *IM24*
IM23. How many times was the Pneumococcal Conjugate Vaccine (PCV) received? *Probe by indicating that rotavirus vaccination is sometimes given at the same time as the Pentavalent vaccination.*	NUMBER OF TIMES ..... __ DK 8	
IM24. Has (***name***) ever received a rotavirus vaccination – that is, liquid in the mouth to prevent diarrhoea? *Probe by indicating that rotavirus vaccination is sometimes given at the same time as the Pentavalent vaccination.*	YES ..... 1 NO ..... 2 DK 8	 2 *IM26* 8 *IM26*
IM25. How many times was the rotavirus vaccine received?	NUMBER OF TIMES ..... __ DK 8	
IM26. Has (***name***) ever received a (Measles-Rubella) MR vaccine – that is, a shot in the arm at the age of 9 months or older - to prevent (him/her) from getting measles and rubella?	YES ..... 1 NO ..... 2 DK 8	 2 *IM27* 8 *IM27*
IM26A. How many times was the (Measles-Rubella) MR vaccine received?	NUMBER OF TIMES ..... ____ DK 8	

CARE OF ILLNESS		CA
CA1. In the last two weeks, has (***name***) had diarrhoea?	YES ..... 1 NO ..... 2 DK 8	 2 *CA14* 8 *CA14*
CA2. *Check BD3: Is child still breastfeeding?*	YES OR BLANK, BD3=1 OR BLANK ..... 1 NO OR DK, BD3=2 OR 8 2	1 *CA3A* 2 *CA3B*
CA3A. I would like to know how much (***name***) was given to drink during the diarrhoea. This includes breastmilk, Oral Rehydration Salt (ORS) and other liquids given with medicine. During the time (***name***) had diarrhoea, was (he/she) given less than usual to drink, about the same amount, or more than usual? *If 'less', probe*: Was (he/she) given much less than usual to drink, or somewhat less? **CA3B**. I would like to know how much (***name***) was given to drink during the diarrhoea. This includes Oral Rehydration Salt (ORS) and other liquids given with medicine. During the time (***name***) had diarrhoea, was (he/she) given less than usual to drink, about the same amount, or more than usual? *If 'less', probe*: Was (he/she) given much less than usual to drink, or somewhat less?	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 NOTHING TO DRINK ..... 5 DK 8	
CA4. During the time (***name***) had diarrhoea, was (he/she) given less than usual to eat, about the same amount, more than usual, or nothing to eat? If 'less', probe: Was (he/she) given much less than usual to eat or somewhat less?	MUCH LESS ..... 1 SOMEWHAT LESS ..... 2 ABOUT THE SAME ..... 3 MORE ..... 4 STOPPED FOOD ..... 5 NEVER GAVE FOOD ..... 7 DK 8	
CA5. Did you seek any advice or treatment for the diarrhoea from any source?	YES ..... 1 NO ..... 2 DK 8	 2 *CA7* 8 *CA7*

CA6. Where did you seek advice or treatment? *Probe:* Anywhere else? Record all providers mentioned, but do <u>not</u> prompt with any suggestions. Probe to identify each type of provider. <u>If unable to determine if public or private sector</u>, write the name of the place and then temporarily record 'W' until you learn the appropriate category for the response. _____ (*Name of place*)	**PUBLIC MEDICAL SECTOR** GOVERNMENT HOSPITAL ..... A GOVERNMENT HEALTH CENTRE ..... B GOVERNMENT HEALTH POST ..... C VILLAGE CLINIC (H.S.A) ..... D MOBILE / OUTREACH CLINIC ..... E OTHER PUBLIC MEDICAL (*specify*)_____ H **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL / CLINIC ..... I PRIVATE PHYSICIAN ..... J PRIVATE PHARMACY ..... K COMMUNITY HEALTH WORKER (NON-GOVERNMENT) ..... L MOBILE CLINIC ..... M OTHER PRIVATE MEDICAL (*specify*)_____ O **CHAM/MISSION** HOSPITAL ..... S HEALTH CENTRE ..... T DK PUBLIC OR PRIVATE OR CHAM/ MISSION ..... W **OTHER SOURCE** RELATIVE / FRIEND ..... P SHOP / MARKET / STREET ..... Q TRADITIONAL PRACTITIONER ..... R OTHER (*specify*) _____ X DK/DON'T REMEMBER ..... Z	
CA7. During the time (***name***) had diarrhoea, was (he/she) given:	Y N DK	
[A] A fluid made from a special packet called Thanzi ORS packet ?	THANZI ORS PACKET 1 2 8	
[B] A pre-packaged ORS fluid?	PRE-PACKAGED ORS FLUID 1 2 8	
[C] Zinc tablets or syrup?	ZINC TABLETS OR SYRUP 1 2 8	
CA8. *Check CA7[A] and CA7[B]: Was child given any ORS?*	YES, YES IN CA7[A] OR CA7[B] ..... 1 NO, 'NO' OR 'DK' IN BOTH CA7[A] AND CA7[B] 2 2 *CA10*	☐

CA9. Where did you get the (*ORS mentioned in CA7[A] and/or CA7[B]*)? *Probe to identify the type of source.* *If 'Already had at home', probe to learn if the source is known.* *If unable to determine whether public or private, write the name of the place and then temporarily record 'W' until you learn the appropriate category for the response.* _____ *(Name of place)*	**PUBLIC MEDICAL SECTOR** GOVERNMENT HOSPITAL ..... A GOVERNMENT HEALTH CENTRE ..... B GOVERNMENT HEALTH POST ..... C VILLAGE CLINIC (H.S.A) ..... D MOBILE / OUTREACH CLINIC ..... E OTHER PUBLIC MEDICAL (*specify*)_____ H **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL / CLINIC ..... I PRIVATE PHYSICIAN ..... J PRIVATE PHARMACY ..... K COMMUNITY HEALTH WORKER (NON-GOVERNMENT) ..... L MOBILE CLINIC ..... M OTHER PRIVATE MEDICAL (*specify*)_____ O DK PUBLIC OR PRIVATE ..... W **CHAM/MISSION** HOSPITAL ..... S HEALTH CENTRE ..... T **OTHER SOURCE** RELATIVE / FRIEND ..... P SHOP / MARKET / STREET ..... Q TRADITIONAL PRACTITIONER ..... R OTHER (*specify*) _____ X DK / DON'T REMEMBER ..... Z	
CA10. *Check CA7[C]: Was child given any zinc?*	YES, CA7[C]=1 ..... 1 NO, CA7[C] ≠1 2	2 □ *CA12*
CA11. Where did you get the zinc? *Probe to identify the type of source.* *If 'Already had at home', probe to learn if the source is known.* *If unable to determine whether public or private, write the name of the place and then temporarily record 'W' until you learn the appropriate category for the response.* _____ *(Name of place)*	**PUBLIC MEDICAL SECTOR** GOVERNMENT HOSPITAL ..... A GOVERNMENT HEALTH CENTRE ..... B GOVERNMENT HEALTH POST ..... C VILLAGE CLINIC (H.S.A) ..... D MOBILE / OUTREACH CLINIC ..... E OTHER PUBLIC MEDICAL (*specify*)_____ H **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL / CLINIC ..... I PRIVATE PHYSICIAN ..... J PRIVATE PHARMACY ..... K COMMUNITY HEALTH WORKER (NON-GOVERNMENT) ..... L MOBILE CLINIC ..... M OTHER PRIVATE MEDICAL (*specify*)_____ O **CHAM/MISSION** HOSPITAL ..... S HEALTH CENTRE ..... T DK PUBLIC, PRIVATE OR CHAM/MISSION ..... W **OTHER SOURCE** RELATIVE / FRIEND ..... P SHOP / MARKET / STREET ..... Q TRADITIONAL PRACTITIONER ..... R OTHER (*specify*) _____ X DK / DON'T REMEMBER ..... Z	

CA12. Was anything else given to treat the diarrhoea?	YES..... 1 NO ..... 2 DK..... 8	 2 *CA14* 8 *CA14*
CA13. What else was given to treat the diarrhoea? *Probe*: Anything else? *Record all treatments given. Write brand name(s) of all medicines mentioned.* _____ (Name of brand) _____ (Name of brand)	**PILL OR SYRUP** ANTIBIOTIC..... A ANTIMOTILITY (ANTI-DIARRHOEA)..... B OTHER PILL OR SYRUP..... G UNKNOWN PILL OR SYRUP ..... H **INJECTION** ANTIBIOTIC..... L NON-ANTIBIOTIC..... M UNKNOWN INJECTION ..... N INTRAVENOUS (IV)..... O HOME REMEDY / HERBAL MEDICINE ..... Q OTHER (*specify*) _____ X	
CA14. At any time in the last two weeks, has (***name***) been ill with a fever?	YES..... 1 NO ..... 2 DK..... 8	 2 *CA16* 8 *CA16*
CA15. At any time during the illness, did (***name***) have blood taken from (his/her) finger or heel for testing?	YES..... 1 NO ..... 2 DK..... 8	
CA16. At any time in the last two weeks, has (***name***) had an illness with a cough?	YES..... 1 NO ..... 2 DK..... 8	
CA17. At any time in the last two weeks, has (**name**) had fast, short, rapid breaths or difficulty breathing?	YES..... 1 NO ..... 2 DK..... 8	 2 *CA19* 8 *CA19*
CA18. Was the fast or difficult breathing due to a problem in the chest or a blocked or runny nose?	PROBLEM IN CHEST ONLY ..... 1 BLOCKED OR RUNNY NOSE ONLY..... 2 BOTH..... 3 OTHER (*specify*) _____ 6 DK..... 8	1 *CA20* 2 *CA20* 3 *CA20* 6 *CA20* 8 *CA20*
CA19. *Check CA14: Did child have fever?*	YES, CA14=1..... 1 NO OR DK, CA14=2 OR 8 2	 2 *CA30*
CA20. Did you seek any advice or treatment for the illness from any source?	YES..... 1 NO ..... 2 DK..... 8	 2 *CA22* 8 *CA22*

CA21. From where did you seek advice or treatment? *Probe:* Anywhere else? Record all providers mentioned, but do not prompt with any suggestions. Probe to identify each type of provider. If unable to determine if public or private sector, write the name of the place and then temporarily record 'W' until you learn the appropriate category for the response. _____ (Name of place)	**PUBLIC MEDICAL SECTOR** GOVERNMENT HOSPITAL ..... A GOVERNMENT HEALTH CENTRE ..... B GOVERNMENT HEALTH POST ..... C VILLAGE CLINIC (H.S.A) ..... D MOBILE / OUTREACH CLINIC ..... E OTHER PUBLIC MEDICAL (*specify*)_____ H **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL / CLINIC ..... I PRIVATE PHYSICIAN ..... J PRIVATE PHARMACY ..... K COMMUNITY HEALTH WORKER (NON-GOVERNMENT) ..... L MOBILE CLINIC ..... M OTHER PRIVATE MEDICAL (*specify*)_____ O **CHAM/MISSION** HOSPITAL ..... S HEALTH CENTRE ..... T DK PUBLIC, PRIVATE OR CHAM/MISSION ..... W **OTHER SOURCE** RELATIVE / FRIEND ..... P SHOP / MARKET / STREET ..... Q TRADITIONAL PRACTITIONER ..... R OTHER (*specify*) _____ X DK/DON'T REMEMBER……..Z	
CA22. At any time during the illness, was (***name***) given any medicine for the illness?	YES ..... 1 NO ..... 2 DK 8	2 □ *CA30* 8 □ *CA30*
CA23. What medicine was (***name***) given? *Probe:* Any other medicine? Record all medicines given. C*heck in the Health passport any medicine which respondent doesn't know the name* If unable to determine type of medicine, write the brand name and then temporarily record 'W' until you learn the appropriate category for the response. _____ (Name of brand) _____ (Name of brand)	**ANTI-MALARIALS** ARTEMISININ COMBINATION THERAPY (ACT)/LA ..... A AMODIAQUINE ..... D QUININE PILLS ..... E INJECTION/IV ..... F ARTESUNATE RECTAL ..... G INJECTION/IV ..... H OTHER ANTI-MALARIAL (*specify*)_____ K **ANTIBIOTICS** AMOXICILLIN ..... L COTRIMOXAZOLE ..... M OTHER ANTIBIOTIC PILL/SYRUP ..... N OTHER ANTIBIOTIC INJECTION/IV ..... O **OTHER MEDICATIONS** PARACETAMOL/PANADOL/ ACETAMINOPHEN ..... R ASPIRIN ..... S IBUPROFEN ..... T ONLY BRAND NAME RECORDED ..... W OTHER (*specify*) _____ X DK/DON'T REMEMBER ..... Z	

CA24. *Check CA23: Antibiotics mentioned?*	YES, ANTIBIOTICS MENTIONED, CA23=L-O ..... 1 NO, ANTIBIOTICS NOT MENTIONED 2	2 → *CA26*
CA25. Where did you get the (***name of medicine from CA23, codes L to O***)? *Probe to identify the type of source.* *If 'Already had at home', probe to learn if the source is known.* *If unable to determine whether public or private, write the name of the place and then temporarily record 'W' until you learn the appropriate category for the response.* _____ *(Name of place)*	**PUBLIC MEDICAL SECTOR** GOVERNMENT HOSPITAL ..... A GOVERNMENT HEALTH CENTRE ..... B GOVERNMENT HEALTH POST ..... C VILLAGE CLINIC (H.S.A) ..... D MOBILE / OUTREACH CLINIC ..... E OTHER PUBLIC MEDICAL (*specify*)_____ H **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL / CLINIC ..... I PRIVATE PHYSICIAN ..... J PRIVATE PHARMACY ..... K COMMUNITY HEALTH WORKER (NON-GOVERNMENT) ..... L MOBILE CLINIC ..... M OTHER PRIVATE MEDICAL (*specify*)_____ O **CHAM/MISSION** HOSPITAL ..... S HEALTH CENTRE ..... T DK PUBLIC, PRIVATE OR CHAM/MISSION ..... W **OTHER SOURCE** RELATIVE / FRIEND ..... P SHOP / MARKET / STREET ..... Q TRADITIONAL PRACTITIONER ..... R OTHER (*specify*) _____ X DK / DON'T REMEMBER ..... Z	
CA26. *Check CA23: Anti-malarials mentioned?*	YES, ANTI-MALARIALS MENTIONED, CA23=A-K ..... 1 NO, ANTI-MALARIALS NOT MENTIONED 2	2 → *CA30*

CA27. Where did you get the (***name of medicine from CA23, codes A to K***)? *Probe to identify the type of source.* *If 'Already had at home', probe to learn if the source is known.* *If unable to determine whether public or private, write the name of the place and then temporarily record 'W' until you learn the appropriate category for the response.* _____ *(Name of place)*	**PUBLIC MEDICAL SECTOR** GOVERNMENT HOSPITAL ..... A GOVERNMENT HEALTH CENTRE ..... B GOVERNMENT HEALTH POST ..... C VILLAGE CLINIC (H.S.A) ..... D MOBILE / OUTREACH CLINIC ..... E OTHER PUBLIC MEDICAL (*specify*)_____ H **PRIVATE MEDICAL SECTOR** PRIVATE HOSPITAL / CLINIC ..... I PRIVATE PHARMACY ..... K MOBILE CLINIC ..... M OTHER PRIVATE MEDICAL (*specify*)_____ O **CHAM/MISSION** HOSPITAL ..... S HEALTH CENTRE ..... T DK PUBLIC, PRIVATE OR CHAM/MISSION ..... W **OTHER SOURCE** RELATIVE / FRIEND ..... P SHOP / MARKET / STREET ..... Q TRADITIONAL PRACTITIONER ..... R OTHER (*specify*) _____ X DK / DON'T REMEMBER ..... Z	
CA28. *Check CA23: More than one antimalarial recorded in codes A to K?*	YES, MULTIPLE ANTI-MALARIALS MENTIONED ..... 1 NO, ONLY ONE ANTIMALARIAL MENTIONED 2	1 ☐ *CA29A* 2 ☐ *CA29B*
CA29A. How long after the fever started did (***name***) first take the first of the (***name all anti-malarials recorded in CA23, codes A to K)***? **CA29B.** How long after the fever started did (***name***) first take (***name of anti-malarial from CA23, codes A to K)***?	SAME DAY ..... 0 NEXT DAY ..... 1 2 DAYS AFTER FEVER STARTED ..... 2 3 OR MORE DAYS AFTER FEVER STARTED ..... 3 DK 8	
CA30. *Check* UB2: C*hild's age*?	AGE 0, 1 OR 2 ..... 1 AGE 3 OR 4 2	2 ☐ *End*
CA31. The last time ***(name)*** passed stools, what was done to dispose of the stools?	CHILD USED TOILET / LATRINE ..... 01 PUT / RINSED INTO TOILET OR LATRINE ..... 02 PUT / RINSED INTO DRAIN OR DITCH ..... 03 THROWN INTO GARBAGE (SOLID WASTE) ..... 04 BURIED ..... 05 LEFT IN THE OPEN ..... 06 OTHER (*specify*) _____ 96 DK 98	

UF11. *Record the time.*	HOURS AND MINUTES..... __ __ : __ __	
UF12. *Language of the Questionnaire.*	ENGLISH ..... 1 CHICHEWA..... 2 TUMBUKA 3	
UF13. *Language of the Interview.*	ENGLISH ..... 1 CHICHEWA..... 2 TUMBUKA .....3 OTHER LANGUAGE (*specify*)_____6	
UF14. *Native language of the Respondent.*	ENGLISH ..... 1 CHICHEWA..... 2 TUMBUKA ..... 3 OTHER LANGUAGE (*specify*) _____ 6	
UF15. *Was a translator used for any parts of this questionnaire?*	YES, THE ENTIRE QUESTIONNAIRE..... 1 YES, PARTS OF THE QUESTIONNAIRE ..... 2 NO, NOT USED 3	

UF16. *Tell the respondent that you will need to measure the weight and height of the child before you leave the household and a colleague will come to lead the measurement. Issue the ANTHROPOMETRY MODULE FORM for this child and complete the Information Panel on that Form.*

Check columns HL10 and HL20 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE: Is the respondent the mother or caretaker of <u>another</u> child age 0-4 living in this household?

☐ *Yes* ☐ *Go to UF17 on the UNDER-FIVE INFORMATION PANEL and record '01'. Then go to the next QUESTIONNAIRE FOR CHILDREN UNDER FIVE to be administered to the same respondent.*

☐ *No* ☐ *Check HL6 and column HL20 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE: Is the respondent the mother or caretaker of a child age 5-17 selected for Questionnaire for Children Age 5-17 in this household?*

☐ *Yes* ☐ *Go to UF17 on the UNDER-FIVE INFORMATION PANEL and record '01'. Then go to the QUESTIONNAIRE FOR CHILDREN AGE 5-17 to be administered to the same respondent.*

☐ *No* ☐ *Go to UF17 on the UNDER-FIVE INFORMATION PANEL and record '01'. Then end the interview with this respondent by thanking her/him for her/his cooperation. Check to see if there are other questionnaires to be administered in this household.*

INTERVIEWER'S OBSERVATIONS

SUPERVISOR'S OBSERVATIONS

ANTHROPOMETRY MODULE INFORMATION PANEL	AN
AN1. *Cluster number:* ___ ___ ___	**AN2**. *Household number:* ___ ___
AN3. *Child's name and line number:*	**AN4**. *Child's age from UB2:*
NAME _____ ___ ___	AGE (IN COMPLETED YEARS)..... __
AN5. *Mother's / Caretaker's name and line number:*	**AN6**. *Interviewer's name and number:*
NAME _____ ___ ___	NAME _____ ___ ___ ___

ANTHROPOMETRY		
AN7. *Measurer's name and number:*	NAME _____ ___ ___ ___	
AN8. *Record the result of weight measurement as read out by the Measurer:* *Read the record back to the Measurer and also ensure that he/she verifies your record.*	KILOGRAMS (KG) ..... ___ ___ . ___ CHILD NOT PRESENT ..... 99.3 CHILD REFUSED ..... 99.4 RESPONDENT REFUSED..... 99.5 OTHER (*specify*) _____ 99.6	99.3□ *AN13* 99.4□ *AN10* 99.5□ *AN10* 99.6□ *AN10*
AN9. *Was the child undressed to the minimum?*	YES..... 1 NO, THE CHILD COULD NOT BE UNDRESSED TO THE MINIMUM..... 2	
AN10. *Check AN4: Child's age?*	AGE 0 OR 1 ..... 1 AGE 2, 3 OR 4 2	1□ *AN11A* 2□ *AN11B*
AN11A. *The child is less than 2 years old and should be measured lying down. Record the result of length measurement as read out by the Measurer:* *Read the record back to the Measurer and also ensure that he/she verifies your record.* AN11B. *The child is at least 2 years old and should be measured standing up. Record the result of height measurement as read out by the Measurer:* *Read the record back to the Measurer and also ensure that he/she verifies your record.*	LENGTH / HEIGHT (CM)..... ___ ___ ___ . ___ CHILD REFUSED ..... 999.4 RESPONDENT REFUSED..... 999.5 OTHER (*specify*) _____ 999.6	999.4□ *AN13* 999.5□ *AN13* 999.6□ *AN13*
AN12. *How was the child actually measured? Lying down or standing up?*	LYING DOWN ..... 1 STANDING UP..... 2	
AN13. *Today's date: Day / Month / Year:* ___ ___ / ___ ___ / 2 0 1 ___		
AN14. Is there another child under age 5 in the household who has not yet been measured?	YES..... 1 NO 2	1□ *Next Child*
AN15. Thank the respondent for his/her cooperation and inform your Supervisor that the Measurer and you have completed all the measurements in this household.		

INTERVIEWER'S OBSERVATIONS FOR ANTHROPOMETRY MODULE

MEASURER'S OBSERVATIONS FOR ANTHROPOMETRY MODULE

SUPERVISOR'S OBSERVATIONS FOR ANTHROPOMETRY MODULE

MICS

QUESTIONNAIRE FOR CHILDREN AGE 5-17

Malawi Multiple Indicator Cluster Survey (MICS), 2019

5-17 CHILD INFORMATION PANEL		FS
FS1. *Cluster number:* ___ ___ ___ ___	**FS2**. *Household number:* ___ ___	
FS3. *Child's name and line number:* NAME _____ ___ ___	**FS4**. *Mother's / Caretaker's name and line number:* NAME _____ ___ ___	
FS5. *Interviewer's name and number:* NAME _____ ___ ___	**FS6**. *Supervisor's name and number:* NAME _____ ___ ___	
FS7. *Day / Month / Year of interview:* ___ ___ / ___ ___ / 2 0 1 ___	**FS8**. *Record the time:*	HOURS : MINUTES __ __ : __ __

Check respondent's age in HL6 in LIST OF HOUSEHOLD MEMBERS, HOUSEHOLD QUESTIONNAIRE:
If age 15-17, verify that adult consent for interview is obtained (HH33 or HH39) or not necessary (HL20=90). If consent is needed and not obtained, the interview must not commence and '06' should be recorded in FS17. The respondent must be at least 15 years old. In the very few cases where a child age 15-17 has no mother or caretaker identified in the household (HL20=90), the respondent will be the child him/herself.

FS9. *Check completed questionnaires in this household: Have you or another member of your team interviewed this respondent for another questionnaire?*	YES, INTERVIEWED ALREADY ..... 1 NO, FIRST INTERVIEW 2	1 □ *FS10B* 2 □ *FS10A*

FS10A. Hello, my name is (***your name***). We are from ***National Statistical Office***. We are conducting a survey about the situation of children, families and households. I would like to talk to you about (***child's name from FS3***)'s health and well-being. This interview will take about ***40*** minutes. All the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?	**FS10B**. Now I would like to talk to you about (***child's name from FS3***)'s health and well-being in more detail. This interview will take about ***40*** minutes. Again, all the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?
YES ..... *1* *NO / NOT ASKED* *2*	1 □ *CHILD'S BACKGROUND Module* 2 □ *FS17*

FS17. *Result of interview for child age 5-17 years* *CODES REFER TO THE RESPONDENT.* *DISCUSS ANY RESULT NOT COMPLETED WITH SUPERVISOR.*	COMPLETED ..... 01 NOT AT HOME ..... 02 REFUSED ..... 03 PARTLY COMPLETED ..... 04 INCAPACITATED (*specify*) _____ 05 NO ADULT CONSENT FOR MOTHER/ CARETAKER AGE 15-17 ..... 06 OTHER (*specify*) _____ 96

CHILD'S BACKGROUND		CB
CB1. *Check the respondent's line number (FS4) in 5-17 CHILD INFORMATION PANEL and the respondent to the HOUSEHOLD QUESTIONNAIRE (HH47):*	FS4=HH47 ..... 1 FS4≠HH47 2	1 *CB11*
CB2. In what month and year was (***name***) born? *Month and year must be recorded.*	DATE OF BIRTH MONTH ..... __ __ YEAR ..... __ __ __ __	
CB3. How old is (***name***)? *Probe*: How old was (***name***) at (his/her) last birthday? *Record age in completed years.* *If responses to CB2 and CB3 are inconsistent, probe further and correct.*	AGE (IN COMPLETED YEARS) ..... __ __	
CB4. Has (***name***) ever attended school or any early childhood education programme?	YES ..... 1 NO 2	2 *CB11*
CB5. What is the highest level and grade or year of school (***name***) has ever attended?	EARLY CHILDHOOD EDUCATION ..... 000 PRIMARY ..... **1** __ __ LOWER SECONDARY ..... **2** __ __ UPPER SECONDARY ..... **3** __ __ HIGHER ..... **4** __ __	000 *CB7*
	VOCATIONAL ..... **5** __ __	
CB6. Did (he/she) ever complete that (grade/year)?	YES ..... 1 NO 2	
CB7. At any time during the 2019/2020 school year did (***name***) attend school or any early childhood education programme?	YES ..... 1 NO 2	2 *CB9*
CB8. During 2019- 2020 school year, which level and grade or year is (***name***) attending?	EARLY CHILDHOOD EDUCATION ..... 000 PRIMARY ..... **1** __ __ ~~LOWER SECONDARY ..... **2** __ __~~ UPPER SECONDARY ..... **3** __ __ HIGHER ..... **4** __ __ ~~VOCATIONAL ..... **5** __ __~~	
CB9. At any time during the 2018 -2019 school year did (***name***) attend school or any early childhood education programme?	YES ..... 1 NO 2	2 *CB11*
CB10. During 2018 – 2019 school year, which level and grade or year did (***name***) attend?	EARLY CHILDHOOD EDUCATION ..... 000 PRIMARY ..... **1** __ __ LOWER SECONDARY ..... **2** __ __ UPPER SECONDARY ..... **3** __ __	
CB11. Is (***name***) covered by any health insurance? **CB12.** What type of health insurance is (***name***) covered by? *Record all mentioned.*	HIGHER ..... **4** __ __ VOCATIONAL ..... **5** __ __ YES ..... 1 NO ..... 2 MUTUAL HEALTH ORGANIZATION/ COMMUNITY-BASED HEALTH INSURANCE ..... A HEALTH INSURANCE THROUGH EMPLOYER ..... B SOCIAL SECURITY ..... C OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE ..... D OTHER (*specify*) _____ X	2 *End*

CHILD LABOUR		CL
CL1. Now I would like to ask about any work (***name***) may do. Since last (***day of the week***), did (***name***) do any of the following activities, even for only one hour? [A] Did (***name***) do any work or help on (his/her) own or the household's plot, farm, food garden or looked after animals? For example, growing farm produce, harvesting, or feeding, grazing or milking animals? [B] Did (***name***) help in a family business or a relative's business with or without pay, or run (his/her) own business? [C] Did (***name***) produce or sell articles, handicrafts, clothes, food or agricultural products? [X] Since last (***day of the week***), did (***name***) engage in any <u>other</u> activity in return for income in cash or in kind, even for only one hour?	YES NO WORKED ON PLOT, FARM, FOOD GARDEN, LOOKED AFTER ANIMALS ..... 1 2 HELPED IN FAMILY / RELATIVE'S BUSINESS / RAN OWN BUSINESS ..... 1 2 PRODUCE / SELL ARTICLES / HANDICRAFTS / CLOTHES / FOOD OR AGRICULTURAL PRODUCTS ..... 1 2 ANY OTHER ACTIVITY 1 2	
CL2. *Check CL1, [A]-[X]:*	AT LEAST ONE 'YES' ..... 1 ALL ANSWERS ARE 'NO' 2	2 *CL7*
CL3. Since last (***day of the week***) about how many hours did (***name***) engage in (this activity/these activities), in total? *If less than one hour, record '00'.*	NUMBER OF HOURS ..... __ __	
CL4. (Does the activity/Do these activities) require carrying heavy loads?	YES ..... 1 NO 2	
CL5. (Does the activity/Do these activities) require working with dangerous tools such as knives and similar or operating heavy machinery?	YES ..... 1 NO 2	

CL6. How would you describe the work environment of (***name***)?		
[A] Is (he/she) exposed to dust, fumes or gas?	YES ..... 1 NO 2	
[B] Is (he/she) exposed to extreme cold, heat or humidity?	YES ..... 1 NO 2	
[C] Is (he/she) exposed to loud noise or vibration?	YES ..... 1 NO 2	
[D] Is (he/she) required to work at heights?	YES ..... 1 NO 2	
[E] Is (he/she) required to work with chemicals, such as pesticides, glues and similar, or explosives?	YES ..... 1 NO 2	
[X] Is (***name***) exposed to other things, processes or conditions bad for (his/her) health or safety?	YES ..... 1 NO 2	
CL7. Since last (***day of the week***), did (***name***) fetch water for household use?	YES ..... 1 NO 2	☐ 2 *CL9*
CL8. In total, how many hours did (***name***) spend on fetching water for household use, since last (***day of the week***)? *If less than one hour, record '00'.*	NUMBER OF HOURS ..... __ __	
CL9. Since last (***day of the week***), did (***name***) collect firewood for household use?	YES ..... 1 NO 2	☐ 2 *CL11*
CL10. In total, how many hours did (***name***) spend on collecting firewood for household use, since last (***day of the week***)? *If less than one hour, record '00'.*	NUMBER OF HOURS ..... __ __	
CL11. Since last (***day of the week***), did (***name***) do any of the following for this household?	YES NO	
[A] Shopping for the household?	SHOPPING FOR HOUSEHOLD 1 2	
[B] Cooking?	COOKING 1 2	
[C] Washing dishes or cleaning around the house?	WASHING DISHES / CLEANING HOUSE 1 2	
[D] Washing clothes?	WASHING CLOTHES 1 2	
[E] Caring for children?	CARING FOR CHILDREN 1 2	
[F] Caring for someone old or sick?	CARING FOR OLD / SICK 1 2	
[X] Other household tasks?	OTHER HOUSEHOLD TASKS 1 2	☐
CL12. *Check CL11, [A]-[X]:*	AT LEAST ONE 'YES' ..... 1 ALL ANSWERS ARE 'NO' 2	2 *End*
CL13. Since last (***day of the week***), about how many hours did (***name***) engage in (this activity/these activities), in total? *If less than one hour, record '00'*	NUMBER OF HOURS ..... __ __	

CHILD DISCIPLINE		FCD
FCD1. *Check CB3: Child's age?*	AGE 5-14 YEARS.....1 AGE 15-17 YEARS.....2	2 *End*
FCD2. Now I'd like to talk to you about something else. Adults use certain ways to teach children the right behaviour or to address a behaviour problem. I will read various methods that are used. Please tell me if you or any other adult in your household has used this method with *(**name**)* in the past month.	YES NO	
[A] Took away privileges, forbade something *(**name**)* liked or did not allow (him/her) to leave the house.	TOOK AWAY PRIVILEGES.....1 2	
[B] Explained why *(**name**)*'s behaviour was wrong.	EXPLAINED WRONG BEHAVIOR.....1 2	
[C] Shook (him/her).	SHOOK HIM/HER 1 2	
[D] Shouted, yelled at or screamed at (him/her).	SHOUTED, YELLED, SCREAMED 1 2	
[E] Gave (him/her) something else to do.	GAVE SOMETHING ELSE TO DO 1 2	
[F] Spanked, hit or slapped (him/her) on the bottom with bare hand.	SPANKED, HIT, SLAPPED ON BOTTOM WITH BARE HAND 1 2	
[G] Hit (him/her) on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object.	HIT WITH BELT, HAIRBRUSH, STICK OR OTHER HARD OBJECT 1 2	
[H] Called (him/her) dumb, lazy or another name like that.	CALLED DUMB, LAZY OR ANOTHER NAME 1 2	
[I] Hit or slapped (him/her) on the face, head or ears.	HIT / SLAPPED ON THE FACE, HEAD OR EARS 1 2	
[J] Hit or slapped (him/her) on the hand, arm, or leg.	HIT / SLAPPED ON HAND, ARM OR LEG 1 2	
[K] Beat (him/her) up, that is hit him/her over and over as hard as one could..	BEAT UP, HIT OVER AND OVER AS HARD AS ONE COULD 1 2	
FCD3. *Check FS4: Is this respondent the mother or caretaker of any other children under age 5?*	YES.....1 NO.....2	2 *FCD5*
FCD4. *Check FS4: Has this respondent already responded to the following question (UCD5) for another child?*	YES.....1 NO.....2	1 *End*
FCD5. Do you believe that in order to bring up, raise, or educate a child properly, the child needs to be physically punished?	YES.....1 NO .....2 DK / NO OPINION.....	

CHILD DISCIPLINE		UCD	
UCD1. Check UB2: Child's age?	**Age 0 1** **Age 1, 2, 3 or 4 2**	**1 End**	
UCD2. Adults use certain ways to teach children the right behavior or to address a behavior problem. I will read various methods that are used. Please tell me if you or any other adult in your household has used this method with *(**name**)* in the past month.	YES NO		
[A] Took away privileges, forbade something *(**name**)* liked or did not allow (him/her) to leave the house.	TOOK AWAY PRIVILEGES.....1 2		
[B] Explained why *(**name**)*'s behavior was wrong.	EXPLAINED WRONG BEHAVIOR.....1 2		
[C] Shook (him/her).	SHOOK HIM/HER 1 2		
[D] Shouted, yelled at or screamed at (him/her).	SHOUTED, YELLED, SCREAMED 1 2		
[E] Gave (him/her) something else to do.	GAVE SOMETHING ELSE TO DO 1 2		
[F] Spanked, hit or slapped (him/her) on the bottom with bare hand.	SPANKED, HIT, SLAPPED ON BOTTOM WITH BARE HAND 1 2		
[G] Hit (him/her) on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object.	HIT WITH BELT, HAIRBRUSH, ...STICK OR OTHER HARD OBJECT 1 2		
[H] Called (him/her) dumb, lazy or another name like that.	CALLED DUMB, LAZY OR ANOTHER NAME 1 2		
[I] Hit or slapped (him/her) on the face, head or ears.	HIT / SLAPPED ON THE FACE, HEAD OR EARS 1 2		
[J] Hit or slapped (him/her) on the hand, arm, or leg.	HIT / SLAPPED ON HAND, ARM OR LEG 1 2		
[K] Beat (him/her) up, that is hit (him/her) over and over as hard as one could.	BEAT UP, HIT OVER AND OVER AS HARD AS ONE COULD.....1 2		
UCD3. *Check UF4: Is this respondent the mother or caretaker of any other children under age 5 or a child age 5-14 selected for the questionnaire for children age 5-17?*	YES.....1 NO.....2	2 *UCD5*	
UCD4. *Check UF4: Has this respondent already responded to the following question (UCD5 or FCD5) for another child?*	YES.....1 NO.....2	1 *End*	
UCD5. Do you believe that in order to bring up, raise, or educate a child properly, the child needs to be physically punished?	YES.....1 NO.....2 DK / NO OPINION.....8		

CHILD FUNCTIONING		FCF
FCF1. I would like to ask you some questions about difficulties (***name***) may have. Does (***name***) wear glasses or use contact lenses?	YES.....1 NO.....2	
FCF2. Does (***name***) use a hearing aid?	YES.....1 NO.....2	
FCF3. Does (***name***) use any equipment or receive assistance for walking?	YES.....1 NO..... 2	
FCF4. In the following questions, I will ask you to answer by selecting one of four possible answers. For each question, would you say that (***name***) has: 1) no difficulty, 2) some difficulty, 3) a lot of difficulty, or 4) that (he/she) cannot at all. *Repeat the categories during the individual questions whenever the respondent does not use an answer category:* Remember the four possible answers: Would you say that (***name***) has: 1) no difficulty, 2) some difficulty, 3) a lot of difficulty, or 4) that (he/she) cannot at all?		
FCF5. *Check FCF1: Child wears glasses or uses contact lenses?*	YES, FCF1=1 .....1 NO, FCF1=2.....2	1 *FCF6A* 2 *FCF6B*
FCF6A. When wearing (his/her) glasses or using contact lenses, does (***name***) have difficulty seeing? **FCF6B**. Does (***name***) have difficulty seeing?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT SEE AT ALL.....4	
FCF7. *Check FCF2: Child uses a hearing aid?*	YES, FCF2=1 .....1 NO, FCF2=2.....2	1 *FCF8A* 2 *FCF8B*
FCF8A. When using (his/her) hearing aid(s), does ***(name)*** have difficulty hearing sounds like peoples' voices or music? **FCF8B**. Does ***(name)*** have difficulty hearing sounds like peoples' voices or music?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT HEAR AT ALL.....4	
FCF9. *Check FCF3: Child uses equipment or receives assistance for walking?*	YES, FCF3=1 .....1 NO, FCF3=2.....2	2 *FCF14*
FCF10. Without (his/her) equipment or assistance, does (name)have difficulty walking 100 meters on level ground? *Probe:* That would be about a length of a football field. *Note that category 'No difficulty' is not available, as the child uses equipment or receives assistance for walking.*	SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT WALK 100 METERS AT ALL 4	3 *FCF12* 4 *FCF12*

FCF11. Without (his/her) equipment or assistance, does (name)have difficulty walking 500 meters on level ground? *Probe:* That would be about 5 lengths of a football field. *Note that category 'No difficulty' is not available, as the child uses equipment or receives assistance for walking.*	SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT WALK 500 METERS AT ALL 4	
FCF12. With (his/her) equipment or assistance, does (***name***) have difficulty walking 100 meters on level ground? *Probe:* That would be about a length of a football field.	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT WALK 100 METERS AT ALL 4	3□*FCF16* 4□*FCF16*
FCF13. With (his/her) equipment or assistance, does (***name***) have difficulty walking 500 meters on level ground? *Probe:* That would be about 5 lengths of a football field.	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT WALK 500 METERS AT ALL 4	1□*FCF16* 2□*FCF16* 3□*FCF16* 4□*FCF16*
FCF14. Compared with children of the same age, does (***name***) have difficulty walking 100 meters on level ground? *Probe:* That would be about a length of 1 football field.	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT WALK 100 METERS AT ALL 4	3□*FCF16* 4□*FCF16*
FCF15. Compared with children of the same age, does (***name***) have difficulty walking 500 meters on level ground? *Probe:* That would be about 5 lengths of a football field.	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT WALK 500 METERS AT ALL 4	
FCF16. Does (***name***) have difficulty with self-care such as feeding or dressing (himself/herself)?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT CARE FOR SELF AT ALL.....4	
FCF17. When (***name***)) speaks, does (he/she) have difficulty being understood by people inside of this household?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT BE UNDERSTOOD AT ALL.....4	
FCF18. When (***name***) speaks, does (he/she) have difficulty being understood by people outside of this household?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT BE UNDERSTOOD AT ALL.....4	
FCF19. Compared with children of the same age, does **(name)** have difficulty learning things?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT LEARN THINGS AT ALL.....4	

FCF20. Compared with children of the same age, does ***(name)*** have difficulty remembering things?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT REMEMBER THINGS AT ALL 4	
FCF21. Does ***(name***) have difficulty concentrating on an activity that (he/she) enjoys doing?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT CONCENTRATE AT ALL.....4	
FCF22. Does ***(name)*** have difficulty accepting changes in (his/her) routine?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT ACCEPT CHANGES AT ALL 4	
FCF23. Compared with children of the same age, does (name) have difficulty controlling (his/her) behaviour?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT CONTROL BEHAVIOUR AT ALL.....4	
FCF24. Does (***name***) have difficulty making friends?	NO DIFFICULTY .....1 SOME DIFFICULTY .....2 A LOT OF DIFFICULTY.....3 CANNOT MAKE FRIENDS AT ALL 4	
FCF25. The next questions have different options for answers. I am going to read these to you after each question. I would like to know how often (***name***) seems very anxious, nervous or worried. Would you say: daily, weekly, monthly, a few times a year or never?	DAILY.....1 WEEKLY .....2 MONTHLY.....3 A FEW TIMES A YEAR .....4 NEVER.....5	
FCF26. I would also like to know how often (***name***) seems very sad or depressed. Would you say: daily, weekly, monthly, a few times a year or never?	DAILY.....1 WEEKLY .....2 MONTHLY.....3 A FEW TIMES A YEAR .....4 NEVER.....5	

PARENTAL INVOLVEMENT		PR
PR1. *Check CB3: Child's age?*	AGE 5-6 YEARS.....1 AGE 7-14 YEARS.....2 AGE 15-17 YEARS.....3	1⇨*End* 3⇨*End*
PR2. At the end of this interview, I will ask you if I can talk to (***name***). If (he/she) is close, can you please ask (him/her) to stay here. If (***name***) is not with you at the moment could I ask that you now arrange for (him/her) to return? If that is not possible, we will later discuss a convenient time for me to call back..		
PR3. Excluding school text books and holy books, how many books do you have for (***name****)* to read at home?	NONE.....00 NUMBER OF BOOKS ..... 0 __ TEN OR MORE BOOKS.....10	
PR4. *Check CB7: Did the child attend any school?* *CHECK ED9 IN THE EDUCATION MODULE IN THE HOUSEHOLD QUESTIONNAIRE FOR CHILD IF CB7 WAS NOT ASKED.*	YES, CB7/ED9=1 .....1 NO, CB7/ED9=2 OR BLANK 2	2⇨*End*
PR5. Does (***name***) ever have homework?	YES.....1 NO.....2 DK.....8	2⇨*PR7* 8⇨*PR7*
PR6. Does anyone help (***name****)* with homework?	YES .....1 NO .....2 DK.....8	
PR7. Does (***name****)*'s school have a school governing body in which parents can participate (such as parent teacher association or school management committee or mother groups)?	YES .....1 NO . . . . . .2 DK.....8	2⇨*PR10* 8⇨*PR10*
PR8. In the last 12 months, have you or any other adult from your household attended a meeting called by this school governing body?	YES.....1 NO. . . . . .2 DK.....8	2⇨*PR10* 8⇨*PR10*
PR9. During any of these meetings, was any of the following discussed: [A] A plan for addressing key education issues faced by (***name***)'s school?	YES NO DK PLAN FOR ADRESSING SCHOOL'S ISSUES..... 1 2 8	
[B] School budget or use of funds received by (***name****)*'s school?	SCHOOL BUDGET 1 2 8	
PR10. In the last 12 months, have you or any other adult from your household received a school report for (***name***)?	YES .....1 NO .....2 DK.....8	

PR11. In the last 12 months, have you or any adult from your household gone to (***name***)'s school for any of the following reasons? [A] A school celebration or a sport event? [B] To discuss (***name***)'s progress with (his/her) teachers?	.....YES NO DK CELEBRATION OR SPORT EVENT..... 1 2 8 TO DISCUSS PROGRESS WITH TEACHERS..... 1 2 8	
PR12. In the last 12 months, has (***name***)'s school been closed on a school day due to any of the following reasons: [A] Natural disasters, such as flood, cyclone, epidemics or similar? [B] Man-made disasters, such as fire, building collapse, riots or similar? [C] Teacher strike? [X] Other?	YES NO DK NATURAL DISASTERS..... 1 2 8 MAN-MADE DISASTERS..... 1 2 8 TEACHER STRIKE ..... 1 2 8 OTHER..... 1 2 8	
PR13. In the last 12 months, was (***name***) unable to attend class due to (his/her) teacher being absent?	YES .....1 NO .....2 DK.....8	
PR14. *Check PR12[C] and PR13: Any 'Yes' recorded?* **PR15**. When (***teacher strike / teacher absence***) happened did you or any other adult member of your household contact any school officials or school governing body representatives?	YES, PR12[C]=1 OR PR13=1.....1 NO.....2 *d* YES .....1 NO .....2 DK.....8	2⇨*En*

FOUNDATIONAL LEARNING SKILLS		FL
FL0. *Check CB3: Child's age?*	AGE 5-6 YEARS.....1 AGE 7-14 YEARS.....2 AGE 15-17 YEARS.....3	1 □ *End* 3 □ *End*

FL1. Now I would like to talk to (***name***). I will ask (him/her) a few questions about (himself/herself) and about reading, and then ask (him/her) to complete a few reading and number activities.

These are not school tests and the results will not be shared with anyone, including other parents or the school.

You will not benefit directly from participating and I am not trained to tell you how well (***name***) has performed.

The activities are to help us find out how well children in this country are learning to read and to use numbers so that improvements can be made.

This will take about 20 minutes. Again, all the information we obtain will remain strictly confidential and anonymous

.

May I talk to (***name***)?	YES, PERMISSION IS GIVEN.....1 NO, PERMISSION IS NOT GIVEN.....2	 2 □ *FL28*

FL2. *Record the time.*	HOURS AND MINUTES..... __ __ : __ __	

FL3. My name is (***your name***). I would like to tell you a bit about myself.

Could you tell me a little bit about yourself?

When the child is comfortable, continue with the verbal consent:

Let me tell you why I am here today. I am from ***National Statistical Office.*** I am part of a team trying to find out how children are learning to read and to use numbers. We are also talking to some of the children about this and asking them to do some reading and number activities. (Your mother/***Name of caretaker***) has said that you can decide if you want to help us. If you wish to help us, I will ask you some questions and give you some activities to do. I will explain each activity, and you can ask me questions any time. You do not have to do anything that you do not want to do. After we begin, if you do not want to answer a question or you do not want to continue that is alright.

Are you ready to get started?	YES.....1 NO / NOT ASKED.....2	□ 2 *FL28*

FL4. *Before you start with the reading and number activities, tick each box to show that:*

□ *You are not alone with the child unless they are at least visible to an adult known to the child.*

□ *You have engaged the child in conversation and built rapport, e.g., using an Icebreaker.*

☐ *The child is sat comfortably, able to use the READING & NUMBERS BOOK without difficulty while you can see which page is open.*

FL5. Remember you can ask me a question at any time if there is something you do not understand. You can ask me to stop at any time.		
FL6. First we are going to talk about reading. [A] Do you read books at home? [B] Does someone read to you at home?	YES NO READS BOOKS AT HOME.....1 2 READ TO YOU AT HOME.....1 2	
FL7. Which language do you speak most of the time at home? *Probe if necessary and read the listed languages.*	ENGLISH.....1 CHICHEWA.....2 CHITUMBUKA.....3 OTHER (*specify*)_____ 6 DK.....8	
FL8. *Check CB7: In the current school year, did the child attend school or any early childhood education programme?* *CHECK ED9 IN THE EDUCATION MODULE IN THE HOUSEHOLD QUESTIONNAIRE FOR CHILD IF CB7 WAS NOT ASKED.*	YES, CB7/ED9=1.....1 NO, CB7/ED9=2 OR BLANK.....2	□ 1 *FL9A*

FL8A. *Check CB4: Did the child ever attend school or any early childhood education programmes?* *CHECK ED4 IN THE EDUCATION MODULE IN THE HOUSEHOLD QUESTIONNAIRE FOR CHILD IF CB4 WAS NOT ASKED.*	YES, CB4/ED4=1 ..... 1 NO, CB4/ED4=2 OR BLANK 2	1 □ *FL9B*
FL8B. *Check FL7: Is READING & NUMBERS BOOK available in the language spoken at home?*	YES, FL7=1, 2 OR 3 ..... 1 NO, FL7=6 OR 8 2	1 □ *FL10B* 2 □ *FL23*
FL9A. What language do your teachers use most of the time when teaching you in class? **FL9B**. When you were in school, what language did your teachers use most of the time when teaching you in class? *Probe if necessary and name the listed languages.*	ENGLISH ..... 1 CHICHEWA ..... 2 OTHER (*specify*)_____ 6 DK 8	1 □ *FL10A* 2 □ *FL10A* 3 □ *FL10A* 6 □ *FL23* 8 □ *FL23*
FL10A. Now I am going to give you a short story to read in (***Language recorded in FL9A/B***). Would you like to start reading the story? **FL10B**. Now I am going to give you a short story to read in (***Language recorded in FL7***). Would you like to start reading the story?	YES ..... 1 NO 2	2 □ *FL23*
FL11. *Check CB3: Child's age?*	AGE 7-9 YEARS ..... 1 AGE 10-14 YEARS 2	1 □ *FL13*
FL12. *Check CB7: In the current school year, did the child attend school or any early childhood education programme?* *CHECK ED9 IN THE EDUCATION MODULE IN THE HOUSEHOLD QUESTIONNAIRE FOR CHILD IF CB7 WAS NOT ASKED.*	YES, CB7/ED9=1 ..... 1 NO, CB7/ED9=2 OR BLANK 2	1 □ *FL19*

FL13. *Give the child the READING & NUMBERS BOOK.*

Open the page showing the reading practice item and say:

Now we are going to do some reading. *Point to the sentence.* I would like you to read this aloud. Then I may ask you a question.

Point to the sentence.

Kitty is a cat. Poppy is a dog. Kitty is 5 years old . Poppy is 6 years old. **FL14**. *Did the child read every word in the practice correctly?*	YES ..... 1 NO 2	□ 2 *FL23*
FL15. *Once the reading is done, ask:* How old is Kitty?	KITTY IS 5 YEARS OLD ..... 1 OTHER ANSWERS ..... 2 NO ANSWER AFTER 5 SECONDS 3	1 □ *FL17*
FL16. *Say:* Kitty is 5 years old. *and go to FL23.*		□ *FL23*
FL17. Here is another question: Who is older: Kitty or Poppy?	POPPY IS OLDER (THAN KITTY) ..... 1 OTHER ANSWERS ..... 2 NO ANSWER AFTER 5 SECONDS 3	1 *FL19*
FL18. *Say:* Poppy is older than Kitty. Poppy is 6 years old and Kitty is 5 years old . *and go to FL23.*		□ *FL23*

FL19A. *Turn the page to reveal the reading passage.*

Thank you. Now I want you to try this.

Here is a story. I want you to read it aloud as carefully as you can.

You will start here *(point to the first word on the first line)* and you will read line by line *(point to the direction for reading each line)*.

When you finish I will ask you some questions about what you have read.

If you come to a word you do not know, go onto the next word.

Put your finger on the first word. Ready? Begin

Dalo	is	seven	years	Old	One
1	2	3	4	5	6
day	her	father	sent	her	to
7	8	9	10	11	12
the	shop	to	buy	sugar	He
13	14	15	16	17	18
gave	Dalo	some	money	Dalo	put
19	20	21	22	23	24
it	in	her	bag	The	bag
25	26	27	28	29	30
had	a	big	hole	On	the
31	32	33	34	35	36
way	Dalo	lost	the	money	Sam
37	38	39	40	41	42
saw	the	money	and	gave	it
43	44	45	46	47	48
to	Dalo	She	was	happy	She
49	50	51	52	53	54
thanked	Sam	and	went	to	the
55	56	57	58	59	60
shop					
61					

FL20. *Results of the child's reading.*

LAST WORD ATTEMPTED ..... NUMBER __ __

TOTAL NUMBER OF WORDS INCORRECT OR MISSED..... NUMBER __ __

FL21. *How well did the child read the story?*

THE CHILD READ AT LEAST ONE WORD CORRECTLY..... 1

THE CHILD DID NOT READ ANY WORD CORRECTLY..... 2 → 2 *FL23*

THE CHILD DID NOT TRY TO READ THE STORY..... 3 → 3 *FL23*

FL22A. Now I am going to ask you a few questions about what you have read.

If the child does not provide a response after a few seconds, repeat the question. If the child seems unable to provide an answer after repeating the question, mark 'No response' and say: Thank you. That is ok. We will move on.

Make sure the child can still see the passage and ask:

[A] How old is Dalo?

CORRECT (DALO IS SEVEN) OR (SEVEN).....1
INCORRECT.....2
NO RESPONSE / SAYS 'I DON'T KNOW' 3

[B]	Who sent Dalo to the shop?	CORRECT (HER FATHER) OR (FATHER).....1 INCORRECT.....2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	
[C]	What was Dalo asked to buy?	CORRECT (SHE WAS ASKED/SENT TO BUY SUGAR] OR (SUGAR).....1 INCORRECT.....2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	
[D]	Why did Dalo lose the money?	CORRECT (BECAUSE IT FELL THROUGH THE HOLE IN THE BAG) OR (BECAUSE THE BAG HAD A HOLE).....1 INCORRECT.....2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	
[E]	Why was Dalo happy?	CORRECT (BECAUSE SAM GAVE HER THE MONEY).....1 INCORRECT.....2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	

FL19B. *Turn the page to reveal the reading passage.*

Thank you. Now I want you to try this.

Here is a story. I want you to read it aloud as carefully as you can.

You will start here *(point to the first word on the first line)* and you will read line by line *(point to the direction for reading each line)*.

When you finish I will ask you some questions about what you have read.

.

If you come to a word you do not know, go onto the next word.

Put your finger on the first word. Ready? Begin

Chisomo	ali	mu	sitandade	2
1	2	3	4	5
Tsiku	lina	Chisomo	ataweruka	ku
6	7	8	9	10
sukulu	anauyamba	ulendo	kupita	kwawo.
11	12	13	14	15
Iye	akuyenda,	anaona	maluwa	ofiira
16	17	18	19	20
kustogolo	kwake.	Maluwawo	anali	pafupi
21	22	23	24	25
ndi	munda	wa	chimanga.	Chisomo
26	27	28	29	30
amafuna	kutengako	maluwawo	kuti	akapatse
31	32	33	34	35
amayi	ake.	Chisomo	anathamanga	kulowa
36	37	38	39	40
mmunda	muja	kuti	akathyoleko	maluwawo.
41	42	43	44	45
Mwatsoka,	iye	anagwa	pafupi	ndi
46	47	48	49	50
mtengo	wa	mango.	Chisomo	anayamba
51	52	53	54	55
kulira.	Mwini	munda	adamuwona	ndipo
56	57	58	59	60
adafika	pafupi.	Iye	adamupatsa	Chisomoyo
61	62	63	64	65
maluwa	ambiri.	Chisomo	anasangalala	ndipo
66	67	68	69	70
adathokoza	mwini	munda	uja.	
71	72	73	74	

FL20B. *Results of the child's reading.*

LAST WORD ATTEMPTED..... NUMBER __ __

FL21B. *How well did the child read the story?*

TOTAL NUMBER OF WORDS INCORRECT OR MISSED ..... NUMBER __ __

THE CHILD READ AT LEAST ONE WORD CORRECTLY..... 1 ☐

THE CHILD DID NOT READ ANY WORD CORRECTLY..... 2 ☐ 2 *FL23*

THE CHILD DID NOT TRY TO READ THE STORY 3 3 *FL23*

FL22B. Now I am going to ask you a few questions about what you have read. *If the child does not provide a response after a few seconds, repeat the question. If the child seems unable to provide an answer after repeating the question, mark 'No response' and say:* Thank you. That is ok. We will move on. *Make sure the child can still see the passage and ask:*		
[A] Kodi Chisomo ali sitandade chani?	CORRECT (CHISOMO ANALI MU SITANDADE 2) OR (SITANDADE 2) ..... 1 INCORRECT ..... 2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	
[B] Nanga Chisomo anaona chiyani pomwe amachokera ku sukulu?	CORRECT (IYE ANAONA MALUWA) ..... 1 INCORRECT ..... 2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	
[C] Ndi chifukwa chiyani Chisomo anayamba kulira?	CORRECT (IYE ANAGWA) ..... 1 INCORRECT ..... 2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	
[D] Tchulani malo omwe Chisomo anagwera.	CORRECT (CHISOMO ANAGWERA PAFUPI NDI MTENGO WA MANGO / PAFUPI NDI MTENGO WA NTCHOCHI) ..... 1 INCORRECT ..... 2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	
[E] Kodi Chisomo anasangalala chifukwa chiyani?	CORRECT (CHIFUKWA CHAKUTI MLIMI UJA ANAMUPATSA MALUWA AMBIRI/ CHIFUKWA ANAPEZA MALUWA OTI AKAPATSE MAYI AKE)..... 1 INCORRECT ..... 2 NO RESPONSE / SAYS 'I DON'T KNOW' 3	

FL23. *Turn the page in the READING & NUMBERS BOOK so the child is looking at the list of numbers. Make sure the child is looking at this page.* Now here are some numbers. I want you to point to each number and tell me what the number is. *Point to the first number and say:* Start here. *If the child stops on a number for a while, tell the child what the number is, mark the number as 'No Attempt', point to the next number and say:* What is this number? *If the child does not attempt to read 2 consecutive numbers, say:* Thank you. That is ok.	**9** CORRECT ..... 1 INCORRECT ..... 2 NO ATTEMPT ..... 3 **12** CORRECT ..... 1 INCORRECT ..... 2 NO ATTEMPT ..... 3 **30** CORRECT ..... 1 INCORRECT ..... 2 NO ATTEMPT ..... 3 **48** CORRECT ..... 1 INCORRECT ..... 2 NO ATTEMPT ..... 3 **74** CORRECT ..... 1 INCORRECT ..... 2 NO ATTEMPT ..... 3 **731** CORRECT ..... 1 INCORRECT ..... 2 NO ATTEMPT 3	

FL23A. *Check FL23: Did the child correctly identify two of the first three numbers (9, 12 and 30)?*	YES, AT LEAST TWO CORRECT ..... 1 NO, AT LEAST 2 INCORRECT OR WITH NO ATTEMPT .. 2	2 *FL28*
FL24. *Turn the page so the child is looking at the first pair of numbers. Make sure the child is looking at this page. Say:* Look at these numbers. Tell me which one is bigger. *Record the child's answer before turning the page in the book and repeating the question for the next pair of numbers.* *If the child does not provide a response after a few seconds, repeat the question. If the child seems unable to provide an answer after repeating the question, record '3', no attempt, for the appropriate pair of numbers, turn the booklet page and show the child the next pair of numbers.* *If the child does not attempt 2 consecutive pairs, record '3', no attempt, for remaining pairs and say:* Thank you. That is ok. We will go to the next activity.	**7 & 5** CORRECT (7)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 **11 & 24** CORRECT (24)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 **58 & 49** CORRECT (58)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 **65 & 67** CORRECT (67)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 **146 & 154** CORRECT (154)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3	
FL25. *Give the child a pencil and paper. Turn the page so the child is looking at the first addition. Make sure the child is looking at this page. Say:* Look at this sum. How much is (***number plus number***)? Tell me the answer. You can use the pencil and paper if it helps you. *Record the child's answer before turning the page in the book and repeating the question for the next sum.* *If the child does not provide a response after a few seconds, repeat the question. If the child seems unable to provide an answer after repeating the question, record '3', no attempt, for the appropriate sum, turn the booklet page and show the child the next addition.* *If the child does not attempt 2 consecutive sums, record '3', no attempt, for remaining sums and say:* Thank you. That is ok. We will go to the next activity. **FL26**. *Turn to the first practice sheet for pattern recognition. Say:* Here are some numbers. 1, 2, __, and 4. *Point to each number and blank space and say:* What number goes here?	**3 + 2** CORRECT (5)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 **8 + 6** CORRECT (14)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 **7 + 3** CORRECT (10)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 **13 + 6** CORRECT (19)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 **12 + 24** CORRECT (36)..... 1 INCORRECT ..... 2 NO ATTEMPT..... 3 CORRECT (3)..... 1 INCORRECT..... 2 NO ATTEMPT..... 3	2 *FL26B* 3 *FL26B*
FL26A. That's correct, 3. Let's do another one.		*FL26C*
FL26B. *Do not explain how to get the correct answer. Just say:* The number 3 goes here. Say the numbers with me. *(Point to each number)* 1, 2, 3, 4. 3 goes here. Let's do another one.		
FL26C. Here are some more numbers. 5, 10, 15 and __. *Point to each number and blank space and say:* What number goes here?	CORRECT (20)..... 1 INCORRECT..... 2 NO ATTEMPT..... 3	2 *FL26E* 3 *FL26E*
FL26D. That's correct, 20.		*FL27*
FL26E. *Do not explain how to get the correct answer. Just say:* The number 20 goes here. Say the numbers with me. *(Point to each number)* 5, 10, 15, 20. 20 goes here.		
FL26F. *CHECK FL26: WAS THE ANSWER CORRECT?*	YES, FL26=1..... 1 NO, FL26=2 OR 3 2	2 *FL28*

FL27. Now I want you to try this on your own. Here are some more numbers. Tell me what number goes here (*pointing to the missing number*). *Record the child's answer before turning the page in the book and repeating the question.* *If the child does not provide a response after a few seconds, repeat the question. If the child seems unable to provide an answer after repeating the question, record '3', no attempt, for the appropriate question, turn the page and show the child the next question.* *If the child does not attempt 2 consecutive patterns, record '3', no attempt, for remaining patterns and say:* Thank you. That is ok.	**5, 6, 7, __** CORRECT (8).....1 INCORRECT .....2 NO ATTEMPT.....3 **14, 15, __, 17** CORRECT (16).....1 INCORRECT .....2 NO ATTEMPT.....3 **20, __, 40, 50** CORRECT (30).....1 INCORRECT .....2 NO ATTEMPT.....3 **2, 4, 6, __** CORRECT (8).....1 INCORRECT .....2 NO ATTEMPT.....3 **5, 8, 11, __** CORRECT (14).....1 INCORRECT .....2 NO ATTEMPT.....3	

FL28. *Result of interview with child.* Discuss any result not completed with Supervisor.	COMPLETED .....01 NOT AT HOME.....02 MOTHER / CARETAKER REFUSED.....03 CHILD REFUSED.....04 PARTLY COMPLETED.....05 INCAPACITATED .....06 OTHER (*specify*) _____ 96	

FS11. *Record the time*.	HOURS AND MINUTES.....__ __ : __ __	
FS12. *Language of the Questionnaire.*	ENGLISH ..... 1 CHICHEWA..... 2 CHITUMBUKA..... 3	
FS13. *Language of the Interview.*	ENGLISH ..... 1 CHICHEWA..... 2 CHITUMBUKA..... 3 OTHER LANGUAGE (*specify*)_____6	
FS14. *Native language of the Respondent.*	ENGLISH ..... 1 CHICHEWA..... 2 CHITUMBUKA..... 3 OTHER LANGUAGE (*specify*) _____6	
FS15. *Was a translator used for any parts of this questionnaire?*	YES, THE ENTIRE QUESTIONNAIRE..... 1 YES, PARTS OF THE QUESTIONNAIRE ..... 2 NO, NOT USED	

FS16. *Thank the respondent and the child for her/his cooperation.*

Proceed to complete the result in FS17 in the 5-17 CHILD INFORMATION PANEL and then go to the HOUSEHOLD QUESTIONNAIRE and complete HH56.

Make arrangements for the administration of the remaining questionnaire(s) in this household