MINISTRY OF HEALTH AND SOCIAL SERVICES

Assessment on Impact of Drought on People Living with HIV (PLHIV), Orphans and Vulnerable Children (OVCs), Pregnant and Breastfeeding Mothers, Children under Five Years in Namibia (2016-2017)

April 2018

Assessment on Impact of Drought on People Living with HIV (PLHIV), Orphans and Vulnerable Children (OVCs), Pregnant and Breastfeeding Mothers, Children under Five Years in Namibia (2016-2017)

2018

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Acronyms and Abbreviations

ALHIV	Adolescents Living with HIV
ANOVA	Analysis of Variance
ANC	Antenatal Care
ART	Anti-Retroviral Therapy
BMI	Body Mass Index
BMI for Age	Body Mass Index for Age
CI	Confidence interval
GAM	Global Acute Malnutrition
HIV	Human Immuno-deficiency Virus
IYCF	Infant and Young Child Feeding
LTFU	Lost to follow up
MAM	Moderate Acute Malnutrition
MCH	Maternal Child Health
MOHSS	Ministry of Health and Social Services
MUAC	Mid Upper Arm Circumference
NACS	Nutrition Assessment Counselling and Support
NAM water	Namibia Water
NDHS	Namibian Demographic Health Survey
OPD	Out Patient Department
OVC	Orphans and Vulnerable Children
PEPFAR	Presidents Emergency Plan For aids Relief
PLHIV	People Living with HIV
PNC	Post Natal Care
SAM	Severe Acute Malnutrition
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations Children's Emergency Fund
USAID	United States Agency for International Development
WASH	Water Sanitation and Hygiene
WFH	Weight for Height
WHO	World Health Organisation

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We are indebted to many people who contributed their time, expertise, and services in completing this assessment. We are thankful to the Ministry of Health and Social Services national and regional health teams for their support during the data collection phase. We greatly appreciate the assistance from the Namibia University of Science and Technology (NUST) for providing the technical support in carrying out the data analysis.

Our sincere gratitude goes to all stakeholders at national, regional and district levels who contributed to this assessment by providing valuable information and for articulating their views. Their responses contributed to the wealth of information comprised in this report.

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Executive Summary

An assessment on the impact of the drought on People Living with HIV/AIDS (PLHIV), Orphans and Vulnerable Children (OVC), Pregnant and Breastfeeding mothers including Children under 5 years was carried out in Namibia in nine regions namely Erongo, Hardap, Kavango East, Kavango West, Kunene, Ohangwena, Oshikoto, Oshana and Zambezi. It was aimed at identifying the impact of drought on PLHIV, OVCs, and children under five years of age, pregnant and breastfeeding mothers in relation to health service supply and utilization, treatment adherence, risk taking behaviours, nutrition status, access to water, sanitation and nutritional supplements.

The assessment comprised three components. The first component focused on reviewing health facility registers from Nutrition Assessment Counselling and Support (NACS), inpatient management of severe acute malnutrition, maternal and child health, HIV, growth monitoring and infant and young child feeding. The second consisted of in-depth key informant interviews with regional heads of Ministry of Health and Social Services, Ministry of Gender Equality and Child Welfare, NamWater and Ministry of Agriculture Water and Forestry Rural water supply division, USAID implementing partners (Maternal and Child Survival Project (MCSP) and Project Hope) and local councillors from the Ministry of Urban and Rural Development (MURD). The third component was focus group discussions that were held with adolescents living with HIV, adults living with HIV and caregivers of orphans and vulnerable children (OVCs).

This was a descriptive study aimed at obtaining relevant information at the different levels of the health system (regional, district and operational) using a series of study instruments that collected quantitative and qualitative data. A total of 32 health centres/ clinics and 16 hospitals were purposively covered. Trained data collectors visited selected health facilities to interview nurses in charge at selected health centres/clinics. Health facility registers were reviewed for Body Mass Index (BMI), Body Mass Index (BMI) for age, Mid Upper Arm Circumference (MUAC), Weight for Height (WFH) and NACS , ART retention rate and Loss to follow up (LTFU) data was collected on PLHIV.

At the regional level, in depth key informant interviews were conducted with nurse managers at selected hospitals. Additionally, other key informants interviewed were regional health directors, NamWater and Rural water supply regional representatives, Ministry of Gender Equality and Child Welfare regional representatives, USAID implementing partners and local councillors for areas surrounding selected health facilities.

This document is an effort to capture key findings on the impact of drought on PLHIV, OVC, Pregnant, breastfeeding mothers and children under five years. It has tried to capture key aspects of nutrition, health, IYCF, coping strategies, water-sanitation and hygiene and other key observations as well as government response on the drought.

Key Findings

NUTRITION

The following are key findings from the assessment related to nutrition and IYCF

- Children under-five years living with HIV had a Global Acute Malnutrition (GAM) rate of 11.6% and a stunting prevalence of 20.8%
- Children 5-9years living with HIV had a Global Acute Malnutrition (GAM) rate of 7.9% and a stunting prevalence of 16.5%
- Children 10-14years living with HIV had a Global Acute Malnutrition (GAM) rate of 8.8% and a stunting prevalence of 23%
- Adults (males) 15 years or above living with HIV had a Global Acute Malnutrition (GAM) rate of 3.7 % and Adults (females) had a Global Acute Malnutrition (GAM) rate of 3.9 %
- In the 0-59, months age group 2257children were admitted in hospital with severe acute malnutrition during the drought assessment period and of these 1688 children were treated and discharged from hospital.
- The total number of children in the 6-59 months age group with SAM and MAM admitted on the Nutrition Assessment Counselling and Support (NACS) programme during the drought assessment were 1107. Four hundred and two (402) had (SAM) and 347 had (MAM). Three hundred and six (306) defaulted from the programme and 52 were cured.
- Growth monitoring data for children under five years showed the number of cases of severe underweight in females was highest in Hardap region (71) followed by Kavango West region (59) and 24 cases found in Oshikoto region . The number of cases of severe underweight in males was highest in Oshana region (182) followed by Kavango West region (80) and 47 cases found in Hardap.
- Moderate anaemia in pregnant women was highest in Kavango West region with 166 cases found. However, Kavango East had the highest number of cases (28) of pregnant women with severe anaemia .
- MUAC tapes and weighing scales were available and functional at most health facilities in the regions .
- Twenty five percent of clinics/health centres stated stock-outs of Ready to Use Therapeutic Food (RUTF) and 21.8% had stock-outs of Ready to use Supplementary Food (RUSF) during the drought assessment. Additionally, 93.7% of the hospitals had stock outs of RUTF during the assessment period.

- IYCF records at health facilities showed that Oshana region had the highest number of women who practised exclusive breast-feeding (8386) during the drought period and 357 babies were mixed fed in Erongo region during the same period.
- Poor record keeping of nutrition data in health registers contributed to the poor quality and unavailability of data collected in health facilities.

HEALTH

The following are key findings from the assessment related to health issues

- ARVs were available at health facilities in most parts of the country during the drought period.
- PLHIV could not access medication at health facilities during the drought because they did not have transport money to get to health facilities due to distances.
- Not all vulnerable people were provided with drought relief food or other food rations. PLHIV stopped taking their medication citing lack of food as the main reason why they were not compliant with ARV medication. They could not take the medication on empty stomachs.
- Children <15 years living with HIV had a retention rate of 79.2%, males 15+ years 83.7% and females 15+ years 84.7%.
- The loss to follow up accounted for 6% of PLHIV who stopped treatment or missed scheduled visits to the health facility within three months after the last visit.
- The drought led to HIV and sexual transmitted infection (STI) risk among young girls because they resorted to prostitution as a negative coping strategy in exchange for money.
- Due to the shortage of water, people drank unsafe water that led to illnesses such as diarrhoea during the drought.
- 93.8% of the health facilities had HIV test kits and 75% reported that the kits were functioning.

WATER, SANITATION AND HYGIENE

The following key findings from the assessment related to water, sanitation and hygiene issues

- During the drought, the regions experienced a decline in the water table. This led to reduction in water quantity and quality and basic sanitation and hygiene practices were compromised.
- Humans and livestock shared water from the same water sources.
- Water rationing was done in regions, and communities had to buy water for household usage, which they could not afford.
- In the regions, health workers organized ongoing general hygiene and sanitation promotion activities that took place at health facilities.

FOOD SECURITY

The following are key findings from the assessment related to food security Issues.

- During the drought, families reduced the number of meals consumed from 2-3 meals per day to one meal per day, and they reported eating smaller meals.

- The dietary diversity of meals consumed during the drought were moderate to poor as families reported eating same type of food. Families could not purchase a variety of food due to lack of resources.

- During the drought, families resorted to coping strategies that included sharing food with others, giving food to the children while the adults went hungry, collecting wild fruits and other produce, drought relief food dependency, and pension/grants support.

- Although drought relief food was distributed occasionally in the regions, the food mainly distributed was the staple food maize meal and rice. Other foods such as tinned fish were not always provided.

- Cases of livestock deaths due to low body weight caused by lack of pasture and drinking water were reported.

RISKY BEHAVIOUR

The following are key findings from the assessment related to behaviour.

- Schoolchildren dropped out of school during the drought due to lack of food.
- Young girls resorted to prostitution in exchange for money

GOVERNMENT AND OTHER PARTNERS SUPPORT

The following are key findings from the assessment related to government support:

- Drought relief food such as maize meal and tinned fish was made available by government to food insecure households throughout the country during the drought.
- Safety net programmes provided by government such as pensions and grants made a positive impact on livelihoods of families that were affected during the drought.

CONCLUSION

Findings of the assessment showed that the drought had an impact on the vulnerable groups concerning nutrition status, access to water, hygiene and sanitation. The poor water and sanitation conditions exposed people to infections such as diarrhoea and this contributed to the high GAM rate. Moreover, the drought exposed people to negative coping strategies such as prostitution. PLHIV skipped taking their medication due to lack of food and this affected their adherence to ARVs.

RECOMMENDATIONS

- Timely planning and strengthening of coordination mechanisms among sectors and other development partners supporting drought interventions at all levels is needed.
- The MoHSS should continue training of health workers including mentorship on management of severe acute and moderate acute malnutrition for both inpatient and outpatients.
- The government should develop and implement programmes to target adolescent girls to empower and build their capacity to withstand shocks and make informed decisions. This will be vital in reducing risky behaviours in this cohort of the population.
- The Directorate of Disaster Preparedness and Response should strengthen the early warning system and take necessary measures to sensitize and equip the communities with necessary information to reduce impact of disasters on livelihoods and household food security.
- The MoHSS referral system should be strengthened by increasing capacity of health workers and CHWs, support supervision, mentorship and provision of in-service training. This will ensure timely identification, and referral of patients with malnutrition to next higher level of care.
- To improve data quality regular training programmes should be conducted on data collection, maintenance and management with well-designed standardised data quality assurance protocols.

1.0 INTRODUCTION

Namibia experienced El Niño induced drought conditions that created deterioration in food security[1,2]. This was the third consecutive year that Namibia had experienced drought, with the 2015/2016 season being the driest in 35 years. The sectors severely affected included; agriculture, health, nutrition and WASH. The poor performance of the main rainfall season 2015/16 had grievous implications on household food security and economy. With at least 48 percent of the population in Namibia relying on agriculture for their livelihoods[3], the effects of El Niño had a direct impact through loss of income from crop and livestock value chains, as well as income-generating opportunities for vulnerable people that provide labour for the sector. According to the draft Vulnerability Assessment report (2016/17), an estimated 729,314 people faced a livelihood deficit and needed support with recovery interventions such as food aid, seeds, tools, ploughing costs, livestock feed, and rehabilitation of livestock water sources

According to the Namibia Food and Nutrition Security Monitoring report, 2016, the highest concentrations of food insecure populations were in Kavango West, Zambezi, Otjozondjupa, Omusati, Ohangwena, Oshikoto and Karas region, which coincided with the majority of PEPFAR priority districts and hotspots. Sentinel sites reported a deterioration of the nutrition situation when comparing acute malnutrition trends of children 6-59 months of 5% in March 2015, 3.5% in October 2015 and 6% in March 2016 (FNSMS, 2016).

Domestic water shortages remains a challenge in Namibia, with particular negative effects on human health, posing increased risk of contracting waterborne diseases. Lack of access to water reduces immunity to opportunistic infections for People living with HIV (PLHIV) and increases the incidence of intestinal worm infections for PLHIV and orphans and vulnerable children (OVC). HIV and AIDS also slows recovery from diarrhoeal diseases, skin conditions and other opportunistic infections. Domestic water supply in the rural areas was of great concern as protected springs and boreholes dried up. Potable water scarcity affected rural and urban domestic supply even in areas previously not vulnerable to drought and institutions including health facilities and school

The national HIV prevalence amongst people aged 15 – 49 is estimated at 13.3 per cent (DHS 2014) with a total estimated number of 229,631 PLHIV. The national HIV prevalence among pregnant women receiving antenatal care (ANC) was estimated at 17.6 per cent (NHSS, 2016). This prevalence was highest among the age group 35-39 at 32.3 per cent. Also worrisome was the prevalence rate (5.7%) among pregnant adolescents (15-19 years).

PEPFAR Namibia estimates that at least 25 percent of PLHIV are in need of food assistance and that as food prices continue to increase due to the meagre harvest, the percentage of food insecure households will continue to steadily grow.

[1] UNICEF and HIV in the context of Elnino in Southern Africa, UNICEF, 2016
[2] WFP, Elnino Emergency; Challenge to End AIDS by 2030, WFP, 2016
[3] NDP 4

As a consequence of the above, in June 2016, the Government of Republic of Namibia (GRN) declared a state of emergency due to the ongoing drought. Subsequently the government made an appeal to development partners to assist its drought response plan. United States Agency for International development (USAID) mobilized resources after receiving a letter from the Office of the Prime minister officially requesting support in food assistance in terms of cereals, supplements for children and pregnant women, water provision in form of water trucking, construction and rehabilitation of wells and boreholes and livestock assistance. USAID , partnered with UNICEF and Ministry of Health and Social Services (MoHSS) to support the Government strengthen the country's drought response and, specifically, to support PLHIV, OVCs and other vulnerable members of the community including pregnant and breastfeeding mothers. UNICEF supported MoHSS in undertaking a public health assessment on the drought impact on PLHIV, OVC, children under five years of age, pregnant and breastfeeding mothers and assist in strengthening the government drought coordination mechanisms.

1.1 Preparedness Planning & Response Capacity

In 2009, the Government of the Republic of Namibia enacted the National Disaster Risk Management Policy (National Disaster Risk Management Plan, 2011). The objective of this policy is to contribute to the achievement of sustainable development in accordance with Namibia's Vision 2030 through reinforcement of national capacities to substantially reduce disaster related risks and build community resilience to disasters (National Disaster Risk Management Plan, 2011). An Institutional Framework for Disaster Risk Management, namely the National Disaster Risk Management Committee (NDRMC) is already in place to facilitate coordination of the inputs of multi-sectoral stakeholders towards alleviation of natural disasters and emergencies. It functions at the national level and has links to the regional, local authority, Constituency and settlement level (National Disaster Risk Management Plan, 2011). It is through these Disaster Risk Management Committees at various levels that the NDRMC has addressed drought disasters through the provision of food rations and supplementary and therapeutic feeding to vulnerable populations through MoHSS and other partners as required.

To implement the policy commitment, the National Disaster Risk Management Committee (NDRMC) with support from a multi-stakeholder team developed the National Disaster Risk Management Plan. The NDRMC functions as the national multi-stakeholder platform responsible for disaster management. The Directorate for Disaster Risk Management (DDRM) is sanctioned with the coordination of disaster risk management and is responsible for the implementation of the resolutions of the NDRMC. Furthermore, other committees at the organizational levels dealing with disaster risk management is the vulnerability assessment committee that collects vulnerability information.

Further, under the office of the Prime-Minister (OPM) in 2014 the Namibia Food and Nutrition Security Monitoring System (NFNSMS) was established following a cabinet decision to provide accurate and timely information and analysis about the food and nutrition situation countrywide. As part of the NFNSMS, there are two assessments in a year of the food and nutrition situation

utilizing primary data as well as secondary data from existing systems. The key areas of assessment are environmental stability, food availability, food access, food utilization and infant and young child feeding.

1.2 Undernutrition and Nutrition Response in Drought Situations

The effects of drought are usually incidental and tend to have a slow onset with prolonged duration. The impacts of drought are favourably reliant on the environment and the underlying population's predisposition. Even though droughts vary from other natural threats, droughts have many numerous effects such as malnutrition in vulnerable groups.

The Namibia Demographic and Health Survey (NDHS) of 2013 indicated that 6% of children under 5 years were wasted. Wasting is also known as acute malnutrition (low weight for height). Acute malnutrition reflects recent changes in food intake especially when there is food insecurity. Additionally, 24% of children under five years in Namibia are stunted (low height for age). Stunting indicates long-term or chronic malnutrition conditions reflecting on historic food intake statuts. Similarly, 13% of under-fives were underweight (low weight for age) and this is a reflection on the combination of chronic and acute malnutrition.

Over the years, the MoHSS has provided treatment for malnutrition using Ready to use Supplementary food (RUSF) for moderate Acute Malnutrition (MAM) and Ready to use Therapeutic food (RUTF) for clients with Severe Acute Malnutrition (SAM). Patients admitted at hospitals with severe acute malnutrition received therapeutic feeds specifically F75, F100, and ReSoMal in line with the inpatient management of severe acute malnutrition guidelines.

Micronutrient deficiencies are common health problems linked to nutrition and food security. Micronutrient deficiencies such as iron deficiency anaemia is prevalent in pregnant women. The NDHS, 2013 showed that, pregnant women had a higher prevalence of anaemia of 26% and 17 % of women suffer from mild anaemia and 4% from moderate anaemia. Ministry of Health and Social Services (MOHSS) provides Iron supplementation to pregnant women with iron deficiency anaemia.

The nutrition unit in the MoHSS embarked on strengthening nutrition assessment counselling, support by training community health workers (CHWs) in early detection, and referral of severely acutely malnourished children aged 6-59 months old and other vulnerable groups for appropriate health care. These activities were aimed at increasing coverage and maximizing the effectiveness of malnutrition treatment as a basis for scaling-up high impact nutrition interventions.

2.0 GOAL, PURPOSE and OBJECTIVES

2.1 Goal

To understand the impact of drought on vulnerable populations that includes: PLHIV, OVC, under-five children, pregnant and breastfeeding mothers.

2.2 Purpose

The purpose for the assessment was twofold:

- To assess the impact of drought on PLHIV, OVCs, children under-five years of age, pregnant and breastfeeding mothers in relation to health services supply and utilization, treatment adherence, risk taking behaviours, nutrition status, access to water, sanitation and nutritional supplements.
- To generate data to inform joint drought multi-sectoral response, programmatic decision making, mitigation measures, and identification of opportunities for greater collaboration between government and implementing partners at national and subnational level to inform short term actions (24 to 48 months) including the development of procurement and distribution plan for nutrition and WASH commodities.

2.3 Objectives

- To determine how the drought affected the availability, access to and utilization of HIV-related facility-based and community-based health services.

- To assess the impact of drought on PLHIV including both at-risk adolescents and adolescents living with HIV (ALHIV), OVC, children under five years of age, pregnant and breastfeeding mothers concerning ART compliance, retention, loss to follow up, recorded deaths and HIV risky behaviours.

- To assess the nutrition status of vulnerable population using appropriate anthropometric measurements and indices namely weight for height (WFH), Body Mass Index (BMI), Mid Upper Arm Circumference (MUAC), BMI for age for clients at Nutrition Assessment Counselling and Support (NACS), Antenatal Care/Post Natal Care (ANC/PNC), Tuberculosis (TB) and Anti Retrieval Therapy (ART) sites.

- To assess the availability of nutrition supplies and tools in the NACS, ANC/PNC, TB and ART sites.

- To assess Infant and Young Child Feeding (IYCF) practices in the drought affected and PEPFAR priority regions.

2.4 Design and Methodology

2.4.1 Methodology

The assessment was a cross sectional study using both quantitative and qualitative methodologies. The assessment involved reviewing of health facility registers on:

- Nutrition Assessment Counselling and Support (NACS),
- Inpatient management of Severe Acute Malnutrition,
- Maternal and Child Health (MCH),
- People Living with HIV (PLHIV) and Tuberculosis (TB) and
- Outpatient Department (OPD).

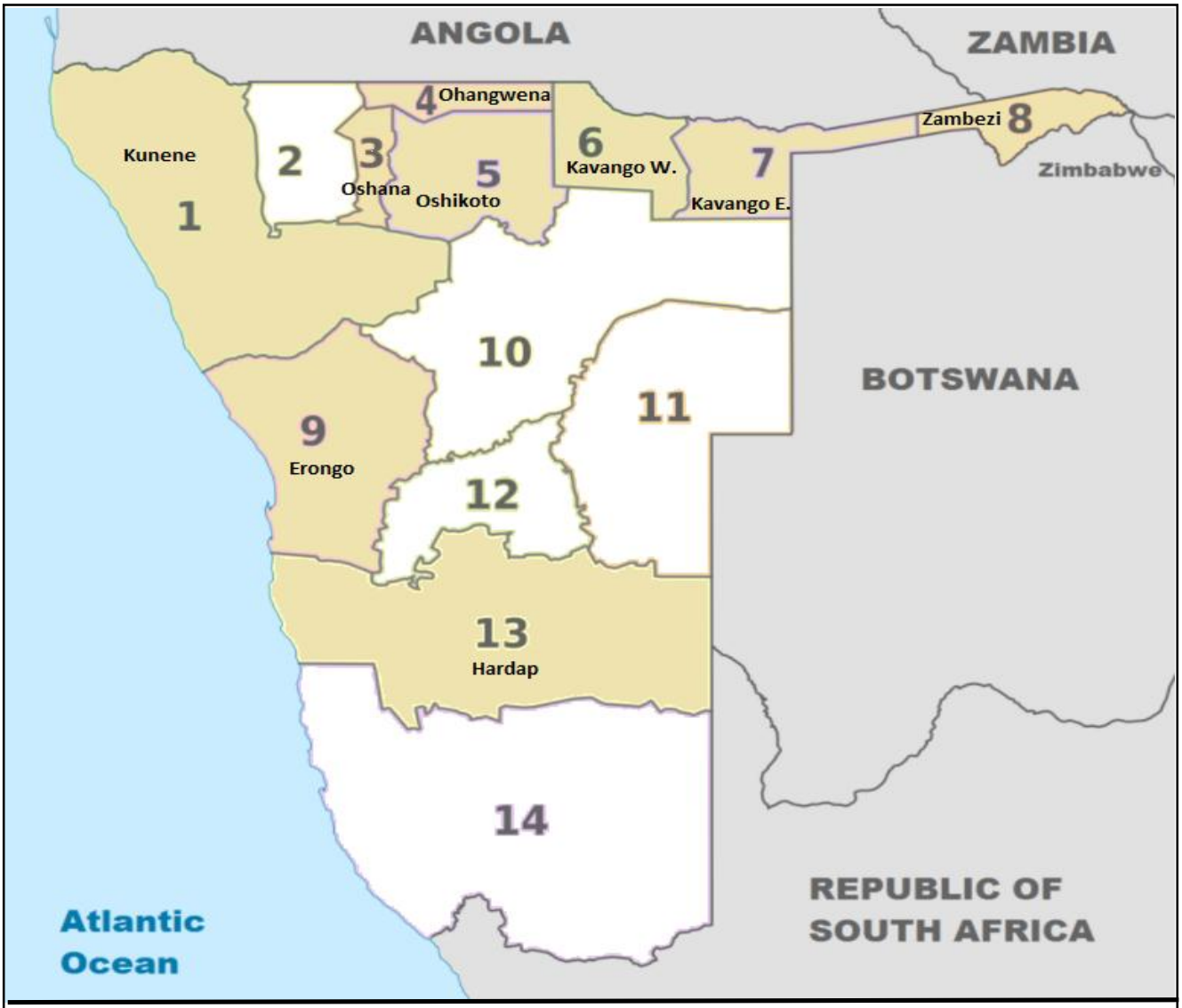
Health facility registers were reviewed for Body Mass Index (BMI), Body Mass Index (BMI) for age, Mid Upper Arm Circumference (MUAC), Weight for Height (WFH), NACS defaulters ART retention rate, and Lost to follow up (LTFU) in PLHIV.
Additionally, in depth key informant interviews were conducted with health in-charges and nurse managers at selected health centres/clinic and hospitals. Furthermore, other key informants interviewed were regional health directors, NAMWater/Rural water supply regional representatives, Ministry of Gender and Child Welfare regional representatives, USAID implementing partners and local councillors for areas surrounding selected health facilities. Moreover, focus group discussions were conducted with:

- Caregivers of Orphaned and Vulnerable Children (OVC),
- People living HIV (PLHIV) support groups.
- Adolescents Living with HIV (ALHIV) support groups.

The assessment did not involve gathering data from households but focused on health facilities, focus group discussions with caregivers of OVCs, ALHIV, PLHIV, and key leaders within the health, WASH and Ministry of Gender and Child Welfare.

2.4.2 Data Selection Sites

Nine regions were purposively selected for this assessment. These regions were drought affected and are PEPFAR priority regions namely, Erongo, Hardap, Kavango East, Kavango West, Kunene, Ohangwena, Oshikoto, Oshana and Zambezi. In each of the selected regions, four health facilities were selected for the assessment, these included a health centre, and clinic (Table 1) except for Oshana and Zambezi region were three health facilities were selected. The selected facilities are in the following 16 districts (Omaruru, Swakopmund Nyangana, Andara, Onandjokwe, Tsumeb, Mariental, Rehoboth, Rundu Nankudu, Opuwo, Outjo, Engela, Okongo, Oshana and Katima Mulilo. In addition, a hospital in each district was included to capture data on the inpatient management of severe acute malnutrition therefore making it 16 district hospitals (Table 1).



KEY:

	Assessed Regions [**1, 3, 4, 5, 6, 7, 8, 9, 13**]
	Other Regions [**2, 10, 11, 12, 14**]

Figure 1: Drought Impact Assessed Regions

Table 1: List of Selected Health Facilities

No.	Region	Health Centre/Clinic	District	District Hospitals
1	Erongo	Omaheke Uis	Omaruru	Omaruru
		Tamariskia Arandis clinic	Swakopmund	Swakopmund
2	Hardap	Aranos Health Centre Malthohe Health Centre	Mariental	Mariental
		Rehoboth Health Centre Gocahs Clinic	Rehoboth	Rehoboth
3	Kavango West	Bunya Health Centre Mupini Health Centre	Rundu	Rundu
		Mpungu Health Centre Nkurenkuru Health Centre	Nankudu	Nankudu
4	Kavango East	Ndonga Clinic Shinyungwe Clinic	Nyangana	Nyangana
		Shadikongoro Clinic Kangongo Clinic	Andara	Andara
5	Kunene	Etanga Okangwati Health Centre	Opuwo	Opuwo
		Kamanjab Clinic Outjo Clinic	Outjo	Outjo
6	Ohangwena	Odibo Health Clinic Ongha Health Clinic	Engela	Engela
		Omboloka Clinic Olukula Clinic	Okongo	Okongo
7	Oshikoto	Okankolo Health Centre Onyaanya Health Centre	Onandjokwe	Onandjokwe
		Tsintsabis Clinic Catherine Bullen Clinic	Tsumeb	Tsumeb
8	Oshana	Oshakati health centre Ehafo Clinic	Oshakati	Oshakati Intermediate hospital
9	Zambezi	Sibinda Health Centre Katima Mulilo Clinic	Katima Mulilo	Katima Mulilo

2.4.3 Data Collection

Enumerators from MoHSS were selected at district, regional and national levels. Enumerators underwent a 4-day training on data collection. The assessment tools were pretested within the communities and health facilities around Windhoek. Data collection in the regions started in October 2017. Forty enumerators from MoHSS, UNICEF and USAID participated in data collection. Consequently, nine research teams were formed to cover the nine regions and each team had four enumerators.

The teams were supported and supervised by regional and national supervisors to ensure accurate and correct completion of the provided assessment tools. The data collection process in the regions took 3 weeks to complete. The teams conducted focus group discussions and key informant interviews during the data collection process. Two people served as facilitators for each focus group discussion and key informant interviews, one other person took notes while the fourth person recorded the proceedings.

2.3.4 Data Tools

The assessment used a descriptive cross-sectional methodology collecting quantitative and qualitative data that included the following components:

- NACS facility assessment tools
- ART/TB nutritional assessment datasheet
- MCH nutritional assessment datasheet
- Inpatient management of severe acute malnutrition (SAM) assessment data sheet (hospitals only)
- NACS and hospital inpatient management of SAM checklist
- Focus group discussions with PLHIV, ALHIV and care givers of OVCs
- Key stake holder interviews

Antenatal Care (ANC), Postnatal Care (PNC), NACS, ART/TB and Inpatient SAM registers were reviewed at each health facility covering the period of April 2016 to March 2017. Nutrition information on Mid-Upper Arm Circumference (MUAC) measurements for all pregnant and breastfeeding women, Weight for Height z-score (WHZ) for children 6 months to 9 years, BMI for age for children 10-14 years and BMI for adults >15 years were extracted from the health registers. Clients from these registers were categorized as normal nutritional status, moderate acute malnutrition, or severe acute malnutrition and this information was recorded on the nutritional assessment datasheet.

Data on PLHIV with severe acute malnutrition, moderate acute malnutrition, lost to follow up (LTFU), retention rate and viral load were collected at national level HIV databases from each hospital. In addition, NACS and hospital Inpatient management of SAM checklists were used to collect data at the facilities on availability and functioning of equipment needed for nutrition assessment, therapeutic food provision and for HIV/ARV test kit supplies.

Qualitative data was collected using focus group discussions and in-depth key stakeholder interviews. The following is the list of qualitative tools used:

- Key informant interview tool with Regional Health Directors
- Key informative interview tool with Nam water/rural water supply representatives
- Key informative interview with Ministry of Gender and Child Welfare representative
- Key informative interview with area counsellors of selected health centre/clinics
- Key informative interview with USAID Implementing partners (Maternal Child Survival Project & Project Hope)
- In-depth interview tool with health facility in-charges and Nurse Manager at hospitals
- OVC focus group discussion tool
- PLHIV focus group discussion tool.
- ALHIV focus group discussion.

2.3.5 Study Population

The objectives of the assessment clearly indicated that the sampling frames were PLHIV, ALHIV, OVCs, and children under five years of age, pregnant and breastfeeding mothers who were clients at health facilities and registered in health registers part of the study during April 2016 to March 2017.

2.3.6 Sampling

There were no specific total target populations numbers on quantitative data for the various vulnerable groups in the assessment because all clients found in the various health registers with Severe Acute Malnutrition (SAM) or Moderate Acute Malnutrition (MAM) during the period April 2016 to March 2017 were automatically included in the study. Moreover, all designated key informants or their designees on the day of the assessment were interviewed. Table 2 below gives the sample sizes for each region.

Table 2: Assessment Methods and Number of Participants /Sample Population per Region

Target Population	Method	Number in each region	Number of participants per group	Total sample size Per region	Total sample size
Support groups for PLHIV – men and women	Focus group	2 per region/ except for Oshana and Zambezi region which conducted 1 each region	8 8	16 8	112(all 7 regions) 16(2 regions)
Care givers of OVCs – men and women	Focus group	2 per region/ except for Oshana and Zambezi region which conducted 1 each region	8 8	16 8	112 (all 7 regions) 16(2 regions)
Adolescent Living with HIV	Focus group	2 per region/ except for Oshana and Zambezi region which conducted 1 per region	8 8	16 8	112(all 7 regions) 16(2 regions)
Total focus group participants		**8**	**8**	**96**	**374**
Health facility in-charge at health facility	In-depth interview	4 per region for 9 regions	4	4	36
NamWater/rural water supply (Ministry of Agriculture) Area Representative for the Region	Key informant interview	2 per region for 9 regions	2	2	18

Table 2: ***Continued***

Target Population	Method	Number in each region	Number of participants per group	Total sample size Per region	Total sample size
Regional Health Director	Key informant interview	1/per region	1	1	9
Ministry of Gender and Child Welfare representative	Key informant interview	1/per region	1	1	9
USAID Implementing partners-MCSP & Project Hope representatives	Key informant interview	Based on	2	2	14
Area councillor	Key informant interview	2	2	2	18
Nurse Manager at District Hospital	In-depth interview	2/per region	2	2	18
Total interview sample size		**14**	**14**	**14**	**122**

2.3.7 Data Analysis

On completion of the data collection process, students from Namibia University of Science and Technology (NUST) captured the data into Excel spreadsheets. Data quality control was done at the point of data entry using data validation rules built into the data entry template; double data entry and checking data entry against completed data collection tools was implemented.

Data were cleaned, coded and analysed using the Statistical Package for Social Science (SPSS). Simple frequency distribution tables were used for descriptive analyses, and thematic analysis was done for open-ended questions.

Focus group discussions were recorded during the sessions. The recorded information was transcribed in Microsoft word and separated according to topics of discussion. The transcribed documents were then loaded into AtlasTi Software. AtlasTi was used to pull out data themes for analysis. Each of the categories or themes was examined in detail to assess for relevance and suitability. Once all the transcripted data was categorised into minor and major categories/themes, a review was done to ensure that the information was categorised, as it should.

2.3.8 Ethical Approval

The assessment protocol was approved by the Policy Planning Directorate of the Ministry of Health and Social Services. Before data collection all enumerators were trained in research ethics during the data collection training. Informed consent was sought from all focus group discussion participants and key informants. Minimal identifiable information was collected during the assessment, and reporting was conducted based on type of health facility to further protect the identity of participants. Quantitative data involved collecting anonymous secondary data only from health facility registers. There were no biochemical measurements taken from respondents.

2.3.9 Limitations

Baseline health data collected from the regions in this assessment that could be comparable to the findings was lacking. Thus, conclusive findings using health data on the impact of the drought on the vulnerable populations could not be guaranteed. Poor record keeping in health registers contributed to the poor quality of data collected. The health data was based on clients registered on health registers at health facilities. These populations were in some cases very small to use as region-specific prevalence rates e.g., data for PLHIV. A number of limitations in this assessment that are noteworthy include:

I. The assessment was largely a cross-sectional exploratory effort thus comparisons may be rather subjective concerning the exact impact of the 2016-2017 droughts on PLHIV; and

II. The regional level analysis may miss the actual context that can be inferred at the constituency level (clinic level), thus quantitative aspects of this assessment can serve as baseline data for subsequent assessments.

3.0 STUDY FINDINGS

PART 1: PEOPLE LIVING WITH HIV (PLHIV)

Anthropometric data on PLHIV was collected from the electronic data base for PLHIV under the Directorate of Special Programmes (DSP), MOHSS , for the period April 2016 to March 2017.

This section presents findings from data collected from the nine regions at selected health facilities, key informants and focus group discussions in 2017. The focus is on impact of the drought on PLHIV, OVCS, pregnant and breastfeeding mothers and children under-five years. The findings are indicated in the sections below. For purposes of this assessment, anthropometric indices focused on Weight for Height (WFH), Body Mass Index for Age, (BMI-Z score), Body Mass Index (BMI). The attributable prevalence of severe acute malnutrition/and or oedema for the indices were based on <-3 z-score and moderate acute malnutrition attributable prevalence on <-2 z-score . The Mid -upper Arm Circumference (MUAC) cut -offs for classification of severe and moderate acute malnutrition in pregnant women were based on the Ministry of Health and Social services (MoHSS) protocol guidelines

3.1 Nutritional status of Children Living with HIV (under 5 years)

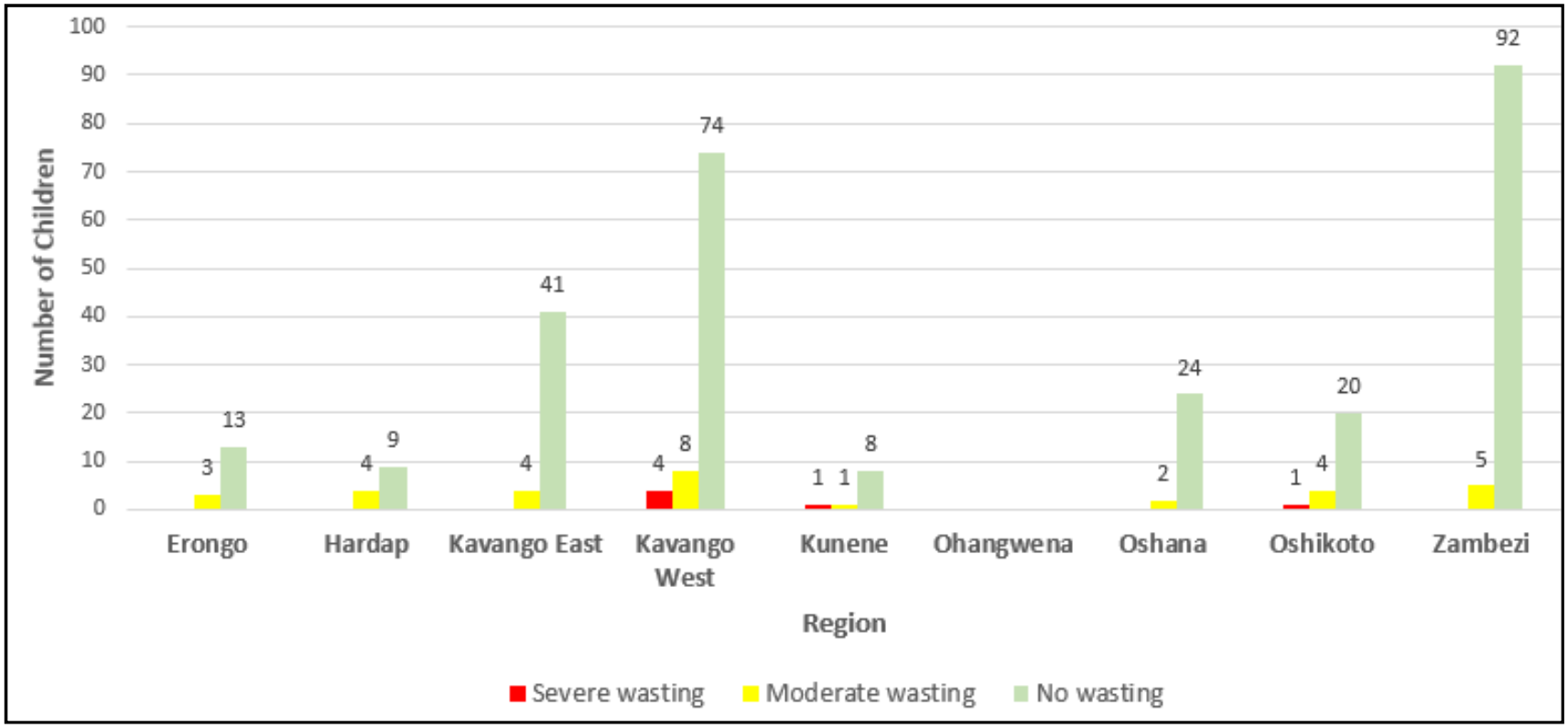
UNICEF defines wasting (moderate and severe) as below minus two standard deviations from median weight-for-height of reference population. Table 3 shows number of cases recorded of wasting in children under 5 years living with HIV using WFH index. Records of 318 children under 5 years were assessed for wasting. The crude prevalence of Severe Acute Malnutrition (SAM) in children under 5 years was 1.9% and Moderate Acute Malnutrition (MAM) was 9.7%. The Global Acute Malnutrition (GAM) rate for children under 5 years was 11.6%. Kavango West had the highest number of cases of severe wasting 1.3% and moderate wasting of 2.5%. Kunene region and Oshikoto region had the same number of severe wasting case of 1.3% each. Zambezi region followed with cases of moderate wasting of 1.6%, then Hardap, Kavango East and Oshikoto all with moderate numbers of malnutrition of 1.3%.

Table 3: Wasting Status among Children under 5 Years

Region	Severe wasting	Moderate wasting	No wasting	Total
Erongo	0 (0.0%)	3 (0.9%)	13 (4.1%)	16 (5.0%)
Hardap	0 (0.0%)	4 (1.3%)	9 (2.8%)	13 (4.1%)
Kavango East	0 (0.0%)	4 (1.3%)	41 (12.9%)	45 (14.2%)
Kavango West	4 (1.3%)	8 (2.5%)	74 (23.3%)	86 (27.0%)
Kunene	1 (0.3%)	1 (0.3%)	8 (2.5%)	10 (3.1%)
Ohangwena	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Oshana	0 (0.0%)	2 (0.6%)	24 (7.5%)	26 (8.2%)
Oshikoto	1 (0.3%)	4 (1.3%)	20 (6.3%)	25 (7.9%)
Zambezi	0 (0.0%)	5 (1.6%)	92 (28.9%)	97 (30.5%)
Total	6 (1.9%)	31 (9.7%)	281 (88.4%)	[k] 318 (100%)

[k] The denominator for all percentages was 318. P-value=0.056 (Chi-square p-value of contingency)

Figure 2 below represents the number of cases of children under 5 years and their wasting status. The two Kavango regions had the largest share of cases of wasting. Erongo, Hardap, Kavango East, Ohangwena, Oshana and Zambezi region had no children under 5 years that had severe acute malnutrition. There was no significant difference on wasting across the regions (p-value=0.056).



There were no children assessed under 5 years in Ohangwena region.

Figure 2: Number of Children under 5-Years on Health Registers by Wasting Status

3.2 Nutritional status of Children living with HIV (5-9 years)

Table 4 shows the BMI-For-Age indicator among children aged 5-9 years. The total number of children assessed in this age group was 468. A crude prevalence of SAM of 3.2% and MAM of 4.7% was found among children 5-9 years. The Global Acute Malnutrition (GAM) rate for children 5-9 years was 7.9%. Kavango East and Kavango West region accounted for more than half of cases of SAM. There was no significant difference on wasting across the regions (p-value=0.049).

Table 4: BMI-for-age Status among Children Aged 5-9 Years

Region	Severe acute malnutrition	Moderate acute malnutrition	Normal BMI	Overweight	Obesity	Total
Erongo	1 (0.2%)	1 (0.2%)	14 (3.0%)	1 (0.2%)	3 (0.6%)	20 (4.3%)
Hardap	0 (0%)	0 (0%)	8 (1.7%)	1 (0.2%)	3 (0.6%)	12 (2.6%)
Kavango East	4 (0.9%)	1 (0.2%)	48 (10.3%)	4 (0.9%)	1 (0.2%)	58 (12.4%)
Kavango West	4 (0.9%)	6 (1.3%)	84 (17.9%)	3 (0.6%)	2 (0.4%)	99 (21.2%)
Kunene	0 (0%)	1 (0.2%)	12 (2.6%)	2 (0.4%)	4 (0.9%)	19 (4.1%)
Ohangwena	0 (0%)	0 (0%)	1 (0.2%)	1 (0.2%)	0 (0%)	2 (0.4%)
Oshana	1 (0.2%)	3 (0.6%)	45 (9.6%)	2 (0.4%)	3 (0.6%)	54 (11.5%)
Oshikoto	3 (0.6%)	5 (1.1%)	52 (11.1%)	4 (0.9%)	6 (1.3%)	70 (15.0%)
Zambezi	2 (0.4%)	5 (1.1%)	114 (24.4%)	6 (1.3%)	7 (1.5%)	134 (28.6%)
Total	15 (3.2%)	22 (4.7%)	378 (80.8%)	24 (5.1%)	29 (6.2%)	[g] 468 (100%)

[g] The denominator for all percentages was 468. P-value=0.049 (Chi-square p-value of contingency)

Figure 3 shows BMI-for-Age for children 5-9 years. The BMI- for -age z-score indicator ranged at >+2 z-score for overweight and above or >+3z-score for obesity.

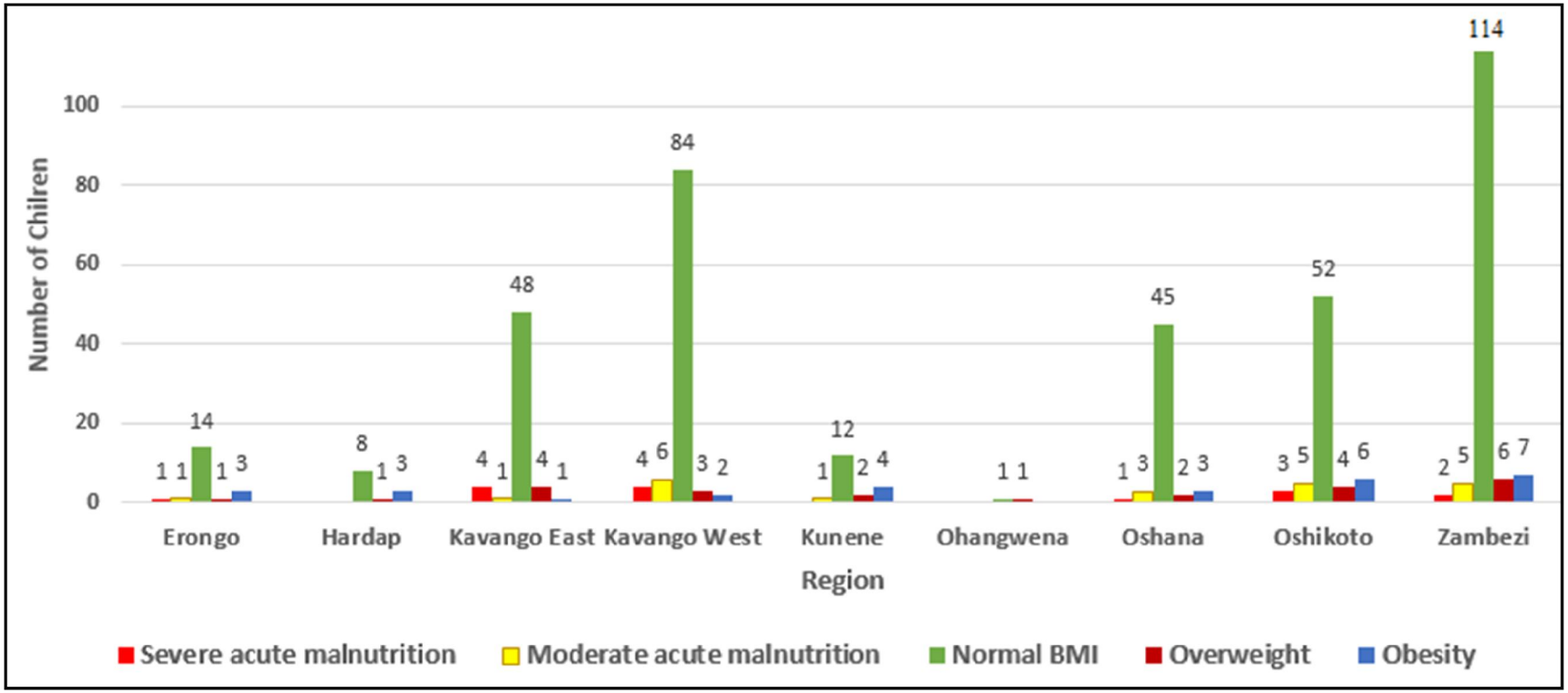


Figure 2: BMI-for-age Status among Children Aged 5-9

3.3 Nutritional status of Children Living with HIV (10-14 years)

Records of 1040 children living with HIV in the 10-14 years age group were assessed in the nine regions for malnutrition using BMI for age indicator. The Global Acute Malnutrition (GAM) rate for children 10-14 years was 8.8%. Most children in this age group across the regions did not have severe acute malnutrition nor moderate acute malnutrition with the exception of Kavango East region, which recorded 36 cases of SAM and 55 cases of MAM. There was a significant difference on wasting across the regions (p-value=<0.001).

Table 5: BMI-for-age Status among Children Aged 10-14 years

Region	Severe acute malnutrition	Moderate acute malnutrition	Normal BMI	Overweight	Obesity	Total
Erongo	0 (0.0%)	0 (0.0%)	398 (38.3%)	153 (14.7%)	113 (10.9%)	664 (63.8%)
Hardap	0 (0.0%)	0 (0.0%)	5 (0.5%)	1 (0.1%)	1 (0.1%)	7 (0.7%)
Kavango East	36 (3.5%)	55 (5.3%)	4 (0.4%)	0 (0.0%)	1 (0.1%)	96 (9.2%)
Kavango West	0 (0.0%)	0 (0.0%)	18 (1.7%)	1 (0.1%)	0 (0.0%)	19 (1.8%)
Kunene	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (0.2%)	1 (0.1%)	3 (0.3%)
Ohangwena	0 (0.0%)	0 (0.0%)	1 (0.1%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
Oshana	0 (0.0%)	0 (0.0%)	4 (0.4%)	0 (0.0%)	0 (0.0%)	4 (0.4%)
Oshikoto	0 (0.0%)	0 (0.0%)	2 (0.2%)	0 (0.0%)	0 (0.0%)	2 (0.2%)
Zambezi	0 (0.0%)	0 (0.0%)	244 (23.5%)	0 (0.0%)	0 (0.0%)	244 (23.5%)
Total	36 (3.5%)	55 (5.3%)	676 (65.0%)	157 (15.1%)	116 (11.2%)	[d] 1040 (100%)

[d] The denominator for all percentages were 1040. P-value=<0.001 (Chi-square p-value of contingency)

Figure 4 shows BMI-for-age Status among children age 10-14 years. The crude prevalence of overweight was 15.1% and 11.2% for obesity.

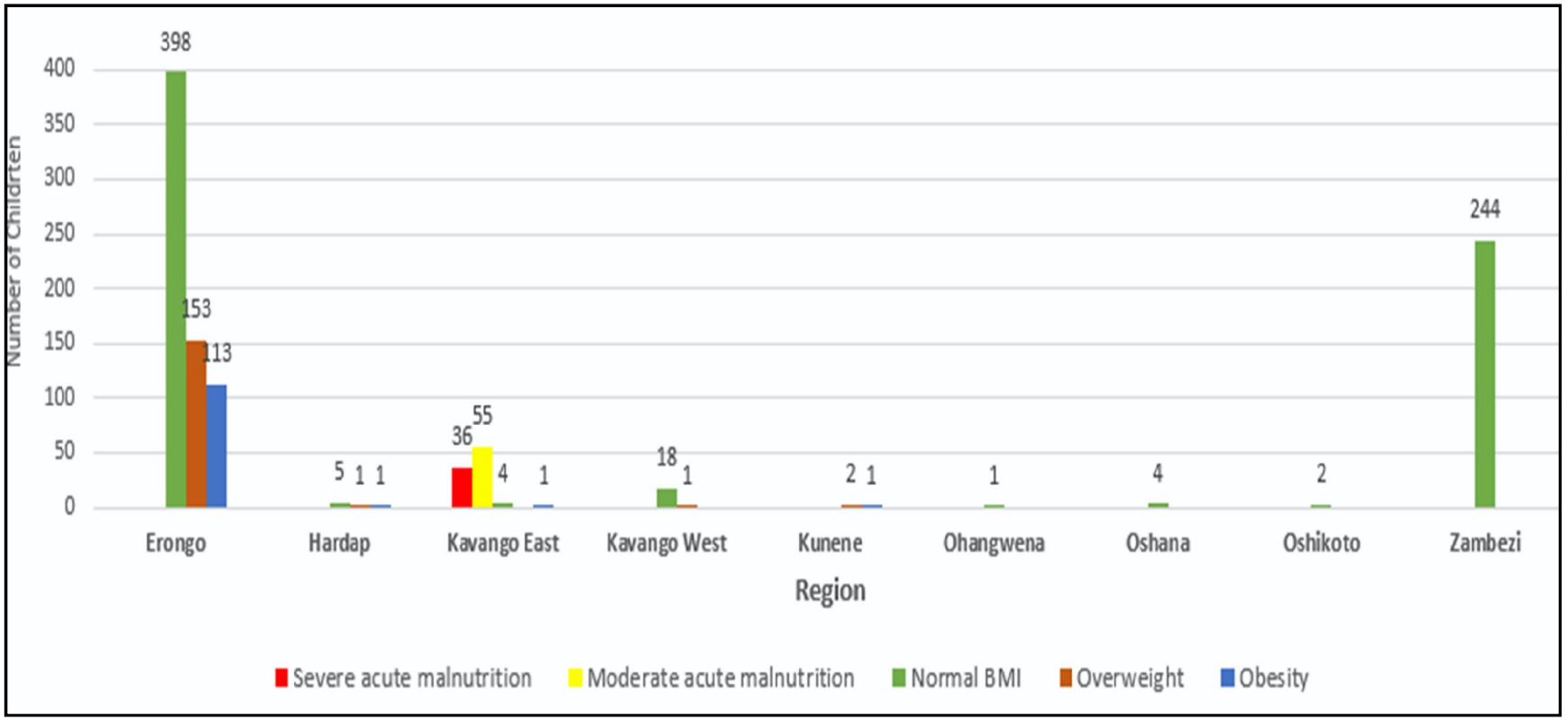


Figure 3: BMI-for-age among Children Aged 10-14 Years

3.4 Nutritional Status among Children by Age Group

Table 6 shows the nutritional status among children living with HIV by age group. For all regions, the crude prevalence of stunting in children was highest in all age groups although it was much higher in the 10-14 year olds (23%). In the under-fives, the crude prevalence of wasting was highest at 11.6% compared to the crude prevalence of wasting in all the other age groups. Overweight and obesity are a rising problem in the 10-14 year olds. This is evident in the crude prevalence of overweight of 15.1% and the crude prevalence of obesity of 11.2%.

Table 6: Nutritional Status among Children by Age Group for all Assessed Regions

Age group	Wasting	Stunting	Underweight	Overweight	Obesity
Children (0-59 months)	37 (11.6%)	68 (20.8%)	40 (12.3%)	19 (6.0%)	3 (0.9%)
[n] Denominator	318	327	325	319	319
Children (5-9 years)	37 (7.9%)	125 (16.5%)	57 (11.2%)	24 (5.1%)	29 (6.2%)
[n] Denominator	468	759	509	468	468
Children (10-14 years)	91 (8.8%)	288 (23.0%)	14 (11.1%)	157 (15.1%)	116 (11.2%)
[n] Denominator	1040	1254	[o] 126	1040	1040

[n] The denominators for percentages were different depending on missing data in each age group and each nutrition status indicator.

[o] There was a lot of missing data for underweight among children aged 10-14 years due to biologically implausible weights for ages.

Figure 5 shows nutritional status of children 0-14 years showing wasting, stunting, underweight, and overweight and obesity of all assessed regions.

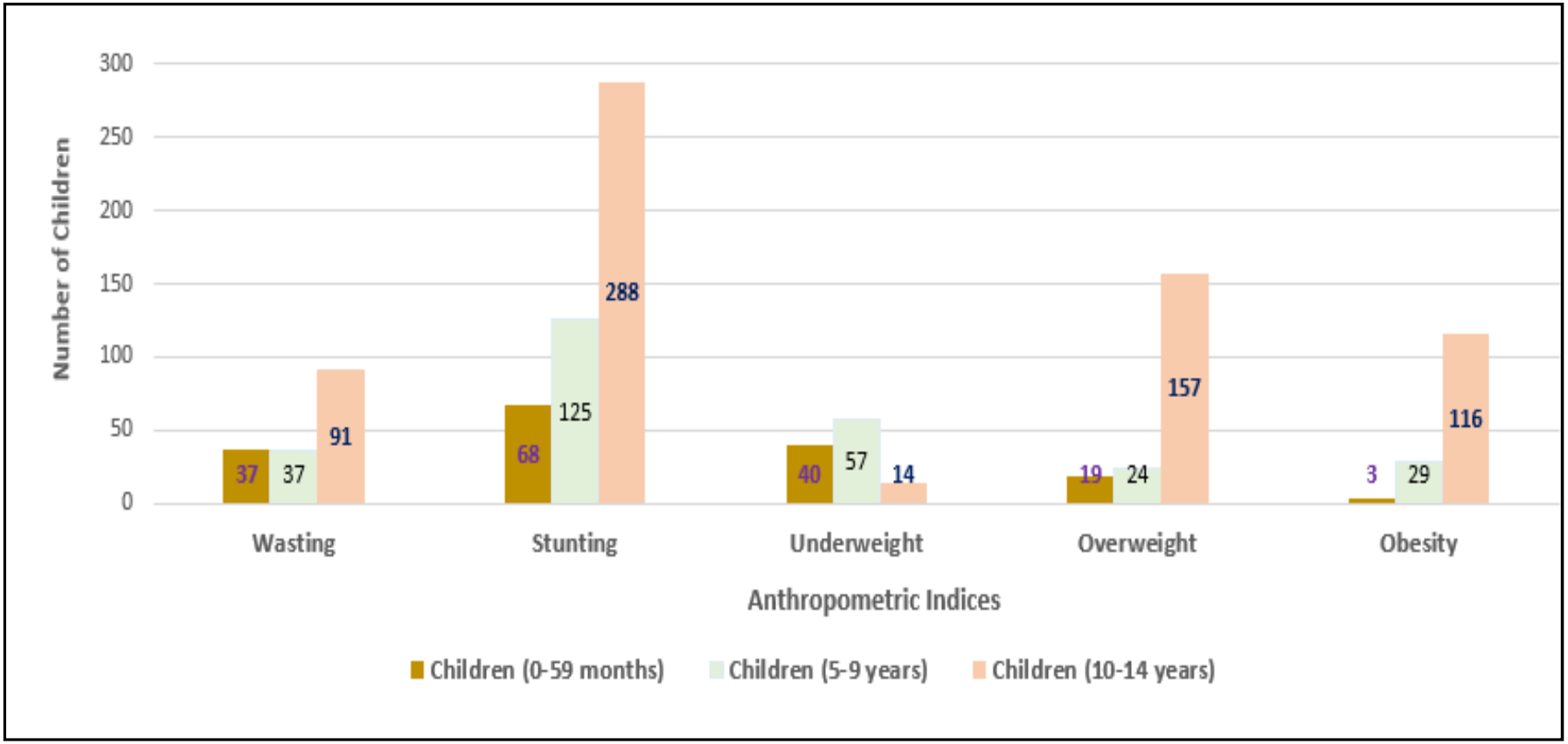


Figure 4: Nutritional Status among Children aged 0-14 Years by age Group for all Assessed Regions

3.5 Adults Living with HIV (15 years or Older)

Table 7 indicates the BMI status of PLHIV among adults 15 years or older by gender. Total records of adults (PLHIV) of 3771 males and 5971 females were analysed and BMI indicators were computed. BMI data for PLHIV for adults 15 years or above was disaggregated according to gender (Table 7). The Global Acute Malnutrition (GAM) rate for males 15 years or older was 9.8%. Similarly, the Global Acute Malnutrition (GAM) rate for females 15 years or older was 6.3%. There was a significant difference on wasting across the regions for males (p-value=<0.001) and females (p-value=<0.001).

Table 7: BMI Status by Gender among Adults 15 Years or Older

Region	Gender	Severe acute malnutrition	Moderate acute malnutrition	Normal BMI	Overweight	Obesity	Total
Erongo	Male	3 (0.1%)	34 (0.9%)	727 (19.3%)	311 (8.2%)	94 (2.5%)	1169 (31.0%)
	Female	4 (0.1%)	27 (0.5%)	505 (8.5%)	466 (7.8%)	420 (7.0%)	1422 (23.8%)
Hardap	Male	6 (0.2%)	73 (1.9%)	482 (12.8%)	90 (2.4%)	22 (0.6%)	673 (17.8%)
	Female	5 (0.1%)	62 (1.0%)	401 (6.7%)	231 (3.9%)	224 (3.8%)	923 (15.5%)
Kavango East	Male	8 (0.2%)	44 (1.2%)	233 (6.2%)	32 (0.8%)	17 (0.5%)	334 (8.9%)
	Female	2 (0.03%)	63 (1.1%)	369 (6.2%)	128 (2.1%)	61 (1.0%)	623 (10.4%)
Kavango West	Male	13 (0.3%)	50 (1.3%)	349 (9.3%)	93 (2.5%)	40 (1.1%)	545 (14.5%)
	Female	9 (0.2%)	69 (1.2%)	605 (10.1%)	321 (5.4%)	167 (2.8%)	1171 (19.6%)
Kunene	Male	2 (0.1%)	30 (0.8%)	117 (3.1%)	34 (0.9%)	6 (0.2%)	189 (5.0%)
	Female	2 (0.03%)	9 (0.2%)	154 (2.6%)	91 (1.5%)	49 (0.8%)	305 (5.1%)
Ohangwena	Male	0 (0%)	1 (0.03%)	9 (0.2%)	4 (0.1%)	15 (0.4%	29 (0.8%
	Female	0 (0%)	4 (0.1%)	31 (0.5%)	10 (0.2%)	20 (0.3%)	65 (1.1%)
Oshana	Male	7 (0.2%)	24 (0.6%)	84 (2.2%)	12 (0.3%)	13 (0.3%)	140 (3.7%)
	Female	14 (0.2%)	37 (0.6%)	119 (2.0%)	55 (0.9%)	28 (0.5%)	253 (4.2%)
Oshikoto	Male	3 (0.1%)	33 (0.9%)	373 (9.9%)	111 (2.9%)	49 (1.3%)	569 (15.1%)
	Female	12 (0.2%)	38 (0.6%)	503 (8.4%)	323 (5.4%)	200 (3.3%)	1076 (18.0%)
Zambezi	Male	7 (0.2%)	30 (0.8%)	53 (1.4%)	15 (0.4%)	18 (0.5%)	123 (3.3%)
	Female	3 (0.1%)	16 (0.3%)	57 (1.0%)	30 (0.5%)	27 (0.5%)	133 (2.2%)
Total	Male	49 (1.3%)	319 (8.5%)	2427 (64.4%)	702 (18.6%)	274 (7.3%)	[a] 3771 (100%)
	Female	51 (0.9%)	325 (5.4%)	2744 (46.0%)	1655 (27.7%)	1196 (20.0%)	[b] 5971 (100%)

[a, b] The denominators for percentages were 3771 and 5971 for males and females respectively. P-value (males) =<0.001, P-value (females) =<0.001 (Chi-square p-value of contingency)

The BMI status among male adults aged 15 or older in Figure 6 shows that Erongo region had the highest number of cases of overweight males, followed by Oshikoto region and Kavango west region. Similarly, in Figure 7, Erongo region had the highest number of cases of overweight females of 7.8%, followed by Kavango West and Oshikoto region. The number of cases of obesity was also highest in Erongo region for males.

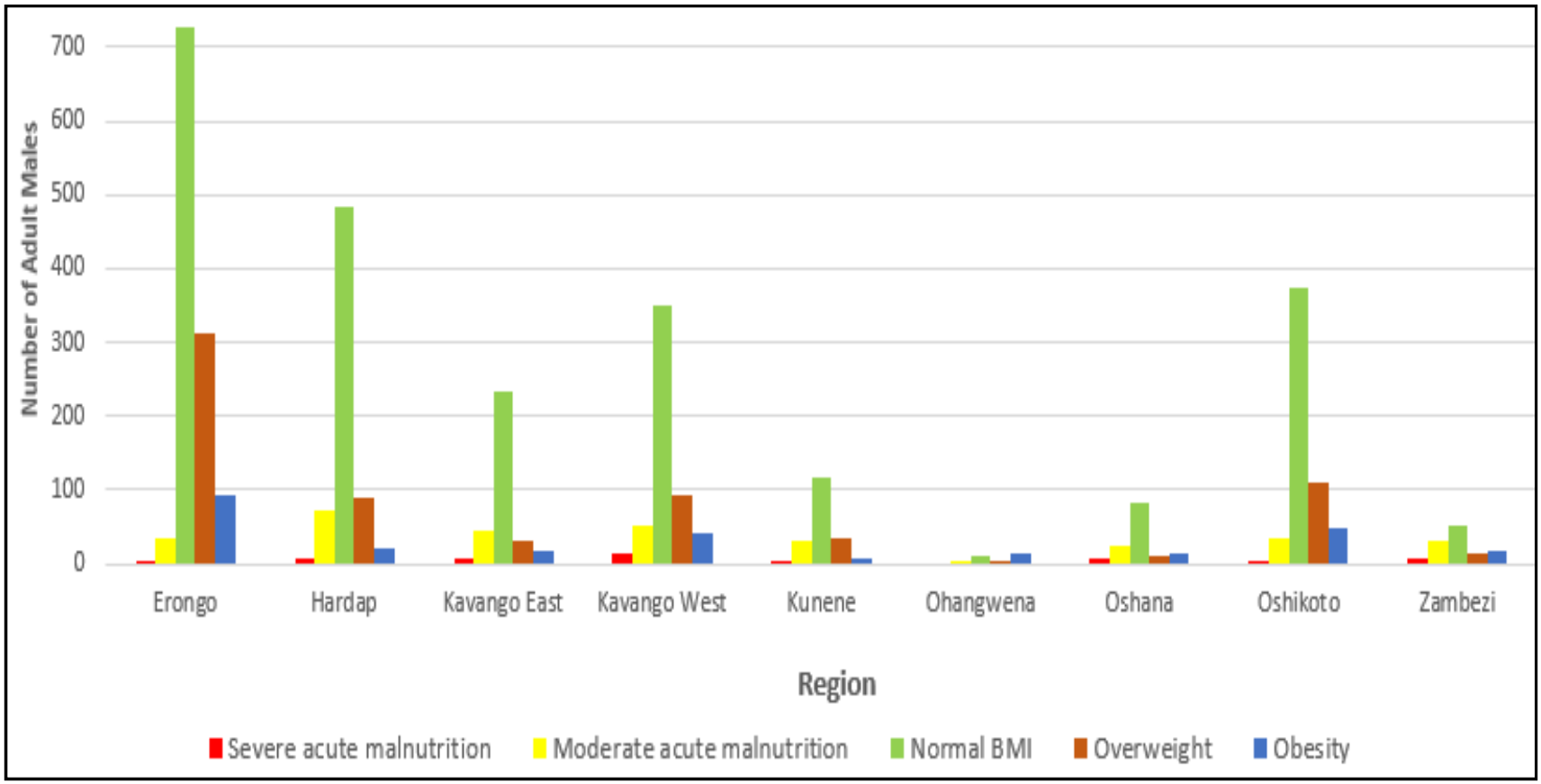


Figure 5: BMI Status among Male Adults Aged 15-Years or Older

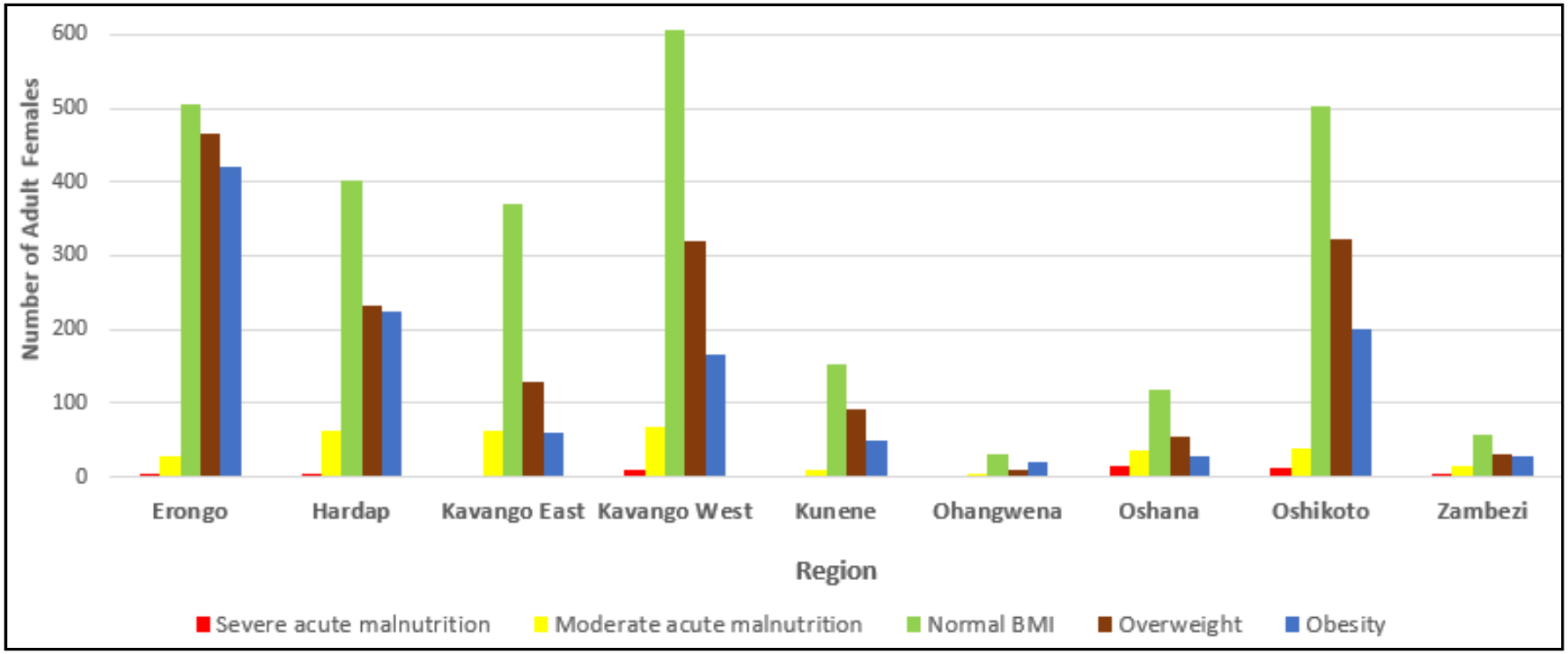


Figure 6: BMI Status among Female Adults Aged 15 years or Older

The BMI status among adults 15 years or above by gender for all assessed regions is shown in Table 8. Severe acute malnutrition and moderate acute malnutrition crude prevalence in both males and females are below 4%. On the other hand, the crude prevalence of overweight and obesity are higher in females compared to males at 17% and 12% respectively. However, GAM was 3.8% for males and 3.9 % for females. Figure 8 displays the regions BMI status by gender among adults aged 15 years or older.

Table 8: BMI Status among Adults 15 -Years or Above by Gender for all Assessed Regions

Gender	Severe acute malnutrition	Moderate acute malnutrition	Normal BMI	Overweight	Obesity	Total
Male adults	49 (0.50%)	319 (3.27%)	2427 (24.91%)	702 (7.21%)	274 (2.81%)	3771 (38.71%)
Female adults	51 (0.52%)	325 (3.34%)	2744 (28.17%)	1655 (16.99%)	1196 (12.28%)	5971 (61.29%)
Total	100 (1.02%)	664 (6.61%)	5171 (53.08%)	2357 (24.20%)	1470 (15.09%)	[c] 9742 (100%)

[c] The denominator for all percentages were 9742.

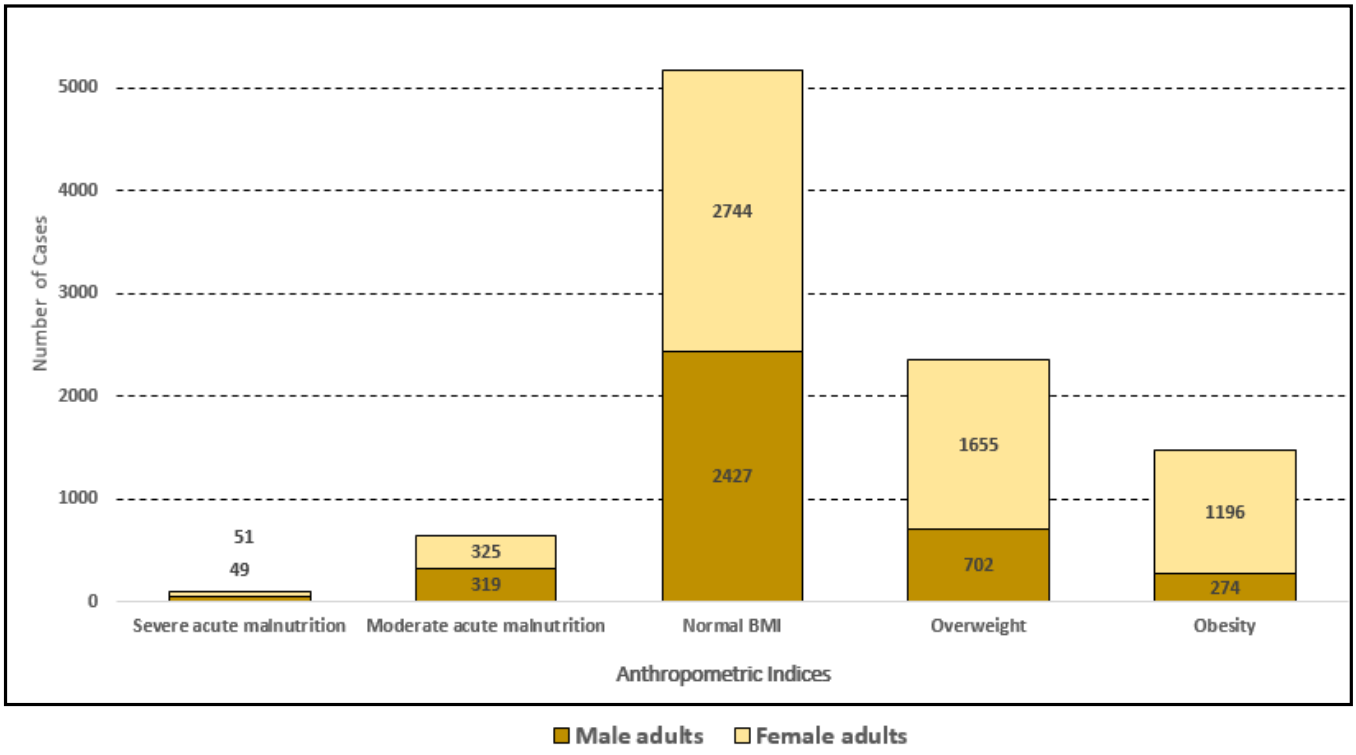


Figure 7 : BMI Status by Gender among Adults Aged 15 or Older for all Assessed Regions

3.6 ART Retention Rate and Loss to Follow Up (LTFU)

Table 9 indicates the ART retention rate and loss to follow up of PLHIV in 2016. The results show the retention data of patients who were receiving anti-retroviral therapy 12months after initiating treatment in 2016 for both children <15 years and males and females 15+ years. Children <15 years living with HIV had a retention rate of 79.2%, males 15+ years 83.7% and females 15+ years 84.7%.

The loss to follow up accounted for 6% of PLHIV who stopped treatment or missed scheduled visits to the health facility within three months after the last visit.

Table 9: ART Retention Rate of PLHIV and Loss to Follow-Up (LTFU)

	Children <15 years	Males 15+ years	Females 15+ years	Total
Number of PLHIV receiving anti-retroviral therapy 12 months after initiating treatment in 2016	583	5612	10204	16399
Total number of PLHIV on ART In 2016. Included are those we died since starting ART, those who stopped treatment and recorded as Loss to follow up at month 12	736	6702	12050	19488
Percentage of PLHIV known to be on anti-retroviral therapy 12months after starting	79.2%	83.7%	84.7%	84.1%
Loss to follow-up	-	-	-	987 (6%)

PART 2: GROWTH MONITORING DATA OF CHILDREN UNDER 5 YEARS

Anthropometric data on under-fives was collected from Growth monitoring records at health facilities for the period April 2016 to March 2017. Children under five years were classified as malnourished according to the weight-for-age anthropometric index of nutritional status.

3.7 Weight for Age (WFA)

Weight for age indicator of 61 284 children under five years was recorded (Table 10). The prevalence of severe underweight in females in the assessed regions ranged from 0.1% to 1.2% (Table10). Male children had a comparatively higher prevalence of severe under-weight children (1.7%) than female children.

Table 10: Underweight (Weight for Age) among Children under Five Years

Weight for age	Hardap	Erongo	Kavango West	Kunene	Ohangwena	Oshikoto	Oshana	Zambezi
F_mod_underW	143 (2.4%)	5 (0.1%)	338 (3.0%)	20 (1.2%)	6 (0.2%)	347 (5,4%)	274 (1.3%)	247 (3.1%)
F_normalW	2541 (42%)	712 (18%)	5539 (50%)	848 (50%)	428 (17%)	3048 (48%)	10041 (46%)	837 (11%)
F_Sev_UnderW	71 (1.2%)	3 (0.1%)	59 (0.1%)	2 (0.1%)	0	24 (0.4%)	18 (0.1%)	1 (0.0%)
M_mod_underW	119 (2.0%)	26 (0.7%)	251 (2.3%)	14 (0.47%)	146 (5.7%)	37 (0.6%)	255 (1.2%)	247 (3.1%)
M_normalW	3104 (52%)	3207 (81%)	4833 (44%)	804 (0.4%)	1934 (76%)	2903 (45%)	10901 (50%)	6564 (81%)
M_Sev_UnderW	47 (0.8%)	4 (0.1%)	80 (0.8%)	6 (0.4%)	43 (1.7%)	24 (0.4%)	182 (0.8%)	1 (0.0%)
TOTAL	6 025	3 957	11 100	1 694	2 557	6 383	21 671	7 897

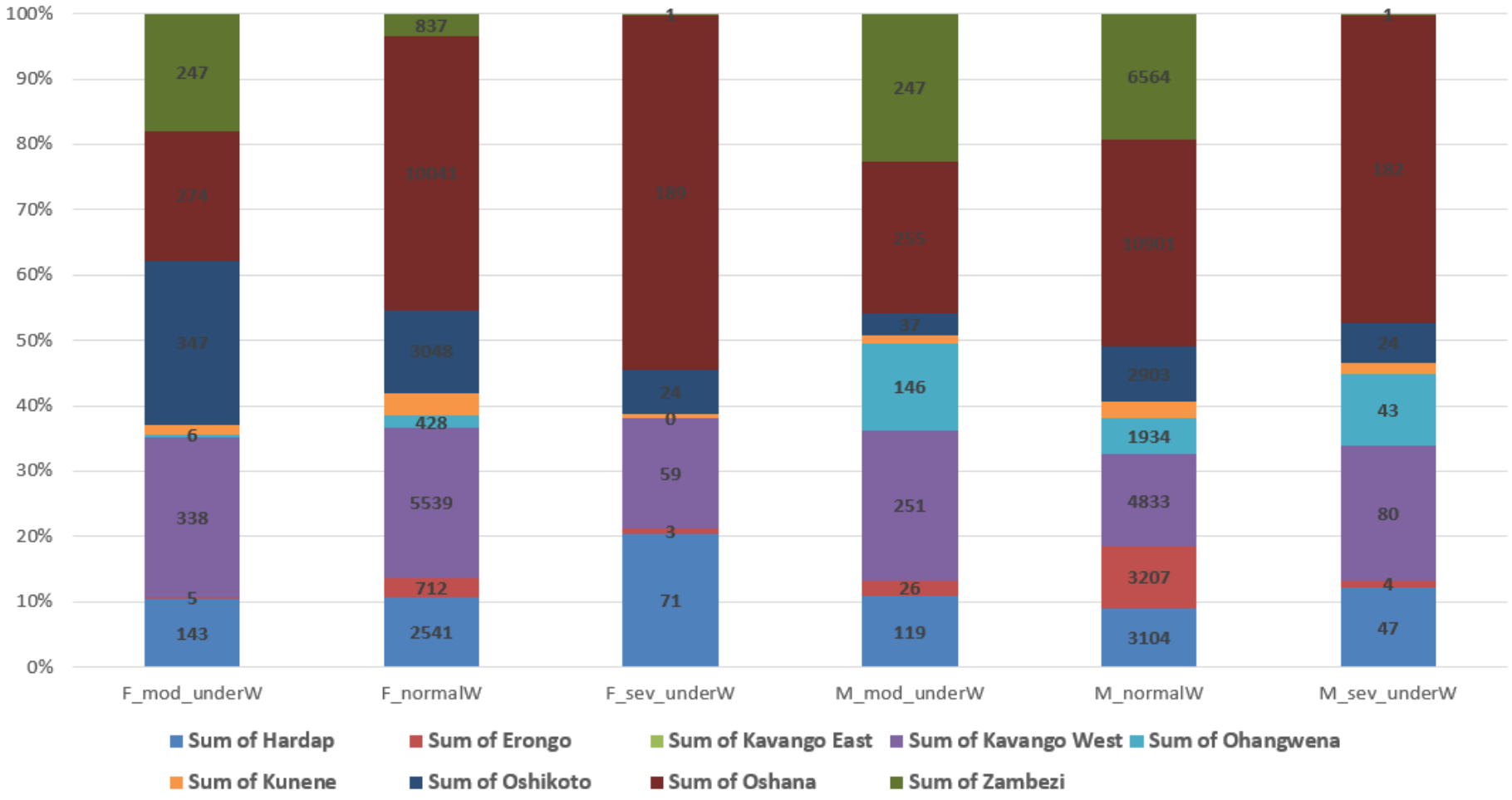


Figure 8: Regional Underweight Data for Children under 5 years

PART 3: FEEDING PRACTICES OF CHILDREN UNDER 2 YEARS

3.8 Infant and Young Child Feeding

Table 11 below shows Health Information System (HIS) data on Infant and young child feeding that was collected during the assessment period. Some health facilities in Zambezi and Ohangwena did not have IYCF data as they had not yet started collecting this type of data**.** Oshana region was doing better than the rest of the assessment regions on the IYCF practices**.** Oshana region had the highest number of mothers who practiced exclusive breastfeeding (8,386); whereas Kavango East (441) and Hardap region (588) had the lowest number of women during the assessment period. Erongo region had the highest number of children (357) on mixed-feeding and lowest number of children (69) introduced to complementary foods at six months

Table 11: Infant and Young Children Feeding Data

	Number of children exclusively breastfed	Number of children introduced to complementary foods at 6months	Number of children on continued breastfeeding with complementary foods	Number of children on mixed feeding
ERONGO	883	69	98	357
HARDAP	588	345	293	
KAVANGO WEST	1913	482	391	19
KAVANGO EAST	441	482	391	
KUNENE	1177	413	488	
OSHIKOTO	1324	413	1074	
OSHANA	8386	4617	7033	

PART 4: INPATIENT MANAGEMENT OF SEVERE ACUTE MALNUTRITION (SAM)

3.9 Hospital Admissions of Children with Severe Acute Malnutrition

Table 12 below shows hospital admission cases of children with severe acute malnutrition. Most children admitted with malnutrition were in the 0-59 month's age group. The total number of children admitted with malnutrition during the assessment period for all regions in the 0-59 months age group was 2257 and those discharged from hospitals in the same age group was 1688. Kavango West region had the highest number of children admitted with malnutrition (593). This was followed by Oshikoto region with 392 children, Ohangwena region with 278 children and Erongo region with 202 children. Kavango West region had the highest recorded deaths of 152 children followed by Ohangwena region with 78 deaths and Oshikoto region with 70 deaths. Four hundred and ten children in the 0-59months age group died during the drought period.

Figure 10 illustrates hospital admissions, discharges and deaths due to malnutrition in children aged 0-9 years during the assessment period

Table 12: Malnutrition Admission Cases in Children Aged 0-12 Years

REGION	AGE	ADMITTED	DISCHARGED	DIED
ERONGO	0-59M	202	72	16
	5-9Y	72	0	0
	10-12Y	16	0	0
HARDAP	0-59M	179	176	23
	5-9Y	0	0	0
	10-12Y	0	0	0
KAVANGO EAST	0-59M	139	129	7
	5-9Y	0	0	0
	10-12Y	0	0	0
KAVANGO WEST	0-59M	593	362	152
	5-9Y	10	7	2
	10-12Y	0	0	0
KUNENE	0-59M	179	122	5
	5-9Y	0	0	0
	10-12Y	0	0	0
OHANGWENA	0-59M	278	238	78
	5-9Y	19	7	4
	10-12Y	2	2	0
OSHANA	0-59M	185	150	35
	5-9Y	5	4	0
	10-12Y	0	0	0
OSHIKOTO	0-59M	392	355	70
	5-9Y	2	3	2
	10-12Y	0	0	0
ZAMBEZI	0-59M	110	84	24
	5-9Y	3	2	1
	10-12Y	3	1	1
ALL REGIONS	**0-59M**	**2257**	**1688**	**410**
	5-9Y	**111**	**23**	**9**
	10-12Y	**21**	**3**	**1**

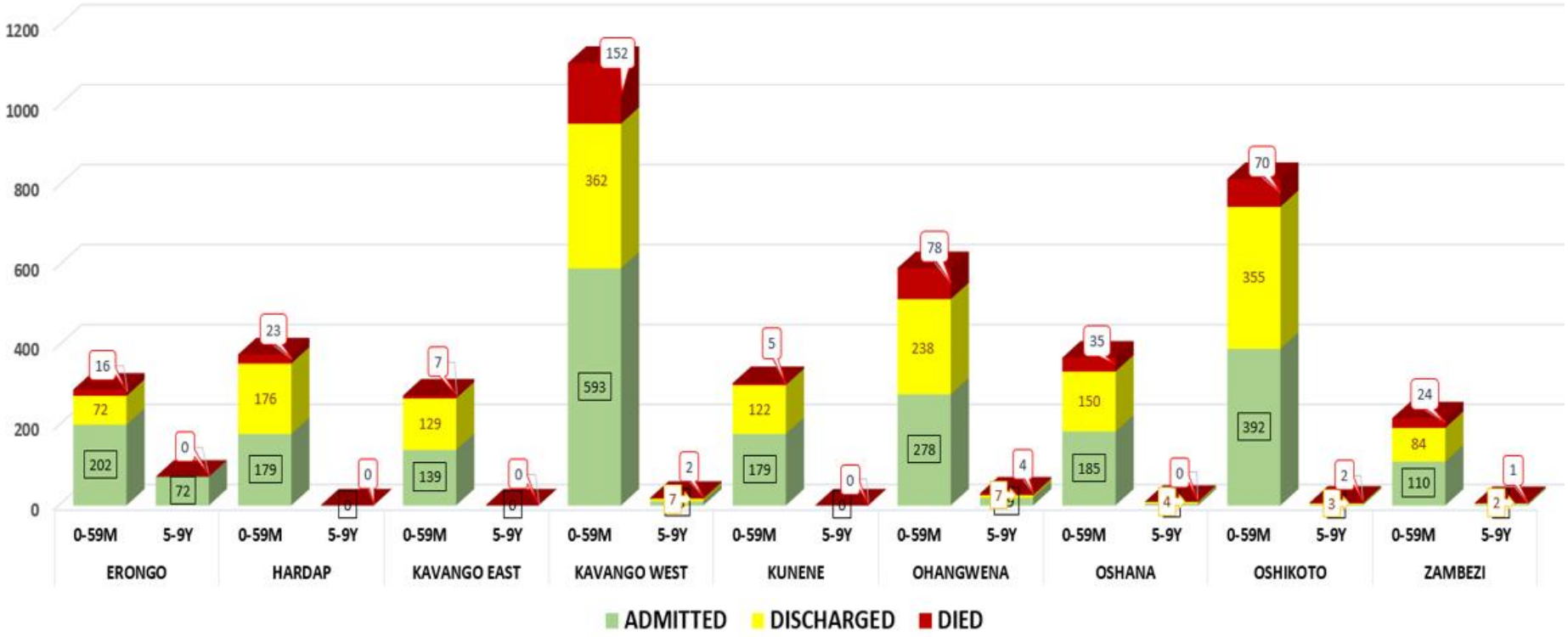


Figure 9: Hospital Admissions of Malnutrition Cases in Children Aged 0-9 years

PART 5: NUTRITION INTERVENTION

3.10 Nutrition Assessment Counselling and Support (NACS)

Table 13 is NACS data for children under 5 years with Moderate Acute Malnutrition, Severe Acute Malnutrition, defaulters and cured for all nine regions. The highest number of total assessed was 14, 239 from Oshana region while Kavango East region had no records on the number assessed and Erongo region only recorded 32 children. Kavango East and Oshikoto had a higher number of female children with MAM. Ohangwena region had the highest prevalence of female children with SAM. Regions with high number of male children with MAM were Kavango East and Oshikoto. Ohangwena region had the highest number of male children with SAM followed by Oshikoto. Oshana recorded the highest number of children who defaulted from the NACS programme. In addition, all regions recorded very few children that were cured on the programme.

Figure 11 below illustrates the distribution of NACS numbers on each assessed criterion. Ohangwena region (in green colour) had the highest number of children with SAM compared to the rest of the regions.

Table 13: NACS Data on MAM, SAM and Defaulters for Children under 5 years by Gender

	Hardap	Erongo	Kavango East	Kavango West	Kunene	Ohangwena	Oshikoto	Oshana	Zambezi
Total assessed	3469	32		4346	3395	1167	2500	14239	6825
Female_MAM	22 (13%)	12 (19%)	6 (22%)	50 (19%)	28 (18%)	50 (15%)	24 (36%)	0	1 (25%)
Female_SAM	18 (11%)	5 (8%)	3 (11%)	35 (13%)	16 (10%)	100 (30%)	10 (15%)	5 (17%)	0
Male_MAM	28 (17%)	10 (16%)	11 (41%)	29 (11%)	23 (15%)	29 (9%)	17 (25%)	4 (14%)	3 (75%)
Male_SAM	23 (14%)	7 (11%)	1 (4%)	25 (9%)	24 (15%)	112 (34%)	16 (24%)	2 (7%)	0
Defaulters	71 (44%)	18 (29%)	4 (15%)	114 (43%)	57 (36%)	28 (8%)	0	14 (48%)	0
Cured	1 (1%)	11 (17%)	2 (7%)	13(5%)	10 (6%)	11 (3%)	0	4 (14%)	0
TOTAL	163	63	27	266	158	330	67	29	4

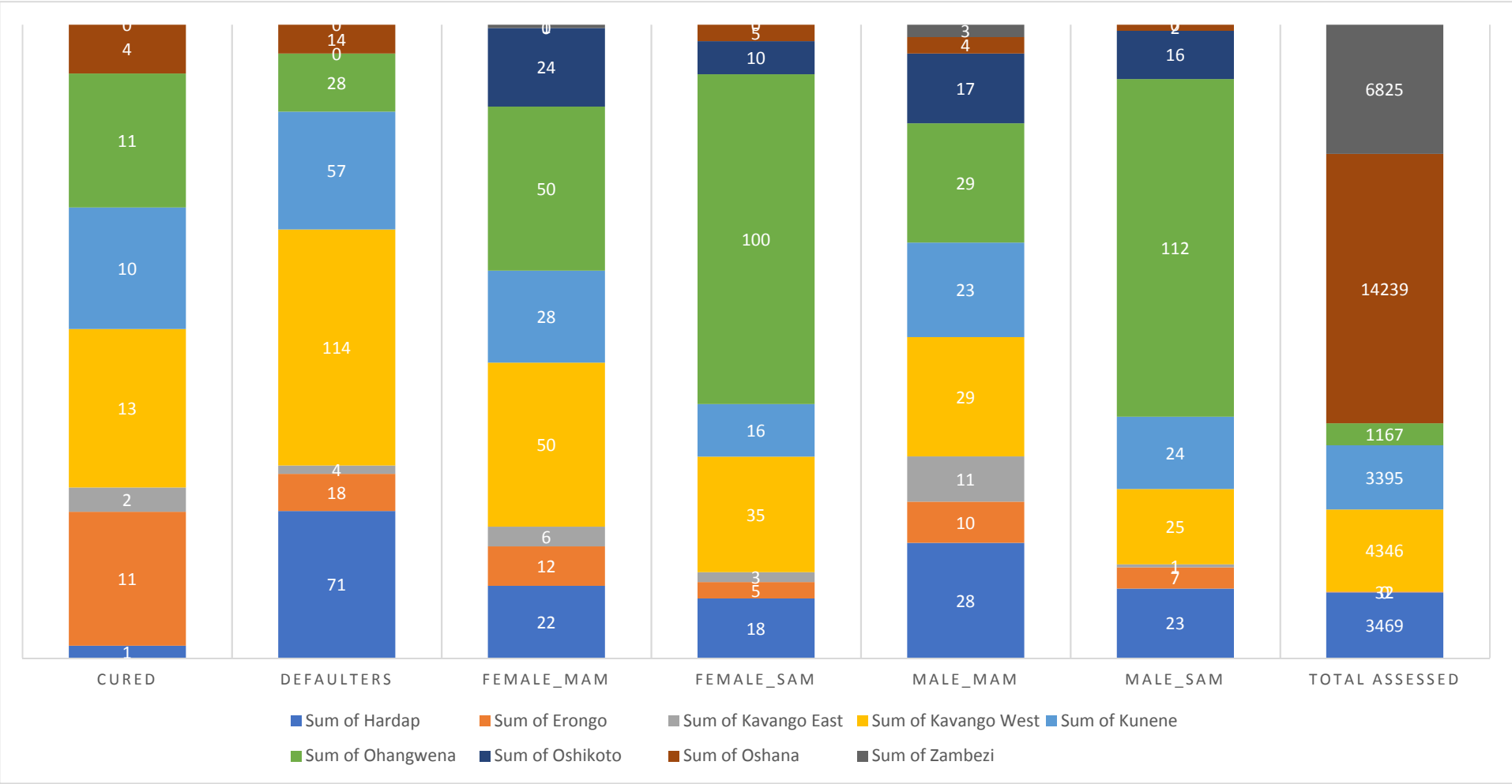


Figure 10: Region NACS Data on MAM, SAM, Defaulters and Cured under 5 Children

3.11 Supporting Documents/Materials for Treatment of Malnutrition

Supporting documents and materials are required to effectively implement the treatment of malnutrition at health facilities. During the assessment, all selected clinics/ health centres and hospitals were assessed for availability of supporting documents and materials. Supporting documents included guidelines, registers, algorithms for the management of malnutrition, nutrition assessment tables, charts and various NACS reporting forms. NACS materials included weighing scales and availability of therapeutic foods necessary for the treatment of malnutrition.

3.11.1 NACS Documents

Table 14 shows availability of NACS supporting documents at clinic/health centres. Health Facilities had most of the supporting documents that were necessary for the NACS programme. The NACS PLHIV operational guidelines were not available at most health facilities. Child health passports were also not available at some health facilities.

Table 14: Clinic/Health Centre NACS Documents

NACS documents	Clinic/health centre n=32
Nutrition assessment counselling and support for PLHIV: Operational Guidelines	15
1-page algorithm for management of malnutrition in Pregnant and Post-partum women	28
1-page algorithm for management of malnutrition in children	32
1-page algorithm for management of malnutrition in adults	32
Flipchart algorithm for management of malnutrition in children	29
Flipchart algorithm for management of malnutrition in adults	28
BMI chart	32
Weight-for-height z-score table	32
MUAC cut offs for children and adults	32
BMI –for-age tables	32
NACS Register	32
NACS Monthly Report Form	32
Monthly Consumption Report Form	32
Requisition Form (MOHSS)	21
Stock cards	20
Child health passports	24

n=number of clinics/health centres

3.11.2 Hospital Documents

Table 15 shows availability of NACS supporting documents at hospitals. Most hospitals had most of the supporting documents for the inpatient management of severe acute malnutrition. Some hospitals lacked RUTF stock cards. Four hospitals had no fridges in the paediatric wards for storing therapeutic feeds F75 and F100. Thirty-eight health workers were trained in inpatient management of severe acute malnutrition.

Table 15: Hospital NACS documents

Documents	Hospital [n= 16]
Inpatient management of severe acute malnutrition register	15
ReSoMal recipe	16
F75 recipe	15
F100 recipe	16
F75 reference cards	16
F100 reference cards	16
Treatment protocol 10 steps	12
Emergency treatment protocol for SAM	12
Weight for height (Z Score) reference cards	16
CMV stock cards	8
RUTF stock cards	8
Fridge	12
Staff trained in inpatient management of SAM	38

n=number of hospitals

3.11.3 Equipment

At all visited health facilities, equipment such as height/length boards, mid-upper arm circumference (MUAC) tapes, ARV/HIV test kits and adult/child weighing scales were assessed using a checklist for availability and functionality.

Adult weighing scales (beam balance): At twenty-three clinic/ health centres visited, each of them had at least had one adult scale. Nine clinics/health centres did not have any adult scales. Additionally, seven adult scales were not functioning at the clinics/health centres visited.

Baby weighing scales (beam balance): At twenty-five clinics/health centres visited each of them at least had one baby weighing scale. Seven clinics/health centres did not have a baby weighing scale. Fifteen baby -weighing scales were not working in the clinics/health centres visited.

Salter scales: In nineteen clinics/health centre**s** visited, each of them at least had one salter scale. Eleven health facilities did not have slater scales. Five salter scales were not functioning in the health facilities visited.

Mother Baby Scale (2 in 1): In twenty-seven clinics/health centres visited, each of them at least had one baby mother scale. Twenty-seven baby mother scales were not functioning in the health facilities visited. Six health facilities visited did not have baby mother scales.

Child length/height board: In twenty-one clinics/health centres visited, each of them at least had one length/height board. Seven child length/height boards were not functioning. Ten health facilities visited did not have child length/height boards.

Adult height board: In thirty-two clinics/health centres visited, each at least had one adult height board. Adult height boards were all functioning in 100 % of the health facilities visited. Five adult height boards were not functioning in the health facilities visited.

MUAC tapes: Children and adult MUAC tapes were available in all regions.

The distribution of scales in the 9 regions is shown in figure 12.

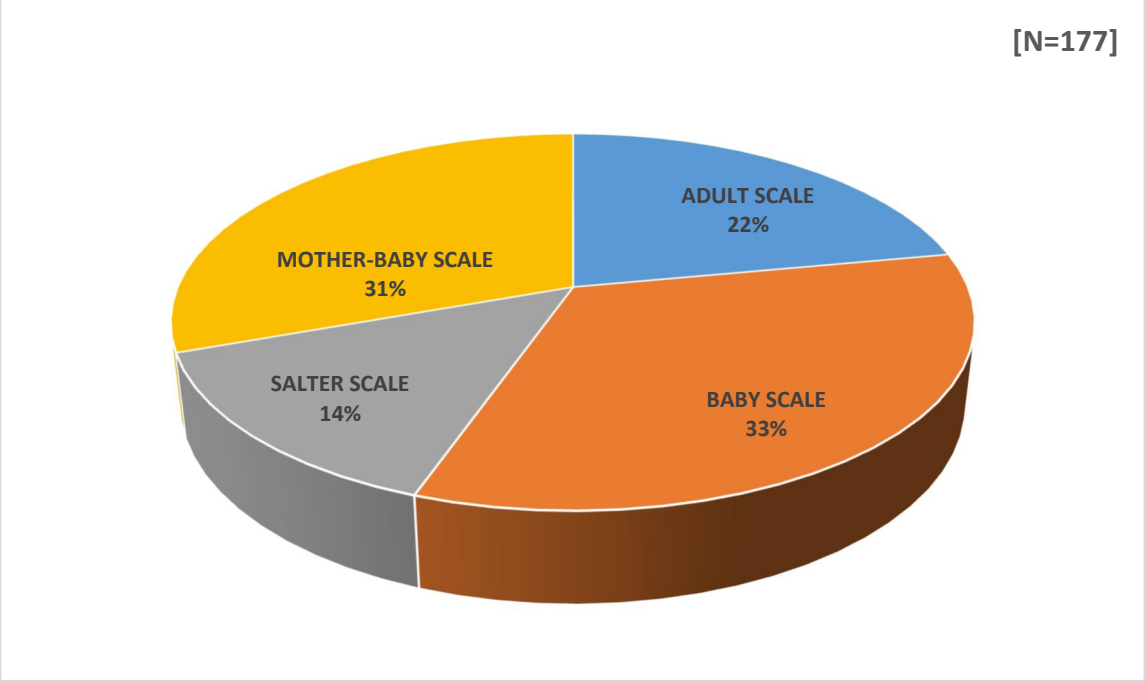


Figure 11: Distribution of Scales in Assessed Regions

Figure 13 below shows distribution of non-functional and functional scales by type in the assessed regions.

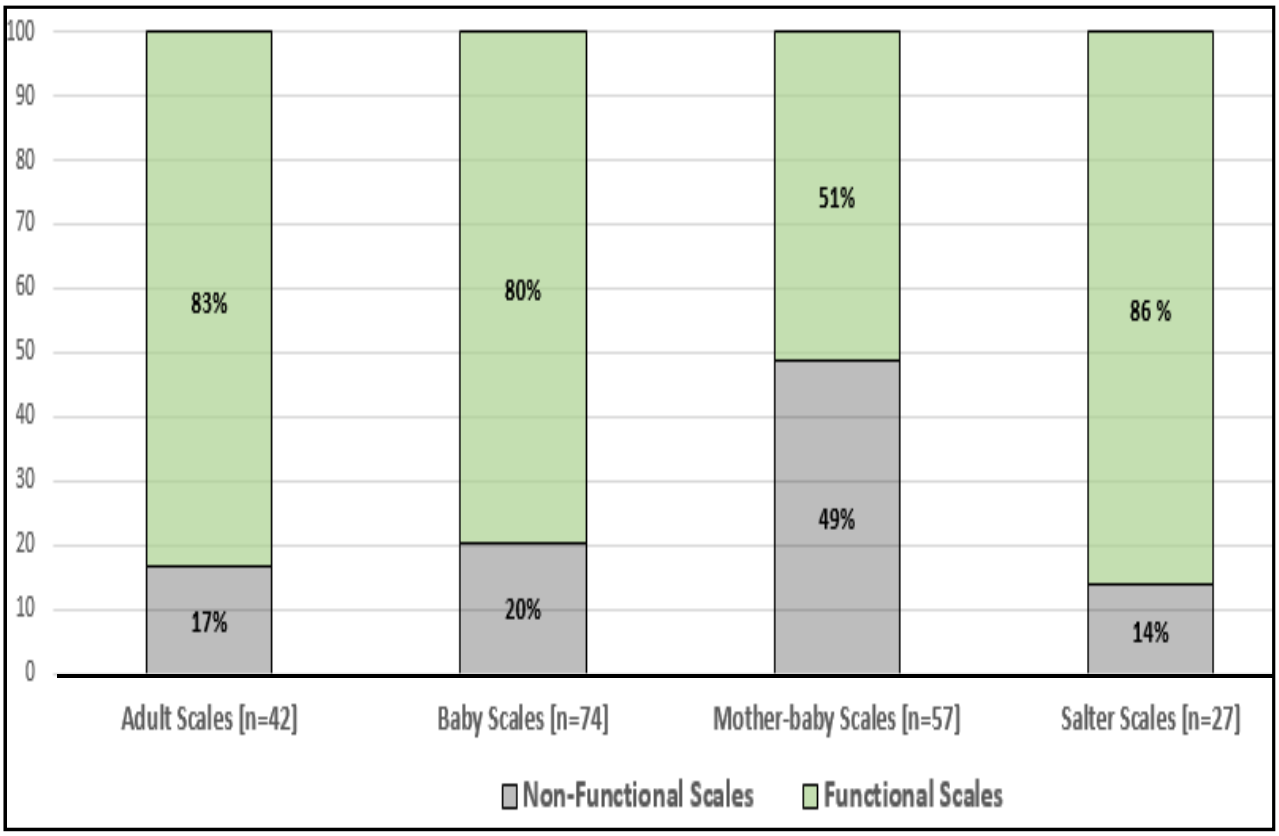


Figure 12: Functioning and Non-Functioning Scales by Type

The availability of children's and adults MUAC tapes per region are shown in table 16.

Table 16: Availability of Children and Adults MUAC Tapes in the Regions

Region	Number of Children MUAC Tapes	Number of Adult MUAC Tapes
Erongo	11	9
Hardap	40	37
Kavango East	11	9
Kavango West	21	9
Kunene	9	9
Ohangwena	11	11
Oshana	17	15
Oshikoto	31	20
Zambezi	3	13

3.11.4 RUTF, RUSF and ARV/HIV Test Kits

Table 17 shows RUTF and RUSF stock at clinics/health centres. Eight health facilities reported that they had RUTF stock–outs during the assessment visit and seven health facilities reported stock-outs of RUSF. There were no expired RUTF and RUSF commodities.

Most of the health facilities had ARV/HIV test kits and 24 clinics (75%) reported that the kits were functioning.

Table 17: RUTF, RUSF and ARV/HIV Test Kits at Clinics/Health Centre

RUTF Stock	**Clinic/health facility n=32**
Expired RUTF cartons	0
Damaged RUTF cartons	0
Stock-outs RUTF cartons	8 (25%)
RUSF Stock	
Expired RUSF cartons	0
Damaged RUSF cartons	0
Stock-outs RUSF cartons	7 (21.8%)
ARV/HIV Test kits	
Availability of ARV/HIV Kits	30(93.8%)
ARV/HIV Kits functioning	24(75%)

Table 18 shows (RUTF) and combined vitamins and mineral (CMV) mix at hospitals. There was no expired RUTF and CMV at the hospitals assessed. Hospitals reported stock-outs of RUTF (93.7%) during the assessment review period from April 2016 to March 2017.

Table 18: RUTF and CMV at Hospitals

RUTF Stock	**Hospitals n=16**
Expired RUTF cartons	0
stock-outs RUTF cartons[x]	15 (93.7%)
RUTF in stock	9(56.3%)
CMV Stock	
Expired CMV	0
CMV stock-outs	0
CMV in stock	16(100%)

PART 6: MATERNAL NUTRITION

3.12 Nutritional status of Pregnant Women

Table 19 shows the total number of pregnant women with severe acute malnutrition and moderate acute malnutrition in the regions. The total number of pregnant women assessed as per ANC registers in all regions were 8866. The total number of women with severe acute malnutrition were 58 and moderate acute malnutrition were 963. Table 20 indicates the crude prevalence across the nine regions for severe acute malnutrition (1%) and moderate acute malnutrition (11%). Kunene and Oshikoto region had the highest number of women with severe acute malnutrition (23 and 14) and Zambezi region had the highest number of moderate acute malnutrition (210).

Table 19: SAM-MAM in Pregnant Women by Region

	ERO	HAR	KAV_E	KAV_W	KUN	OHA	OSH	OSHA	ZAM	Total
TOTAL ASSESSED	225	1389	360	1441	1120	990	850	1692	799	8866
SAM	2	10	1	4	23	2	14	2	0	58
MAM	15	165	1	113	110	55	116	178	210	963

Table 20 : Prevalence of SAM - MAM in Pregnant Women

Region	Severe acute malnutrition	Moderate acute malnutrition
Erongo	2(1%)	15 (7%)
Hardap	10 (1%)	165 (12%)
Kavango East	1 (0%)	1 (0%)
Kavango West	4 (0%)	113 (8%)
Kunene	23 (2%)	110 (10%)
Ohangwena	2 (0%)	55 (6%)
Oshana	2 (0.1%)	178 (11%)
Oshikoto	14 (2%)	116 (14%)
Zambezi	0 (0%)	210 (26%)
Total	58 (1%)	963 (11%)

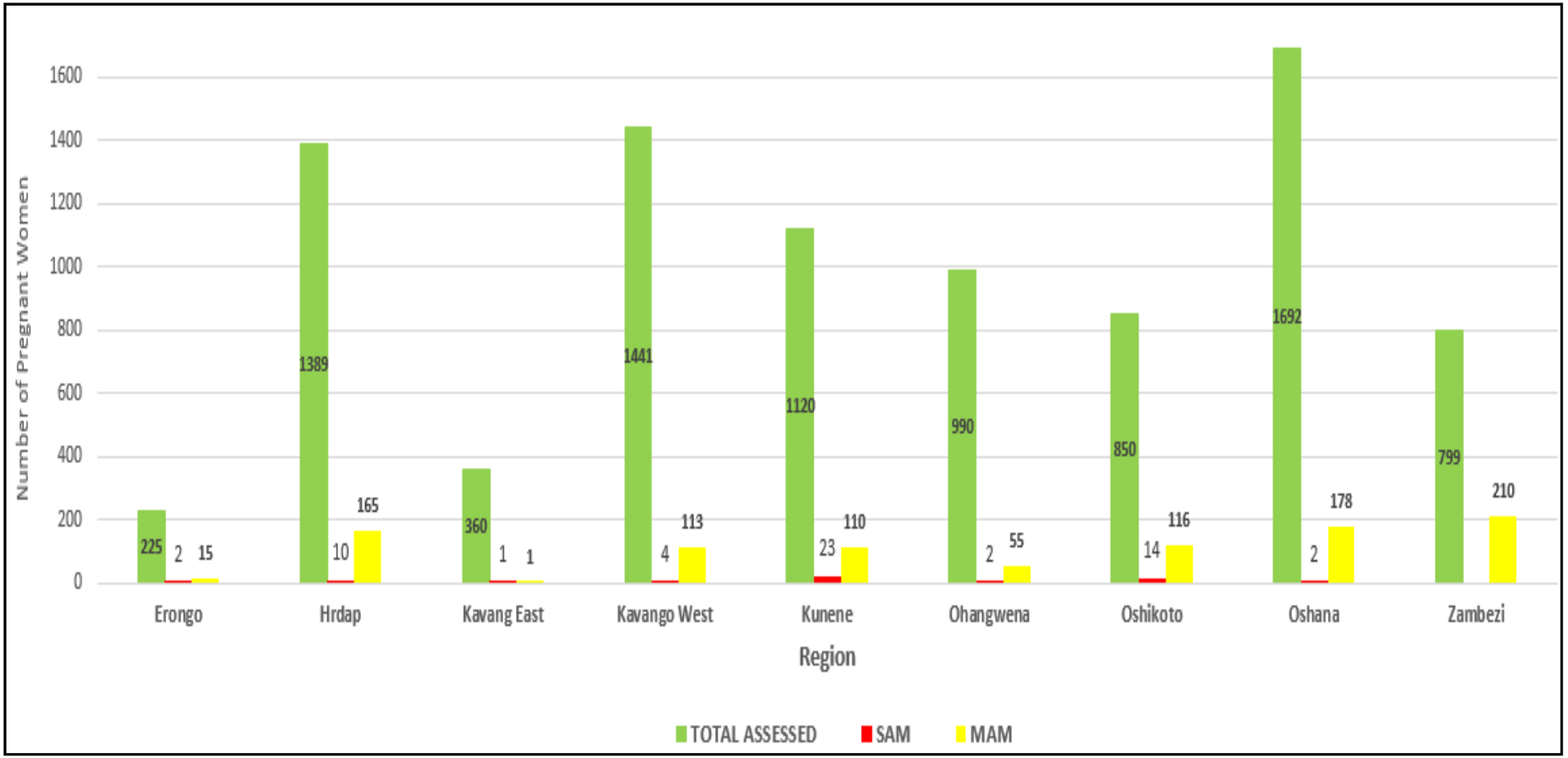


Figure 13: Severe Acute Malnutrition and Moderate Acute Malnutrition Cases in Pregnant Women

Figure 14 above present's occurrence of severe acute malnutrition and moderate acute malnutrition in the nine assessed regions. The majority of the pregnant women had normal nutritional status.

3.13 Prevalence of anaemia in Pregnant Women

Table 21 shows number of pregnant women with mild, moderate and severe anaemia in the nine regions. The total number of pregnant women assessed was 9062. The total number of women with mild anaemia was 1390, moderate anaemia 655 and severe anaemia 65.

Table 21: Regional Anaemia Status in Pregnant Women

Region	Total Assessed	Mild Anaemia	Moderate Anaemia	Severe Anaemia
Erongo	1027	148	82	1
Hardap	1275	168	66	7
Kavango East	394	74	59	28
Kavango West	1389	262	166	12
Kunene	863	79	17	2
Ohangwena	829	156	29	0
Oshana	1684	261	92	5
Oshikoto	794	74	57	4
Zambezi	807	168	87	6
Total	9062	1390	655	65

Table 22 is showing the prevalence of anaemia in the regions. Prevalence of mild anaemia was highest in Zambezi region (20.8%) followed by Kavango West region (18.9%), Kavango East region (18.8%) and Ohangwena region (18. 8%). Prevalence of Moderate and severe anaemia was high in Kavango East region at 14.9% and 7.1% respectively

Table 22: Percentage Anaemia Prevalence in Pregnant Women by Region

Region	Without Anaemia (%)	Mild Anaemia (%)	Moderate Anaemia (%)	Severe Anaemia (%)	TOTAL
Erongo	77.51	14.41	7.98	0.10	100
Hardap	81.10	13.18	5.18	0.55	100
Kavango East	59.14	18.78	14.97	7.11	100
Kavango West	68.32	18.86	11.95	0.86	100
Kunene	88.64	9.15	1.97	0.23	100
Ohangwena	77.68	18.82	3.50	0.00	100
Oshana	78.74	15.50	5.46	0.30	100
Oshikoto	83.00	9.32	7.18	0.50	100
Zambezi	67.66	20.82	10.78	0.74	100

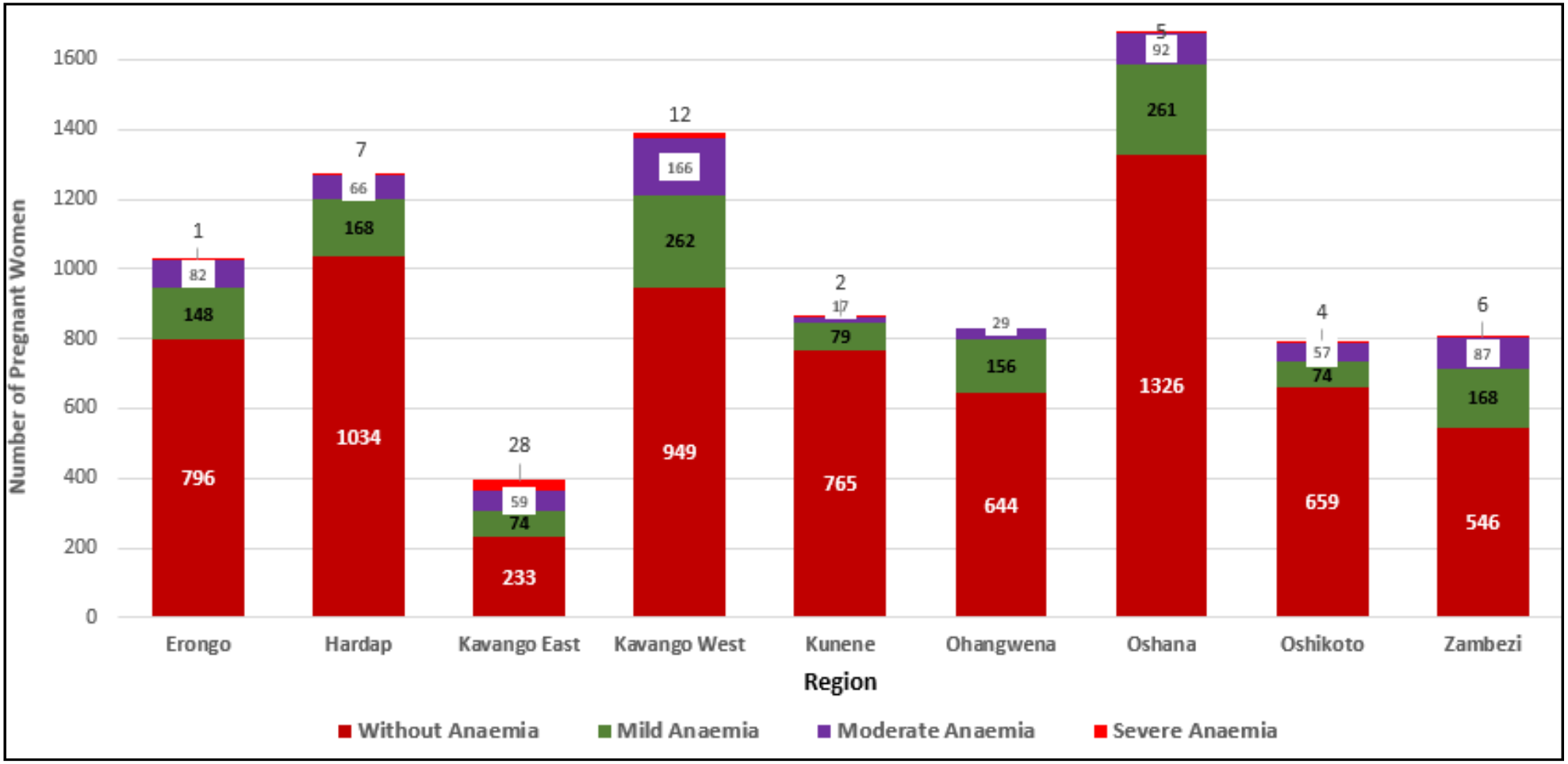


Figure 145: Anaemia Status in Pregnant Women

Figure 15 above shows the total number of women with the different grades of anaemia in the different regions.

PART 7: FINDINGS OF THE FOCUS GROUP DISCUSSIONS (FGDS)

3.14 Adults and Adolescents Living With HIV

Focus group discussions (FGDs) were conducted in all 9-drought affected regions with adults living with HIV, adolescents living with HIV and Caregivers of OVC. The discussions focused on six major themes, namely: Lack of food, water and sanitation, coping strategies, health care, HIV vulnerability and risky behaviours and drought mitigation measures. These themes are also the main highlights of the findings.

3.14.1. Adults Living With HIV

Major themes that were recurrent in the focus group discussions with adults living with HIV were lack of food, followed by non-compliance to ARV medication. Water, hygiene and livestock, provision of government and non-governmental organizations (NGOs) drought relief food ranked third. Risk behaviour such as prostitution was reported by 12% of the respondents. Availability of ARV Medication was also reported at 12%. They are further discussed in the sections below.

3.14.1.1 Lack of Food

Adults living with HIV indicated that they were often without food as was mentioned in these quotes below:

"We were hungry we didn't have enough rain, we planted but rain disappeared"

"drought life was not easy, used to sell reeds to sell and buy maize meal for the children".

"Food was less and PLHIV were struggling". "Household members sleep on empty stomach, the little they have they give to children"

Breastfeeding mothers reported that due to lack of food they produced less breastmilk. Likewise, pregnant women stated that they did not get enough food and feared that this compromised the health of their unborn babies, and further indicated that they had no access to green vegetables as reflected in the following quotes:

"No enough food for pregnant women to feed her unborn baby", "Pregnant women had no healthy meals e.g. green veggies due to drought".

"*Not enough breast-milk for babies causing babies to become malnourished"*

Before the drought they claimed that they ate a variety of foods and had 2-3 meals per day (meal frequency)," but during the drought, they could only have one meal and sometimes went to bed hungry.

Before the drought, each person ate from his or her own plate but with the drought, children all ate from one plate and adults ate from one plate. PLHIV were quoted as saying:

"The whole family ate on one plate, if there is a family member who is not around that time nothing is kept for them", "The whole family ate on one plate",

"There are people who really go hungry since no food at all".

"They depend on drought relief food if not given they go without food, Yes, household members sleep on empty stomach, the little they have they give to children"

3.14.2 Water, Sanitation and Hygiene

3.14.2.1 Water

It was reported that during the drought period water for daily needs was in short supply such that most times, there was no running water from the taps and the water was often dirty posing a risk and exposure to water borne diseases. Wells and boreholes dried up and water had to be rationed. Lack of water brought immeasurable suffering, as at times it was difficult to even access drinking water and water had to be bought. Most families could not afford buying water. Further difficulties arose due to long distances that had to be walked to fetch water from rivers. Families and livestock were getting water from the same water source. In some situations, families had to bear the financial burden of having to buy diesel to pump water. Families mentioned loss of their livestock during the drought due to lack of water and pasture.

The following quotes on water , sanitation and hygiene were drawn from the focus group discussions with PLHIV*: "Water is not available at all getting it is scarce*", *"If there is no water it means no water for handwashing, washing clothes or bathing* ", "*the only problem is that you need money to pay for the water (pre-paid)", "*we get water from the river and the river is far away".

3.14.2.2 Sanitation

Many households reported sanitation as a major problem. Households, in particular, in rural communities did not have toilets nor materials to construct toilets, thus they resorted to using the bush to defecate. This practice is unsanitary to the community and the environment they are living in and exposes communities to infections and diseases.

3.14.2.3 Hygiene

The drought conditions resulted in dried up water sources, causing an acute shortage of water that resulted in adverse hygienic conditions. Communities pointed to the discomfort of not taking regular baths and having to use water that was recycled for various tasks. Children were bathed in the same water that was then used for washing clothes. Laundry, was not done on a regular basis. Washing of hands was also not regularly done due to water shortages from the drought.

3.14.3 Coping Strategies

Common coping strategies adopted by households during the drought period were reduction in food consumption, some obtained Government/NGOs assistance such as drought relief food others begged from neighbours and some sent their children to visit relatives or friends during meal times where they could possibly be guaranteed a meal.

3.14.4 Health Care

Respondents stated that ARVs at health facilities were mainly in stock during the drought although in rare situations they sometimes were out of stock. Adults living with HIV stated that health care was easier for them because they got their ART routinely from clinics/health centres whereas for children they had to be taken to the hospital for their ARVs. This was a cost to the families in terms of transport costs. Additionally, the lack of food made it difficult to take ARV medication and therefore adherence was compromised as some respondents lamented, "Taking *the medication on an empty stomach is difficult because the medicine makes you weak and dizzy"*

"I missed my day to collect ARV medication because I was working to raise a bit of money for food".

It was also reported that RUTF and RUSF were out of stock at most facilities during the drought period.

3.14.5 HIV Vulnerability and Risky Behaviours

Respondents stated that during the drought due to lack of food, young girls resorted to prostitution in exchange for money whereas young boys resorted to stealing. There were family conflicts triggered by the lack of money and availability of food. There were conflicts and arguments between couples especially if the wife felt the husband was not trying hard enough to look for work or money to support the family.

3.15 Adolescents Living with HIV

They were five major themes and nine sub-themes that emerged from the effects of the drought on ALHIV. The major themes centred on major needs (83%), lack of food (73%), types of food consumed (67%), water for animals (54%), non-compliance to ARVs (52%) The sub-themes were on availability of food at home (67%), shared ARV medicine with friends, long distance to walk to health facilities (65%), Water (Long distances to fetch water, water was rationed, couldn't afford to buy water) (35%), availability of rice and beans in other regions (23%), availability of Mahangu (mostly in Oshikoto) (22%), Sanitation compromised due to lack of water (19%), availability of canned fish (14%) and lack of money for basic daily needs (13%).

3.1.5.1 Major Needs

ALHIV mentioned that their major needs or requirements during the drought were food, financial needs, water and sanitation. They mentioned that when there was no food they didn't go to school as some echoed during the focus group discussions*," When there was no food, some of us used to be absent from school", "we stopped going to school because there was no water and food at home". "There was no food in the afternoon/night and we went to bed on an empty stomach".*

ALHIV, also mentioned they needed money to buy food and other needs such as water and school uniforms which they could not afford during the drought period, "*Yes, some of our families had to pay for water. If our families paid N$ 200, then there was no money to buy food"*, "*some people begged for water and some had no money to buy water".*

Poor sanitation was cited as a problem in reference to lack of toilet facilities and water. *"It was difficult because water was not enough and if you wash yourself you had to wash your clothes using the same water". "We reduced washing of hands and we re-use water"*

3.1.5.2 Lack of food

Lack of food was cited as a major problem among all the ALHIV. They stated how difficult it was for them to take their ARVs on an empty stomach .*" But if you drink without eating you get abdominal pain". "It was difficult to get to the clinic for check up on an empty stomach because ARVs make you sick when you didn't eat any thing".*

3.1.5.3 Types of food consumed

ALHIV mentioned a variety of foods they ate before the drought such as beans, maize, mahangu, groundnuts, watermelons, omaere, fruits, vegetables, meat, macaroni, rice and pumpkins and that these foods were in abundant supply. However, during the drought most of these were no longer available.

3.1.5.4 Water for animals

Lack of drinking water for domestic animals was mentioned with concern by ALHIV. They cited how the animals would come by their homestead looking for drinking water in the water buckets. Some of their domestic animals died and others were very thin due to hunger. *"Animals are getting less water, because of shortage of water. Livestock also dies of thirst. Some people are buying water for the goats".*

3.1.5.5 Non-compliance to ARVs

ALHIV mentioned difficulties they faced with complying with ARV medication citing long distances walked to health facilities for check-ups and ARV collections. They mentioned lack of transport money, lack of water and food as serious impediments for them to comply to ARV medications. They would say: *"It is difficult at times for those of us staying far away from the clinic, by the time we reached the clinic it is closed". " lack of water meant that we could not take medication on time".*

3.1.6 Care-givers of Orphans and Vulnerable Children (OVC)

Major themes attributed to drought by caregivers, circumstances and factors that were due to the impact of the drought included:

- Coping strategies, (26%),
- Health problems (22%),
- Risky behaviour (18%),
- Education effects (4%).
- Livestock (5%)
- Needs (4%)

3.1.6.1 Coping strategies

Caregivers of OVCS cited coping strategies as children sharing their food, soliciting for government assistance and eating a single meal in a day. Additionally, with respect to Standard of living, they stated that the OVC grant of N$ 250 was not sufficient to buy food and other basic needs for OVCs.

3.1.6.2 Livestock

Communities with livestock faced difficulties during the drought citing animals drinking sewer water, dying of livestock due to starvation and drying-up of boreholes. This reduced their wealth base and threatened their livelihoods.

3.1.6.3 Needs

Caregivers of OVCs mentioned that their needs during the drought-included food, assistance to start up projects like needlework, handicrafts and possibilities of training on income generation ventures.

3.1.6.4 Education needs

During the drought, caregivers mentioned difficulties faced by the OVCs in education. There were OVC school dropouts due to lack of food as food grants were instead used to buy school uniforms.

3.1.6.5 Risky behaviour

Risky behaviours that emerged during the discussions were increase in early marriages, increased prostitution and an increase in the number of street kids.

3.1.6.5 Health

Health issues that emerged as difficulties faced during the drought were diarrhoea and an increase of STI.

3.1.6.5 Major effects of drought on Caregivers

Major effects of drought on caregivers of OVC in terms of frequency ranked as follows: increased school dropouts (22%), followed by prostitution among young girls (21%), not enough food for the household (19%), lack of food (18%), increased conflict due to lack of food in the house (15%) and livestock dying due to lack of water and availability of pasture (5%).

Major themes that emerged attributed to the impact of the drought varied across the nine regions. However, coping strategies and education were ranked as the top-two most important themes in all the nine regions. Education was impacted mainly through increased number of school dropouts. Coping strategies included families having to adjust to taking a single meal in a day.

In terms of behavioural change, the most affected regions were Kavango East (31%), Kunene and Hardap both with (19%) and Kavango West (15%). The other regions ranged from 5-13%, the least being Oshana region with 5%. Health as theme was ranked the highest in the two Kavango regions followed by Kunene and Ohangwena regions. In terms of changes for needs (help) from government, Hardap region ranked highest as well as in reference to needed changes under standards of living.

4.0 DISCUSSION

4.1 Nutrition Status

Global Acute Malnutrition (GAM) is defined as a Weight for Height Z-score (WHZ-score) <2SDs. The results of this assessment showed that among PLHIV, the Global Acute Malnutrition (GAM) rates were highest among children under five years (11.6%) followed by children 10-14 years (8.8%). GAM shows recent nutritional history or recent changes in food intake. However, other research findings have shown that the increased rates of malnutrition may not necessarily only be perpetuated by inadequate food intake but also other underlying acute infections and chronic illnesses such as HIV. HIV infection and frequent co-infections affects nutritional status through reduction in food intake resulting from loss of appetite, coupled with malabsorption and increased nutritional needs leading to malnutrition.

Retention in care for PLHIV is a necessary condition for maintaining or restoring health. Assessment findings showed that in 2016, Children <15 years living with HIV had a retention rate of 79.2%, males 15+ years 83.7% and females 15+ years 84.7%. The loss to follow up accounted for 6% of all PLHIV in 2016 who stopped treatment or missed scheduled visits to the health facility within three months after the last visit. Although Namibia has made great strides in increasing the number of PLHIV on ART , UNAIDS 90-90-90 targets aimed at diagnosing 90% of all HIV-positive persons, providing anti-retroviral therapy for 90% of those diagnosed and achieving viral suppression for 90% of those treated by 2020 has not yet been attained in Namibia. Furthermore, during the assessment it was apparent that not all households with PLHIV benefitted from the drought relief food. It is important that PLHIV have food security issues addressed especially during serious environmental calamities such as droughts since nutrition plays a big role in slowing down disease progression.

Nutrition status data of PLHIV in children and adults in the nine assessed regions showed the double burden of malnutrition that is characterised by the coexistence of undernutrition such as wasting, stunting and underweight along with overweight and obesity.

During the early HIV epidemic, wasting was common. However, with the introduction of Highly Active Antiretroviral Therapy (HAART) this has become less common. However, several studies have indicated that malnourished adults living with HIV have an increased progressive risk of HIV disease and mortality when the BMI decreases particularly at < 18.5 irrespective of HIV status. Equally, PLHIV on ART in the end experience dyslympdeias and lipodystrophy, which are associated with deviations in fat metabolism leading to increased fat profiles flowing in the blood. The increased fat leads to risks of the non-communicable diseases such as diabetes, hypertension and stroke. The assessment results showed an increasing prevalence in overweight and obesity in children 10-14 years and in adults 15

years and above particularly women who had an all-region prevalence for overweight at 16.9% and 12.3% prevalence in obesity.

In line with the high burden of HIV in Namibia and the ready access to ART, which has greatly improved the lives of PLHIV, there is need to put in place programmes or approaches that will not only address HIV in areas with SAM but will also address the anticipated upsurge of non-communicable diseases linked with ART usage.

The assessment results also showed that the drought conditions brought about food shortages which compromised the nutritional status of vulnerable groups especially children under five years as shown in findings under growth monitoring using underweight as an indicator in Table 10 and SAM and MAM in the NACS programme in Table 13. There was however variation across the regions on the levels of malnutrition during the drought with some having higher levels of malnutrition than others.

Moreover, study subjects during focus group discussions mentioned the lack of sanitation and poor hygienic conditions during the drought as cause for concern. Findings on PLHIV in the assessment showed that stunting was highest in the under-fives at 20% and the 10-14 year olds at 23%. Stunting is due to chronic malnutrition while wasting and oedema are due to acute malnutrition. Studies have shown strong linkages between environmental factors such as poor sanitation and hygiene to stunting. Children in unhygienic settings are at greater risk of exposure to germs and intestinal parasites, which disrupt nutrient absorption and weaken the immune system, which in turn, leaves them more vulnerable to recurrent infections and diseases.

4.2 Nutrition Assessment Counselling and Support (NACS)

Although NACS services were offered at all health facilities during the drought as part of routine care for prevention, care and treatment for malnutrition there is need to improve nutrition assessment techniques, correct classification of nutritional status and general record keeping. NACS defaulters continue to be many in the regions and a follow up system using Community Health Workers (CHWs) to follow them up would drastically reduce these numbers. Moreover, the number of clients as cured are very low in most regions of defaulting and their unknown nutritional status. Also health workers need to ensure that clients found to have SAM or MAM are registered on the NACS programme and their details entered into the NACS register. Health workers have been trained on the NACS programme over the years but high staff turnover and limited staff at health facilities continue to increase the work load at health facilities. The NACS programme requires a strong mentorship component as well as strengthened supportive supervision that would support the programme.

It is hoped that with the newly introduced Monitoring and Evaluation NACS forms into the Health information system (HIS) will improve scrutiny of data been collected.

4.2.1 NACS Support Materials

In order to implement NACS services it is important that there are adequate functional supplies and services at health facilities.

Most NACS support materials such as algorithms, charts and tables were available at most health facilities. This enabling environment would ensure that health workers adequately classify nutrition status of clients and provide the necessary counselling.

4.2.2 Equipment

Most facilities in the regions at least had one functional scale, however, Figure 14 showed non-functional scales in the regions as 52% mother-baby scales, 28% baby scales, 13% adult scales and 7% salter scales. The majority of mother baby scales were non- functional because they had no batteries to operate. Health workers raised concern over regularly purchasing batteries for the mother-baby scales, as it was not always feasible to do so. To avoid compromising nutrition status data it is important that the scales used are durable and can accurately measure. Most facilities had adequate child and adult MUAC tapes to supply the CHW who in turn would use the MUAC tape to screen communities for malnutrition. The adult height boards were available at the majority of health facilities but the child length/height boards were not always available at health facilities.

4.2.3 NACS Therapeutic Foods (RUSF and RUTF)

Although NACS therapeutic foods RUTF and RUSF were available at some facilities during the drought assessment, most health facilities mentioned that, they had stock-outs of therapeutic foods during the drought period. Therapeutic foods are necessary for the effective treatment of SAM and MAM and lack of these products during the drought did have a strong bearing on the treatment outcomes of NACS patients. PLHIV in focus group discussions persistently stated the difficulties they faced having to take ARVs on an empty stomach and how most of them stopped taking ARVs due to lack of food.

4.3 Hospital Admissions of Children with Severe Acute Malnutrition

Table 12 shows findings on hospital admissions of children 0-12 years during the drought assessment period. Two thousand three hundred and eighty-nine (2389) children were admitted with SAM with complications, 1714 were discharged from hospital after treatment and 420 children died due to SAM with complications.

Severe malnutrition is both a medical and a social disorder. Successful management of the severely malnourished patients requires that both medical and social problems be recognized and corrected. Health staff need to be adequately trained in the management of SAM using the support materials such as how to make F75, F100 and following the WHO

treatment protocols if children admitted with SAM with complications are adequately treated. Furthermore, more training needs to be done for hospital staff working in the Paediatric wards of the regions in order to create a large pool of trained personnel.
When therapeutic feeds (F75, F100 and RUTF) and other treatments are administered, this usually leads to very rapid reversal of the clinical features of SAM. These therapeutic feeds are used in all hospitals in Namibia in the treatment of SAM with complications. However, during the drought hospitals recorded stock outs of RUTF which were part of the treatment during the rehabilitation phase.

4.4 Infant and Young Child Feeding (IYCF)

4.4.1 Exclusive Breastfeeding

Exclusive breastfeeding is defined as giving an infant only breastmilk, and no other liquids or solids, not even water from 0-6 months. Drops or syrups consisting of vitamins, mineral supplements or medicines are permitted if medically indicated or prescribed. The Health Information System (HIS) data presented in table 11 from the Regions shows that some mothers with children under 6 months were practicing exclusive breastfeeding. It was difficult to establish whether the majority of mothers practiced exclusive breastfeeding during the drought assessment period as facilities had only recently started collecting this data. According to the Ministry of Health Social Services (MoHSS), Infant and Young Child Feeding (IYCF) report, 2013 states that although it is not recommended to give infants less than 6 months anything other than breastmilk, the results showed that 21 percent of infants aged less than 6 months were given solid foods.

Breastfeeding, especially six months of exclusive breastfeeding, has a significant effect in the reduction of mortality from the two biggest contributors to infant deaths, that is, diarrhea and pneumonia as well as on all-cause mortality.
Other benefits of breastfeeding include lower risks of asthma, food allergies, celiac disease, type 1 diabetes, and leukemia. Breastfeeding may also improve cognitive development and decrease the risk of obesity in adulthood.

4.4.2 Complementary Feeding

Complementary Feeding is the process of feeding a baby with other foods when breast milk is no longer sufficient to meet the nutritional requirements of a child. This happens at 6 months whereby there is a transition from exclusive breastfeeding to family foods. During the period of complementary feeding, a baby gradually becomes accustomed to eating family foods. At the end of 2 years, breastmilk is entirely replaced by family foods.

The HIS data presented in Table 11 showed that a very large number of babies were started on complementary feeds at 6 months as confirmed by their mothers during the assessment period. Oshana region had the highest number of children started on complementary feeds at 6 months (3803). However, in Erongo region only four mothers confirmed to have introduced complementary feeding at 6 months. Other facilities with no data had not yet started collecting the information.

According to the results of the IYCF study done in 2013 in Namibia, showed that complementary feeding started as early as 3 months but the majority of infants received complementary foods at the recommended age of 6 months in both rural and urban areas.

4.4.3 Continued Breastfeeding with Complementary Feeds

The HIS data in Table 11, showed that many mothers continued breastfeeding while they gave other foods. Complementary foods and fluids given prematurely may lead to an earlier cessation of breast milk. Giving foods and other liquids other than breastmilk to infants younger than 6 months interferes with breastfeeding. It can decrease infants' intake of breastmilk, whereby they suckle less, and a decrease in suckling in turn reduces breastmilk production. All infants should be breastfeed on demand during the day and night and not according to a fixed schedule.

4.4.4 Mixed Feeding

Table 11 showed that most mothers in the regions did not practice mixed feeding with the exception of Erongo region, which reported 333 children on mixed feeding.

Mixed feeding is defined as giving other liquids such as artificial feeds either milk or cereal or other foods and water and/or foods together with breastmilk to infants under 6 months of age. Studies have shown that babies who are mixed fed are at higher risk of HIV infection than those who are exclusively breastfed. Furthermore, mixed feeding reduces breastmilk supply due to reduced breastfeeding as breastmilk works best on a supply and demand basis meaning that the more the baby breast-feeds the more milk the body produces.

When the baby gets to 6 months, their nutrient needs cannot be met by breast milk alone, and at this age, they will be ready to take in other foods. At this age, exclusive breast-feeding is no longer sufficient to meet all energy and nutrient needs by itself so complementary foods are introduced to make up the difference. At 6 months, the digestive system will be mature enough to digest other nutrients like starch, protein and fat.

4.4.5 Maternal Nutrition

The role that nutrition plays in maternal and child health is widely recognized as pillar for optimum long-term health. Maternal nutritional status before and during pregnancy is very important for the well-being of the developing foetus. Poor maternal nutrition status has been related to adverse birth outcomes such as low birth weight (<2.5kg), preterm birth and intrauterine growth restrictions (IUGR). Low birth weight is associated with perinatal morbidity and increased risk of long-term disability. Preterm birth is defined as gestational age less than 37 completed weeks and is one of the leading causes of low birth weights, which is the underlying causes of infant mortality and congenital anomalies (Abu-Saad & Fraser, 2010).

The occurrences of severe acute malnutrition is aggravated during disasters such as droughts and floods. Severe acute malnutrition and moderate acute malnutrition are public health concerns. Maternal nutrition assessment results showed an all-region –specific prevalence of SAM of 1% and MAM 11%. Additional, other research studies imply that maternal nutrition influences individual health even before birth hence healthy maternal dietary patterns during the peri-conceptional period and throughout pregnancy decreases the risk of maternal and infant complications.

Malnourished women are at particular risk of micronutrient deficiencies. Findings of the assessment showed that the different grades of iron deficiency anaemia that is mild, moderate and severe are a problem in all regions among pregnant women. During pregnancy and breastfeeding, women have an increased iron need. Iron is important for the production of haemoglobin in the blood, which assists in the transportation of oxygen in the body, immune function and energy metabolism. Studies have shown that iron deficiency in pregnant women is linked to increased risk of low birth weight and prematurity. Additional Iron deficiency is also associated with decreased work performance and work productivity in adults. Teenage mothers are at an increased risk of iron deficiency anaemia because of their increased nutritional requirements due to their own growth spurts.

Therefore, Iron deficiency anaemia during pregnancy is associated with increased morbidity and foetal death.

4.5.6 Drought Mitigation Measures and Challenges

Government provided drought relief food throughout the country to various vulnerable groups that fitted their selection criteria. The selection of families to qualify for drought relief was based on the NRCS vulnerability selection criteria and government assessments, the selection criteria in general included: Labour constrained households, Households with malnourished clients and Child, female and elderly-headed households.

The food distributed was mainly maize meal and tinned fish. Red Cross Namibia set-up soup kitchens in some drought affected regions and Catholic Aids Action (CAA) provided some food for OVC during the drought in some regions. Apart from the government, other stakeholders also contributed to the communities needs despite the challenges faced by stakeholders during the drought period. NamWater, Project Hope and Maternal Child Survival Project (MCSP) and Ministry of Gender, Equality and Child Welfare were among stakeholders that provided mitigation measures during the drought period.

NamWater in some regions provided water to communities using water tankers when available, or by drilling boreholes and setting up water points. They also provided communities that lived near rivers with water purification tablets. Regional Disaster Risk Management Committees exist that could offer help during the drought period through planning to provide communities with material assistance. However, while some regions met regularly others never or rarely met. One regional officer stated
"I cannot remember but last year I attended only once, this meeting is arranged by the regional councillor's office, it is not easy for me to know why it was not held ".

There are other sub –committees or forums in the regions that discussed water and sanitation issues such as WATSAM forum and the constituency disaster risk management committees.

In some regions, NamWater held awareness raising campaigns on how communities could save water. However, due to the magnitude of the drought in some regions, NAMWATER faced major setbacks such as lack of water tankers to deliver water to communities, lack of money to buy new pipes to fix boreholes or drill boreholes in order to expand the service to the community. In some situations, diesel pumps broke down and coupled with lack of funding progress was hindered to fix the pumps in time, consequently communities could not be supplied with the needed water.

Project Hope and Maternal Child Survival Project (MCSP) was operational in specific drought affected regions. The two organizations support Ministry of Health and Social Services (MOHSS) and carried out the following activities during the drought, training of Community Health Workers (CHWs) on health, training of health workers on NACS and water and sanitation, hygiene (WASH) and supervision of CHW. They also Supported MOHSS on the TB programme in areas such as health education, contact tracing, defaulter tracing through household visits and Implementing Namibia adherence and function programme for OVC and PLHIV.
During the drought, the organizations worked with Ministry of Gender to facilitate clients to obtain relevant documents e.g. birth certificates in order for them to register OVC on child grants.

Regional Directors in the Ministry of Gender, Equality and Child Welfare mentioned that on co-ordination, they had an Emergency contingency plan, which catered for emergencies such as droughts, floods etc. The emergency plan was operational during the drought and it helped spearhead the drought programme under their ministry. They also stated that they sat on various committees or forums that were operational during the drought such as childcare and protection forum that specifically catered for the needs of children, Regional AIDS Coordinating Committee (RACC), Regional Development Coordinating Committee (RDCC) and Integrated School Health Program (ISHP). During the drought period, the Ministry held various meetings with other stakeholders such as educating councillors on various issues regarding child health and care. They also conducted community awareness campaigns on the drought.

However, in some regions due to the impact of the drought and an increase of malnutrition there was an overwhelming demand for grants. In some instances, some beneficiaries misused grants. The Ministry had difficulties at controlling or verifying records on eligibility for grants during the drought. This was because working class people who did not qualify for grants were applying for grants. In some regions, the increase in demand for grants became overwhelming due to teenage pregnancies. Fortunately, during the drought period the Ministry of Gender, Equality and Child Welfare got food donations from a mining company, Pick N Pay and ShopRite.

5.0 RECOMMENDATIONS

- During the development of drought plans, the Government and stakeholders should be mindful of the necessity of increased nutritional requirements, water and sanitation needs for PLHIV and other vulnerable groups.
- Timely planning and strengthening of coordination mechanisms among sectors and other development partners supporting drought interventions at all levels is of the essence as logistical delays easily affect the food from reaching intended targets. With respect to people living with HIV, not receiving food in time results into non-compliance in taking their prescribed medication. Taking ARVs requires that HIV patients have eat enough food before taking the medication.
- Health outreach services should be increased and expanded during emergencies in order to prevent interruption of service provision and cater for vulnerable groups that are unable to get to health facilities due to transport, financial constraints and ill health.
- The MoHSS should continue training of health workers including mentorship on management of severe acute and moderate acute malnutrition for both inpatient and outpatients to improve treatment outcomes.
- Central Medical Store should strengthen the supply chain for RUSF, RUTF and other relevant medicines to minimise stock outs.
- MoHSS with support from partners should procure and distribute functional equipment that is regularly serviced in all health facilities.
- The government should develop and implement programs targeting adolescent girls that will empower them to withstand shocks and make informed decisions. This will be vital towards reducing of risky behaviours.
- The government's Directorate of Disaster Preparedness and Response should strengthen its early warning systems and take necessary measures to increase awareness of the communities in order to reduce the impacts of drought on their livelihoods and household food security.

- The government through the department of NAMwater/Rural water supply should ensure that water supply points are established especially in the most vulnerable regions and driest areas in the country.

- The government through NAMwater/Rural water supply departments should ensure the rehabilitation and maintenance of boreholes and other water provision services.

- The Ministry of Gender Equality and Social Welfare should ensure that safety net programmes are inclusive and exhaustive targeting all vulnerable groups.

- The MoHSS should ensure at health facilities proper record keeping for effective management of patient health conditions.

- The government should strengthen the health information and nutrition surveillance system to provide real-time data to facilitate prompt decision-making to reduce the impact of shocks on the communities.

- The MoHSS should strengthen the referral system through capacity-building of health workers and CHWs, support supervision, mentorship and provision of required training programmes.

- To improve data quality regular training programmes should be conducted on data collection, maintenance and management with well-designed standardised data quality assurance protocols.

6.0 CONCLUSION

Focus group discussion (FGDS) findings with PLHIV and caregivers of OVCs revealed a host of impacts of the drought on vulnerable groups regarding health, nutrition, water and sanitation. Most recurrent issues centred on the role of safety nets, food availability or lack of food, coping strategies and, water.

Role of safety nets

Safety net programmes provided by government such as pensions and grants made a positive impact on livelihoods of families that during the drought. Caregivers of OVCS cited coping strategies such as children sharing their food, soliciting for government assistance and eating a single meal in a day. It emerged that the OVC grant of N$ 250 was not sufficient to buy food and other basic needs for OVCs.

The impact of the drought led to an increase in malnutrition and somewhat rendered government grants ineffective due overwhelming demand for such grants. The Ministry of Gender and Child Welfare had difficulties at controlling or verifying records on eligibility of grant seekers. Under drought conditions, it emerged that people in employment were circumventing criteria for qualifying for grants.

Food Availability

Not all vulnerable people were provided with drought relief food or other food rations. PLHIV stopped taking their medication citing lack of food as the main reason they failed to adhere to prescribed ARV medications. Breastfeeding mothers reported that due to lack of food they produced less breastmilk.

PLHIV believed that taking the medication on an empty stomach led to some side effects such as weakness and dizziness. This evidently was cited as a major problem among all the ALHIV.

Coping Strategies

Some of the common coping strategies adopted by households during the drought period further compromised their health wellbeing. Other adopted strategies fragmented the family units as in some cases children had to be sent to relatives or otherwise friends hoping for a meal.

PLHIV and caregivers had a number of coping strategies to lessen impacts of drought on their livelihoods. The drought situation brought-about dependencies of varying magnitude within household coping strategies, collecting wild fruits, other produce, and an increased over-reliance on drought relief food and pension/grants support from the government.

Water and sanitation

During the drought, the regions experienced a decline in the water table. This led to reduction in water quantity and quality and basic sanitation and hygiene practices were compromised. Lack of water availability for daily household tasks led to rationing of water and in places water had to be bought at unaffordable prices.

Sanitation was an overly problem for all the nine regions. Households, in particular, in rural communities did not have toilets nor materials to construct toilets and had to use the bush to defecate. These conditions exacerbated by the drought immensely increased communities vulnerability to diseases.

The drought period in general was evidenced by water shortages and people had to drink unsafe water that led to marked occurrences of illnesses such as diarrhoea. In some extreme cases, people and livestock shared water from the same source.

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