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# Baseline Assessment of Non-Communicable Diseases (NCDs) for Refugee and Host Community in the East and Horn of Africa and Great Lakes Region: The Context of Burundi

**Final Report**

**January 2025**

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# CONTENTS

# TABLES

## FIGURES



## EXCERPTS

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**Lartech Africa Limited**

**Baseline Assessment Consultant**

**January 2025**

# ACRONYMS AND SYMBOLS

| | |
|---|---|
| α | alpha level |
| % | Percent |
| AIDS | Acquired Immunodeficiency Syndrome |
| AUC | African Union Commission |
| AAP | Accountability to Affected Populations |
| BHA | Bureau for Humanitarian Assistance |
| Camp | Bwagizira, Kavumu, Nyankanda, Kinama, Musasa |
| CAT | Content Analysis Technique |
| CDC | Center for Disease Control |
| CHWs | Community Health Workers |
| CI | Confidence Interval |
| CLT | Central Limit Theorem |
| COPD | Chronic Obstructive Pulmonary Disease |
| CRD | Chronic Respiratory Disease |
| CRPD | Convention on the Rights of Persons with Disabilities |
| CSV | Comma Separated Values |
| EERG | External Evaluation Reference Group |
| FAO | Food and Agriculture Organization |
| FGDs | Focus Group Discussions |
| g | Grams |
| GCR | Global Compact on Refugees |
| GRF | Global Refugee Forum |
| GIT | Gastrointestinal |
| GVC | Gruppo Di Volontariato Civile |
| HCFs | Health Care Facilities |
| HH | Household |
| HIG | Humanitarian Intervention Guide |
| HIS | Health Information System |
| IBM | International Business Machines |
| IDPs | Internally Displaced Persons |
| IEC | Information, Education and Communication |
| IOM | International Organization for Migration |
| KABP | Knowledge, Attitude, Belief and Practice |
| KIIs | Key Informant Interviews |
| km | Kilometre |
| MhGAP | Mental Health Gap Action Programme |
| MHPSS | Mental Health and Psychosocial Support |
| ml | Milliliters |
| MoH | Ministry of Health |

| | |
|---|---|
| MoPH | Ministry of Public Health |
| MS | Microsoft |
| N | Denominator |
| n | Numerator |
| NCDs | Non-Communicable Diseases |
| NGO | Non-Governmental Organization |
| no | Number |
| NTDs | Neglected Tropical Diseases |
| PAD | Peripheral artery disease |
| PEC | Patient Education and Counselling |
| PHC | Primary Health Care |
| PNILMCNT | National Integrated Program for the Control of Non-Chronic Diseases Transmissible |
| PPS | Probability Proportional to Size |
| PTSD | Post-Traumatic Stress Disorder |
| PWDs | People with Disabilities |
| SD | Standard Deviation |
| SDG | Sustainable Development Goal |
| SPSS | Statistical Package for the Social Sciences |
| STEPS | Noncommunicable Disease Risk Factor Surveillance |
| ToR | Terms of Reference |
| UN | United Nations |
| UNEG | United Nations Evaluation Group |
| UNHCR | United Nations High Commissioner for Refugees |
| WDF | World Diabetes Foundation |
| WFP | World Food Programme |
| WHO | World Health Organization |

# GLOSSARY OF TERMS

| | |
|---|---|
| **Baseline assessment** | Is an analysis of the current situation to identify the starting points for a programme or project, setting benchmarks against which future progress can be assessed or comparisons made |
| **Cardiovascular diseases** | A group of disorders of the heart and blood vessels. They include peripheral arterial disease; and rheumatic heart disease. |
| **Community health workers** | A community health worker (CHW) is a frontline public health worker who is a trusted member or has a very good understanding of the community served. A CHW serves as a liaison between health and social services and the community to facilitate access to services and to improve the quality and cultural competence of service delivery. |
| **Host community** | The country of asylum and the local, regional, and national governmental, social and economic structures within which refugees live, which could be camps or urban settings. |
| **Morbidity** | The condition of suffering from a disease or medical condition. |
| **Mortality** | The number of deaths in a given area or period, or from a particular cause |
| **Mental Health Gap Action Programme** | The World Health Organization (WHO) action programme developed for countries with low and lower middle incomes for scaling up services for mental, neurological, and substance use disorders. |
| **Non-communicable diseases** | Non-infectious conditions that cannot be transmitted from one person to another |
| **Post-traumatic stress disorder** | A mental health condition that develops following a traumatic event characterized by intrusive thoughts about the incident, recurrent distress/anxiety, flashback and avoidance of similar situations. |
| **Primary health care** | A whole-of-society approach of health care that is provided in the community for people making an initial approach to a medical practitioner or clinic for advice or treatment. |
| **Refugee** | Someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion |
| **Refugee Camp** | A plot of land temporarily made available to host refugees in temporary homes. UNHCR, host Governments and other humanitarian organizations provide essential services in refugee camps including food, sanitation, health, medicine and education. These camps are ideally located at least 50 km away from the nearest international border to deter camp raids and other attacks on its civilian occupants. |
| **Secondary health care** | Special treatment and support provided by doctors and other health professionals for patients who have been referred to them for specific expert care, most often provided in hospitals. |
| **Tertiary health care** | The level of healthcare above secondary care which is a highly specialized medical care, usually provided over an extended period of time, involving advanced and complex diagnostics, procedures and treatments performed by medical specialists in state-of-the-art facilities. |

# EXECUTIVE SUMMARY

## Background

UNHCR aims to prevent Non-Communicable Diseases (NCDs) and reduce morbidity and mortality from the most significant NCDs by improving the quality of care, ensuring the rational use of medicine, and strengthening the clinical and community-based management of NCDs amongst refugees. It is for this reason that the UNHCR designed the ***UNHCR's Strengthened Response to NCDs Project*** which is being implemented in Burundi, Tanzania, and Sudan. The overall objective of the project in Burundi is to improve and develop prevention, diagnosis and treatment of non-communicable diseases among host communities, repatriated refugees (returnees), internally displaced and refugee populations (in camps and across urban areas).

The need for the baseline assessment was driven by limited existence of evidence on NCD prevention, diagnosis, and management in refugee settings. The baseline assessment was key to addressing the lack of data on refugees and NCDs by analysing current systems in place for NCD care or lack thereof in Burundi. The assessment was also necessary for identifying key gaps in care and thus inform and guide the implementation of project activities.

This report presents the baseline assessment findings on NCDs for refugees in Bwagizira; Kavumu; Nyankanda; Kinama; and Musasa. camps.

## Objectives of the Assessment

The purpose of the baseline assessment was to provide baseline values on the status quo of NCD service provision by primary health care facilities offering services to refugees for project specific indicators that will inform design, prioritization and targeting of interventions. These values will be compared at endline to measure performance. Specifically, the assessment has: established benchmarks against which the project's progress and impact will be measured over the project life cycle and at the end of the period of implementation; identified needs and current NCD service provision and capacity gaps; and proposed solutions to further refine country plans in the project's key areas of prevention, diagnosis, and management.

## Data Collection Methodology

Field data collection delayed for over five months due to the lengthy ethical approval process that was required in order to undertake the assessment of the host population, internally displaced persons (IDPs), returnees and refugees living in urban areas. Field data collection, therefore, started when implementation of some of the project activities had begun. The scope of the assessment was reduced to cover only refugee population in the targeted camps.

The baseline assessment utilized systematically integrated mixed methods consisting of both quantitative and qualitative data collection from both primary and secondary sources. Primary data was collected through household interviews, focus group discussions (FGD), assessment of health facilities, key informant interviews (KII) and administration of knowledge, attitude, beliefs and practice (KABP) tool to community health workers (CHWs). Secondary data was collected through review of relevant literature.

Field data collection was conducted from 16 to 28 August 2023. The assessment used the KoboCollect application for data collection. A total of 904 household interviews, 10 health facility assessments, 43 FGDs, 71 KABP tests for CHWs and 7 KIIs were successfully completed.

The assessment was undertaken in strict conformance to safety, confidentiality, and strong research ethics in line with UNHCR's ethical standards, United Nations Evaluation Group (UNEG) norms and standards, the UNEG Ethical Guidelines for Evaluation, the Code of Conduct for Evaluations in the United Nations (UN) system, UNHCR Data Protection Policy, UNHCR Age, Gender and Diversity Policy and UNHCR Disability Inclusion Strategy. A detailed assessment methodology is discussed in chapter 2 of this report.

# Summary of Findings and Discussions

The assessment findings are discussed in the following headings: behavioural risk factors and NCDs. A full analysis of the status of the indicators is presented as Appendix I inform of a fact sheet matrix.

## *1) NCD Behavioural Risk Factors*

The overall prevalence of current tobacco use was **7.1% (95% CI: 5.5%-9.0%; n=64, N=904)** with significantly higher prevalence among males (14.4%) than females (1.0%). Majority (88.1%) of the current smokers started using tobacco products at a young age of 25 years and below (Males, 87.2%; Females, 100.0%). Cigarettes (69.2%) were the predominantly used tobacco products followed by hand-rolled (29.5%) and waterpipe / shisha (1.3%). The assessment further found that **9.6% (95% CI: 7.8%-11.7%; n=87, N=904)** of the respondents consumed alcohol in the past seven days prior to the assessment day with a higher proportion being males (16.8%) compared to the females (3.6%). On dietary risk factors, only **1.8% (95% CI: 1.0%-2.9%; n=16, N=904)** of the respondents ate a healthy diet. The assessment further found that **87.2% (95% CI: 84.8%-89.3%; n=788, N=904)** of the respondents engaged in adequate physical activity while 12.8% did not.

## *2) Non-Communicable Diseases*

### ***Respondents Knowledge, Attitude, Beliefs and Practice on NCDs***

About **89.3% (95% CI: 87.1%-91.2%; n=807, N=904)** of the respondents were aware of NCDs (Males, 92.0%; Females, 87.0%) with the source of knowledge mainly from families, friends or neighbours (49.8%), health facilities (27.5%), radios (15.3%), and schools/ teachers (4.1%) among others. The assessment established the attitude of the respondents on NCDs in respect to 8 statements[1] regarding NCDs and found that that 87.2% (Males, 90.0%; Females, 84.8%) of the respondents agreed that NCDs give serious problems to the health of a person followed by 85.8% (Males, 88.0%; Females, 84.0%) who agreed that NCDs are serious diseases. Regarding myths and misconceptions, **2.1% (95% CI: 1.3%-3.3%; n=19, N=904)** of the respondents were aware and believed in traditions, myths, and misconceptions on NCDs. Furthermore, **20.9% (95% CI: 18.3%-23.7%; n=189, N=904)** of the respondents had been screened and tested for NCDs while **7.7% (95% CI: 6.1%-9.7%; n=70, N=904)** were diagnosed with NCDs, mainly high blood pressure (42.9%) followed by heart attack (20.8%), diabetes mellitus (15.6%), and asthma (10.4%) among other NCDs.

### ***Health Seeking Behaviours among the Respondents***

About **6.4% (95% CI: 4.9%-8.2%; n=58, N=904)** of the respondents sought for NCD services at a health facility in the last 12 months preceding the assessment. Among those who sought for NCD services, majority (91.4%) visited health centres while less than a tenth (8.6%) visited health posts. About 81.0% of the respondents travelled less than 1 km to health facility to seek for NCD services while 25.9% were referred to high level facilities due to the nature of their illness. Lack of medicine, lack of health services and long waiting hours before service delivery were cited as some of the barriers and/or challenges to good health seeking behaviours by the respondents.

### ***NCD Services***

Through KIIs, the assessment established that the Ministry of Public Health (MoPH) was committed to ensuring effective NCD prevention, diagnosis and management through policy and coordination. The MoPH had: adopted strategic plans for different pathologies to combat NCDs and certain risk factors in line with the National Health Policy (2016-2025) and the National Health Development Plan (2010-2015); developed a Multisectoral National Plan for the Fight against Non-communicable Diseases (2019-2023) in collaboration with the World Health Organization (WHO) and other partners inspired by the National Health Development Plan (PNDS III 2019-2023); and created the National Integrated

[1] *(1) Is at risk of getting NCDs; (2) NCDs are serious diseases; (3) NCDs give serious problems to the health of a person; (4) NCDs can be prevented; (5) NCDs can be treated; (6) Too much sugar in diet could cause NCDs; (7) Too much salt or salty sauce in diet could cause NCDs; and (8) Physical inactivity causes NCDs*

Program for the Fight Against Non-Communicable Diseases (PNILMCNT) as the national reference for all activities related to NCDs in Burundi.

Refugees have been included and integrated into the Burundi national health systems. They have direct access to health centres with a minimum package of activities (1st level) but can be referred to higher level care if necessary. Additionally, refugees have been integrated in the ministry's health promotion interventions such as vaccination campaigns. Moreover, medication for type 1 diabetes and mental health illnesses are given free of charge to the entire population including refugees. Furthermore, there is a national guideline for the integration of mental health care into the health system of Burundi, which allows for collaboration on programs supporting refugees, internally displaced persons, and migrants.

All (100.0%) the assessed primary healthcare facilities (HCFs) were providing care for priority NCDs. The facilities provided a range of NCD services including diabetes management, mental health services and cancer screening services.

The assessment found that 87 health care workers provided NCD treatment, out of these, 56.3% had been trained on NCD management. The trainings were a one-off activity facilitated by UNHCR under the World Diabetes Foundation (WDF) project in collaboration with Gruppo Di Volontariato Civile (GVC). The total number of CHWs attached to these facilities was 54 (Males, 35; Females, 19). The facilities served a total population of 370,830 people, giving a ratio of 1 CHW: 1,078 people. The assessment found that 28 (51.9%) CHWs had training on NCDs. However, out of the 71 CHWs who undertook the test, only 11 (15.5%) were knowledgeable on NCDs.

According to KIIs, the need for NCD services in the country was very high. These needs related to diagnosis of NCDs, health promotional activities, awareness creation and NCD commodities. Data held in the assessed facility databases reflected that a total of 687 NCD patients needed referral for either secondary or tertiary care, all of whom were referred. Only 1 NCD death due to cardiovascular disease had occurred in the last 30 days prior to the assessment, 410 NCD patients had received education and counselling on selfcare, 257 NCD patients had been provided with follow up on Mental Health and Psychosocial Support (MHPSS) and that 3 persons with NCDs had received supplementary food rations in the last 6 months prior to the assessment.

The assessment found that there were different strategies in place aimed at ensuring inclusion and accountability. Burundi had a strategic plan (2016-2023) for all NCDs and a mental health plan (2016-2020) which was to be renewed, and a national plan to combat cancer was at the validation phase at the time of the assessment. The Minister of Public Health and the Fight Against Acquired Immunodeficiency Syndrome (AIDS) had signed a reorganization order to reorganize the program called "National Integrated Program for the Fight against Chronic Non-Communicable Diseases", (PNILMCNT) within the Ministry of Public Health and the Fight against AIDS. Further, the Ministry of Health (MoH) has developed and validated a training manual for care providers on main NCDs including diabetes, cardiovascular diseases and chronic respiratory diseases.

# Conclusions

The assessment has presented the values on the status quo of NCD service provision in the refugee camps. These values will be useful in guiding the design, prioritization and targeting of the UNHCR NCD project interventions and forms the basis for future performance measurements.

Based on the findings and discussions, the report concludes as follows:

### ***Behavioural Risk Factors***

i) The prevalence of tobacco and/ or alcohol use among the respondents was lower than the national tobacco and alcohol use prevalence. However, tobacco users were initiated to smoking at young age of 25 years and below. This exposed them early in life to high nicotine intake, leading to high probability of contracting NCDs.

ii) The prevalence of healthy diet intake among the respondents was low which meant that all the respondents and by extension all households did not have a healthy diet hence, high vulnerability to risk factors for NCDs.

iii) The prevalence of engagement in physical activity among the respondents was relatively high which made them less prone to NCDs.

***KABP on NCDs***

i) The level of NCD awareness among the respondents was relatively high with the main source of information being families, friends or neighbours and health facilities. About one in 10 respondents on the other hand were not aware of NCDs.
ii) A high proportion of the respondents agreed that NCDs gave serious problems to the health of a person and that NCDs were serious diseases. A small proportion (2.1%) of the respondents were aware and believed in traditions, myths and misconceptions on NCDs.
iii) The rate of NCD screening and testing among the respondents was low. Majority of those who were screened and tested, were diagnosed with high blood pressure, heart attack, diabetes mellitus and asthma. NCD management was adequate and was done at individual level, health facility level by CHWs.

***Integration and Availability of Quality NCD Services***

i) The MoPH had integrated NCD prevention, diagnosis and management in the health system. They had developed a Multisectoral National Plan for the Fight against Non-communicable Diseases (2019-2023) among other key plans.
ii) Refugees have been integrated in the national health system, but with limited access to services outside the camp.
iii) The availability of NCD services was high and was available in all the 5 assessed health facilities. Shortage of medicine, equipment and lack of a clear referral pathway inhibited the smooth delivery of quality NCD services.

***Capacity of healthcare workers***

i) The proportion of health workers and CHWs trained on NCD management was moderate. Shortage or lack of trained health care workers to diagnose, manage and treat NCDs was cited as key barriers and/or challenge to provision of quality NCD services.

***Levels of need, access and utilization of services by refugees***

i) The need for NCD services in the country was high especially on the prevention and diagnosis of NCDs, general awareness of NCDs, NCD commodities and capacity of healthcare workers.
ii) The level of access to NCD services was low which was reflected in the proportion of respondents who needed and sought for NCD services. This was attributed to several cited challenges including inadequate screening and testing equipment, lack of health services and lack of medicine.
iii) The utilization of the available NCD services was moderate which was reflected in the number of referrals, number of those who received education and counselling on selfcare and those who were provided with MHPSS follow up among other key indicators.

***Inclusion, gender mainstreaming and accountability to affected populations***

i) Refugees were included and/ or mainstreamed in the national health system in Burundi.

# Recommendations

To address the identified gaps from the assessment, the following are recommended:

| Aspect | Recommendations |
|---|---|
| NCD Prevention | **Championing against tobacco use**: the assessment found that tobacco smokers were initiated to tobacco smoking at a very early age. The project should develop innovative and approaches for advocating against tobacco use. |
| | **Sustained advocacy, awareness creation and engagement**: of parents, caregivers and faith leaders on their role in creating a healthy environment to support healthy lifestyles for children and their families to address issues that lead to NCDs and support practices that protects their families from being exposed to NCDs. |
| | **Advocating for targeted initiatives with high impacts in reducing** food insecurity through livelihoods and targeted food security programs. This could include livelihoods-based interventions which will help the refugees secure adequate and sustainable income thus a reduction in food insecurity. |
| NCD Diagnosis | **Staffing**: The assessment advocates for additional staffing in the health facilities, specifically in the NCD unit. |
| | **Support the equipping of health facilities with NCD equipment, diagnostic tests and consumables** to promote adequate and timely stocking of the health facilities. |
| NCD Management | **Establishment of peer support programs/ groups** to provide community level support in response to the shortage of CHWs to conduct follow-ups among patients so as to enhance support to the delivery of mental health services to complement the efforts of CHWs. The group participants can assist in conducting follow-ups, monitoring medication adherence, providing basic support, and referring clients to specialized mental health services as needed. |
| | **Awareness creation on drug adherence:** To enhance good health seeking behaviours among the target population, there is need to counsel and educate the NCD clients on the importance of modern medicine and drug adherence before providing them with the medication. |

## Report Structure

The report is structured into four (4) chapters: Chapter 1 provides the background information, project description as well as the objectives of the baseline assessment. Chapter 2 provides the baseline assessment methodology. Chapter 3 presents the assessment findings and discussions. Chapter 4 provides a summary of conclusions and recommendations.

# 1.0 INTRODUCTION

## 1.1 Overview

This chapter discusses the project for which the baseline assessment was undertaken. It presents the current situation of health and NCDs in Burundi, project description, project overall objective and target beneficiaries, the project response activities, justification, and the objectives of the baseline assessment.

## 1.2 Background Information

Refugees often endure deplorable conditions of social disconnection, displacement, isolation, famine, war, and overcrowding and are needy, vulnerable, and marginalized community. Many refugees, particularly those who have experienced trauma in war-torn countries, are extremely vulnerable to mental health illnesses. They suffer a high rate of treatable or preventable social, physical, emotional, and health problems (including NCDs). Additionally, refugees have to deal with chronic stressors, such as socioeconomic disadvantage, isolation, hostility, violence, social prejudice, and the collapsed social support structures that may retard their recovery[2].

The health needs of refugees and migrants are adequately addressed in the global compact on refugees and the global compact for safe, orderly, and regular migration as well as the in the framework of priorities and guiding principles to promote the health of refugees and migrants. This framework aims to inform discussions among Member States and partners engaged in the development of the global compact on refugees and the global compact for safe, orderly and regular migration to ensure that the health aspects of refugees and migrants are adequately addressed; to serve as a foundation for the development of a draft global plan of action on the health of refugees and migrants, which was submitted to the Seventy-second World Health Assembly in 2019; and to provide a resource for consideration by Member States in addressing the health needs of refugees and migrants, in alignment with the Sustainable Development Goals (SDG) and other global and regional policy frameworks as appropriate to each country's context and priorities[3]. This section discusses the NCD context globally, regionally, and nationally.

### 1.2.1 Global Context

Non-communicable diseases are the leading cause of morbidity and mortality worldwide. NCDs vary but often include diabetes, cardiovascular disease (including hypertension, heart failure, strokes, chronic kidney disease), chronic lung disease (such as asthma and chronic obstructive pulmonary disease) and cancer[4].Refugees affected by NCDs face several challenges such as: interrupted care; and weakened and overburdened humanitarian and public health systems which are usually not adequately equipped for managing chronic conditions[5].

The global context of prevention and control of NCDs is anchored in the SDG Target 3.4 which aims at reducing by one third premature mortality from non-communicable diseases through prevention and treatment and promoting mental health and well-being[6]. Further, the WHO through the Global NCD Compact 2020–2030 aims to accelerate progress on the prevention and control of NCDs. It seeks to

[2] *Intrigues of Accessing Mental Health Services Among Urban Refugees Living in Kenya: The Case of Somali Refugees Living in Eastleigh, Nairobi, March 2018*
[3] *WHO, Promoting the health of refugees and migrants: Framework of Priorities and Guiding Principles to Promote the Health of Refugees and Migrants*
[4] *The sphere handbook, 2018*
[5] *UNHCR, 2021: Evaluation of the Caring for Refugees with NCDs Project*
[6] *https://www.who.int/data/gho/data/themes/topics/indicator-groups/indicator-group-details/GHO/sdg-target-3.4-noncommunicable-diseases-and-mental-health (Reviewed on 4 October 2024)*

ensure Member States adopt policies[7] and programmes that improve NCD outcomes and save the lives of people living with NCDs[8].

### 1.2.2 Regional Context

The burden of NCDs in the African region remains high. Sixteen countries in the region account for 15.9% of global cervical cancer mortality. Only 3% of the world's cancer treatment facilities are available in 22 sub-Saharan African countries, resulting in poor survival rates. Approximately 1 in 22 (24 million) adults aged 20-79 are living with diabetes in the Africa Region in 2021. There is also limited access to essential medicines and technologies for NCDs in primary health care (PHC) facilities. In addition, neglected tropical diseases (NTDs) affect approximately 1 billion people in tropical and subtropical regions with affected communities often struggling to access basic healthcare services. However, the global response to NTDs has led to near eradication and elimination of NTDs in parts of the region. Data remain scarce for many other NTDs, which require innovative and intensified surveillance[9].

Regionally, the context of prevention and control of NCDs is anchored in the Africa Center for Disease Control (CDC) Non-Communicable Diseases, Injuries Prevention and Control and Mental Health Promotion Strategy (2022-2026). The strategy recognizes that Member States, the African Union Commission (AUC) and global institutions have set health goals to decrease the burden of diseases including NCDs, injuries and mental health illness on the continent. The strategy seeks to bring all these policies together in a set of strategic actions to support Member States in their implementation of activities for the prevention and control of NCDs, injuries and mental health promotion.

### 1.2.3 National Context

Literature indicates that Burundi is struggling to provide access to essential services even to its own citizens and many Burundians in refugee hosting areas rely on services, including health care, provided in the refugee camps. Some of these camps have been active for almost 20 years and have not been sufficiently maintained and rehabilitated due to continuous underfunding. They are characterized by lack of medication for chronic diseases and for mental health illnesses; lack of medical personnel; and long distances covered to health facilities; among other challenges.[10]

Currently, NCDs in Burundi are substantially on the rise. Since 2015, NCDs have been declared a public health problem.[11] Statistical data from the health information system (HIS) does not provide sufficient information to reflect the epidemiological profile of NCDs in Burundi. However, the country has some fragmentary data on NCDs and their risk factors. According to the noncommunicable disease risk factor surveillance (STEPS) survey carried out in the Kirundo Province in 2013, the prevalence of hypertension was 25.2% and that of diabetes was 1%. The prevalence of risk factors was as follows: obesity (0.4%) and overweight (3.1%); smoking (20%), alcohol consumption (88%), low consumption of fruits and vegetables (91.5%) and low physical activity (16.7%)[12].

According to the WHO, estimates of 2022, the risk of premature deaths due to NCDs in Burundi stood at 25%, and the percentage of deaths due to NCDs stood at 37%. In terms of health policies, Burundi had a National Policy on Health whose vision was to reduce morbidity and mortality rates linked to communicable and non-communicable diseases.[13]

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[7] *Details on these policies can be found in WHO Global Action Plan for the Prevention and Control of NCDs, 2013-2020*
[8] *https://www.who.int/initiatives/global-noncommunicable-diseases-compact-2020- 2030#:~:text=The%20Global%20NCD%20Compact%202020%E2%80%932030%20aims%20to%20accelerate,save%20the%20lives%20of%20people%20living%20with%20NCDs*
[9] *WHO, Communicable and Non-Communicable Diseases in Africa in 2021/2022*
[10] *Refugee health: UNHCR's strengthened response to non-communicable diseases (NCDs) Integrated health services across settings of acute and protracted humanitarian crisis in Eastern African contexts, 2022-2024*
[11] *Making Non-Communicable Diseases Prevention and Control a Development Priority in East Africa, Danish NCD Alliance, Programme Document 2020-2023*
[12] *Ministry of Public Health and the Fight against AIDS (March, 2019), National Integrated Strategic Plan for the Fight against Non-Communicable Diseases (PSNILMNT) 2019-2023*
[13] *Burundi National Health Policy, 2016*

Burundi had developed national NCD targets, had a Multisectoral National Plan for the Fight against Non-communicable Diseases (2019-2023), a strategic plan for all NCDs (2016 – 2023) and one for mental health from 2016 to 2020. Further, Burundi had developed and validated guidelines for care providers on main NCDs including diabetes, cardiovascular diseases and chronic respiratory diseases[14]. In terms of policies and interventions to reduce alcohol consumption, Burundi had partially achieved restrictions on physical availability and increased exercise taxes.[15]

### 1.2.4 Inclusion, Gender Mainstreaming and Accountability to Affected Populations

Even if refugees are fully or partially included in national health policies, strategies and systems, they may still face financial, administrative, geographic, language, gender and social barriers to access services. Furthermore, national services may lack the capacity and be under-resourced and unable to meet the needs of the host population (even before the additional requirements of refugees). The Global Compact on Refugees (GCR) supports inclusion of refugees into national policies, strategies and plans and integration into national systems while emphasizing the importance of support to those systems. In this global public health strategy, UNHCR outlines how to work with and through national services to foster inclusion and integration of refugees whilst ensuring that immediate and ongoing needs are met[16].

The Government of Burundi has endorsed the GCR and, with the support of partners, committed to furthering refugee inclusion and integration in national services, promoting the progressive self-reliance and economic integration of refugees, and improving the well-being of host communities through its 2018 Burundi Refugee and Host Community Support Strategy, which was developed for refugees and host communities and pledges made through the Global Refugee Forum (GRF)[17].

## 1.3 Project Description

UNHCR aims to prevent NCD's and reduce morbidity and mortality from the most significant NCDs through improving the quality of care, ensuring the rational use of medicines, and strengthening the clinical and community-based management of NCDs amongst refugees. It is for this reason that UNHCR designed a project titled: *UNHCR's Strengthened Response to NCDs Integrated Health Services Across Settings of Acute and Protracted Humanitarian Crises in Eastern African Contexts, 2022-2024: Burundi, Tanzania, Sudan*[18].

The UNHCR's strengthened response to NCDs project is a three-year project (running from 2022 to 2024) aimed at improving the health and well-being of vulnerable refugees living in camps in line with to SDG 3.4[19]. The project will support the provision of NCD prevention and care services including, awareness-raising, medical consultations, NCD management support, provision of essential equipment and supplies, referrals, provision of food, and local health staff capacity building, as well as training of community health workers in Tanzania, Burundi, and Sudan[20].

The project's theory of change is that the overarching vision of the project is to contribute to improved health and well-being of vulnerable refugees, IDPs, other persons for whom UNHCR works including returnees, and affected host populations, with reference to SDG Target 3.4. This will be done in several refugee camps and host community settings across critical UNHCR country operations with large and unmet need for improved and expanded NCD care and prevention. The vision is anchored within the ideal transition towards '"universal health coverage'" with a focus on NCDs and is focused on supporting

[14] *Baseline Assessment Key Informant, 2023*
[15] *WHO Non-Communicable Diseases Progress Monitor, 2022*
[16] *UNHCR, UNHCR Global Strategy for Public Health*
[17] *UNHCR and World Bank Group, Socio - Economic Profile of Refugees in Burundi Results from the 2019 -2020 Socioeconomic Survey*
[18] *UNHCR. (2022). Baseline Assessment for NCDs, ToR*
[19] *Refugee health: UNHCR's strengthened response to non-communicable diseases (NCDs) Integrated health services across settings of acute and protracted humanitarian crisis in Eastern African contexts, 2022-2024*
[20] *UNHCR. (2022). Baseline Assessment for NCDs, ToR*

the attainment of SDG Target 3.4. In concrete terms, the project vision is supported by interventions organized through the project's objectives.

The overall objective of the project in Burundi is to improve and develop prevention, diagnosis and treatment of non-communicable diseases among host communities, repatriated refugees (returnees), internally displaced and refugee populations (in camps and across urban areas) by:

i) Strengthening the operational capacity of health facilities for the detection, diagnostic and therapeutic management of NCD by providing medical equipment and consumables;
ii) Strengthening the technical capacity of health care providers and community health workers on NCD;
iii) Raising awareness about the prevention and management of NCDs;
iv) Organizing field consulting visits to provide clinical services, support and capacity building for primary care on a quarterly basis;
v) Organizing selfcare therapeutic education sessions;
vi) Strengthening the follow-up of individuals living with mental illness also suffering from NCDs;
vii) Ensuring a healthy and nutritious diet for patients with NCD; and
viii) Undertaking advocacy activities with Burundi's MoH for the inclusion of forcibly displaced people in the national system.

Additional details on the project are set out in the project document that can be accessed at UNHCR Baseline Assessment for NCDs Project Document.

## 1.4 Baseline Assessment

### 1.4.1 Justification

The baseline assessment was necessitated by limited existence of evidence on NCD prevention, diagnosis, and management in refugee settings. Data related to NCDs amongst the forcibly displaced is uneven and, at best, addresses broader settings such as low-income countries or humanitarian situations. The baseline assessment was key to addressing the lack of data on refugees and NCDs by analysing current systems in place for NCD care or lack thereof in Burundi. The assessment was also necessary for identifying key gaps in care and thus inform and guide the implementation of project activities. The baseline findings will be used for monitoring and measurement of Project results during implementation and at endline.

### 1.4.2 Objectives

The baseline assessment was undertaken to provide values on the status quo of NCD service provision for project specific indicators to inform design, prioritization and targeting of interventions. The baseline assessment forms part of performance measurement at project evaluation.

Specifically, the assessment has:

i. Established benchmarks against which the project's progress and impact will be measured over the project life cycle and at the end of the period of implementation; and identified needs and current NCD service provision and capacity gaps; and
ii. Proposed solutions to further refine country plans in the project's key areas of prevention, diagnosis, and management.

# 2.0 METHODOLOGY

## 2.1 Overview

The baseline assessment utilised systematically integrated mixed methods of quantitative and qualitative approaches comprising both primary and secondary sources. Primary data was collected through household interviews, focus group discussions, assessment of health facilities, key informant interviews and administration of KABP tool to CHWs. Secondary data was collected through review of relevant literature reflected in the reference section. This sections below further detail the baseline assessment methodology.

## 2.2 Assessment Design

The assessment was originally designed to cover the refugee community (in camps and urban areas) IDPs, returnees and the host community. However, due to limitations cited in section 2.10, the scope of the assessment was reduced to cover only refugee populations in the targeted camps.

## 2.3 Sampling

Sampling for household survey was based on the Probability Proportion to Size (PPS) sampling procedure using a two-stage cluster sampling method. The PPS was applied to a population of 54, 821 refugees (Bwagizira, 9942; Kavumu, 17232; Nyankanda, 10826; Kinama, 7727; Musasa, 9094). The first stage involved the selection of 30 clusters, while the second stage involved the selection of 30 households from each cluster. The selection of 30 clusters and 30 households was informed by the Central Limit Theorem. Based on the 30 by 30 sampling approach, the assessment sampled a total of 900 households for the baseline assessment. The distribution of the sampled households in the selected camps is attached as Appendix II of this report.

For the focus group discussions (FGDs), the baseline assessment targeted five categories of stakeholder groups (men, women, youth, CHWs and persons living with disability) in line with the ToR. Using the target beneficiary population and the hyper geometric distribution formula the assessment sampled a total of 45 FGDs (Bwagizira, 9; Kavumu, 9; Nyankanda, 9; Kinama, 9; Musasa, 9) who were consulted with through focus group discussions.

A total of 18 key informants were identified based on their knowledge of the assessment objectives and questions, their experience and job description. Based on reviewed documents and data provided by UNHCR, a total of 5 health facilities in the 5 camps that were under the management of GCV were sampled for sampling and assessment. Additional health facilities within the study sites that were offering services to refugees were also mapped and assessed during the assessment. Consequently, the study successfully assessed and mapped 10 health facilities within the project area.

## 2.4 Development of Data Collection Tools, Training and Pre-Test

### 2.4.1 Development of Data Collection Tools

The assessment used both quantitative and qualitative data collection tools as further discussed below. These tools were reviewed by UNHCR before commencement of training. The comments received from the review were then incorporated to improve and finalise the tools.

#### *2.4.1.1 Quantitative Tools*

The following quantitative tools were used during the assessment:

a) **Household Questionnaire**: The tool was used to capture information on: the profile of the sampled refugees; level of needs, access and utilization of services by refugees; awareness and sensitization on NCD risks, lifestyle and well-being of the respondents; KABP on NCDs; and facilitators and barriers to health service utilization. The tool was administered to the household head or any household member above 18 years.

b) **Health Facility Mapping and Assessment Tool**: The tool was used to capture information on: health facility inventories with respect to NCD service provision, including equipment and medicine, structures, services provided, and staff and patients, and geo-location. This involved interviews with the facility focal person, reviewing of facility databases, and observations. The tool was administered to the health facility focal person.
c) **KABP Tool for CHWs**: Was administered to CHWs to gauge their knowledge and practice regarding NCDs.

#### *2.4.1.2 Qualitative Tools*

The following qualitative tools were used during the assessment:

a) **Key Informant Interview Guide**: The tool was used to capture information on: the level of engagement and ownership of the MoH/local authorities in NCD prevention, diagnosis, and management and inclusion and integration of refugees in national systems; availability of NCD services; the capacity and quality of existing health systems to deliver quality NCD care to refugees; and availability and awareness of NCD strategies. The guide was administered to the key informants identified for the assessment.
b) **Focus Group Discussion Guide**: The tool was used to capture information on: NCD services; awareness and sensitization on NCD risks, health lifestyle and well-being; KABP on NCDs; and facilitators and barriers to health service utilization. The guide was administered to the community groups identified for the assessment.

### 2.4.2 Training of Research Assistants

A total of twenty-one (21) research assistants (Supervisors, 3; Enumerators, 18) were trained virtually for two (2) days from 9-10 August 2023. The trainings were undertaken by Lartech Africa in collaboration with GNK Multi Services. Appendix IV of this report presents the training report, which outlines the training proceedings.

### 2.4.3 Field Pre-test

After training, the tools were pre-tested for appropriateness and suitability on 11 August 2023 in Rohero Zone in Bujumbura. After the pre-test, the teams conducted feedback sessions for fine-tuning the tools and finalisation before commencement of data collection.

## 2.5 Data Collection

Field data collection was undertaken from 16 to 28 August 2023. The assessment used the Kobo Collect platform for data collection. Table 2.1 presents a summary of the completed forms for each tool.

*Table 2.1: Summary of the completed interviews for each tool*

| NO. | Data Collection Tools | Completed Interviews |
|---|---|---|
| 1 | Household Questionnaire | 904 |
| 2 | Health Facility Assessment Tool | 10 |
| 3 | KABP Tool | 71 |
| 4 | FGD Guide | 43 |
| 5 | KII Guide | 7 |

The assessment consulted with 9 CHW groups through FGDs. Before the commencement of the FGD discussions with the CHWs, the FGD facilitators administered the KABP test to the CHWs to measure their level of knowledge and practice regarding NCDs. The test entailed NCD pictorials that the CHWs were expected to select from while the facilitators awarded the scores.

The assessment undertook a census of all the health facilities in the five camps. A total of 10 (Bwagizira, 1; Kavumu, 2; Nyankanda, 2; Kinama, 2; Musasa, 3) health facilities were assessed and mapped during the assessment. The distribution of the assessed health facilities is attached as Appendix II of this report. The assessment also successfully completed a total of seven (7) KIIs with: UNHCR Public Health and

Programme Management staff Burundi, International Organization for Migration (IOM) representative, a representative from the National Office for Protection of Refugees and Stateless Persons, local authority from Kinama camp, a health worker from Kiremba hospital, a representative from the World Food Programme (WFP) and a representative from the MoPH.

## 2.6 Data Quality Assurance

To ensure quality of all the data collected, the following key measures were implemented;

i.) Comprehensive review of assessment instruments before commencement of data collection;
ii.) Thorough training of the assessment team undertaken by Lartech Africa in partnership with GNK Multi Services;
iii.) Adequate pre-testing of all the tools;
iv.) Use of mobile data collection platform programmed with logical controls;
v.) Self-identification of disability status by the respondents;
vi.) Performance monitoring (back checks, spot-checks, accompaniments); and
vii.) Daily cross-checking of administered tools for accuracy, correctness, consistency, and completeness.

The household questionnaire for this assessment was lengthy and this could trigger respondent fatigue which would negatively impact on the data quality. To mitigate this, research assistants were well trained on the tool for easy understanding of its contents as well as on interviewing skills aimed at keeping the respondents alert and focused. Further, a pretest to establish the estimated time of administering the questionnaire was undertaken. Based on this, enumerators clearly explained to the respondents the estimated time of engagement and interviews proceeded only upon consent based on the required information and time.

## 2.7 Data Management, Processing and Analysis

### 2.7.1 Data Management

Quantitative data management was undertaken on the Kobo Collect platform. Access to data held in server for viewing, use and modification was restricted to authorized personnel only. At the end of each day, data was reviewed for accuracy and consistency and thereafter safely stored.

The FGD and KII data were captured on notebooks, later collated and transcribed. Data cleaning and verification was done both in the field and at the head office to ensure accuracy of the information.

### 2.7.2 Data Processing and Analysis

Data was analysed using a data analysis plan developed for each indicator. Before commencement of quantitative data processing, a rigorous data cleaning exercise on all the submitted forms was undertaken in MS Excel. This was done to ensure accuracy and consistency of the data.

Data processing was done using; Microsoft (MS) Excel, and International Business Machines (IBM) Statistical Package for the Social Sciences (SPSS) version 26 (v26). MS Excel was used to import comma separated values (CSV) data from the Kobo Collect server before being transferred into the SPSS. SPSS v26 was used to analyse data collected through household questionnaire, health facility assessment tool and KABP tool. All the quantitative data were analysed at a confidence interval (CI) of 95% and an alpha level ($\alpha$) of 0.05.

Data analysis included computation of descriptive statistics such as frequencies and cross tabulations. Qualitative data collected through KIIs and FGDs was grouped into thematic areas and analysed using Content Analysis Technique (CAT). The results of the analysis have been used to compile this report.

## 2.8 Ethical Considerations

The assessment was undertaken in strict conformance to safety, confidentiality, and strong research ethics. The baseline assessment was guided by the UNHCR's ethical standards, UNEG norms and standards, the

UNEG Ethical Guidelines for Evaluation, the Code of Conduct for Evaluations in the UN system, UNHCR Data Protection Policy, UNHCR Age, Gender and Diversity Policy and UNHCR Disability Inclusion Strategy.

The assessment team was trained on ethical considerations. Consent procedures were followed during the assessment, with oral informed consent obtained from the respondents during data collection. Only after consent was given, did the assessment proceed with interviews and/or discussions.

The assessment team informed the participants that their participation was voluntary and that the respondents were free to refuse to answer any question or withdraw altogether whenever they felt to. They were also informed that there was no monetary compensation for participating in the assessment. All the information collected through the assessment was treated with utmost confidentiality based on the principle of do-no-harm.

## 2.9 Study Governance

The study was governed by the following key principles to ensure its effectiveness, accountability, and inclusiveness.

i. **Competence**: For the assessment to be effective, we utilized sufficient expertise, resources, and tools to adequately respond to the objectives of the assessment.
ii. **Collaboration**: The study collaborated with UNHCR, GNK Multi Services, Burundi, health facilities, research assistants, and other stakeholders during the implementation of the study activities.
iii. **Integrity**: One of the core values of Lartech Africa is to uphold integrity. All the study activities were undertaken with honesty, fairness, and in a manner consistent with soundness of moral principle.
iv. **Transparency:** To ensure accountability, the study was undertaken in an open and candid manner in consultation with relevant players.
v. **Non- discrimination**: the study sampled a range of respondents irrespective of their race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, or disability status.
vi. **Participation**: The study ensured that all involved parties actively participated in the study activities right from the inception to the dissemination phase.

## 2.10 Reporting and Dissemination

The assessment findings herein are the basis for discussions, conclusions and recommendations presented in this report. The findings of this report were presented to the UNHCR External Evaluation Reference Group (EERG) through a virtual stakeholders' validation conference on 22 November 2023. The meeting was attended by thirteen (13) participants including: UNHCR representatives, WDF representatives, WHO representatives and Consultant representatives. Comments and inputs from the validation meeting have been incorporated and integrated into this Final Report.

## 2.11 Challenges and Limitations

The assessment went on well without major hitches. However, the following challenges were encountered:

i. **Delayed commencement of field data collection**: field data collection delayed for over five months. The delay was attributed to lengthy ethical approval process that was required in order to undertake the assessment of the host population, IDPs returnees and refugees living in urban areas. This challenge was addressed by limiting the scope of the assessment to refugee population in the camps.
ii. **Potential of data contamination**: due to the delays sited in bullet (i) above, field data collection started when implementation of some of the project activities had begun. While this did not affect the overall findings of the assessment, some of the assessed health facilities had received equipment, consumables and trainings. Areas of contamination identified in the baseline findings included the following indicators: number and percentage of healthcare workers providing NCD treatment who are trained on NCD management, number and percentage of healthcare workers

providing mental health treatment who are trained on mental health gap action programme (MhGAP) humanitarian intervention guide (HIG) and number and percentage of CHWs with training on NCDs. During the evaluation, the team queried the respondents more deeply on the status of these indicators before intervention activities.

iii. **Gathering people with disabilities (PWDs) at a central place for FGDs was a huge challenge**. It was difficult for the PWDs to move from their residences to the FGD venues due to accessibility issues. The assessment team, however, facilitated their movement to the required venues by providing transportation.

iv. The assessment was undertaken during the vaccination of children in the targeted refugee camps. This affected the smooth administration of the KABP tool and FGD guide to CHWs who were assisting with the vaccination. However, the assessment team managed to mobilize the CHWs and successfully administered the tools.

# 3.0 FINDINGS AND DISCUSSIONS

## 3.1 Overview

This chapter presents the study findings. It discusses the assessment questions and matrix, respondents' profile; behavioural risk factors; KABP on NCDs; health seeking behaviours and NCD service provision. Data for the main study indicators have been disaggregated by sex of the respondents.

## 3.2 Questions and Baseline Assessment Matrix

Building on the objectives in Section 1.4.2 above, the baseline assessment answered the following key research questions under the identified thematic areas. These questions are further elaborated in the baseline study matrix (Appendix VIII).

| No | Thematic Area | Key baseline questions |
|---|---|---|
| 1 | Integration, availability and quality of NCD services | • What is the level of engagement and ownership of the MoH/local authorities in NCD prevention, diagnosis, and management and the inclusion and integration of refugees in national systems?<br>• What is the current availability of NCD services? |
| 2 | Institutional capacity and capacity of health care workers | • What is the capacity and quality of the existing health systems to deliver quality NCD care to refugees and host communities?<br>• What is the scope of practice, coordination, guidelines/job aides, supplies, used by CHWs?<br>• What is the current capacity of health staff (CHW and primary health professionals) to provide NCD care?<br>• What is the presence of CHW, numbers, ratio / population, and their mode of functioning?<br>• What is the current knowledge and capacity of CHWs to provide prevention and support to persons with NCDs? |
| 3 | Level of needs, access and utilization of services by refugees and host communities | • What is the proportion of refugees and host communities that need NCD services in each country in the areas of intervention?<br>• What is the proportion of refugees and host communities that have access to quality NCD services in each country in the areas of intervention?<br>• What are the barriers to access of NCD services? (E.g., financial, sociocultural |
| 4 | Inclusion, gender mainstreaming and accountability to affected populations | • What are the strategies in place to ensure inclusion (age, gender, and disability) and Accountability to Affected Populations (AAP)?<br>• What is the level of awareness of strategies in place to ensure inclusion (gender, age, disability) and accountability to POCs on NCDs including prevention, self-care, and diet? |

## 3.3 Respondents Profile

The profiles discussed hereunder relate to household respondents, institutions or health facilities and CHWs.

### 3.3.1 Household Respondents Profile

In order to understand the factors that affect the health status of refugees, data pertaining to their health status alone would not suffice. Data on demographic factors such as education, income, ability to understand the language in the host country and occupation, are also important. It is imperative to collect and synthesize this data so as to promote inter-sectoral action in safeguarding and promoting the health of refugees[21]. The baseline assessment collected demographic data of the household respondents on their relationship to the head of the household, sex, age, nationality, spoken languages, educational status and disability status as discussed below.

Females accounted for 54.6% of the respondents while males accounted for 45.4%. Majority (45.8%) of the respondents were heads of the household (HH) followed by those who were spouses to household

[21] *Collection and integration of data on refugee and migrant health in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2020. License: CC BY-NC-SA 3.0 IGO*

heads (43.8%). About 52.1% of the respondents were aged between 18 to 35 years (Males, 49.8%; Females, 54.0%) followed by those aged between 36-65 years at 44.1% (Males, 45.4%; Females, 43.1%). Less than a tenth (9.5%) of the respondents had some form of disability (Males, 9.5%; Females, 9.5%) as shown in Table 3.1. The main forms of disability were physical (67.4%) followed by visual (15.8%) and chronic (13.7%).

*Table 3.1: Relationship of the respondent to the household head, age distribution and disability status of the respondents*

| Background Characteristics | Males | | Females | | Overall | |
|---|---|---|---|---|---|---|
| | Count (n) | % | Count (n) | % | Count (n) | % |
| ***Relation to the HH Head*** | | | | | | |
| Head | 354 | 86.3 | 60 | 12.1 | 414 | 45.8 |
| Spouse | 5 | 1.2 | 391 | 79.1 | 396 | 43.8 |
| Others | 51 | 12.4 | 43 | 8.7 | 94 | 10.4 |
| Total | 410 | 100.0 | 494 | 100.0 | 904 | 100.0 |
| ***Age Group*** | | | | | | |
| 18 - 35 | 204 | 49.8 | 267 | 54.0 | 471 | 52.1 |
| 36 - 65 | 186 | 45.4 | 213 | 43.1 | 399 | 44.1 |
| Above 65 | 20 | 4.9 | 14 | 2.8 | 34 | 3.8 |
| Total | 410 | 100.0 | 494 | 100.0 | 904 | 100.0 |
| ***Disability*** | | | | | | |
| Yes | 39 | 9.5 | 47 | 9.5 | 86 | 9.5 |
| No | 371 | 90.5 | 447 | 90.5 | 818 | 90.5 |

*(Source: Baseline Assessment, Household Survey, 2023)*

Regarding literacy[22], 68.4% of the respondents were literate (Males, 82.9%; Females, 56.3%) while 31.6% were illiterate (Males, 17.1%; Females, 43.7%). About 32.7% of the respondents had completed primary school education (Males, 34.6%; Females, 31.2%), 28.8% had completed secondary school education (Males, 37.6%; Females, 21.5%) while 30.8% had no formal education (Males, 17.1%; Females, 42.1%). Majority (65.2%) of the respondents were married (Males, 76.8%; Females, 55.5%) while 34.7% (Males, 23.2%; Females, 44.3%) were cohabiting, widowed, never married, separated or divorced as shown in Table 3.2.

*Table 3.2: Literacy, education level and marital status of the respondents*

| Background Characteristics | Males | | Females | | Overall | |
|---|---|---|---|---|---|---|
| | Count (n) | % | Count (n) | % | Count (n) | % |
| ***Literacy Level*** | | | | | | |
| Yes | 340 | 82.9 | 278 | 56.3 | 618 | 68.4 |
| No | 70 | 17.1 | 216 | 43.7 | 286 | 31.6 |
| Total | 410 | 100.0 | 494 | 100.0 | 904 | 100.0 |
| ***Highest Level of Education*** | | | | | | |
| No formal schooling | 70 | 17.1 | 208 | 42.1 | 278 | 30.8 |
| Pre-primary | 19 | 4.6 | 13 | 2.6 | 32 | 3.5 |
| Primary school | 142 | 34.6 | 154 | 31.2 | 296 | 32.7 |
| Secondary School | 154 | 37.6 | 106 | 21.5 | 260 | 28.8 |
| Others | 25 | 6.1 | 13 | 2.6 | 38 | 4.2 |
| Total | 410 | 100.0 | 494 | 100.0 | 904 | 100.0 |
| ***Marital Status*** | | | | | | |
| Never married | 65 | 15.9 | 45 | 9.1 | 110 | 12.2 |
| Married | 315 | 76.8 | 274 | 55.5 | 589 | 65.2 |
| Widowed | 11 | 2.7 | 98 | 19.8 | 109 | 12.1 |
| Others | 19 | 4.6 | 77 | 15.6 | 96 | 10.6 |
| Total | 410 | 100.0 | 494 | 100.0 | 904 | 100.0 |

*(Source: Baseline Assessment, Household Survey, 2023)*

A biggest proportion (91.6%) of the respondents were Christians (Males, 90.0%; Females, 92.9%) followed by Muslims at 8.0% (Males, 9.0%; Females, 7.1%). With regard to the respondent's nationality, the assessment found that nearly all (96.8%) the respondents were of Congolese nationality (Males, 98.3%; Females, 95.5%). The rest (3.2%) were of other nationalities consisting Burundians, Ugandans, and Rwandese. An assessment of the languages spoken by the respondents showed that 93.4% of the

[22] *The ability to read and write in any language*

respondents spoke Swahili (Males, 92.9%; Females, 93.7%), 49.1% spoke Kirundi (Males, 48.8%; Females, 49.4%), while 25.0% spoke French (Males, 36.1%; Females, 15.8%) as shown in Table 3.3.

*Table 3.3: Religion, Nationality and Languages spoken by the respondents*

| Background Characteristics | Males | | Females | | Overall | |
|---|---|---|---|---|---|---|
| | Count (n) | % | Count (n) | % | Count (n) | % |
| ***Religion*** | | | | | | |
| Christian | 369 | 90.0 | 459 | 92.9 | 828 | 91.6 |
| Muslim | 37 | 9.0 | 35 | 7.1 | 72 | 8.0 |
| Others | 4 | 0.9 | 0 | 0.0 | 4 | 0.4 |
| Total | 410 | 100.0 | 494 | 100.0 | 904 | 100.0 |
| ***Nationality*** | | | | | | |
| Congolese | 403 | 98.3 | 472 | 95.5 | 875 | 96.8 |
| Burundian | 0 | 0.0 | 19 | 3.8 | 19 | 2.1 |
| Others | 7 | 1.7 | 3 | 0.6 | 10 | 1.1 |
| Total | 410 | 100.0 | 494 | 100.0 | 904 | 100.0 |
| ***Languages*** | | | | | | |
| Swahili | 381 | 92.9 | 463 | 93.7 | 844 | 93.4 |
| Kirundi | 200 | 48.8 | 244 | 49.4 | 444 | 49.1 |
| French | 148 | 36.1 | 78 | 15.8 | 226 | 25.0 |
| Kinyamulenge | 113 | 27.6 | 86 | 17.4 | 199 | 22.0 |
| Gifurero | 62 | 15.1 | 93 | 18.8 | 155 | 17.1 |
| Lingala | 50 | 12.2 | 21 | 4.3 | 71 | 7.9 |
| Kibembe | 31 | 7.6 | 32 | 6.5 | 63 | 7.0 |
| Kinyarwanda | 37 | 9.0 | 25 | 5.1 | 62 | 6.9 |
| Kongo | 26 | 6.3 | 18 | 3.6 | 44 | 4.9 |
| Others | 38 | 9.3 | 22 | 4.5 | 60 | 6.6 |

*(Source: Baseline Assessment, Household Survey, 2023)*

### 3.3.2 Institutional/ Health Facility Profile

An assessment of health facilities in the target camps was used to measure the availability of NCD services. The assessment successfully assessed and mapped a total of 10 HCFs (Primary HCFs, 5; Secondary HCFs, 5). All the 10 HCF offered NCD services. Table 3.4 presents the profile of the assessed health facilities.

*Table 3.4: Profile of assessed health facilities*

| Camp | Level of health facility | Name of assessed health facility | Ownership of health facility | Services offered | Offers NCD services |
|---|---|---|---|---|---|
| Kinama Camp | Secondary Care | Muyinga Hospital | MoH | Both In-Patient and Out-Patient | Yes |
| | Primary Care | Health facility Kinama camp | GVC | | |
| Musasa Camp | Secondary Care | Gashoho hospital | MoH | Both In-Patient and Out-Patient | Yes |
| | | Kiremba Hospital | Catholic church | | |
| | Primary Care | Health Facility of Musasa camp | GVC | | |
| Nyankanda Camp | Secondary Care | District Hospital of Ruyigi | MoH | Both In-Patient and Out-Patient | Yes |
| | Primary Care | Health Facility of Nyakanda camp | GVC | | |
| Bwagizira Camp | Primary Care | Health centre of Bwagizira Camp | GVC | Both In-Patient and Out-Patient | Yes |
| Kavumu Camp | Secondary Care | Cankuzo Hospital | MoH | Both In-Patient and Out-Patient | Yes |
| | Primary Care | Health Facility of Kavumu camp | GVC | | |

*(Source: Health Facility Records, 2023)*

Table 3.5 below presents the staffing levels of the assessed health facilities.

*Table 3.5: Staff composition of the assessed health facilities*

| Camp | Name of assessed health facility | Staff composition | |
|---|---|---|---|
| | | Category | Number |
| Kinama Camp | Muyinga Hospital | Doctor(s) | 16 |
| | | Nurse(s) | 104 |
| | | Psycho social support | 3 |
| | Health facility Kinama camp | Doctor(s) | 1 |
| | | Nurse(s) | 11 |

| Camp | Name of assessed health facility | Staff composition | |
|---|---|---|---|
| | | Category | Number |
| | | CHWs/ CHVs | 11 |
| | | Psycho social support | 1 |
| Musasa Camp | Gashoho hospital | Doctor(s) | 5 |
| | | Nurse(s) | 39 |
| | | Psycho social support | 1 |
| | Kiremba Hospital | Doctor(s) | 7 |
| | | Nurse(s) | 73 |
| | Health Facility of Musasa camp | Doctor(s) | 1 |
| | | Nurse(s) | 15 |
| | | Psycho social support | 1 |
| | | CHWs/ CHVs | 17 |
| Nyankanda Camp | District Hospital of Ruyigi | Doctor(s) | 2 |
| | | Nurse(s) | 41 |
| | Health Facility of Nyakanda camp | Doctor(s) | 1 |
| | | Nurse(s) | 10 |
| | | Psycho social support | 1 |
| Bwagizira Camp | Health centre of Bwagizira Camp | Doctor(s) | 1 |
| | | Nurse(s) | 7 |
| | | Other (specify) | 1 |
| Kavumu Camp | Cankuzo Hospital | Doctor(s) | 5 |
| | | Nurse(s) | 50 |
| | Health Facility of Kavumu camp | Doctor(s) | 1 |
| | | Nurse(s) | 9 |
| | | Midwifery | 3 |
| | | Psycho social support | 1 |

*(Source: Health Facility Records, 2023)*

### 3.3.3 Community Health Workers Profile

Community health workers are essential personnel in the health system. In Burundi, the assessment found that they were mainly focused on preventive and promotional care.

Out of the 10 assessed health facilities, 5 had CHWs attached to them. The total number of CHWs attached to these facilities was 54 (Males, 35; Females, 19). Table 3.6 presents the number of CHWs in the assessed health facilities. On average, there were 11 CHWs per facility. The minimum number of CHWs attached to a health facility was 2 while the maximum was 17.

*Table 3.6: Number of CHWs in the assessed health facilities*

| Data Point | Camp | | | | | Overall |
|---|---|---|---|---|---|---|
| | Kinama | Musasa | Nyankanda | Bwagizira | Kavumu | |
| Mean | 11 | 17 | 17 | 2 | 7 | 11 |
| Std. Deviation | | | | | | 6.50 |
| Minimum | 11 | 17 | 17 | 2 | 7 | 2 |
| Maximum | 11 | 17 | 17 | 2 | 7 | 17 |
| Median | 11 | 17 | 17 | 2 | 7 | 11 |

*(Source: Health Facility Records, 2023)*

The CHWs served a total population of 370,830 people against a population of 316,386 people[23] which implied that their coverage went beyond their target population. Further analysis showed that the ratio of CHWs to served population was 1: 1078 which was significantly higher than the recommended CHW to population ratio of 1 CHWs per 500 people[24]. Table 3.7 presents the distribution of the CHWs in the assessed health facilities.

[23] *https://data.unhcr.org/en/documents/details/103720 (Reviewed on 14 October 2023)- The total population of concern in Burundi as at 31 August 2023. This includes 220,834 returnees mainly from Tanzania, Rwanda, DRC and Uganda and a further 87,375 refugees and asylum-seekers, as well as 8,177 IDPs*

[24] *UNICEF, 2014, Communities Care: Transforming Lives and Preventing Violence*

*Table 3.7: Presence of community health workers (CHW), and numbers, ratio / population by camp*

| Name of Health Facility | Total Number of CHWs | | | Population covered by facility | Ratio of CHWs to Population |
|---|---|---|---|---|---|
| | Overall | Male | Female | | |
| Health Centre of Bwagiriza Camp | 2 | 0 | 2 | 9,730 | 1:4,865 |
| Health Facility of Nyakanda camp | 17 | 12 | 5 | 10,972 | 1:645 |
| Health Facility of Kavumu camp | 7 | 4 | 3 | 20,000 | 1:2,857 |
| Health Facility of Musasa camp | 17 | 11 | 6 | 9,381 | 1:552 |
| Health facility Kinama camp | 11 | 8 | 3 | 8,128 | 1:739 |
| ***Total*** | ***54*** | ***35*** | ***19*** | ***58,211*** | ***1:1,078*** |

*(Source: Health Facility Records, 2023)*

Only 2 HCFs (Health Facility of Musasa camp and Health facility Kinama camp) with CHWs had a definitive structure that outlined the position of the CHWs, the reporting channels and their scope of work.

The Burundian health system is organized in a hierarchical manner with the CHWs falling under the community level. Within this level, they are expected to offer preventive and promotional care and ensure the management of certain pathologies such as simple malaria, diarrhea, pneumonia. The assessment established that the CHWs undertook several roles including: mother and child care, outreaches and enrolment of new health cases, referrals, interpersonal and relationship building, advocacy, women empowerment, local coordination and home visits. CHWs through FGDs cited; reporting, maintaining hygiene at the health centres, acting as a link between the community and the health centres, and assisting health care workers in the facility and during vaccination as some of their roles as CHWs.

To carry out their work, the assessment found that the CHWs were equipped and provided with pens, register, leaflets, booklets, image boxes and vests.

## 3.4 Behavioural Risk Factors

NCDs are causally linked with four leading behavioural risk factors of: tobacco use, harmful use of alcohol, physical inactivity and unhealthy diet. In turn, these behaviours can lead to the following four key metabolic/physiological changes: raised blood pressure, overweight/obesity, raised blood glucose, and raised blood lipids[25] .

The baseline sought to assess tobacco and alcohol use, dietary risk factors and physical activity among the respondents. Assessment results on these behavioural risk factors will assist the project in the formulation, tracking and implementation of effective control interventions on these behaviours. The assessment findings on the individual respondents' behaviours regarding these factors are discussed in the sub sections below.

### 3.4.1 Tobacco and Alcohol Use

#### *3.4.1.1 Tobacco Use*

Tobacco use, including smoking and use of smokeless tobacco, is currently one of the leading global risk factors for illness and death from major NCDs. These illnesses and premature deaths are not only caused by the direct consumption of tobacco, but also exposure of non-smokers to second-hand smoke[26]. This section describes tobacco usage among respondents in the camps.

The assessment found that the overall prevalence of current tobacco use was **7.1% (95% CI: 5.5%-9.0%; n=64, N=904)** with significantly higher prevalence among males (14.4%) than females (1.0%) as presented in Table 3.8. This proportion was lower than the national tobacco prevalence rate of 11.8%[27] and the global tobacco prevalence rate of 22.3%[28].

[25] *Noncommunicable diseases country profiles 2018. Geneva: World Health Organization; 2018. License: CC BY-NC-SA 3.0 IGO*
[26] *Non-communicable diseases country profiles 2018. Geneva: World Health Organization; 2018. License: CC BY-NC-SA 3.0 IGO*
[27] *https://data.worldbank.org/indicator/SH.PRV.SMOK?locations=BI (Reviewed 0n 8 September 2023)*
[28] *https://www.who.int/news-room/fact-sheets/detail/tobacco# (Reviewed on 05 December 2023)*

*Table 3.8: Proportion of respondents currently using tobacco by sex*

| Currently using Tobacco | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 59 | 14.4 | 5 | 1.0 | 64 | 7.1 |
| No | 351 | 85.6 | 489 | 99.0 | 840 | 92.9 |
| ***Total*** | ***410*** | ***100.0*** | ***494*** | ***100.0*** | ***904*** | ***100.0*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

The assessment found that the individual respondents used a variety of tobacco products. The most common among the tobacco users was cigarettes (69.2%), hand-rolled (29.5%) and waterpipe/ shisha (1.3%).

Current tobacco users smoking frequency is presented in Table 3.9. Smoking frequency was categorized as either rarely, sometimes, often, or always. Overall, 37.5% smoked often (Males, 39.0%; Females, 20.0%), 26.6% smoked sometimes (Males, 22.0%; Females, 80.0%), 23.4% smoked always (Males, 25.4%; Females, 0.0%) and 12.5% smoked rarely (Males, 13.6%; Females, 0.0%).

*Table 3.9: Smoking frequency of current smokers by sex*

| Frequency of using tobacco products | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Rarely | 8 | 13.6 | 0 | 0.0 | 8 | 12.5 |
| Sometimes | 13 | 22.0 | 4 | 80.0 | 17 | 26.6 |
| Often | 23 | 39.0 | 1 | 20.0 | 24 | 37.5 |
| Always | 15 | 25.4 | 0 | 0.0 | 15 | 23.4 |
| ***Total*** | ***59*** | ***100.0*** | ***5*** | ***100.0*** | ***64*** | ***100.0*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

Smoking plays a large role in the body's ability to absorb and process nutrients, vitamins, and minerals. The nicotine in cigarettes affects the body's ability to maintain the proper level of nutrients and is more likely to drain vitamins and minerals within the body[29].

The assessment established that there was a significant correlation between prevalence of tobacco use and NCD prevalence. As the intake of tobacco increases, the likelihood of being diagnosed with NCD increases and vice versa (Pearson Chi-Square value of **0.016** at 95% CI). Furthermore, the likelihood of being a tobacco smoker and being diagnosed with NCDs are weakly associated (Cramer's V value of **0.080**) which means that people who smoke tobacco tend to have a high level of being diagnosed with NCD.

Overall, majority (88.1%) of the tobacco smokers started using tobacco products at a younger age of 25 years and below (Males, 87.2%; Females, 100.0%) as shown in Table 3.10.

*Table 3.10: Age of smoking initiation*

| Age of Tobacco Initiation | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Below 18 | 36 | 38.3 | 5 | 71.4 | 41 | 40.6 |
| 18 - 25 | 46 | 48.9 | 2 | 28.6 | 48 | 47.5 |
| 26 - 35 | 10 | 10.6 | 0 | 0.0 | 10 | 9.9 |
| 36 - 45 | 1 | 1.1 | 0 | 0.0 | 1 | 1.0 |
| Above 45 | 1 | 1.1 | 0 | 0.0 | 1 | 1.0 |
| ***Total*** | ***94*** | ***100.0*** | ***7*** | ***100.0*** | ***101*** | ***100.0*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

### *3.4.1.2 Alcohol Consumption*

The harmful use of alcohol is a major risk factor for premature deaths and disabilities in the world, and is known to cause heart diseases, cancers, liver diseases, and a range of mental illness and behavioural disorders[30]. The assessment found that **9.6% (95% CI: 7.8%-11.7%; n=87, N=904)** of the respondents

[29] *https://jamaicahospital.org/newsletter/how-smoking-affects-nutrition/ (Reviewed on 18 September 2023)*
[30] *Non-communicable diseases country profiles 2018. Geneva: World Health Organization; 2018. License: CC BY-NC-SA 3.0 IGO*

consumed alcohol in the past seven days prior to the assessment day with a higher proportion being males (16.8%) compared to the females (3.6%) as shown in Table 3.11.

*Table 3.11: Proportion of respondents who consumed alcohol in the past 7 days preceding the assessment by sex*

| Consumed any alcohol | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 69 | 16.8 | 18 | 3.6 | 87 | 9.6 |
| No | 341 | 83.2 | 476 | 96.4 | 817 | 90.4 |
| ***Total*** | ***410*** | ***100.0*** | ***494*** | ***100.0*** | ***904*** | ***100.0*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

No amount of alcohol consumption is recommended by WHO. The assessment found that only 1.1% of current alcohol drinkers had consumed alcohol for all the seven days preceding the assessment as shown in Table 3.12.

*Table 3.12: Proportion of respondents who consumed alcohol daily for 7 days preceding the assessment by sex*

| Consumed alcohol daily for 7 days | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 1 | 1.4 | 0 | 0.0 | 1 | 1.1 |
| No | 68 | 68 | 68 | 68 | 68 | 68 |
| ***Total*** | ***69*** | ***100.0*** | ***18*** | ***100.0*** | ***87*** | ***100.0*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

Further analysis established that alcohol consumption was not significantly correlated with NCD prevalence (**Pearson Chi-Square value of 0.464 at α=0.05**). However, the lack of correlation was weak (**Cramer's V value of 0.024**).

### 3.4.2 Prevalence of Tobacco and/ or Alcohol use among the Respondents

Table 3.13 shows detailed analysis on the prevalence of tobacco and alcohol use among the respondents by sex, age, disability status and ethnicity. The prevalence of tobacco and/ or alcohol use was **13.2% (95% CI: 11.0%-15.5%; n=119, N=904)** with a higher prevalence recorded among males (23.9%) compared to females (4.3%).

*Table 3.13: Prevalence of tobacco and/ or alcohol use among the respondents in camps by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 54 | 26.5 | 150 | 73.5 | 13 | 4.9 | 254 | 95.1 | 67 | 14.2 | 404 | 85.8 |
| 36 - 65 | 39 | 21.0 | 147 | 79.0 | 7 | 3.3 | 206 | 96.7 | 46 | 11.5 | 353 | 88.5 |
| Above 65 | 5 | 25.0 | 15 | 75.0 | 1 | 7.1 | 13 | 92.9 | 6 | 17.6 | 28 | 82.4 |
| ***Total*** | ***98*** | ***23.9*** | ***312*** | ***76.1*** | ***21*** | ***4.3*** | ***473*** | ***95.7*** | ***119*** | ***13.2*** | ***785*** | ***86.8*** |
| **PWD** | | | | | | | | | | | | |
| Yes | 8 | 20.5 | 31 | 79.5 | 1 | 2.1 | 46 | 97.9 | 9 | 10.5 | 77 | 89.5 |
| No | 90 | 24.3 | 281 | 75.7 | 20 | 4.5 | 427 | 95.5 | 110 | 13.4 | 708 | 86.6 |
| ***Total*** | ***98*** | ***23.9*** | ***312*** | ***76.1*** | ***21*** | ***4.3*** | ***473*** | ***95.7*** | ***119*** | ***13.2*** | ***785*** | ***86.8*** |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 95 | 23.6 | 308 | 76.4 | 19 | 4.0 | 453 | 96.0 | 114 | 13.0 | 761 | 87.0 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 2 | 10.5 | 17 | 89.5 | 2 | 10.5 | 17 | 89.5 |
| Others | 3 | 42.9 | 4 | 57.1 | 0 | 0.0 | 3 | 100.0 | 3 | 30.0 | 7 | 70.0 |
| ***Total*** | ***98*** | ***23.9*** | ***312*** | ***76.1*** | ***21*** | ***4.3*** | ***473*** | ***95.7*** | ***119*** | ***13.2*** | ***785*** | ***86.8*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

The assessment established that there was a significant correlation between prevalence of tobacco and/ or alcohol consumption and NCD prevalence. As the intake of tobacco and/ or alcohol increases, the likelihood of being diagnosed with NCD increases and vice versa (Pearson Chi-Square value of **0.007** at 95% CI). Furthermore, the likelihood of being a tobacco smoker and/ or an alcohol consumer and being diagnosed with NCDs are moderately associated (Cramer's V value of **0.147**) which means that people who smoke tobacco and/ or consume alcohol tend to have a high level of being diagnosed with NCD.

### 3.4.3 Dietary Risk Factors

Poor quality diets are among the top 6 risk factors contributing to the global burden of disease. Specifically, the NCD burden is associated with diets low in fruits and vegetables, high in sodium, low in nuts and seeds, low in whole grains, and low in seafood-derived omega-3 fatty acids[31]. Excessive consumption of calorie dense foods containing high levels of saturated fats, trans-fatty acids, free sugars and/or salt either alone, or in combination with insufficient physical activity, contributes to obesity and diabetes, as well as other NCDs[32].

The assessment asked respondents questions on fruits and vegetable consumption, salt and sugar intake, and consumption of oils and fats at the household level. The findings are discussed hereunder.

#### *3.4.3.1 Fruits and Vegetables Intake*

The WHO recommends consumption of at least 400 grams of fruit and vegetables each day or five servings of 80 grams of fruits and vegetables per person per day[33]. Literature shows that consumption of fruits and vegetables within these recommendations lowers mortality and reduces risk of cardiovascular diseases (including heart disease and stroke), several common cancers (such as colorectal cancer, liver cancer and lung cancer), type 2 diabetes and chronic respiratory diseases (including asthma and chronic obstructive pulmonary disease)[34]. This section describes fruits and vegetables intake among respondents in the camps.

Table 3.14 shows that **88.4% (95% CI: 86.1%-90.4%; n=799, N=904)** of the respondents ate fruits and/or vegetables (Males, 92.0%; Females, 85.4%) within seven days preceding the assessment.

*Table 3.14: Proportion of respondents who ate fruits and/ or vegetables within seven days preceding the assessment by background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 192 | 94.1 | 12 | 5.9 | 229 | 85.8 | 38 | 14.2 | 421 | 89.4 | 50 | 10.6 |
| 36 - 65 | 169 | 90.9 | 17 | 9.1 | 180 | 84.5 | 33 | 15.5 | 349 | 87.5 | 50 | 12.5 |
| Above 65 | 16 | 80.0 | 4 | 20.0 | 13 | 92.9 | 1 | 7.1 | 29 | 85.3 | 5 | 14.7 |
| ***Total*** | ***377*** | ***92.0*** | ***33*** | ***8.0*** | ***422*** | ***85.4*** | ***72*** | ***14.6*** | ***799*** | ***88.4*** | ***105*** | ***11.6*** |
| **PWD** | | | | | | | | | | | | |
| Yes | 29 | 74.4 | 10 | 25.6 | 35 | 74.5 | 12 | 25.5 | 64 | 74.4 | 22 | 25.6 |
| No | 348 | 93.8 | 23 | 6.2 | 387 | 86.6 | 60 | 13.4 | 735 | 89.9 | 83 | 10.1 |
| ***Total*** | ***377*** | ***92.0*** | ***33*** | ***8.0*** | ***422*** | ***85.4*** | ***72*** | ***14.6*** | ***799*** | ***88.4*** | ***105*** | ***11.6*** |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 372 | 92.3 | 31 | 7.7 | 403 | 85.4 | 69 | 14.6 | 775 | 88.6 | 100 | 11.4 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 17 | 89.5 | 2 | 10.5 | 17 | 89.5 | 2 | 10.5 |
| Others | 5 | 71.4 | 2 | 28.6 | 2 | 66.7 | 1 | 33.3 | 7 | 70.0 | 3 | 30.0 |
| ***Total*** | ***377*** | ***92.0*** | ***33*** | ***8.0*** | ***422*** | ***85.4*** | ***72*** | ***14.6*** | ***799*** | ***88.4*** | ***105*** | ***11.6*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

The assessment established that there was a significant correlation between prevalence of fruits and/or vegetable intake and NCD prevalence. As the intake of fruits and/or vegetable decreases, the likelihood of being diagnosed with NCD increases and vice versa (Pearson Chi-Square value of **0.046 at α=0.05**). This means that people who do not consume fruits and/or vegetables tend to have a high level of being diagnosed with NCD. However, the relationship was weak (Cramer's V value of **0.066).**

While the assessment did not measure the quantity of fruits or vegetables consumed, individual respondents who consumed fruits and vegetables throughout the week were deemed to have met the WHO definition of adequate intake of fruits and vegetables. The assessment findings presented in Table 3.15 shows that only **0.7% (95% CI: 0.2%-1.4%; n=6, N=904)** of the respondents attained adequate fruits and vegetables intake (Males, 0.5%; Females, 0.8%).

[31] *Non-Communicable Diseases, Diets and Nutrition 2018. United Nations System Standing Committee on Nutrition, May 2018*
[32] *Fiscal policies for diet and prevention of non-communicable diseases: technical meeting report, 5-6 May 2015. World Health Organization; 2015*
[33] *FAO. 2020. Fruit and vegetables – your dietary essentials. The International Year of Fruits and Vegetables, 2021, background paper*
[34] *Fruits and Vegetables: Essentials for a Healthy Diet, 2023. Non-Communicable Diseases Watch, Centre for Health Protection of the Department of Health, April 2023*

*Table 3.15: Proportion of respondents achieving the recommended intake of fruits and vegetables by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 1 | 0.5 | 203 | 99.5 | 1 | 0.4 | 266 | 99.6 | 2 | 0.4 | 469 | 99.6 |
| 36 - 65 | 1 | 0.5 | 185 | 99.5 | 2 | 0.9 | 211 | 99.1 | 3 | 0.8 | 396 | 99.2 |
| Above 65 | 0 | 0.0 | 20 | 100.0 | 1 | 7.1 | 13 | 92.9 | 1 | 2.9 | 33 | 97.1 |
| ***Total*** | 2 | 0.5 | 408 | 99.5 | 4 | 0.8 | 490 | 99.2 | 6 | 0.7 | 898 | 99.3 |
| **PWD** | | | | | | | | | | | | |
| Yes | 1 | 2.6 | 38 | 97.4 | 1 | 2.1 | 46 | 97.9 | 2 | 2.3 | 84 | 97.7 |
| No | 1 | 0.3 | 370 | 99.7 | 3 | 0.7 | 444 | 99.3 | 4 | 0.5 | 814 | 99.5 |
| ***Total*** | 2 | 0.5 | 408 | 99.5 | 4 | 0.8 | 490 | 99.2 | 6 | 0.7 | 898 | 99.3 |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 2 | 0.5 | 401 | 99.5 | 3 | 0.6 | 469 | 99.4 | 5 | 0.6 | 870 | 99.4 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 1 | 5.3 | 18 | 94.7 | 1 | 5.3 | 18 | 94.7 |
| Others | 0 | 0.0 | 7 | 100.0 | 0 | 0.0 | 0 | 100.0 | 0 | 0.0 | 10 | 100.0 |
| ***Total*** | 2 | 0.5 | 408 | 99.5 | 4 | 0.8 | 490 | 99.2 | 6 | 0.7 | 898 | 99.3 |

*(Source: Baseline Assessment, Household Survey, 2023)*

Further analysis as presented in Table 3.16 show that the respondents took fruits on an average of 2.1 days and vegetables on an average of 3.6 days during the 7 days preceding the assessment with slightly more variability observed in vegetable intake (SD, 2.0) than fruit intake (SD, 1.3).

*Table 3.16: Mean number of days for fruits and vegetables consumption within seven days preceding the assessment*

| Data Point | Number of consumption days | |
|---|---|---|
| | Fruits | Vegetables |
| Mean | 2.1 | 3.6 |
| Median | 2.0 | 3.0 |
| Minimum | 1 | 1 |
| Maximum | 7 | 7 |
| Std. Deviation | 1.3 | 2.0 |
| Number of respondents | 360 | 782 |
| CI | 95% | 95% |

*(Source: Baseline Assessment, Household Survey, 2023)*

The common types of fruits found in the assessed camps were avocados, bananas, pineapples, tree tomatoes, plums, lemons, oranges guavas, citrus, mangoes, pawpaw, okra, tamarillo, and coconut. The assessment findings presented in Table 3.17 shows that avocado was reported the most consumed fruit with a weighted average of 38.3% followed by banana (36.3%), pineapple (7.1%) and tree tomato (5.4%).

*Table 3.17: Type of fruits consumed by the respondents*

| Fruits | Weight (%) | Rank |
|---|---|---|
| Avocado | 38.3 | 1 |
| Banana | 36.3 | 2 |
| Pineapple | 7.1 | 3 |
| Tree tomato | 5.4 | 4 |
| Plum | 2.3 | 5 |
| Lemon | 2.0 | 6 |
| Orange | 1.6 | 7 |
| Others[35] | 6.9 | 8 |
| ***Total*** | ***100.0*** | |

*(Source: Baseline Assessment, Household Survey, 2023)*

The common types of vegetables found in the assessed camps were amaranth, cassava leaves, bean leaves, cabbage, tomatoes, African eggplant, onions, pumpkin leaves, sweet potato leaves, eggplant, traditional vegetable, carrots, pepper, pumpkin, and kales (*sukuma wiki)*. The assessment findings presented in Table 3.18 shows that amaranth was reported the most consumed vegetable with a weighted average of 26.7% followed by cassava leaves (26.6%), bean leaves (11.8%), cabbage (9.9%), tomato (5.9%) and African eggplant (5.4%).

[35] *Guavas, Citrus, Mangoes, Pawpaw, Okra, Tamarillo, and Coconut*

*Table 3.18: Type of vegetables consumed by the respondents*

| Vegetables | Weight (%) | Rank |
|---|---|---|
| Amaranth | 26.7 | 1 |
| Cassava leaves | 26.6 | 2 |
| Bean leaves | 11.8 | 3 |
| Cabbage | 9.9 | 4 |
| Tomato | 5.9 | 5 |
| African eggplant | 5.4 | 6 |
| Onions | 4.8 | 7 |
| Pumpkin leaves | 4.0 | 8 |
| Others[36] | 4.9 | 9 |
| ***Total*** | ***100.0*** | |

*(Source: Baseline Assessment, Household Survey, 2023)*

### *3.4.3.2 High Dietary Salt*

High dietary salt intake is defined as additional of salt while eating or intake of food processed in high salt on a daily basis. Consumption of high dietary salt raises blood pressure and increases the risk of heart disease and stroke. According to the WHO (2018), the recommended daily intake of salt should be less than 5 grams per person per day.[37]. This section provides assessment findings on dietary salt intake among the respondents.

To obtain this proportion, the assessment considered respondents who always added salt on their food while preparing or eating it and/or consumed processed food high in salt. The prevalence of high dietary salt intake among the respondents was found to be **6.0% (95% CI: 4.5%-7.7%; n=54, N=904)** with a slightly higher prevalence recorded among females (6.9%) than among the males (4.9%) as shown in Table 3.19.

*Table 3.19: Prevalence of high dietary salt intake among the respondents in the camps by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 6 | 2.9 | 198 | 97.1 | 15 | 5.6 | 252 | 94.4 | 21 | 4.5 | 450 | 95.5 |
| 36 - 65 | 13 | 7.0 | 173 | 93.0 | 17 | 8.0 | 196 | 92.0 | 30 | 7.5 | 369 | 92.5 |
| Above 65 | 1 | 5.0 | 19 | 95.0 | 2 | 14.3 | 12 | 85.7 | 3 | 8.8 | 31 | 91.2 |
| ***Total*** | ***20*** | ***4.9*** | ***390*** | ***95.1*** | ***34*** | ***6.9*** | ***460*** | ***93.1*** | ***54*** | ***6.0*** | ***850*** | ***94.0*** |
| **PWD** | | | | | | | | | | | | |
| Yes | 4 | 10.3 | 35 | 89.7 | 2 | 4.3 | 45 | 95.7 | 6 | 7.0 | 80 | 93.0 |
| No | 16 | 4.3 | 355 | 95.7 | 32 | 7.2 | 415 | 92.8 | 48 | 5.9 | 770 | 94.1 |
| ***Total*** | ***20*** | ***4.9*** | ***390*** | ***95.1*** | ***34*** | ***6.9*** | ***460*** | ***93.1*** | ***54*** | ***6.0*** | ***850*** | ***94.0*** |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 19 | 4.7 | 384 | 95.3 | 32 | 6.8 | 440 | 93.2 | 51 | 5.8 | 824 | 94.2 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 2 | 10.5 | 17 | 89.5 | 2 | 10.5 | 17 | 89.5 |
| Others | 1 | 14.3 | 6 | 85.7 | 0 | 0.0 | 3 | 100.0 | 1 | 10.0 | 9 | 90.0 |
| ***Total*** | ***20*** | ***4.9*** | ***390*** | ***95.1*** | ***34*** | ***6.9*** | ***460*** | ***93.1*** | ***54*** | ***6.0*** | ***850*** | ***94.0*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

The low prevalence in high dietary salt intake among the respondents was attributed to their perception that it causes NCDs. The assessment findings presented in Table 3.20 shows that 76.2% of the respondents (Males, 78.5%; Females, 74.3%) perceived that high dietary salt intake caused NCDs while 23.8% of the respondents (Males, 21.5%; Females, 25.7%) perceived otherwise.

*Table 3.20: Perception of respondents on high dietary salt intake as a cause NCDs by sex*

| High dietary salt intake can cause NCD | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 322 | 78.5 | 367 | 74.3 | 689 | 76.2 |
| No | 88 | 21.5 | 127 | 25.7 | 215 | 23.8 |
| ***Total*** | ***410*** | ***100.0*** | ***494*** | ***100.0*** | ***904*** | ***100.0*** |

[36] *Sweet potato leaves, Eggplant, Traditional vegetable, Carrots, Pepper, Pumpkin, Sukuma wiki*
[37] *Non-communicable diseases country profiles 2018. Geneva: World Health Organization; 2018*

*(Source: Baseline Assessment, Household Survey, 2023)*

Further analysis established that high dietary salt intake was not significantly correlated with NCD prevalence (Pearson Chi-Square value of **0.252 at α=0.05**). However, the lack of correlation was weak (Cramer's V value of **0.038)**. This implies that the perception of the respondents may hold true or not.

### *3.4.3.3 High Dietary Sugar*

High dietary sugar intake[38] threatens the nutrient quality of diets by providing significant energy but without additional nutritional benefits, leading to unhealthy weight gain and increased risk of overweight, obesity and other NCDs. High dietary sugar intake can also lead to dental caries and its associated negative health impacts. The recommended sugar intake should be less than 10% of total energy intake which is equivalent to 50g (around 12 level teaspoons) per day (WHO, 2022) [39]. This section provides assessment findings on high dietary sugar intake among the respondents.

The assessment findings presented in Table 3.21Table 3.21 shows that the prevalence of high dietary sugar intake among the respondents was **15.4% (95% CI: 13.1%-17.9%; n=139, N=904)** with a higher prevalence recorded among males (21.2%) than among the females (10.5%).

*Table 3.21: Prevalence of high dietary sugar intake among the respondents by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 48 | 23.5 | 156 | 76.5 | 29 | 10.9 | 238 | 89.1 | 77 | 16.3 | 394 | 83.7 |
| 36 - 65 | 34 | 18.3 | 152 | 81.7 | 21 | 9.9 | 192 | 90.1 | 55 | 13.8 | 344 | 86.2 |
| Above 65 | 5 | 25.0 | 15 | 75.0 | 2 | 14.3 | 12 | 85.7 | 7 | 20.6 | 27 | 79.4 |
| ***Total*** | ***87*** | ***21.2*** | ***323*** | ***78.8*** | ***52*** | ***10.5*** | ***442*** | ***89.5*** | ***139*** | ***15.4*** | ***765*** | ***84.6*** |
| **PWD** | | | | | | | | | | | | |
| Yes | 4 | 10.3 | 35 | 89.7 | 3 | 6.4 | 44 | 93.6 | 7 | 8.1 | 79 | 91.9 |
| No | 83 | 22.4 | 288 | 77.6 | 49 | 11.0 | 398 | 89.0 | 132 | 16.1 | 686 | 83.9 |
| ***Total*** | ***87*** | ***21.2*** | ***323*** | ***78.8*** | ***52*** | ***10.5*** | ***442*** | ***89.5*** | ***139*** | ***15.4*** | ***765*** | ***84.6*** |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 86 | 21.3 | 317 | 78.7 | 50 | 10.6 | 422 | 89.4 | 136 | 15.5 | 739 | 84.5 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 2 | 10.5 | 17 | 89.5 | 2 | 10.5 | 17 | 89.5 |
| Others | 1 | 14.3 | 6 | 85.7 | 0 | 0.0 | 3 | 100.0 | 1 | 10.0 | 9 | 90.0 |
| ***Total*** | ***87*** | ***21.2*** | ***323*** | ***78.8*** | ***52*** | ***10.5*** | ***442*** | ***89.5*** | ***139*** | ***15.4*** | ***765*** | ***84.6*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

The low prevalence of high dietary sugar intake was attributed to the perception of the respondents that it causes NCDs. The assessment findings presented in Table 3.22 shows that 81.1% of the respondents (Males, 85.4%; Females, 77.5%) perceived that high dietary sugar intake causes NCDs while 18.9% of the respondents perceived otherwise (Males, 14.6%; Females, 22.5%).

*Table 3.22: Perception of respondents on high dietary sugar intake as a cause NCDs by sex*

| High dietary sugar intake can cause NCDs | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 350 | 85.4 | 383 | 77.5 | 733 | 81.1 |
| No | 60 | 14.6 | 111 | 22.5 | 171 | 18.9 |
| ***Total*** | ***410*** | ***100.0*** | ***494*** | ***100.0*** | ***904*** | ***100.0*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

Further analysis established that there was no significant correlation between high dietary sugar intake and prevalence of NCDs (Pearson Chi-Square value of **0.264 at α=0.05**). However, the disassociation was weak (Cramer's V value of **0.037)**. This implies that the perception of the respondents may hold true or not.

[38] *Any sugar added to a food or drink*
[39] *Sugars Factsheet. World Health Organization, 2022*

### 3.4.3.4 Dietary Fat and Oil

Dietary fat and oil include all the lipids in plant and animal tissues that are eaten as food. Dietary fats and oils are subdivided into classes of unsaturated, saturated and trans-fats[40]. Literature indicates that excessive consumption of fats is unhealthy. Moreover, consumption of fats, especially industrially produced partially hydrogenated vegetable oils has been associated with an increased risk of heart disease, infertility, endometriosis, gallstones, Alzheimer's disease, diabetes, and some cancers[41]. The WHO recommends less than 30% of total energy intake from fats. Unsaturated fats[42] are preferable to saturated fats[43] and trans-fats of all kinds, including both industrially-produced trans-fats[44] and ruminant trans-fats[45]. It is suggested that the intake of saturated fats be reduced to less than 10% of total energy intake and trans-fats to less than 1% of total energy intake. In particular, industrially-produced trans-fats are not part of a healthy diet and should be avoided[46]. This section provides assessment findings on dietary fat and oil intake among the respondents.

To obtain this proportion, respondents were asked the type of oil and fats they frequently used to prepare food in their homes. Based on the WHO recommendations stated above, respondents who frequently used unsaturated oils and fats or those who never used any oils and fats were considered as those who had met the defined recommendation. Accordingly, the assessment findings presented in Table 3.23 shows that only **0.1% (95% CI: 0.0%-0.5%; n=1, N=904)** of the respondents achieved the recommended intake of dietary oils and fats (Males, 0.0%; Females, 0.2%).

*Table 3.23: Proportion of respondents achieving the recommended intake of dietary oils and fats by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 0 | 0.0 | 204 | 100.0 | 0 | 0.0 | 267 | 100.0 | 0 | 0.0 | 471 | 100.0 |
| 36 - 65 | 0 | 0.0 | 186 | 100.0 | 1 | 0.5 | 212 | 99.5 | 1 | 0.3 | 398 | 99.7 |
| Above 65 | 0 | 0.0 | 20 | 100.0 | 0 | 0.0 | 14 | 100.0 | 0 | 0.0 | 34 | 100.0 |
| ***Total*** | 0 | 0.0 | 410 | 100.0 | 1 | 0.2 | 493 | 99.8 | 1 | 0.1 | 903 | 99.9 |
| **PWD** | | | | | | | | | | | | |
| Yes | 0 | 0.0 | 39 | 100.0 | 1 | 2.1 | 46 | 97.9 | 1 | 1.2 | 85 | 98.8 |
| No | 0 | 0.0 | 371 | 100.0 | 0 | 0.0 | 447 | 100.0 | 0 | 0.0 | 818 | 100.0 |
| ***Total*** | 0 | 0.0 | 410 | 100.0 | 1 | 0.2 | 493 | 99.8 | 1 | 0.1 | 903 | 99.9 |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 0 | 0.0 | 403 | 100.0 | 1 | 0.2 | 471 | 99.8 | 1 | 0.1 | 874 | 99.9 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 19 | 100.0 | 0 | 0.0 | 19 | 100.0 |
| Others | 0 | 0.0 | 7 | 100.0 | 0 | 0.0 | 3 | 100.0 | 0 | 0.0 | 10 | 100.0 |
| ***Total*** | 0 | 0.0 | 410 | 100.0 | 1 | 0.2 | 493 | 99.8 | 1 | 0.1 | 903 | 99.9 |

*(Source: Baseline Assessment, Household Survey, 2023)*

Literature shows that meals prepared away from home tend to have higher energy density, fat, and sodium, but lower in fruits, vegetables, whole grains, and protective nutrients such as dietary fibres and antioxidants. Although some restaurants provide high-quality foods, the dietary quality for meals away from home, especially from fast-food chains, is usually lower compared with meals cooked at home. As a result, frequently dining out has been reported to be related with increased risk of NCDs including obesity, diabetes, and biomarkers of other chronic diseases[47].

[40] *Fats and fatty acids in human nutrition: report of an expert consultation. FAO Food and Nutrition Paper 91. Rome: Food and Agriculture Organization of the United Nations; 2010*

[41] *https://www.emro.who.int/noncommunicable-diseases/publications/questions-and-answers-on-reducing-fat-intake-to-prevent-and-control-noncommunicable-diseases-in-eastern-mediterranean-region.html (Reviewed on 11 July 2023)*

[42] *Found in fish, avocado and nuts, and in sunflower, soybean, canola and olive oils*

[43] *Found in fatty meat, butter, palm and coconut oil, cream, cheese, ghee and lard*

[44] *Found in baked and fried foods, and pre-packaged snacks and foods, such as frozen pizza, pies, cookies, biscuits, wafers, and cooking oils and spreads*

[45] *Found in meat and dairy foods from ruminant animals, such as cows, sheep, goats and camels*

[46] *https://www.who.int/news-room/fact-sheets/detail/healthy-diet (Reviewed on 26 August 2023)*

[47] *The Academy of Nutrition and Dietetics, MARCH 25, 2021, Association Between Frequency of Eating Away-From-Home Meals and Risk of All-Cause and Cause-Specific Mortality*

Figure 3.1 shows the distribution of respondents who consumed meals prepared away from home. A meal was defined as breakfast, lunch, or dinner. Overall, 5.0% of the respondents ate 1 to 5 meals away from home in an ideal week with a significant difference observed among the males (7.1%) compared to the females (3.2%).

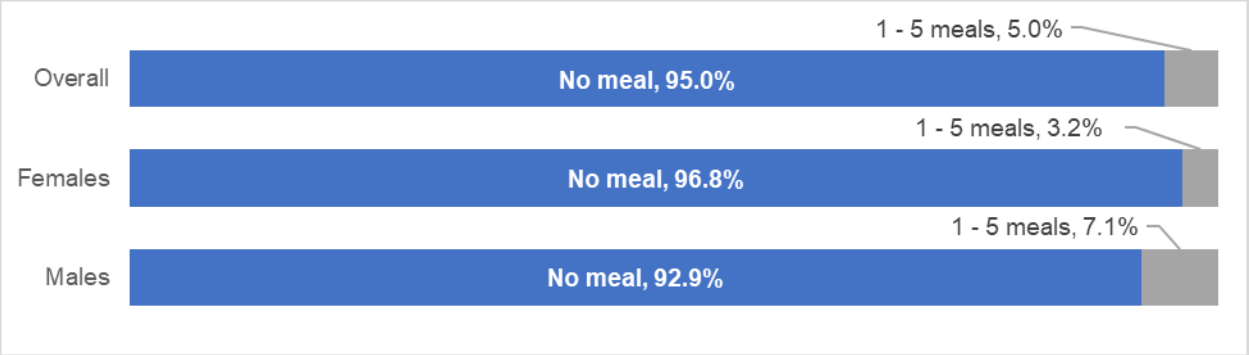



*Figure 3.1: Number of meals eaten by the respondents away from home by sex*

*(Source: Baseline Assessment, Household Survey, 2023)*

### 3.4.3.5 Prevalence of healthy diet intake among the respondents

According to the WHO, healthy diets are rich in fibre, fruit, vegetables, lentils, beans, nuts, and wholegrains. These diets are balanced, diverse and meet a person's macronutrient (protein, fat, carbohydrate, and fibre) and micronutrient (minerals and vitamins) needs depending on their stage of life. Generally, healthy diets contain: fat intake of less than 30% of total energy mainly from unsaturated fats, sugar intake of less than 10% of total energy, salt intake of less than 5g per day and fruit and vegetables intake at least 400g per day[48].

Accordingly, the assessment found that only **1.8% (95% CI: 1.0%-2.9%; n=16, N=904)** of the respondents ate a healthy diet with a high proportion being recorded among the males (2.0%) than among the females (1.6%) as shown in Table 3.24. The findings reflect that all the respondents and by extension all households did not have a healthy diet. This is attributed to the fact that many refugees have limited access to livelihood opportunities and remain largely dependent on humanitarian assistance thus struggling to afford enough nutritious food.

*Table 3.24: Prevalence of healthy diet intake among the respondents by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 3 | 1.5 | 201 | 98.5 | 4 | 1.5 | 263 | 98.5 | 7 | 1.5 | 464 | 98.5 |
| 36 - 65 | 5 | 2.7 | 181 | 97.3 | 3 | 1.4 | 210 | 98.6 | 8 | 2.0 | 391 | 98.0 |
| Above 65 | 0 | 0.0 | 20 | 100.0 | 1 | 7.1 | 13 | 92.9 | 1 | 2.9 | 33 | 97.1 |
| ***Total*** | 8 | 2.0 | 402 | 98.0 | 8 | 1.6 | 486 | 98.4 | 16 | 1.8 | 888 | 98.2 |
| **PWD** | | | | | | | | | | | | |
| Yes | 2 | 5.1 | 37 | 94.9 | 0 | 0.0 | 47 | 100.0 | 2 | 2.3 | 84 | 97.7 |
| No | 6 | 1.6 | 365 | 98.4 | 8 | 1.8 | 439 | 98.2 | 14 | 1.7 | 804 | 98.3 |
| ***Total*** | 8 | 2.0 | 402 | 98.0 | 8 | 1.6 | 486 | 98.4 | 16 | 1.8 | 888 | 98.2 |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 8 | 2.0 | 395 | 98.0 | 7 | 1.5 | 465 | 98.5 | 15 | 1.7 | 860 | 98.3 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 1 | 5.3 | 18 | 94.7 | 1 | 5.3 | 18 | 94.7 |
| Others | 0 | 0.0 | 7 | 100.0 | 0 | 0.0 | 3 | 100.0 | 0 | 0.0 | 10 | 100.0 |
| ***Total*** | 8 | 2.0 | 402 | 98.0 | 8 | 1.6 | 486 | 98.4 | 16 | 1.8 | 888 | 98.2 |

*(Source: Baseline Assessment, Household Survey, 2023)*

Further analysis indicated that there was no significant correlation between healthy diet and prevalence of NCDs (Pearson Chi-Square value of **0.822 at α=0.05**). However, the disassociation was weak (Cramer's V value of **0.007)**.

[48] https://ncdalliance.org/why-ncds/risk-factors-prevention/unhealthy-diets-and-malnutrition *(Reviewed on 27 September 2023)*

### 3.4.4 Physical Activity

Physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure, including activities undertaken while working, playing, carrying out household chores, travelling, and engaging in recreational pursuits[49]. People with inadequate physical activity tend to have increased risks of NCD compared to those with adequate physical activity. Adults aged 18–64 years should do at least 150 minutes of moderate-intensity physical activity throughout the week, or do at least 75 minutes of vigorous-intensity physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity. Adults aged 65 years and above should follow the recommendations of the 18-64 age group and in addition do varied multicomponent physical activity that emphasizes functional balance and strength training at moderate or greater intensity, on 3 or more days a week, to enhance functional capacity and to prevent falls[50]. This section provides an assessment of findings on levels of physical activity among the respondents.

Adequate physical activity in this assessment included: (i) work, leisure or sport activities that increased breathing or heart rate; and (ii) walking or cycling for at least 10 minutes. The assessment findings presented in Table 3.25 show that **87.2% (95% CI: 84.8%-89.3%; n=788, N=904)** of the respondents engaged in adequate physical activity while 12.8% did not. The proportion of respondents who were physically active was higher than the global prevalence of 72.5%[51].

*Table 3.25: Prevalence of engagement in physical activity among the respondents by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 196 | 96.1 | 8 | 3.9 | 242 | 90.6 | 25 | 9.4 | 438 | 93.0 | 33 | 7.0 |
| 36 - 65 | 160 | 86.0 | 26 | 14.0 | 168 | 78.9 | 45 | 21.1 | 328 | 82.2 | 71 | 17.8 |
| Above 65 | 14 | 70.0 | 6 | 30.0 | 8 | 57.1 | 6 | 42.9 | 22 | 64.7 | 12 | 35.3 |
| ***Total*** | ***370*** | ***90.2*** | ***40*** | ***9.8*** | ***418*** | ***84.6*** | ***76*** | ***15.4*** | ***788*** | ***87.2*** | ***116*** | ***12.8*** |
| **PWD** | | | | | | | | | | | | |
| Yes | 25 | 64.1 | 14 | 35.9 | 30 | 63.8 | 17 | 36.2 | 55 | 64.0 | 31 | 36.0 |
| No | 345 | 93.0 | 26 | 7.0 | 388 | 86.8 | 59 | 13.2 | 733 | 89.6 | 85 | 10.4 |
| ***Total*** | ***370*** | ***90.2*** | ***40*** | ***9.8*** | ***418*** | ***84.6*** | ***76*** | ***15.4*** | ***788*** | ***87.2*** | ***116*** | ***12.8*** |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 364 | 90.3 | 39 | 9.7 | 399 | 84.5 | 73 | 15.5 | 763 | 87.2 | 112 | 12.8 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 17 | 89.5 | 2 | 10.5 | 17 | 89.5 | 2 | 10.5 |
| Others | 6 | 85.7 | 1 | 14.3 | 2 | 66.7 | 1 | 33.3 | 8 | 80.0 | 2 | 20.0 |
| ***Total*** | ***370*** | ***90.2*** | ***40*** | ***9.8*** | ***418*** | ***84.6*** | ***76*** | ***15.4*** | ***788*** | ***87.2*** | ***116*** | ***12.8*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

Further analysis indicated that there was no significant correlation between engagement in physical activity and prevalence of NCDs (Pearson Chi-Square value of **0.135 at α=0.05**). However, the disassociation was weak (Cramer's V value of **0.050)**.

## 3.5 Knowledge, Attitude, Belief and Practice on NCD

A KABP test was incorporated into the assessment to collect information on what is known, believed and practiced in relation to NCDs. Good understanding of KABP enables appropriate programming of the interventions. This section presents the KABP on NCDs.

### 3.5.1 Knowledge

The assessment defined knowledge as the respondents' awareness on NCDs. Accordingly, about **89.3% (95% CI: 87.1%-91.2%; n=807, N=904)** of the respondents were aware of NCDs (Males, 92.0%; Females,

[49] https://www.who.int/news-room/fact-sheets/detail/physical-activity *(Reviewed on 13 July 2023)*
[50] https://www.who.int/news-room/fact-sheets/detail/physical-activity *(Reviewed on 13 July 2023)*
[51] *Global status report on physical activity 2022. Geneva: World Health Organization; 2022*

87.0%) while 10.7% were not aware (Males, 8.0%; Females, 13.0%) as shown in Table 3.26. The findings reflected that the level of NCD awareness among the target population was relatively high. Limited knowledge on NCD on the other hand was attributed to lack of participation in sensitization or awareness creation programmes (as reflected in Table 3.54). This therefore, calls for sustained awareness creation on NCDs and encouragement of refugees to participate in the awareness creation forums.

*Table 3.26: Proportion of respondents who are aware of NCDs by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 195 | 95.6 | 9 | 4.4 | 228 | 85.4 | 39 | 14.6 | 423 | 89.8 | 48 | 10.2 |
| 36 - 65 | 163 | 87.6 | 23 | 12.4 | 190 | 89.2 | 23 | 10.8 | 353 | 88.5 | 46 | 11.5 |
| Above 65 | 19 | 95.0 | 1 | 5.0 | 12 | 85.7 | 2 | 14.3 | 31 | 91.2 | 3 | 8.8 |
| ***Total*** | ***377*** | ***92.0*** | ***33*** | ***8.0*** | ***430*** | ***87.0*** | ***64*** | ***13.0*** | ***807*** | ***89.3*** | ***97*** | ***10.7*** |
| **PWD** | | | | | | | | | | | | |
| Yes | 33 | 84.6 | 6 | 15.4 | 42 | 89.4 | 5 | 10.6 | 75 | 87.2 | 11 | 12.8 |
| No | 344 | 92.7 | 27 | 7.3 | 388 | 86.8 | 59 | 13.2 | 732 | 89.5 | 86 | 10.5 |
| ***Total*** | ***377*** | ***92.0*** | ***33*** | ***8.0*** | ***430*** | ***87.0*** | ***64*** | ***13.0*** | ***807*** | ***89.3*** | ***97*** | ***10.7*** |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 370 | 91.8 | 33 | 8.2 | 410 | 86.9 | 62 | 13.1 | 780 | 89.1 | 95 | 10.9 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 17 | 89.5 | 2 | 10.5 | 17 | 89.5 | 2 | 10.5 |
| Others | 7 | 100.0 | 0 | 0.0 | 3 | 100.0 | 0 | 0.0 | 10 | 100.0 | 0 | 0.0 |
| ***Total*** | ***377*** | ***92.0*** | ***33*** | ***8.0*** | ***430*** | ***87.0*** | ***64*** | ***13.0*** | ***807*** | ***89.3*** | ***97*** | ***10.7*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

The assessment established that education also affected the level of awareness on NCDs. The findings indicated that there was a significant correlation between education and knowledge on NCDs (Pearson Chi-Square value of **0.000 at α=0.05).** This means that people with some level of education were more likely to know about NCDs compared to those without education as shown in Table 3.27. However, the relationship was moderate (Cramer's V value of **0.194).**

*Table 3.27: Relationship between level of education and NCD awareness*

| Level of education | Aware of NCD | | |
|---|---|---|---|
| | Count | Expected Count | Likelihood (%) |
| No education | 226 | 248.2 | -8.9 |
| Primary school | 276 | 264.2 | +4.5 |
| Secondary School | 241 | 232.1 | +3.8 |

*(Source: Baseline Assessment, Household Survey, 2023)*

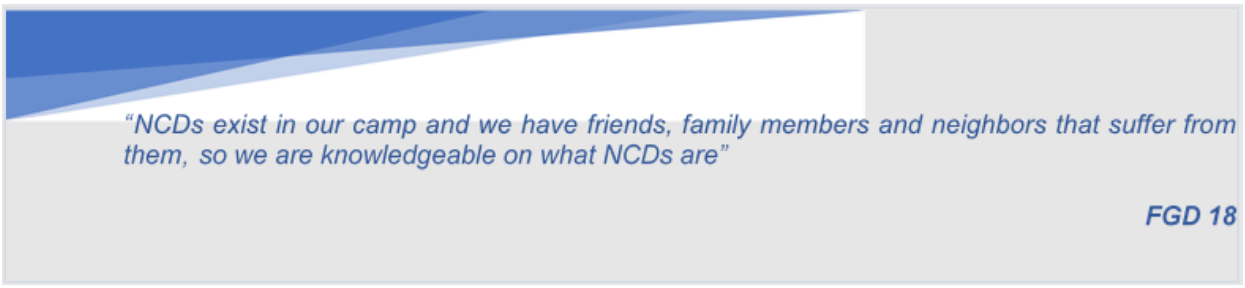
The assessment participants stated that they got information about NCDs mostly from families, friends, or neighbours (49.8%) and health facilities (27.5%) among others as presented in Table 3.33 and further illustrated in Excerpt 3.1. The assessment findings further suggested that while CHWs were potential sources of NCD information, their reach was low (0.5%). The low proportion is attributed to the large population coverage of each CHW (1 CHW: 1: 1,078 people) as further discussed in section 3.2.3 of this report.

*Table 3.28: Sources of information on NCDs*

| Information Source | Weight (%) | Rank |
|---|---|---|
| Friends/Family/Neighbors | 49.8 | 1 |
| Health facilities | 27.5 | 2 |
| Radio | 15.3 | 3 |
| School/teachers | 4.1 | 4 |
| Television | 1.7 | 5 |
| NGO/UN project | 0.6 | 6 |
| Newspaper | 0.6 | 7 |
| CHV | 0.5 | 8 |
| **Total** | **100.0** | |

*(Source: Baseline Assessment, Household Survey, 2023)*

*Excerpt 3.1: Sources of information on NCD*




*(Source: Baseline Assessment, FGD Participant, 2023)*

The assessment participants were aware of the following NCDs; diabetes mellitus, asthma, high blood pressure, heart attack, mental illness, breast cancer, stroke, lung cancer, stomach cancer, violence, diabetes insipidus, cervical cancer, cerebrovascular disease, peripheral artery disease (PAD), colorectal cancer, congenital heart disease, chronic obstructive pulmonary disease (COPD), coronary artery disease, deep vein thrombosis and pulmonary embolism, occupational lung diseases, such as black lung, kwashiorkor, gastritis, sickle cell, epilepsy, gestational diabetes, prediabetes, hemorrhoids and arthritis.

Well-known risk factors that lead to NCDs include poor diets like intake of foods rich in fat, salt and sugar; physical inactivity, consumption of tobacco, excessive use of alcohol, and stress. Respondents' knowledge on causes of NCDs were assessed. Findings from the household survey corroborated through FGDs and KIIs revealed that genetics, shocking news, stress, excessive consumption of alcohol, unhealthy lifestyle and use of tobacco products were some of the contributing factors to the occurrence of NCDs.

### 3.5.2 Attitude

Attitude in this assessment was defined as feelings or perceptions of the respondents toward NCDs. The assessment evaluated the opinions of the respondents in respect to 8 statements regarding NCDs. Findings presented in Table 3.29 show that 87.2% (Males, 90.0%; Females, 84.8%) of the respondents agreed that NCDs give serious problems to the health of a person followed by 85.8% (Males, 88.0%; Females, 84.0%) who agreed that NCDs are serious diseases.

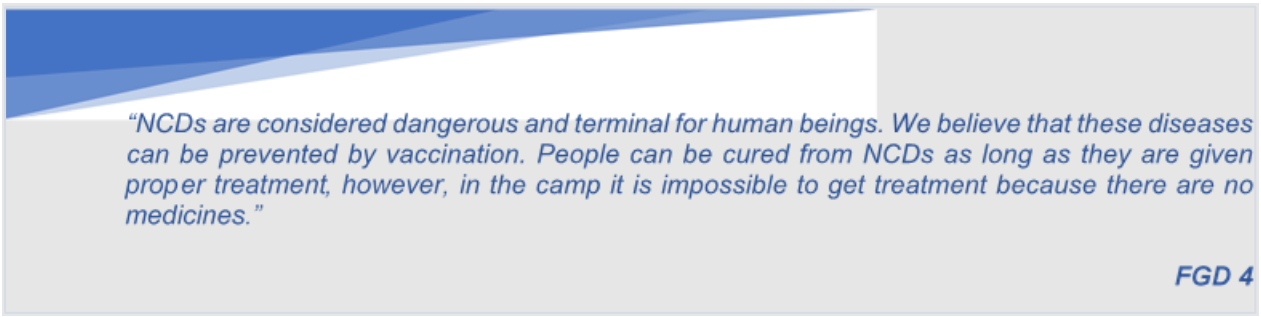
*Table 3.29: Attitude of respondents on NCDs*

| Attitude Statements | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| Are at risk of getting NCDs | 291 | 71.0 | 119 | 29.0 | 327 | 66.2 | 167 | 33.8 | 618 | 68.4 | 286 | 31.6 |
| NCDs are serious diseases | 361 | 88.0 | 49 | 12.0 | 415 | 84.0 | 79 | 16.0 | 776 | 85.8 | 128 | 14.2 |
| NCDs give serious problems to the health of a person | 369 | 90.0 | 41 | 10.0 | 419 | 84.8 | 75 | 15.2 | 788 | 87.2 | 116 | 12.8 |
| NCDs can be prevented | 276 | 67.3 | 134 | 32.7 | 275 | 55.7 | 219 | 44.3 | 551 | 61.0 | 353 | 39.0 |
| NCDs can be treated | 271 | 66.1 | 139 | 33.9 | 283 | 57.3 | 211 | 42.7 | 554 | 61.3 | 350 | 38.7 |
| High dietary sugar intake can cause NCDs | 350 | 85.4 | 60 | 14.6 | 383 | 77.5 | 111 | 22.5 | 733 | 81.1 | 171 | 18.9 |
| High dietary salt intake can cause NCD | 322 | 78.5 | 88 | 21.5 | 367 | 74.3 | 127 | 25.7 | 689 | 76.2 | 215 | 23.8 |
| Physical inactivity causes NCDs | 292 | 71.2 | 118 | 28.8 | 295 | 59.7 | 199 | 40.3 | 587 | 64.9 | 317 | 35.1 |

*(Source: Baseline Assessment, Household Survey, 2023)*

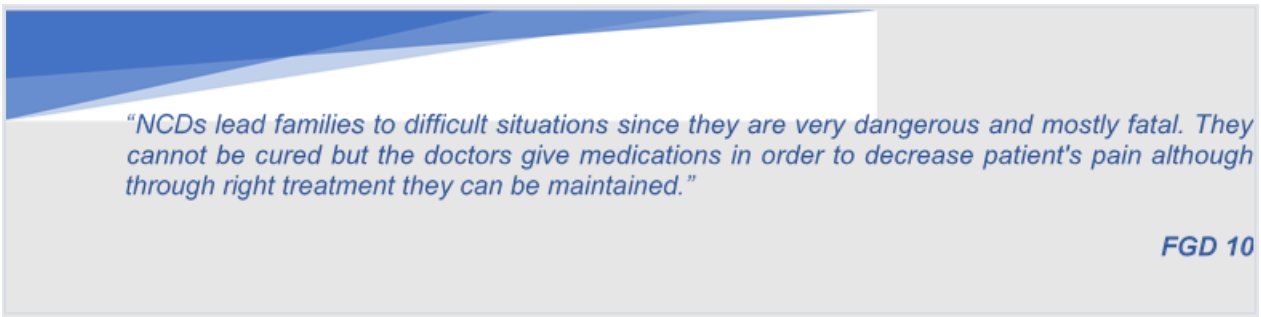
Excerpt 3.2 and Excerpt 3.3 provides further illustration on people's attitude about NCDs.

*Excerpt 3.2: Positive attitude towards NCDs*




*(Source: Baseline Assessment, FGD Participants, 2023)*

*Excerpt 3.3: Positive attitude towards NCDs*




*(Source: Baseline Assessment, FGD Participants, 2023)*

The assessment established that there was a significant correlation between level of awareness on NCDs and the attitude (Pearson Chi-Square value of **0.000 at α=0.05**). The relationship was moderate (Cramer's V value of **0.215).** This implied that those who were aware of NCDs were more likely to have a positive attitude about it.

### 3.5.3 Beliefs

The assessment defined belief as what the respondents accepted, considered as true, or held as an opinion regarding NCDs. The findings presented in Table 3.30 shows that **2.1% (95% CI: 1.3%-3.3%; n=19, N=904)** of the respondents were aware and believed in traditions, myths, and misconceptions on NCDs.

*Table 3.30: Proportion of respondents aware and believe in traditions, myths and misconceptions about NCDs by sex and background characteristics*

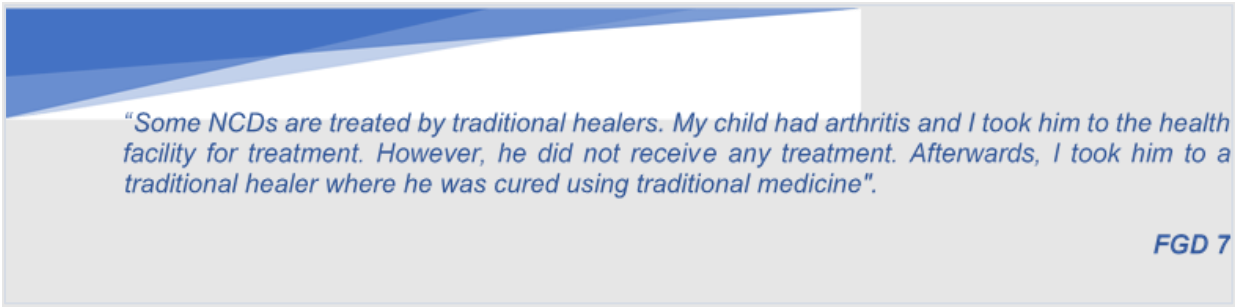
| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 5 | 2.5 | 199 | 97.5 | 4 | 1.5 | 263 | 98.5 | 9 | 1.9 | 462 | 98.1 |
| 36 - 65 | 3 | 1.6 | 183 | 98.4 | 6 | 2.8 | 207 | 97.2 | 9 | 2.3 | 390 | 97.7 |
| Above 65 | 0 | 0.0 | 20 | 100.0 | 1 | 7.1 | 13 | 92.9 | 1 | 2.9 | 33 | 97.1 |
| ***Total*** | ***8*** | ***2.0*** | ***402*** | ***98.0*** | ***11*** | ***2.2*** | ***483*** | ***97.8*** | ***19*** | ***2.1*** | ***885*** | ***97.9*** |
| **PWDs** | | | | | | | | | | | | |
| Yes | 1 | 2.6 | 38 | 97.4 | 4 | 8.5 | 43 | 91.5 | 5 | 5.8 | 81 | 94.2 |
| No | 7 | 1.9 | 364 | 98.1 | 7 | 1.6 | 440 | 98.4 | 14 | 1.7 | 804 | 98.3 |
| ***Total*** | ***8*** | ***2.0*** | ***402*** | ***98.0*** | ***11*** | ***2.2*** | ***483*** | ***97.8*** | ***19*** | ***2.1*** | ***885*** | ***97.9*** |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 8 | 2.0 | 395 | 98.0 | 10 | 2.1 | 462 | 97.9 | 18 | 2.1 | 857 | 97.9 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 1 | 5.3 | 18 | 94.7 | 1 | 5.3 | 18 | 94.7 |
| Others | 0 | 0.0 | 7 | 100.0 | 0 | 0.0 | 3 | 100.0 | 0 | 0.0 | 10 | 100.0 |
| ***Total*** | ***8*** | ***2.0*** | ***402*** | ***98.0*** | ***11*** | ***2.2*** | ***483*** | ***97.8*** | ***19*** | ***2.1*** | ***885*** | ***97.9*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

According to the household and FGD respondents, some respondents believed that those with NCDs were bewitched or cursed. Some respondents also held the belief that NCDs were hereditary and untreatable.

For these reasons, these respondents believed that traditional medicine worked better (more effective) than modern medicine in the treatment of NCD. Excerpt 3.4 provides further illustration on some of the beliefs about NCDs.

*Excerpt 3.4: FGD participants' comments on the treatment of NCD*




*(Source: Baseline Assessment, FGD Participants, 2023)*

Further analysis established that there was a significant correlation between people's beliefs and their attitude on NCD (Pearson Chi-Square value of **0.003 at α=0.05).** The relationship was weak (Cramer's V value of **0.099)** which implies that traditional beliefs influenced the people's attitude on NCD.

### 3.5.4 Practice

Practice in this assessment was defined as ways in which respondents demonstrated their knowledge, attitude and beliefs through their actions. The actions included screening, testing, diagnosis and management of NCDs.

#### (a). Screening and Testing

Screening refers to presumptive identification of unrecognized disease in an apparently healthy, asymptomatic population by means of tests, examinations or other procedures that can be applied rapidly and easily to the target population. The screening pathway involves: identification of the population for screening, invitation and information, testing, referral for screen positives and reporting of screen negative results, diagnosis, Intervention / treatment / follow-up and reporting of outcomes. For screening to be effective, each step of the pathway must be supported by substantial resources, including financial, human and technological resources (WHO,2020)[52].

The assessment sought to establish whether the respondents had ever been screened and tested for NCDs. The findings in Table 3.31 shows that **20.9% (95% CI: 18.3%-23.7%; n=189, N=904)** of the respondents had been screened and tested for NCDs. According to the assessment participants, screening services were offered during scheduled health visits, outreaches and organized mass screening activities.

*Table 3.31: Proportion of respondents screened or tested for NCDs by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 31 | 15.2 | 173 | 84.8 | 39 | 14.6 | 228 | 85.4 | 70 | 14.9 | 401 | 85.1 |
| 36 - 65 | 47 | 25.3 | 139 | 74.7 | 57 | 26.8 | 156 | 73.2 | 104 | 26.1 | 295 | 73.9 |
| Above 65 | 9 | 45.0 | 11 | 55.0 | 6 | 42.9 | 8 | 57.1 | 15 | 44.1 | 19 | 55.9 |
| **Total** | 87 | 21.2 | 323 | 78.8 | 102 | 20.6 | 392 | 79.4 | 189 | 20.9 | 715 | 79.1 |
| **PWD** | | | | | | | | | | | | |
| Yes | 12 | 30.8 | 27 | 69.2 | 13 | 27.7 | 34 | 72.3 | 25 | 29.1 | 61 | 70.9 |
| No | 75 | 20.2 | 296 | 79.8 | 89 | 19.9 | 358 | 80.1 | 164 | 20.0 | 654 | 80.0 |
| **Total** | 87 | 21.2 | 323 | 78.8 | 102 | 20.6 | 392 | 79.4 | 189 | 20.9 | 715 | 79.1 |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 85 | 21.1 | 318 | 78.9 | 98 | 20.8 | 374 | 79.2 | 183 | 20.9 | 692 | 79.1 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 3 | 15.8 | 16 | 84.2 | 3 | 15.8 | 16 | 84.2 |
| Others | 2 | 28.6 | 5 | 71.4 | 1 | 33.3 | 2 | 66.7 | 3 | 30.0 | 7 | 70.0 |
| Total | 87 | 21.2 | 323 | 78.8 | 102 | 20.6 | 392 | 79.4 | 189 | 20.9 | 715 | 79.1 |

[52] *WHO 2020: Health Systems and Policy Analysis. Policy Brief 35. Screening: When is it appropriate and how can we get it right?*

*(Source: Baseline Assessment, Household Survey, 2023)*

The assessment established that screening and testing was significantly correlated with the level of awareness (Pearson Chi-Square value of **0.003 at α=0.05**). The association was moderate (Cramer's V value of **0.100**). The results imply that those who were aware of NCDs were more likely to get screened and/or tested than those who were not aware of NCDs.

### (b). Diagnosis

Diagnosis is the process of determining the nature of a disease or disorder and distinguishing it from other possible conditions[53]. The assessment sought to establish the proportion of respondents who were diagnosed with NCDs. The findings presented in Table 3.32 shows that **7.7% (95% CI: 6.1%-9.7%; n=70, N=904)** of the respondents were diagnosed with NCDs. Accordingly, NCD prevalence was higher among the females (9.1%) than among the males (6.1%).

*Table 3.32: Proportion of respondents diagnosed with NCDs by sex and background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 7 | 3.4 | 197 | 96.6 | 4 | 1.5 | 263 | 98.5 | 11 | 2.3 | 460 | 97.7 |
| 36 - 65 | 15 | 8.1 | 171 | 91.9 | 36 | 16.9 | 177 | 83.1 | 51 | 12.8 | 348 | 87.2 |
| Above 65 | 3 | 15.0 | 17 | 85.0 | 5 | 35.7 | 9 | 64.3 | 8 | 23.5 | 26 | 76.5 |
| ***Total*** | ***25*** | ***6.1*** | ***385*** | ***93.9*** | ***45*** | ***9.1*** | ***449*** | ***90.9*** | ***70*** | ***7.7*** | ***834*** | ***92.3*** |
| **PWD** | | | | | | | | | | | | |
| Yes | 6 | 15.4 | 33 | 84.6 | 10 | 21.3 | 37 | 78.7 | 16 | 18.6 | 70 | 81.4 |
| No | 19 | 5.1 | 352 | 94.9 | 35 | 7.8 | 412 | 92.2 | 54 | 6.6 | 764 | 93.4 |
| ***Total*** | ***25*** | ***6.1*** | ***385*** | ***93.9*** | ***45*** | ***9.1*** | ***449*** | ***90.9*** | ***70*** | ***7.7*** | ***834*** | ***92.3*** |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 24 | 6.0 | 379 | 94.0 | 43 | 9.1 | 429 | 90.9 | 67 | 7.7 | 808 | 92.3 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 1 | 5.3 | 18 | 94.7 | 1 | 5.3 | 18 | 94.7 |
| Others | 1 | 14.3 | 6 | 85.7 | 1 | 33.3 | 2 | 66.7 | 2 | 20.0 | 8 | 80.0 |
| ***Total*** | ***25*** | ***6.1*** | ***385*** | ***93.9*** | ***45*** | ***9.1*** | ***449*** | ***90.9*** | ***70*** | ***7.7*** | ***834*** | ***92.3*** |

*(Source: Baseline Assessment, Household Survey, 2023)*

Further analysis from the household survey showed that high blood pressure (42.9%) was the most prevalent type of NCD among the respondents followed by heart attack (20.8%) and diabetes mellitus (15.6%) as shown in Table 3.33.

*Table 3.33: Common types of NCD in the refugee camps as reported by HH respondents*

| Type of NCDs | Weight (%) | Rank |
|---|---|---|
| High blood pressure | 42.9 | 1 |
| Heart attack | 20.8 | 2 |
| Diabetes mellitus | 15.6 | 3 |
| Asthma | 10.4 | 4 |
| Coronary artery disease | 2.6 | 5 |
| Disability | 2.6 | 6 |
| Cerebrovascular disease | 1.3 | 7 |
| Peripheral artery disease (PAD) | 1.3 | 8 |
| Congenital heart disease | 1.3 | 9 |
| Breast Cancer | 1.3 | 10 |
| Total | 100.0 | |

*(Source: Baseline Assessment, Household Survey, 2023)*

The findings above were corroborated with findings on the prevalent types of NCDs among clients from the assessed health facilities as presented in Table 3.34.

*Table 3.34: Type of NCDs held in the assessed facility databases*

| Types of NCDs | |
|---|---|
| Chronic Diseases | Asthma |
| | Chronic obstructive pulmonary disease (COPD) |
| | Pulmonary hypertension |
| | Cystic fibrosis |

[53] https://www.britannica.com/science/diagnosis *(Reviewed on 16 October 2023)*

| Types of NCDs | |
|---|---|
| | Occupational lung diseases, such as black lung |
| | Diabetes |
| | Cancer |
| | Stroke |
| Cardiovascular Diseases | Coronary artery disease |
| | Heart attack |
| | Stroke |
| | Cerebrovascular disease |
| | Peripheral artery disease (PAD) |
| | Congenital heart disease |
| | Deep vein thrombosis and pulmonary embolism |
| | High Blood Pressure |
| Cancer | Cervical Cancer |
| | Breast Cancer |
| | Lung Cancer |
| | Colorectal Cancer |
| | Stomach Cancer |
| Diabetes | Type 2 diabetes |
| | Type 1 diabetes |
| | Gestational diabetes |
| | Prediabetes |
| Violence | Intimate partner/gender-based violence |
| | Youth violence |
| | Child maltreatment |
| Mental Health Condition | Seizure Disorder |
| | Depression |
| | Stress |
| | Sleep Disorders |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

### (c). Management

Management of NCDs includes detection, screening, treatment and provision of access to palliative care for people in need[54]. To improve NCD management, an integrated approach is needed to coordinate and deliver care across the levels of the health system. The approach includes increasing primary care capacity and competencies to address multiple chronic conditions, and integration with other complementary programs to avoid missing opportunities for NCD diagnosis and management[55].

To manage the NCDs, 33.8% (Males, 39.1%; Females, 31.3%) of the individual respondents adhered to medication as presented in Table 3.36.

*Table 3.35: NCD management measures employed by the respondents*

| Management measures | Weight (%) | | | Rank |
|---|---|---|---|---|
| | Males | Females | Overall | |
| Living a healthy lifestyle | 39.1 | 31.3 | 33.8 | 1 |
| Avoiding stress | 34.8 | 33.3 | 33.8 | 2 |
| Adherence to medication | 21.7 | 29.2 | 26.8 | 3 |
| Seeking medical attention whenever unwell | 0.0 | 4.2 | 2.8 | 4 |
| Following doctor's advice | 0.0 | 2.1 | 1.4 | 5 |
| Consumption of hot water | 4.3 | 0.0 | 1.4 | 6 |
| Total | 100.0 | 100.0 | 100.0 | |

*(Source: Baseline Assessment, Household Survey, 2023)*

Further, the assessment found that while majority of the primary health care (PHC) facilities provided NCD services, where such services existed, it included management for chronic respiratory diseases, diabetes, and hypertension as shown in Table 3.43 and Excerpt 3.8. NCD management by CHWs was limited to palliative care to NCD patients.

[54] https://www.who.int/activities/management-of-noncommunicable-diseases *(Reviewed on 27 August 2023)*
[55] https://iris.paho.org/handle/10665.2/56328 *(Reviewed on 17 October 2023)*

## 3.6 Health Seeking Behaviours

Proper understanding of health seeking behaviours can reduce delay to diagnosis, improve treatment compliance and improve health promotion strategies within the refugee camps. Health seeking behaviours is broadly classified into two approaches: health seeking behaviours (utilization of the formal systems) or health seeking behaviours (illness response). This assessment does not make a distinction of the two. The pathways to health seeking behaviour may introduce delays in seeking competent care, and is therefore of practical relevance for policy development. Studies have shown that patients follow different pathways for different conditions relating predominantly to the role of the husband, social and cultural factors[56]. This might have implications for the project. The view is often that the desired health seeking behaviour is for an individual to respond to an illness episode by seeking first and foremost help from a trained allopathic doctor, in a formally recognized health care setting. However, as demonstrated in this section, for some illnesses, people preferred traditional medicine over modern medicine.

### 3.6.1 Proportion of respondents who visited a health facility to seek for NCD services within 12 months preceding the assessment

Individual respondents were asked whether or not they had visited any health facility to seek for NCD services within 12 months preceding the assessment. The findings presented in Table 3.36 show that **6.4% (95% CI: 4.9%-8.2%; n=58, N=904)** of the respondents needed and sought for NCD services within this period.

*Table 3.36: Proportion of respondents who visited a health facility to seek for NCD services within 12 months preceding the assessment by background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 7 | 3.4 | 197 | 96.6 | 6 | 2.2 | 261 | 97.8 | 13 | 2.8 | 458 | 97.2 |
| 36 - 65 | 9 | 4.8 | 177 | 95.2 | 28 | 13.1 | 185 | 86.9 | 37 | 9.3 | 362 | 90.7 |
| Above 65 | 6 | 30.0 | 14 | 70.0 | 2 | 14.3 | 12 | 85.7 | 8 | 23.5 | 26 | 76.5 |
| **Total** | 22 | 5.4 | 388 | 94.6 | 36 | 7.3 | 458 | 92.7 | 58 | 6.4 | 846 | 93.6 |
| **PWD** | | | | | | | | | | | | |
| Yes | 7 | 17.9 | 32 | 82.1 | 5 | 10.6 | 42 | 89.4 | 12 | 14.0 | 74 | 86.0 |
| No | 15 | 4.0 | 356 | 96.0 | 31 | 6.9 | 416 | 93.1 | 46 | 5.6 | 772 | 94.4 |
| **Total** | 22 | 5.4 | 388 | 94.6 | 36 | 7.3 | 458 | 92.7 | 58 | 6.4 | 846 | 93.6 |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 21 | 5.2 | 382 | 94.8 | 35 | 7.4 | 437 | 92.6 | 56 | 6.4 | 819 | 93.6 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 19 | 100.0 | 0 | 0.0 | 19 | 100.0 |
| Others | 1 | 14.3 | 6 | 85.7 | 1 | 33.3 | 2 | 66.7 | 2 | 20.0 | 8 | 80.0 |
| Total | 22 | 5.4 | 388 | 94.6 | 36 | 7.3 | 458 | 92.7 | 58 | 6.4 | 846 | 93.6 |

*(Source: Baseline Assessment, Household Survey, 2023)*

Further analysis on health seeking behaviour as presented in Table 3.37 showed that the decision to follow with a particular medical path was influenced by a variety of economic and socio-cultural factors. Assessment findings show that some of the respondents with heart attack, diabetes mellitus and high blood pressure used traditional medicine in addition to hospital medication as medication for these NCDs.

*Table 3.37: Proportion of respondents with NCDs who visited a health facility and/or used traditional medicine in addition to hospital medication as medication for NCDs*

| Background Characteristics | Traditional medicine | | | | Modern medicine | | | |
|---|---|---|---|---|---|---|---|---|
| | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| ***Sex*** | | | | | | | | |
| Male | 3 | 8.0 | 23 | 92.0 | 22 | 5.4 | 388 | 94.6 |
| Female | 2 | 6.7 | 42 | 93.3 | 58 | 7.3 | 458 | 92.7 |
| ***Type of NCDs*** | | | | | | | | |
| Heart attack | 1 | 6.3 | 15 | 93.8 | 8 | 50.0 | 8 | 50.0 |

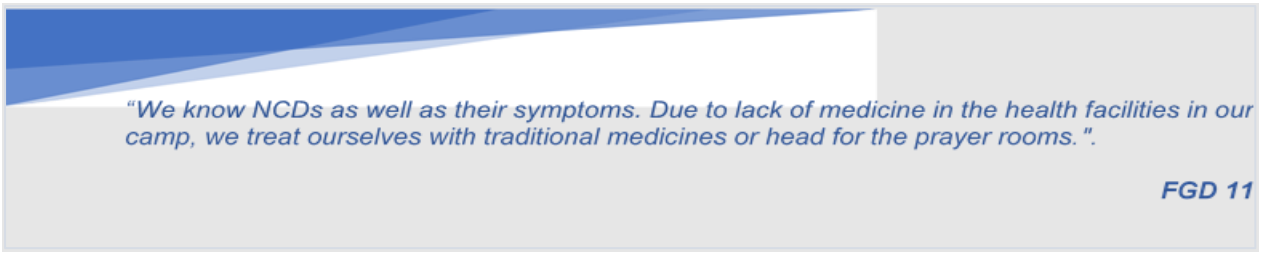
[56] *University of Manchester Health Systems Development Programme, A review of health seeking behaviour: problems and prospects*

| Background Characteristics | Traditional medicine | | | | Modern medicine | | | |
|---|---|---|---|---|---|---|---|---|
| | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| Coronary artery disease | 0 | 0.0 | 2 | 100.0 | 1 | 50.0 | 1 | 50.0 |
| Cerebrovascular disease | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 1 | 100.0 |
| Peripheral artery disease (PAD) | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 1 | 100.0 |
| Congenital heart disease | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 1 | 100.0 |
| Breast Cancer | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 1 | 100.0 |
| Diabetes mellitus | 2 | 16.7 | 10 | 83.3 | 11 | 91.7 | 1 | 8.3 |
| Asthma | 0 | 0.0 | 8 | 100.0 | 6 | 75.0 | 2 | 25.0 |
| High blood pressure | 2 | 6.1 | 31 | 93.9 | 18 | 54.5 | 15 | 45.5 |
| Disability | 0 | 0.0 | 2 | 100.0 | 1 | 50.0 | 1 | 50.0 |

*(Source: Baseline Assessment, Household Survey, 2023)*

Excerpt 3.5 illustrates a path followed by respondents towards seeking for health services.

*Excerpt 3.5: Health seeking behaviours among respondents with NCDs*




*(Source: Baseline Assessment, FGD Participant, 2023)*

### 3.6.2 Distance to the Health Facility

All refugees should have access to curative and preventive healthcare services, whether they live in refugee camps or out-of-camps. Distance to health facilities should be considered when health facilities are designed and constructed. At least one health facility should be within 5 km. of refugee locations (UNHCR, 2023)[57]. The assessment found that 96.6% of the respondents travelled at most 5km to a health facility to seek for NCD services as depicted in Figure 3.2.

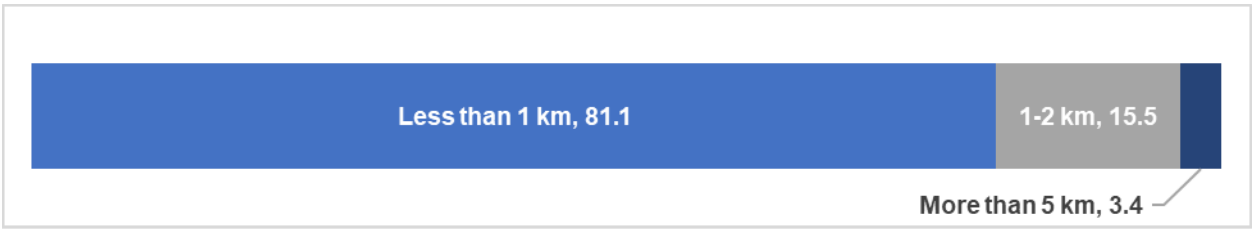



*Figure 3.2: Average distance to a health facility*

*(Source: Baseline Assessment, Household Survey, 2023)*

The findings suggest that nine in ten respondents travelled within the recommended distance of 5km to a health facility, which reflected good coverage. However, additional effort was required to reduce the distance to health facilities to within 5km for all.

### 3.6.3 NCD Services Offered

The WHO recommends management of hypertension, diabetes and other cardiovascular risk factors in primary care[58]. Table 3.38 shows the NCD services sought by the respondents who visited a health facility to seek for NCD services within 12 months preceding the assessment. Most of them were offered cardiovascular disease management (44.8%); chronic respiratory disease (CRD) diagnosis and/or

[57] *UNHCR, 2023: Emergency Handbook, Primary health care coverage standard, 29 March 2023*
[58] *https://www.emro.who.int/noncommunicable-diseases/publications/questions-and-answers-on-management-of-noncommunicable-diseases-in-primary-health-care.html (Reviewed on 15 September 2023)*

management services (24.1%) and diabetes management (22.4%) which were adequate and within the WHO recommendations.

*Table 3.38:Type of NCD services sought by the respondents*

| NCD Services | Weight (%) | Rank |
|---|---|---|
| Cardiovascular disease management | 44.8 | 1 |
| Chronic respiratory disease (CRD) diagnosis and/or management services | 24.1 | 2 |
| Diabetes management | 22.4 | 3 |
| NCD precautionary measures | 3.4 | 4 |
| Monitoring of blood pressure | 1.9 | 5 |
| Heart examination | 1.7 | 6 |
| Mental health services | 1.7 | 7 |
| Total | 100.0 | |

*(Source: Baseline Assessment, Household Survey, 2023)*

### 3.6.4 Waiting time before receiving NCD services

Waiting time refers to the time a patient waits in the health facility before being seen by medical staff or health personnel. The Institute of Medicine (IOM) recommends that at least 90% of patients are seen by the medical staff within 30 minutes of their scheduled appointment time[59]. According to the assessment findings, 44.1% of the clients were served within 30 minutes of the appointment time as shown in Figure 3.3. This reflected bad service time.


*Figure 3.3: Waiting time for receiving NCD services*

*(Source: Baseline Assessment, Household Survey, 2023)*

### 3.6.5 Level of satisfaction with services offered

Further analysis showed that, among the respondents who visited a health facility within 12 months preceding the assessment to seek for NCD services, 56.9% (Males, 63.6%; Females, 52.8%) were satisfied with the services they received while 43.1% (Males, 36.4%; Females, 47.2%) were not as shown in Table 3.39.

*Table 3.39: Proportion of respondents who visited a health facility within 12 months preceding the assessment to seek for NCD services who were satisfied by NCD services received by background characteristics*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 5 | 71.4 | 2 | 28.6 | 4 | 66.7 | 2 | 33.3 | 9 | 69.2 | 4 | 30.8 |
| 36 - 65 | 6 | 66.7 | 3 | 33.3 | 14 | 50.0 | 14 | 50.0 | 20 | 54.1 | 17 | 45.9 |
| Above 65 | 3 | 50.0 | 3 | 50.0 | 1 | 50.0 | 1 | 50.0 | 4 | 50.0 | 4 | 50.0 |
| ***Total*** | 14 | 63.6 | 8 | 36.4 | 19 | 52.8 | 17 | 47.2 | 33 | 56.9 | 25 | 43.1 |
| **PWD** | | | | | | | | | | | | |
| Yes | 3 | 42.9 | 4 | 57.1 | 3 | 60.0 | 2 | 40.0 | 6 | 50.0 | 6 | 50.0 |
| No | 11 | 73.3 | 4 | 26.7 | 16 | 51.6 | 15 | 48.4 | 27 | 58.7 | 19 | 41.3 |
| ***Total*** | 14 | 63.6 | 8 | 36.4 | 19 | 52.8 | 17 | 47.2 | 33 | 56.9 | 25 | 43.1 |

[59] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3868129/ *(Reviewed on 15 September 2023)*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Ethnicity** | | | | | | | | | | | | |
| Burundian | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Congolese | 14 | 66.7 | 7 | 33.3 | 19 | 54.3 | 16 | 45.7 | 33 | 58.9 | 23 | 41.1 |
| Others | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 2 | 100.0 |
| ***Total*** | 14 | 63.6 | 8 | 36.4 | 19 | 52.8 | 17 | 47.2 | 33 | 56.9 | 25 | 43.1 |

*(Source: Baseline Assessment, Household Survey, 2023)*

The assessment gauged the level of satisfaction of respondents who were satisfied with the services offered using a five Linkert scale of much higher, higher, about the same, lower and much lower. The findings as presented in Figure 3.4 shows that the level of satisfaction for most (39.4%) of the respondents was high.

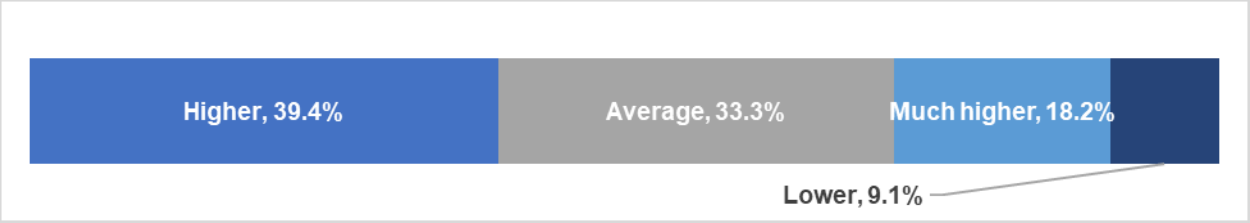



*Figure 3.4: Level of satisfaction of respondents with the services offered*

*(Source: Baseline Assessment, Household Survey, 2023)*

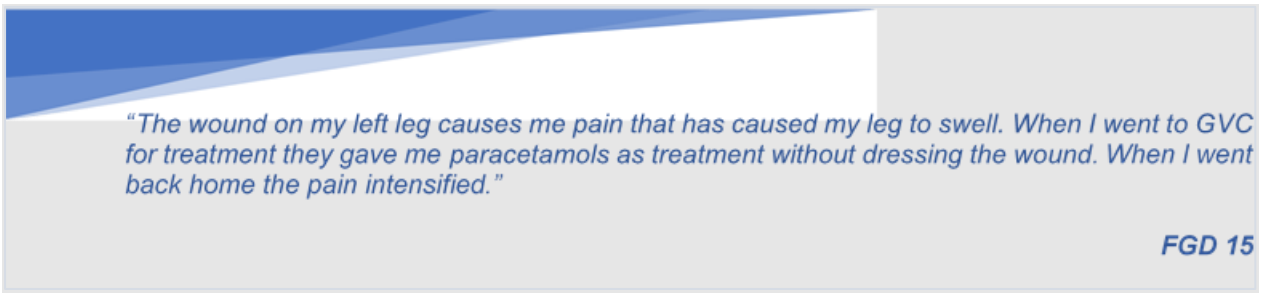
Those who were dissatisfied with the services provided, mainly cited lack of drugs (80.0%) among other factors as shown in Table 3.40 and further illustrated in Excerpt 3.6.

*Table 3.40: Reasons for dissatisfaction with NCD services*

| Reasons for dissatisfaction | Weight (%) | Rank |
|---|---|---|
| Lack of drugs | 80.0 | 1 |
| Failure to be tested on the condition suffered | 4.0 | 2 |
| Lack of referral | 4.0 | 3 |
| Lack of a doctor to attend to the patients | 4.0 | 4 |
| Lack of health care services | 4.0 | 5 |
| Lack of improvement/ recovery | 4.0 | 6 |
| ***Total*** | ***100.0*** | |

*(Source: Baseline Assessment, Household Survey, 2023)*

*Excerpt 3.6:FGD participant's comment on reasons for dissatisfaction with services received*




*(Source: Baseline Assessment, FGD Participants, 2023)*

### 3.6.6 Referral to Other Health Facilities

About 25.9% (Males, 36.4%; Females, 19.4%) of the respondents who sought for NCD services were referred to other health facilities as shown in Table 3.41. They were refereed to either hospitals (73.3%), health centres (20.0%) or health posts (6.7%).

*Table 3.41: Proportion of NCD patients who were referred to another facility*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 1 | 14.3 | 6 | 85.7 | 1 | 16.7 | 5 | 83.3 | 2 | 15.4 | 11 | 84.6 |
| 36 - 65 | 4 | 44.4 | 5 | 55.6 | 6 | 21.4 | 22 | 78.6 | 10 | 27.0 | 27 | 73.0 |
| Above 65 | 3 | 50.0 | 3 | 50.0 | 0 | 0.0 | 2 | 100.0 | 3 | 37.5 | 5 | 62.5 |
| ***Total*** | 8 | 36.4 | 14 | 63.6 | 7 | 19.4 | 29 | 80.6 | 15 | 25.9 | 43 | 74.1 |
| **PWD** | | | | | | | | | | | | |
| Yes | 2 | 28.6 | 5 | 71.4 | 1 | 20.0 | 4 | 80.0 | 3 | 25.0 | 9 | 75.0 |
| No | 6 | 40.0 | 9 | 60.0 | 6 | 19.4 | 25 | 80.6 | 12 | 26.1 | 34 | 73.9 |
| ***Total*** | 8 | 36.4 | 14 | 63.6 | 7 | 19.4 | 29 | 80.6 | 15 | 25.9 | 43 | 74.1 |
| **Ethnicity** | | | | | | | | | | | | |
| Burundian | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Congolese | 38.1 | 36.4 | 13 | 61.9 | 7 | 20.0 | 28 | 80.0 | 15 | 26.8 | 41 | 73.2 |
| Others | 0.0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 2 | 100.0 |
| ***Total*** | 36.4 | 36.4 | 14 | 63.6 | 7 | 19.4 | 29 | 80.6 | 15 | 25.9 | 43 | 74.1 |

*(Source: Baseline Assessment, Household Survey, 2023)*

Referral facilities were mostly more than 5 km away (86.7%) as shown in Figure 3.5.

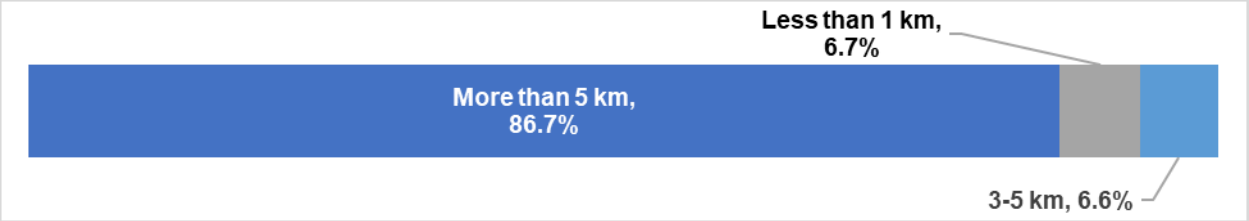



*Figure 3.5: Average distance to a health referral facility*

*(Source: Baseline Assessment, Household Survey, 2023)*

Before any referral, 66.7% of the clients waited for less than 6 hours, 20.0% waited for 6- 12 hours while 13.3% waited for more than 12 hours as shown in Figure 3.6 . Further analysis revealed that the referral expenses were borne by UNHCR, GVC and the respondents themselves.

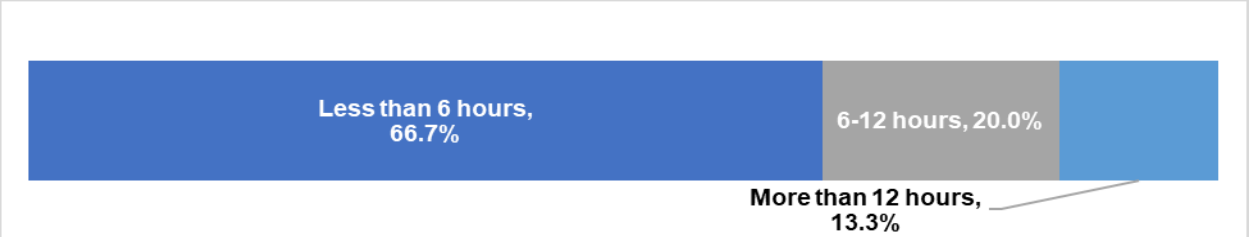



*Figure 3.6: Waiting time for NCD referrals*

*(Source: Baseline Assessment, Household Survey, 2023)*

### 3.6.7 Barriers to Good Health Seeking Behaviours

The assessment found that there were many barriers to good health seeking behaviours. The barriers were categorized as geographical[60], socioeconomic[61], cultural[62] and organizational[63] as shown in Table 3.42. Organizational barriers included inadequate screening and testing equipment, lack of health services, lack of medicine, lack of supplementary food in the health facilities, long hours before being referred, long waiting hours before being attended to, and wrong treatment provided for the illness. Geographical barriers

[60] *Physical accessibility and distance*
[61] *Demographic characteristics and well as economic status*
[62] *Existing community cultures*
[63] *Capacity of health facility, including services, staff, equipment and medicine*

included inability to access health facilities among the clients with disability while socioeconomic barriers included insufficient funds to seek for medical services.

*Table 3.42: Barriers to health seeking behaviours*

| Category | Cited barrier |
|---|---|
| Organizational | • Inadequate screening and testing equipment<br>• Lack of health services<br>• Lack of medicine<br>• Lack of supplementary food in the health facilities<br>• Long hours before being referred<br>• Long waiting hours before being attended to<br>• Wrong treatment provided for the illness |
| Geographical | • Inability to access health facilities among the clients with disability |
| Socio-economic | • Insufficient funds to seek for medical services |

*(Source: Baseline Assessment, Household Survey, 2023)*

## 3.7 Integration and Availability of Quality NCD Services

Integrated health services, based on strong primary care and public health functions, directly contribute to a better distribution of health outcomes, enhanced well-being and quality of life, which in turn bring important economic, social, and individual benefits. Integrated care contributes to improved access to services, fewer unnecessary hospitalizations and readmissions, better adherence to treatment, increased patient satisfaction, health literacy and selfcare, greater job satisfaction for health workers, and overall improved health outcomes. This sub section discusses the level of integration and availability of quality NCD services in the camps.

### 3.7.1 Level of Engagement and Ownership of the MoPH/Local Authorities in NCD Prevention, Diagnosis, and Management

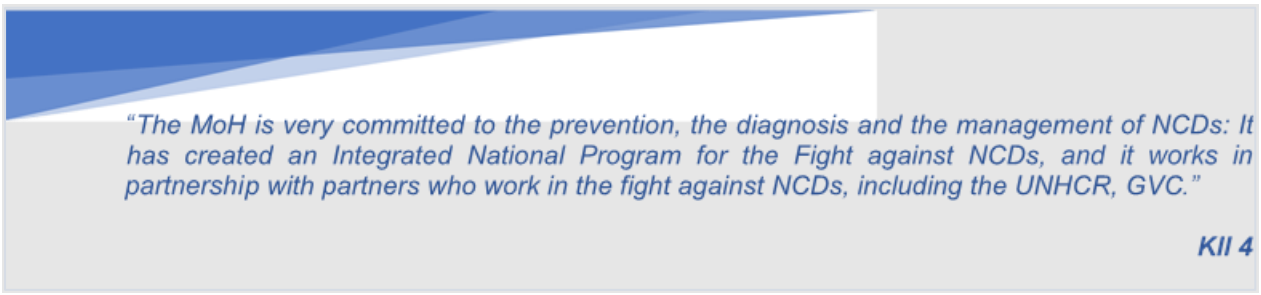
Through KIIs, the assessment established that the MoPH was committed to ensuring effective NCD prevention, diagnosis, and management through policy and coordination.

To address the burden of NCDs, the MoPH had adopted strategic plans for different pathologies to combat NCDs and certain risk factors in line with the National Health Policy (2016-2025) and the National Health Development Plan (2010-2015). To avoid most premature deaths due to Chronic NCDs, the Ministry of Public Health and the Fight against AIDS, through the National Integrated Program for the Fight against Chronic Non-communicable Diseases, developed a Multisectoral National Plan for the Fight against Non-communicable Diseases (2019-2023) in collaboration with the WHO and other partners inspired by the National Health Development Plan (PNDS III 2019-2023).[64]

The MoPH created the National Integrated Program for the Fight Against Non-Communicable Diseases (PNILMCNT) as the national reference for all activities related to NCDs in Burundi. This was informed by information from surveys on risk factors, screening, early diagnosis, to the management of these diseases, including palliative care. In collaboration with other departments of the ministry, the PNILMCNT's mission is to propose appropriate strategies to combat the main NCDs (CVD, cancers, diabetes, PCBs) and to coordinate interventions on the ground.[65]

[64] *Republic of Burundi, Ministry of Public Health and The Fight Against Aids, Multisectoral Action Plan for Prevention and Control of Non-Communicable Diseases, 2019-2023*
[65] *Republic of Burundi, Ministry of Public Health and The Fight Against Aids, Multisectoral Action Plan for Prevention and Control of Non-Communicable Diseases, 2019-2023*

*Excerpt 3.7: MoPH involvement in NCD prevention, diagnosis and management*




*(Source: Baseline Assessment, Key Informant, 2023)*

Among the local authorities, the assessment through KIIs established that their main role was to give permission to those who undertook awareness creation in the camps. They did not facilitate and NCD services due to lack of budget for the same.

### 3.7.2 Inclusion and Integration of Refugees in National Health Systems

The assessment through KIIs established that refugees have been included and integrated into the Burundi national health systems. They have direct access to health centres with a minimum package of activities (1st level) but can be referred to higher level care if necessary. First level health centres were those located within the camps also referred to as primary health care facilities. Additionally, refugees have been integrated in the ministry's health promotion interventions such as vaccination campaigns. Moreover, medication for type 1 diabetes and mental health are given free of charge to the entire population including refugees.

Further, the assessment established that there is a national guideline for the integration of mental health care into the health system of Burundi, which allows for collaborations on programs supporting refugees, internally displaced persons, and migrants

### 3.7.3 Availability of NCD Services

#### *3.7.3.1 Number and percentage of primary health care facilities providing care for priority NCDs (Sphere and UNHCR RBM)*

The assessment found that all (100.0%) the assessed primary HCFs were providing care for priority NCDs. The facilities provided a range of NCD services including diabetes management, mental health services and cancer screening services as further shown in Table 3.43.

*Table 3.43: NCD services offered by the assessed primary health care facilities*

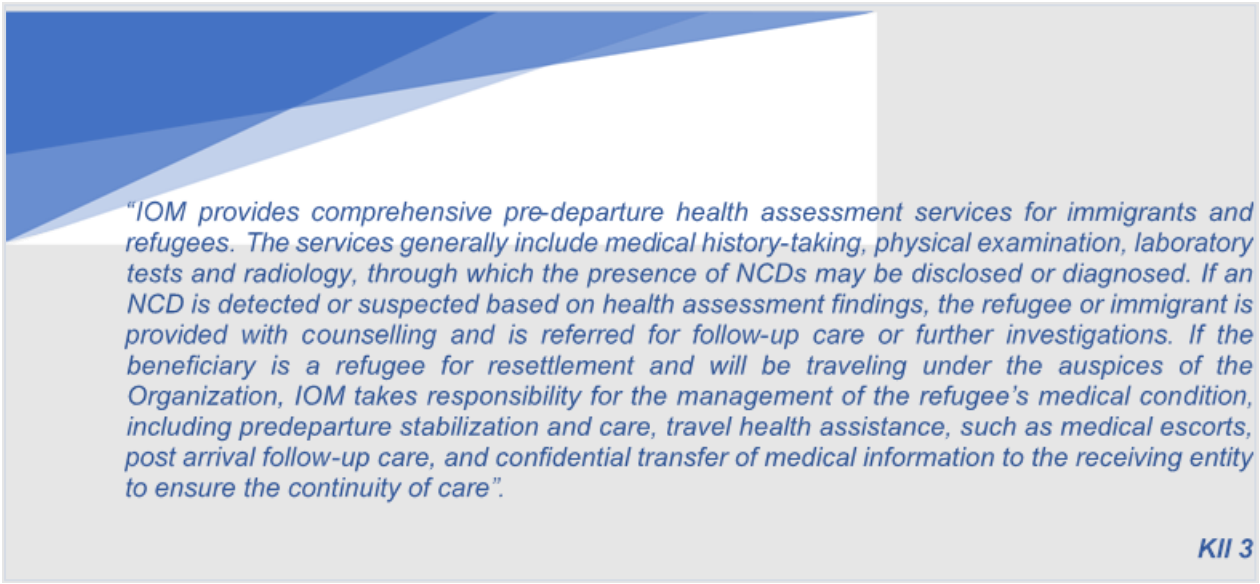
| Name of Primary Health Facility | NCD Services Offered |
|---|---|
| Health Centre of Bwagiriza Camp | • Mental Health Services<br>• Chronic respiratory disease diagnosis and management services<br>• Diabetes Management<br>• Cardiovascular disease services<br>• Psychological support |
| Health Facility of Nyakanda camp | • Mental Health Services<br>• Chronic respiratory disease diagnosis and management services<br>• Diabetes Management<br>• Cardiovascular disease services<br>• Psychological support |
| Health Facility of Kavumu camp | • Mental Health Services<br>• Diabetes Management<br>• Psychological support<br>• Injury/acute minor surgical conditions |
| Health Facility of Musasa camp | • Mental Health Services<br>• Chronic respiratory disease diagnosis and management services<br>• Diabetes Management<br>• Cardiovascular disease services<br>• Psychological support<br>• Injury/acute minor surgical conditions |
| Health facility Kinama camp | • Cancer Screening Services<br>• Mental Health Services |

| Name of Primary Health Facility | NCD Services Offered |
|---|---|
| | • Chronic respiratory disease diagnosis and management services<br>• Diabetes Management<br>• Cardiovascular disease services<br>• Injury/acute minor surgical conditions |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

Findings from KIIs revealed that NCD services provided to migrants and/or refugees during pre-departure by the International Organization for Migration (IOM) mainly includes counselling and referrals for follow-up care or further investigations (See Excerpt 3.8).

*Excerpt 3.8: Health services offered to migrants and/or refugees by the IOM*




*(Source: Baseline Assessment, Key Informant, 2023)*

## 3.8 Institutional Capacity and Capacity of Healthcare Workers

### 3.8.1 Institutional Capacity

The assessment defined institutional capacity as the ability of health facilities to deliver NCD care effectively to those who needed it when they needed it. The dimensions of capacity measured were staff adequacy, equipment adequacy, quality service provision, and availability of medicine. The findings are discussed below.

#### *3.8.1.1 Capacity and Quality of the Existing Health Systems to Deliver Quality NCD Care to Refugees and Hosts*

Table 3.44 gives a summary of the equipment inventories of the primary health care facilities that provided NCD services at the time of the assessment.

*Table 3.44: NCD equipment capacity of the assessed primary health care facilities in the refugee camps*

| Type of NCD | Equipment | Name of assessed health facility | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Health Centre of Bwagiriza Camp | | Health Facility of Nyakanda camp | | Health Facility of Kavumu camp | | Health Facility of Musasa camp | | Health facility Kinama camp | |
| | | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment |
| Asthma | Pulse Oximeter | 0 | 30 | 0 | 30 | 0 | 30 | 3 | 0 | 0 | 30 |
| | Oxygen Inhaler | 1 | 0 | 1 | 0 | 0 | 30 | 0 | 30 | 0 | 30 |
| | Stethoscope | 3 | 0 | 4 | 0 | 0 | 30 | 6 | 0 | 5 | 0 |
| Hypertension | Blood pressure apparatus | 3 | 0 | 4 | 0 | 0 | 30 | 4 | 0 | 3 | 0 |
| | Stethoscope | 3 | 0 | 4 | 0 | 0 | 30 | 6 | 0 | 5 | 0 |
| Diabetes | Blood Pressure Apparatus | 3 | 0 | 4 | 0 | 6 | 0 | 4 | 0 | 3 | 0 |
| | Intravenous Saline | 0 | 30 | 0 | 30 | 0 | 30 | 25 | 0 | 0 | 30 |
| | Infusion Kit for Intravenous Fluids | 0 | 30 | 0 | 30 | 0 | 30 | 150 | 0 | 0 | 30 |
| | Serum blood glucose meter | 0 | 30 | 0 | 30 | 0 | 30 | 3 | 0 | 3 | 0 |
| Heart failure | Adult Scale | 1 | 0 | 1 | 0 | 0 | 30 | 0 | 30 | 0 | 30 |
| | Blood pressure apparatus | 0 | 30 | 4 | 0 | 0 | 30 | 4 | 0 | 3 | 0 |
| | Stethoscope | 3 | 0 | 4 | 0 | 0 | 30 | 6 | 0 | 5 | 0 |
| | Ultrasound | 0 | 30 | 1 | 0 | 0 | 30 | 0 | 30 | 0 | 30 |
| Cancer | Thermometer | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 5 | 0 |
| Mental health | Thermometer | 4 | 0 | 7 | 0 | 5 | 0 | 5 | 0 | 5 | 0 |
| | Stethoscopes | 0 | 30 | 4 | 0 | 5 | 0 | 6 | 0 | 5 | 0 |
| Injury/ acute minor surgical conditions | Needle holder | 0 | 30 | 0 | 30 | 4 | 0 | 0 | 30 | 0 | 30 |
| | Scalpel handle and blades | 0 | 30 | 0 | 30 | 3 | 0 | 0 | 30 | 4 | 0 |
| | Surgical scissors | 0 | 30 | 0 | 30 | 4 | 0 | 4 | 0 | 6 | 0 |
| | Suture | 0 | 30 | 0 | 30 | 0 | 30 | 12 | 0 | 0 | 30 |

*(Source: Health Facility Records, 2023)*

Table 3.45 gives a summary of the consumable and medicine inventories of the primary health care facilities that provided NCD services at the time of the assessment. A detailed list of the assessed consumables and medicine is found in the health facility assessment tool in appendix III of this report.

*Table 3.45: Available NCD consumables and medicine in the assessed health care facilities*

| Type of NCD | Consumables and medicine | Name of assessed health facility | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Health Centre of Bwagiriza Camp | | Health Facility of Nyakanda camp | | Health Facility of Kavumu camp | | Health Facility of Musasa camp | | Health facility Kinama camp | |
| | | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment | Number available at the time of assessment | Number of days experienced Stock out within 30 days preceding the assessment |
| Asthma | Beclometasone | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 45,400 | 5 |
| | Prednisolone | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 |
| | Salbutamol | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 458 | 30 |
| | Hydrocortisone | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 456 | 0 |
| | Bronchodilators | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 45,808 | 20 |
| Hypertension | Beta Blocker | 280 | 0 | 280 | 0 | 0 | 30 | 280 | 0 | 0 | 30 |
| Diabetes | Serum Glucose | 42 | 0 | 50 | 0 | 45 | 0 | 25 | 0 | 0 | 30 |
| | Insulin | 10 | 0 | 5 | 0 | 6 | 0 | 5 | 0 | 0 | 30 |
| | Metformin | 700 | 0 | 800 | 0 | 650 | 0 | 600 | 0 | 0 | 30 |
| | Glibenclamide | 196 | 0 | 280 | 0 | 170 | 0 | 0 | 30 | 0 | 30 |
| Epilepsy | Diazepam Tablet | 400 | 0 | 300 | 0 | 0 | 30 | 400 | 0 | 0 | 30 |
| | Diazepam Injectables | 17 | 0 | 17 | 0 | 0 | 30 | 10 | 0 | 0 | 30 |
| | Phenobarbitone | 34 | 0 | 0 | 19 | 0 | 30 | 0 | 30 | 0 | 30 |
| | Carbamazepine | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 |
| Injury/ acute minor surgical conditions | Lidocaine (5%) | 0 | 30 | 0 | 30 | 2 | 0 | 5 | 0 | 0 | 30 |
| Heart failure | Atenolol | 280 | 0 | 280 | 0 | 0 | 30 | 280 | 0 | 280 | 10 |
| | Furosemide | 1000 | 0 | 500 | 0 | 0 | 30 | 800 | 0 | 0 | 30 |
| Pain care | Tramadol (tablet or injectable) | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 20 |
| | One non-opioid analgesic (paracetamol, ibuprofen, aspirin or diclofenac) | 0 | 30 | 250 | 0 | 100 | 0 | 3000 | 0 | 0 | 30 |

*(Source: Health Facility Records, 2023)*

#### 3.8.1.2 Percentage of Primary Health Care Facilities with Stock Outs (>4d) of Tracer NCD Medications (metformin, Angiotensin-converting enzyme (ACE) inhibitor, steroid inhaler) within 30 days preceding the assessment

The assessment found that all the assessed primary health care facility (100.0%) experienced stock outs of tracer NCD medications in the last 30 days prior to the assessment as shown in Table 3.45. Four assessed primary health care facilities providing NCD services were stocked with metformin while one was not. All the facilities lacked ACE inhibitor and steroid inhalers. This was one of the key barriers to provision of quality NCD services as already discussed in Section 3.4.2.1 above.

#### 3.8.1.3 Percentage of Primary Health Care Facilities with Non-availability of Essential Supplies and Equipment for Managing NCDs within 30 days preceding the assessment

To establish this indicator, the assessment used the WHO package of essential noncommunicable (PEN) disease interventions for primary health care which provides protocols and tools needed for the detection, diagnosis, treatment and care of cardiovascular diseases, diabetes and chronic respiratory diseases in primary health care. Based on this, the assessment established that all (100.0%) the assessed primary health care facilities lacked some of the essential supplies for management of cardiovascular diseases, diabetes and chronic respiratory diseases within 30 days preceding the assessment as shown in Table 3.46.

*Table 3.46: Availability of essential supplies and equipment for managing NCDs within 30 days preceding the assessment*

| Primary health care facility | Type of NCD | Equipment, Medicine and consumables | Available throughout 30 days preceding the assessment |
|---|---|---|---|
| Main Hospital, Nyarugusu Camp | Cardiovascular diseases | Blood pressure apparatus | Yes |
| | | Calcium Channel Blocker | Yes |
| | | Thiazide Diuretics | Yes |
| | | Ace Inhibitor | No |
| | | Beta Blocker | No |
| | | Angiotensin II receptor blockers (ARBs) | No |
| | Diabetes | Serum blood glucose meter | No |
| | | Metformin | Yes |
| | Chronic respiratory diseases | Salbutamol Inhaler | No |
| | | Salbutamol | Yes |
| | | Beclometasone | Yes |
| | | Prednisolone | Yes |
| Health Post no 4, Nyarugusu Camp | Cardiovascular diseases | Blood pressure apparatus | Yes |
| | | Calcium Channel Blocker | Yes |
| | | Thiazide Diuretics | Yes |
| | | Ace Inhibitor | Yes |
| | | Beta Blocker | Yes |
| | | Angiotensin II receptor blockers (ARBs) | Yes |
| | Diabetes | Serum blood glucose meter | Yes |
| | | Metformin | Yes |
| | Chronic respiratory diseases | Salbutamol Inhaler | No |
| | | Salbutamol | Yes |
| | | Beclometasone | No |
| | | Prednisolone | Yes |
| MTI clinic in MSF Main Hospital, Nduta Camp | Cardiovascular diseases | Blood pressure apparatus | Yes |
| | | Calcium Channel Blocker | Yes |
| | | Thiazide Diuretics | Yes |
| | | Ace Inhibitor | Yes |
| | | Beta Blocker | Yes |
| | | Angiotensin II receptor blockers (ARBs) | Yes |
| | Diabetes | Serum blood glucose meter | No |
| | | Metformin | Yes |
| | Chronic respiratory diseases | Salbutamol Inhaler | Yes |
| | | Salbutamol | Yes |
| | | Beclometasone | No |
| | | Prednisolone | Yes |

*(Source: Health Facility Records, 2023)*

### 3.8.2 Capacity of Healthcare Workers

#### 3.8.2.1 Current Capacity of Health Staff (Primary Health Professionals) to Provide NCD Care

Assessment findings on the capacity of healthcare workers providing NCD services collected during the assessment of health facilities is discussed hereunder.

*i) Number and percentage of healthcare workers providing NCD treatment who are trained in NCD management (Sphere)*

The assessment sought to establish the proportion of healthcare workers who were providing NCD services and had additional training on NCD management. The findings presented in Table 3.47 show that out of the 87 health care workers who provided NCD services, 56.3% had had additional training on NCD management through induction workshops and/or on the job training (OJT). These trainings were provided by UNHCR under the WDF Project in collaboration with GVC.

*Table 3.47: Number and percentage of healthcare workers providing NCD treatment who are trained in NCD management by sex*

| Trained on NCDs Management | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 36 | 59.0 | 13 | 50.0 | 49 | 56.3 |
| No | 25 | 41.0 | 13 | 50.0 | 38 | 43.7 |
| Total | 61 | 100.0 | 26 | 100.0 | 87 | 100.0 |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

Detailed analysis on the number of healthcare workers providing NCD treatment who are trained in NCD management by health facility is presented in Table 3.48 below.

*Table 3.48: Number of healthcare workers providing NCD treatment who are trained in NCD management by health facility*

| Level of health facility | Name of health facility | Number of health workers providing NCD treatment | Number of health workers providing NCD treatment trained on NCD Management |
|---|---|---|---|
| Primary Care | Health Centre of Bwagiriza Camp | 15 | 0 |
| | Health Facility of Nyakanda camp | 11 | 5 |
| | Health Facility of Kavumu camp | 10 | 10 |
| | Health Facility of Musasa camp | 8 | 8 |
| | Health facility Kinama camp | 8 | 6 |
| Secondary Care | Cankuzo Hospital | 0 | 0 |
| | Gashoho hospital | 8 | 4 |
| | Muyinga Hospital | 19 | 8 |
| | Kiremba Hospital | 8 | 8 |
| | District Hospital of Ruyigi | 0 | 0 |
| **Total** | | **87** | **49** |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

#### 3.8.2.2 Current Knowledge and Capacity of CHWs to Provide Prevention and Support to Persons with NCDs

Effective provision of NCD services by the CHWs is dependent on their knowledge on NCDs. The baseline sought to assess the knowledge and practice towards NCD among CHWS in the camps as a step in identifying their potential role in community NCD prevention, diagnosis and management.

*i) Number and percentage of CHW who have received training on NCDs*

The findings indicated that out of the 54 CHWs attached to the assessed health facilities, 28 (51.9%) had been trained on NCDs as shown in Table 3.49. The trainings were undertaken by UNHCR under the WDF project in collaboration with GVC and they covered issues of NCD management, diagnosis, and treatment.

*Table 3.49: Number and percentage of CHWs who have received training on NCDs by sex*

| Trained on NCDs | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 20 | 57.1 | 8 | 42.1 | 28 | 51.9 |
| No | 15 | 42.9 | 11 | 57.9 | 26 | 48.1 |
| Total | 35 | 100.0 | 19 | 100.0 | 54 | 100.0 |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

## 3.9 Level of Needs, Access, and Utilization of Services by Refugees

### 3.9.1 Level of Need for NCD Health Services

The level of need for NCD services by refugees was high. The scope of needs included early diagnosis, general awareness and NCD commodities. From the consultations undertaken, the following specific needs were identified:

i.) Needs in the diagnosis, management and follow up of patients with cancer;
ii.) Need for strengthening NCD diagnostic capacities of healthcare workers due to their inadequate capacity on NCD management;
iii.) Need to boost prevention measures to a larger group of the population;
iv.) Need of medicines for mental illness;
v.) Need of health promotional activities related to mental health; and
vi.) Need to put in place advocacy, policy, and strategies that include migrants.

### 3.9.2 Level of Access of NCD Services

The assessment findings on the level of access to NCD services in the assessed primary health care facilities are discussed under the key project indicators below.

#### *3.9.2.1 Number of Consultation Visits within 6 months preceding the assessment in the PHC facilities*

Data from the primary health facility records as presented in Table 3.50 showed that a total of 3043 consultation visits were recorded within the period under review.

*Table 3.50: Number of consultation visits within 6 months preceding the assessment*

| Sex | Total Number of Consultations (n) |
|---|---|
| Males | 1467 |
| Females | 1576 |
| Overall | 3043 |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

#### *3.9.2.2 Total Number and percentage of NCD consultations within 12 months preceding the assessment*

Out of 173,871 consultation records held in the health facilities databases within 12 months preceding the assessment, 5,132 (3.0%) were NCD related as shown in in Table 3.51.

*Table 3.51: Total number and Percentage of NCD Consultations within 12 Months Preceding the Assessment*

| Sex | Value |
|---|---|
| Total Number of NCD Consultations (n) | 5132 |
| Total Number of Consultations (N) | 173,871 |
| Proportion of NCD consultations over the total consultations (%) | 3.0% |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

#### 3.9.2.3 Total Number of NCD Patients (clients) held in the PHC Facility Database

The assessment found that a total of 687 NCD patients were held in the facility database out of which 309 (45.0%) were males and 378 (55.0%) were females. One hundred and eighty-four (184, 26.8%) of these patients were living with disability.

#### 3.9.2.4 Total Number and Percentage of Patients Referred for Secondary Care

The assessment found that out of the 5 assessed PHC facilities providing NCD services, only 2 had a standard referral procedure for chronic diseases, cardiovascular diseases, diabetes, violence, mental disorder and cancer. Data from health facility records showed that 384 NCD patients needed referral to either secondary or tertiary facilities within the last 12 months preceding the assessment. All of these patients, (100.0%) were referred for secondary care.

The age categories for the patients who were referred varied from 18 years to above 60 years. These patients had to wait for up to five or more days before being referred. UNHCR and the patients themselves covered the referral costs incurred.

#### 3.9.2.5 Total Number of Deaths in NCD Patients recorded in the PHC Facility Database

As per the facility records, 1 NCD death (Male, 1) occurred within 30 days preceding the assessment. The patient was suffering from cardiovascular disease and was above 60 years.

#### 3.9.2.6 Percentage of NCD patients/ clients receiving education and counselling on selfcare

Prevention, treatment and management of NCDs requires patient education and counselling (PEC). Assessment findings from the health facility records revealed that 59.7% of the NCD patients had received education and counselling on selfcare (Table 3.52).

*Table 3.52: Percentage of NCD patients/ clients receiving education and counselling on selfcare*

| Received education and counselling on selfcare | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 220 | 71.2 | 190 | 50.3 | 410 | 59.7 |
| No | 89 | 28.8 | 188 | 49.7 | 277 | 40.3 |
| Total | 309 | 100.0 | 378 | 100.0 | 687 | 100.0 |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

The assessment through KIIs found that there were no separate sessions for education and counselling on selfcare, however, patients were educated and counselled by the health care providers during the consultation visits (See Excerpt 3.9).

*Excerpt 3.9: Education and counselling on selfcare*

> *"There is no session for self-care. During the consultations, the doctor tells the patients how to take their medication. For diabetics on insulin, the nurses individually show everyone how to inject themselves and dose the insulin. There are no manuals or written procedures for education and counselling on self-care."*
>
> ***KII 5***

*(Source: Baseline Assessment, Key Informant, 2023)*

Among the diabetic patients receiving education and counselling on selfcare as illustrated in the excerpt above, age and storage of the insulin provided were some of the challenges encountered as cited in Excerpt 3.10.

*Excerpt 3.10: Challenges in providing education and counselling on selfcare*


*(Source: Baseline Assessment, Key Informant, 2023)*

To address these challenges, there is need to provide health centres with refrigerators for insulin storage as well as manuals for health education and counselling on selfcare.

#### 3.9.2.7 Percentage of NCD patients/ clients living with mental health conditions provided with follow up on MHPSS

MHPSS include any support that people receive to protect or promote their mental health and psychosocial wellbeing. MHPSS also includes support for people's general psychosocial wellbeing such as helping people connect with other family and community members, or helping them deal more effectively with personal challenges or practical problems. All these can have great benefits in reducing their distress and suffering.

The assessment found that 37.4% of the patients had been provided with follow up on MHPSS as shown in Table 3.53.

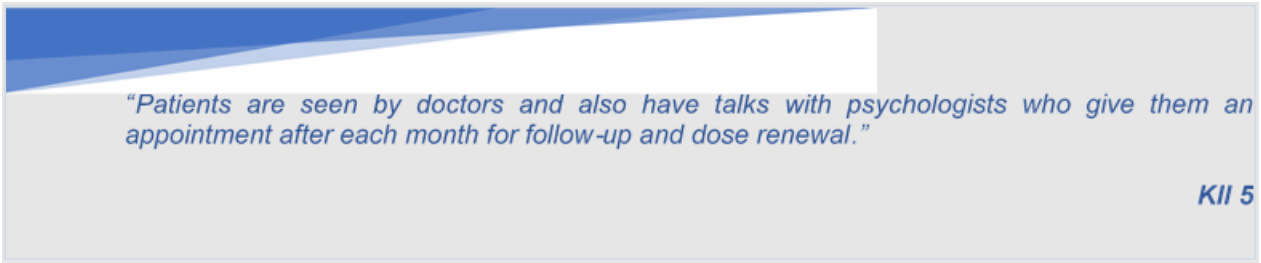
*Table 3.53: Percentage of NCD patients/ clients living with Mental Health conditions provided with follow up MHPSS*

| Provided with follow up MHPSS | Sex | | | | Overall | |
|---|---|---|---|---|---|---|
| | Males | | Females | | | |
| | Count (n) | % | Count (n) | % | Count (n) | % |
| Yes | 146 | 47.2 | 111 | 29.4 | 257 | 37.4 |
| No | 163 | 52.8 | 267 | 70.6 | 430 | 62.6 |
| Total | 309 | 100.0 | 378 | 100.0 | 687 | 100.0 |

*(Source: Baseline Assessment, Health Facility Records, 2023)*

Excerpt 3.11 presents an illustration on the procedure for follow up on MHPSS as cited by one of the key informants.

*Excerpt 3.11: Procedure for follow up on MHPSS*




*(Source: Baseline Assessment, Key Informant, 2023)*

The main challenge encountered with health care providers while undertaking these follow ups was the lack of finances to facilitate the follow up activities. To solve this challenge and in turn increase the proportion of patients who receive quality MHPSS follow ups, there is need to increase budget allocation for these activities thus enhance more home visits. Failure of the patients to keep appointments was also cited as another key challenge to provision of MHPSS follow-ups.

#### 3.9.2.8 Number of Persons with NCDs Receiving Supplementary Food Rations

Health facility records revealed that only 1 health facility was providing supplementary food rations to NCD patients. The total number of patients who had received these rations was 3 (Male,1; Females,2). KIIs revealed that WFP, the main provider of food rations, was facing a drastic decrease in resources to provide

other types of support at the camp level, which made them prioritize children. However, the organization had organized for resource mobilization meetings with some donors including Bureau for Humanitarian Assistance (BHA) to advocate for more resources as needs increased.

## 3.10 Inclusion, Gender Mainstreaming and Accountability to Affected Populations

As already discussed in section 3.5.3.1 (b) of this report, refugees were included and/ or mainstreamed in the national health system in Burundi. This section discusses the existing strategies for the management of NCDs in Burundi.

### 3.10.1 Strategies in Place for the Management of NCDs in Burundi

Findings from key informants only revealed that there were different strategies in place for NCD management. They included:

(i) A strategic plan for all NCDs (2016-2023) and a mental health plan (2016-2020).
(ii) A national plan to combat cancer was at validation phase at the time of the assessment.
(iii) The Minister of Public Health and the Fight Against AIDS signed a reorganization order to reorganize the program called “National Integrated Program for the Fight against Chronic Non-Communicable Diseases”, (PNILMCNT) within the Ministry of Public Health and the Fight against AIDS
(iv) The MoH has developed and validated a training manual for care providers on main NCDs including diabetes, cardiovascular diseases and chronic respiratory diseases.

### 3.10.2 Awareness Creation and Advocacy Activities

Information collated from KIIs revealed that the general level of awareness of these strategies was low due to lack of funding to organize advocacy events. The assessment further assessed the level of awareness on NCD under the following indicator.

#### *3.10.2.1 Number of Refugees Reached with Awareness and Sensitization on NCD Risks, Health Lifestyle and Well-being*

Table 3.54 shows that **2.5% (95% CI: 1.6%-3.8%; n=23, N=904)** respondents had been reached through awareness and sensitization activities on NCD risks, health lifestyle and well-being. The findings reflected that the awareness levels within the camps was low. They were reached through meetings, events and information, education, and communication materials.

*Table 3.54: Number of respondents reached with awareness and sensitization on NCD risks, health lifestyle and well-being by sex*

| Background Characteristics | Sex | | | | | | | | Overall | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males | | | | Females | | | | | | | |
| | Yes | | No | | Yes | | No | | Yes | | No | |
| | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % | Count (n) | % |
| **Age Group** | | | | | | | | | | | | |
| 18 - 35 | 3 | 1.5 | 201 | 98.5 | 5 | 1.9 | 262 | 98.1 | 8 | 1.7 | 463 | 98.3 |
| 36 - 65 | 6 | 3.2 | 180 | 96.8 | 8 | 3.8 | 205 | 96.2 | 14 | 3.5 | 385 | 96.5 |
| Above 65 | 1 | 5.0 | 19 | 95.0 | 0 | 0.0 | 14 | 100.0 | 1 | 2.9 | 33 | 97.1 |
| ***Total*** | 10 | 2.4 | 400 | 97.6 | 13 | 2.6 | 481 | 97.4 | 23 | 2.5 | 881 | 97.5 |
| **PWD** | | | | | | | | | | | | |
| Yes | 1 | 2.6 | 38 | 97.4 | 2 | 4.3 | 45 | 95.7 | 3 | 3.5 | 83 | 96.5 |
| No | 9 | 2.4 | 362 | 97.6 | 11 | 2.5 | 436 | 97.5 | 20 | 2.4 | 798 | 97.6 |
| ***Total*** | 10 | 2.4 | 400 | 97.6 | 13 | 2.6 | 481 | 97.4 | 23 | 2.5 | 881 | 97.5 |
| **Ethnicity** | | | | | | | | | | | | |
| Congolese | 10 | 2.5 | 393 | 97.5 | 13 | 2.8 | 459 | 97.2 | 23 | 2.6 | 852 | 97.4 |
| Burundian | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 19 | 100.0 | 0 | 0.0 | 19 | 100.0 |
| Others | 0 | 0.0 | 7 | 100.0 | 0 | 0.0 | 3 | 100.0 | 0 | 0.0 | 10 | 100.0 |
| ***Total*** | 10 | 2.4 | 400 | 97.6 | 13 | 2.6 | 481 | 97.4 | 23 | 2.5 | 881 | 97.5 |

*(Source: Baseline Assessment, Household Survey, 2023)*

Additional study findings form KIIs revealed that 1,201 community health workers and 32 administrative leaders had been reached with awareness on NCD risks.

## 3.11 Barriers to Provision of Quality NCD Services and coping mechanisms

Broadly, key informants revealed that the quality of NCD services varied significantly across the country due to the state of healthcare infrastructure, geographic location and socioeconomic factors. Table 3.55 below presents the cited barriers to NCD service delivery and the coping mechanisms.

Table 3.55: Barriers to provision of quality NCD services and coping mechanisms

| Barriers | Coping mechanisms |
|---|---|
| Lack of NCD equipment | Referral of patients to facilities with needed equipment for advanced screening and testing |
| Lack of NCD medicine | Treat patients with the available medicine |
| Lack of staff who are specialized on NCD diagnosis, management and treatment | Referral of patients to facilities with NCD specialists |
| Lack of trainings among the healthcare workers providing NCD services | Undertake on job trainings to staff |
| Low budget provisions and lack of finances to facilitate referrals | Referral of patients with good prognosis |
| Lack of vehicles and fuel to facilitate the referrals | Provide services available in the health facility and refer only emergency cases |
| Restrictions prohibiting the referral of refugees to third level facilities | Provide services available in the health facility |

*(Source: Baseline Assessment, Health Facility Records and KIIs, 2023)*

# 4.0 CONCLUSIONS AND RECOMMENDATIONS

## 4.1 Conclusions

The assessment has presented the values on the status quo of NCD service provision in the refugee camps. These values will be useful in guiding the design, prioritization and targeting of the UNHCR NCD project interventions and forms the basis for future performance measurements.

Based on the findings and discussions, the report concludes as follows:

### 4.1.1 Behavioural Risk Factors

i) The prevalence of tobacco and/ or alcohol use among the respondents was lower than the national tobacco and alcohol use prevalence. However, tobacco users were initiated to smoking at a young age of 25 years and below. This exposed them early in life to high nicotine intake, leading to a high probability of contracting NCDs.

ii) The prevalence of healthy diet intake among the respondents was low which meant that all the respondents and by extension all households did not have a healthy diet leading to poor nutrition hence high exposure to NCDs.

iii) The prevalence of engagement in physical activity among the respondents was relatively high which made them less prone to NCDs.

### 4.1.2 KABP on NCDs

i) The level of NCD awareness among the respondents was relatively high with the main source of information being families, friends or neighbours and health facilities. About 1 in 10 respondents on the other hand were not aware of NCDs.

ii) A high proportion of the respondents agreed that NCDs gave serious problems to the health of a person and that NCDs were serious diseases. A small proportion (2.1%) of the respondents were aware and believed in traditions, myths, and misconceptions on NCDs.

iii) The rate of NCD screening and testing among the respondents was low. Majority of those who were screened and tested, were diagnosed with high blood pressure, heart attack, diabetes mellitus and asthma. NCD management was adequate and was done at individual level, health facility level and by CHWs.

### 4.1.3 Integration and Availability of Quality NCD Services

i) The MoPH had integrated NCD prevention, diagnosis and management in the health system. They had developed a Multisectoral National Plan for the Fight against Non-communicable Diseases (2019-2023) among other key plans.

ii) Refugees have been integrated in the national health system, but with limited access to services outside the camp.

iii) The availability of NCD services was high and was available in all the 5 assessed health care facilities. Shortage of medicine, equipment and lack of a clear referral pathway inhibited the smooth delivery of quality NCD services.

### 4.1.4 Capacity of healthcare workers

i) The proportion of health workers and CHWs trained on NCD management was moderate. Shortage or lack of trained health care workers to diagnose, manage and treat NCDs were cited as key barriers and/or challenge to provision of quality NCD services.

### 4.1.5 Levels of need, access and utilization of services by refugees

i) The need of NCD services in the country was high especially on the prevention and diagnosis of NCDs, general awareness of NCDs, NCD commodities and capacity of healthcare workers.

ii) The level of access to NCD services was low. This was reflected in the proportion of respondents who needed and sought for NCD services. This was attributed to several cited challenges including inadequate screening and testing equipment, lack of health services, and lack of medicine.

iii) The utilization of the available NCD services was moderate. This was reflected in the number of referrals, number of those who received education and counselling on selfcare and those who were provided with MHPSS follow up among other key indicators.

### 4.1.6 Inclusion, gender mainstreaming and accountability to affected populations

i) Refugees were included and/ or mainstreamed in the national health system in Burundi.

## 4.2 Recommendations

To address the identified gaps from the assessment, the following are recommended:

| Aspect | Recommendations |
|---|---|
| NCD Prevention | **Championing against tobacco use**: the assessment found that tobacco smokers were initiated to tobacco smoking at a very early age. The project should develop innovative approaches for advocating against tobacco use. |
| | **Sustained advocacy, awareness creation and engagement**: of parents, caregivers, and faith leaders on their role in creating a healthy environment to support healthy lifestyles for children and their families to address issues that lead to NCDs and support practices that protects their families from being exposed to NCDs. |
| | **Advocating for targeted initiatives with high impacts in reducing** food insecurity through livelihoods and targeted food security programs. This could include livelihoods-based interventions which will help the refugees secure adequate and sustainable income thus a reduction in food insecurity. |
| NCD Diagnosis | **Staffing**: The assessment advocates for additional staffing in the health facilities, specifically in the NCD unit. |
| | **Support the equipping of health facilities with NCD equipment, diagnostic tests, and consumables** to promote adequate and timely stocking of the health facilities. |
| NCD Management | **Establishment of peer support programs/ groups** to provide community level support in response to the shortage of CHWs in conducting follow-ups among patients therefore enhancing support for the delivery of mental health services that complement the efforts of CHWs. The group participants can assist in conducting follow-ups, monitoring medication adherence, providing basic support, and referring clients to specialized mental health services as needed. |
| | **Awareness creation on drug adherence:** To enhance good health seeking behaviours among the target population, there is need to counsel and educate the NCD clients on the importance of modern medicine and drug adherence before providing them with the medication. |

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# APPENDICES

| Appendix I: Template of the Fact Sheet | Appendix II: Sample Size in Burundi | Appendix III: Data Collection Tools | Appendix IV: Training Report |
|---|---|---|---|
| Fact Sheet | Sample Size | Data Collection Tools | Training Report |
| **Appendix V: Baseline Assessment ToR** | **Appendix VI: Map of Assessed Health facilities** | **Appendix VII: List of Consulted Stakeholders** | **Appendix VIII: Baseline Assessment Matrix** |
| Terms of Reference | Map | Stakeholders | Baseline Assessment Matrix |