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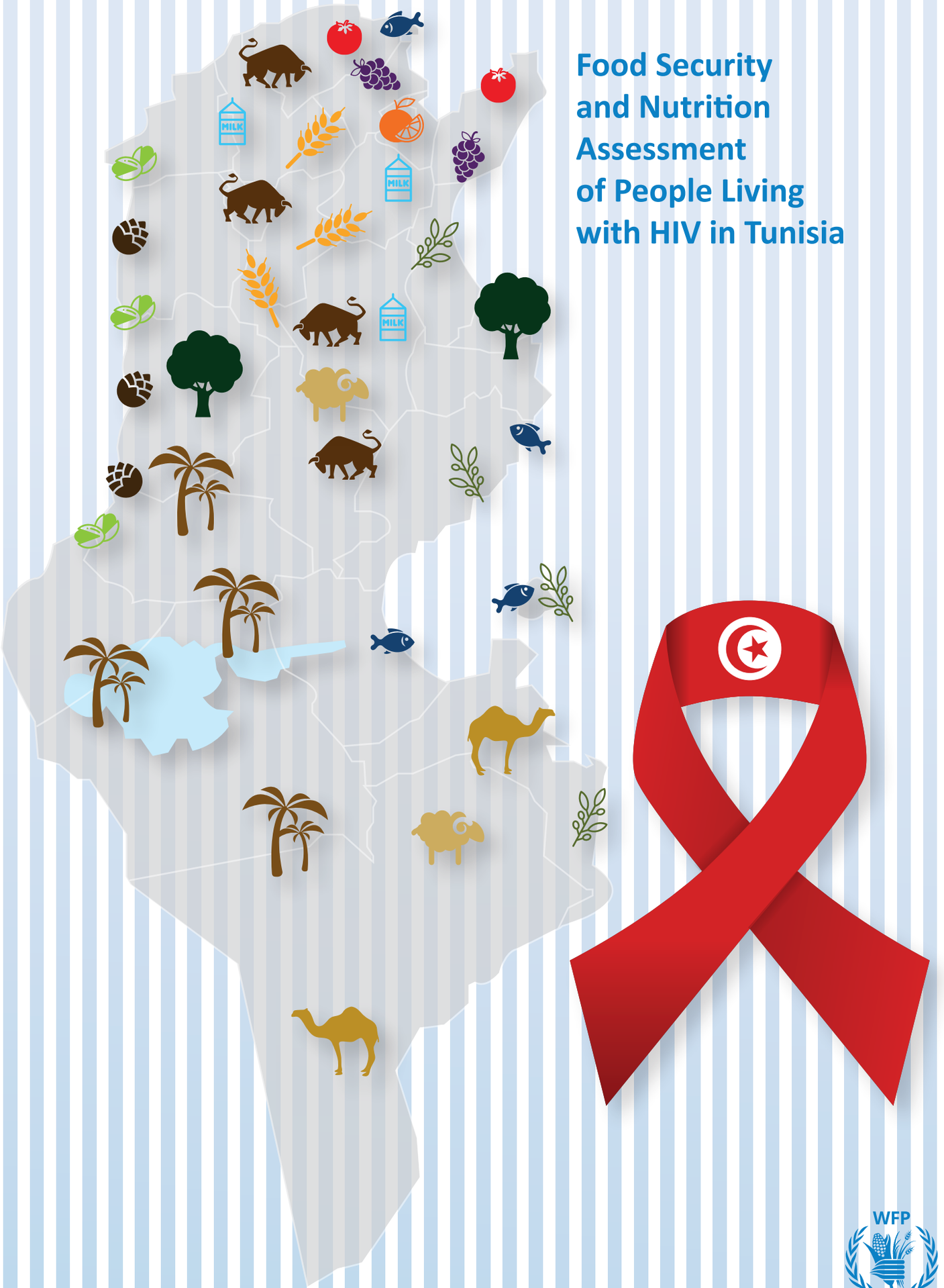
Food Security and Nutrition Assessment of People Living with HIV in Tunisia

Study Report 2021

WFP
World Food Programme

Food Security and Nutrition Assessment of People Living with HIV in Tunisia



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ABBREVIATIONS

AIDS	Acquired Immuno Deficiency Syndrome
ART	Anti-Retroviral Treatment
ATL	Association Tunisienne de Lutte Contre les MST et le SIDA
ATP	Association Tunisienne de Prevention Positive
BMI	Body Mass Index
CARI	Consolidated Approach on Reporting Indicators of Food Security
COVID-19	Corona Virus Disease
CSI	Coping Strategy Index
DK	Do not Know
FCS	Food Consumption Score
FCS-N	Food Consumption Score-Nutrition
FES	Food Expenditure share
HH	Household
HIV	Human Immunodeficiency Virus
IDUs	Injecting Drug Users
MENA	Middle East and North Africa
MoH	Ministry of Health
MOT	Mode of Transmission
MSM	Men having sex with Men
MUAC	Middle Upper Arm Circumference
NGOs	Non-Governmental Organizations
PLHIV	People living with HIV
PLW	Pregnant and Lactating Women
RBC	Regional Bureau Cairo
r-CSI	reduced-Coping Strategy Index
SBCC	Social and Behavioural Change Communication
TND	Tunisian Dinar
UNAIDS	Joint United Nations Programme on HIV/AIDS
USD	United States Dollar
WDDS	Women Diet Diversity Score
WFP	World Food Programme
WHO	World Health Organization

EXECUTIVE SUMMARY

The purpose of the food security and nutrition assessment is to provide baseline information on the food security and nutritional status profile of PLHIV in Tunisia. The results will support the government, and all development partners to develop effective food security and nutrition interventions for PLHIV, as part of a comprehensive and multisectoral response to HIV. The results also aim to support the governments in building evidence base, provide policy support for HIV-sensitive social protection and technical support to governments and national partners on addressing food security and nutritional needs of PLHIV.

Joint United Nations Programme on HIV/AIDS[1] (UNAIDS) data show that the number of people living with HIV (PLHIV) in Tunisia almost doubled in the past year with 6,500 recorded cases in 2019 compared to only 2,997 recorded cases in 2018. In response to the lack of data on malnutrition and food insecurity among PLHIV in Tunisia, WFP and the Government of Tunisia conducted a district-wide assessment on the nutrition status, food security status, and vulnerability among PLHIV.

This assessment interviewed 986 PLHIV distributed across four districts in Tunisia. 647 PLHIV adhering to treatment were reached through the four health centres providing ART while 339 PLHIV missing treatment were reached through snowballing technique with partner NGOs, and study enumerators serving as access keys to this group. The assessment results show that food insecurity among PLHIV in Tunisia reached 39 percent with significant to extreme food consumption gaps. 30 percent PLHIV resort to practicing coping strategies such as resorting to begging, engaging in illegal activities,
homelessness to meet their food needs.
52 percent of the PLHIV households are in debt, and 58 percent unemployed, stating food as the main household expense.

Food insecurity is highest among the poorest PLHIV. Poor adherence to ART is found to be highly correlated with poverty and food insecurity.
Food insecurity is almost double among those who miss ART compared to those who adhere to treatment (57 percent vs. 30 percent, respectively).
PLHIV who miss ART usually belong to the poorest quintile which indicates the vulnerability status of this group.
Food and nutrition support are crucial in the form of health and social protection services in order to facilitate the uptake of HIV counselling, testing, treatment and prevention interventions.
81percent PLHIV receive free ART from the government and free screening of HIV. However, the assessment shows the weak social protection response with only 3.7 percent PLHIV receive cash assistance; 21.8 percent receive food voucher and 8.4 percent receive health and nutrition education. Working with the government on national HIV response and social protection plans, and Social Behavior Change and Communication (SBCC) activities are viable entry points for Tunisia to ensuring inclusion of PLHIV in the national social protection system.
Shelter, psychosocial support, food quality, food quantity and medicine were the unmet needs ranked first by 70percent of respondents.
Through the survey, 75percent PLHIV responded that cash assistance is the most suitable kind of assistance to meet their needs, and 13 percent responded food vouchers.
Overweight and obesity prevalence is 31 percent among PLHIV and increased risks associated with chronic diseases such as diabetes, cardiovascular diseases, hypertension and cancer.
Obesity is significantly higher among females with 13 percent of female participants being obese versus only 3 percent of their male counterparts.

Overweight and obesity was double among those adhering to ART in comparison to those missing treatment. This assessment also found that 29 percent pregnant and lactating PLHIV women

1 UNAIDS 2019 data https://www.unaids.org/en/regionscountries/countries.tunisia

suffer from undernutrition. The assessment looked at patterns of food consumption, women dietary diversity and specific dietary preferences.
More than half of all households resorted to lowering quality of food, reducing portion per meal and reducing number of meals per day for an average of 3 days per week.
The qualitative assessment results show stigma, discrimination, mental health issues, lack of medical care and treatment and food assistance. The qualitative results emphasize on the fragile mental health condition of PLHIV as well as the discrimination they suffer from in workplace, in health facilities, and within their own families. The assessment recommends strengthening of national health and social protection systems, institutions and technical capacity and programmes to protect and improve access to food and enhance nutrition outcomes for PLHIV.

Creating social protection and livelihood strengthening linkages for PLHIV in treatment and missing treatment need further support. Strengthening social protection system for vulnerable PLHIV by governments can help mitigate the significant social and economic impacts of PLHIV households and individuals. Combined social protection interventions targeting PLHIV have benefits for HIV prevention, treatment and adherence and bear direct positive outcomes.

Supporting the government with programme design and implementation focusing on transfer modalities, delivery channels will promote economic empowerment, adherence to treatment and reduce negative coping mechanisms.
WFP calls for government, UNAIDS and development partners in advocating for assistance in the form of food, cash or vouchers to prevent deterioration of individual and household well-being, thereby also enabling access and adherence to treatment. The improvement in Food Consumption Score requires consumption of at least 5 -7 food groups. Adequate dietary intake and macro and micronutrient absorption are crucial for effective treatment outcomes.
In addition, SBCC strategies could focus on appropriate dietary and nutrition related practices for PLHIV with focus on a balanced diet with adequate energy and micronutrient intake. PLHIV should be given information on different food groups and behavior actions should be taken to ensure high protein food groups are prioritized in the daily consumption. Providing adequate nutrition counselling to PLHIV on consumption of a balanced healthy diet, is vital for health and survival, focusing on a balanced diet with adequate energy and micronutrient intake.

Exploration opportunities to integrate the prevention of overweight and obesity of PLHIV into national health and nutrition responses is recommended. Special attention should be paid for pregnant women living with HIV who should be prioritized for nutrition assessment, counselling, and support, as they recorded high prevalence of under-nutrition.

With this evidence and recommendations, WFP can work with governments and partners to address the HIV epidemic, ensuring adequate food consumption, increased access to livelihoods through social protection systems, reduced negative coping mechanisms and increased care and protection activities to improve PLHIV household's food security for health, physical and human capital development in Tunisia.

CHAPTER 1

Introduction and Methodology

Background

Food security and nutrition are critical for individuals, households and communities affected with HIV and AIDS. Food and nutrition insecurity drive the HIV and AIDS epidemic which multiplies HIV risks and vulnerabilities while worsening the socio-economic impact of the virus.

Poor nutritional status and lack of food security could accelerate progression to HIV and AIDS-related illnesses and weaken adherence and response to antiretroviral therapy (ART).

Hence, adequate dietary intake and nutrient absorption are critical for effective treatment outcomes of HIV and AIDS. Growing evidence links food security and nutrition with improved health seeking behaviour, adherence to treatment, and reduction in morbidity and mortality. Ensuring optimal nutritional status and food security among the most vulnerable within a population, including People Living with HIV (PLHIV) is pivotal to achieving zero hunger. PLHIV are often marginalized, excluded and left behind in policy and programming aimed at supporting the most vulnerable population groups.

Social protection systems can address the multiple and interrelated social determinants of HIV and AIDS, including poverty, income and gender inequalities, stigma and discrimination, food insecurity and social exclusion. Social protection systems can directly address the supply and demand barriers that prevent people from accessing HIV services. World Food Programme (WFP) is the convening agency for ensuring that adequate food and nutrition support is integrated into social protection systems and humanitarian emergencies. WFP ensures that food, nutrition and social protection support is provided to people living with HIV and AIDS and their households to support treatment adherence, improve nutrient uptake and absorption, and ensuring inclusion of the most marginalized population groups into social protection systems.

AIDSWFP is one of 11 co-sponsoring organizations of the Joint United Nations Programme on HIV/AIDS. Under the joint programme's division of labour, WFP co-convenes the United Nations Inter-Agency Task Team on HIV-sensitive Social Protection, with the International Labour Organization (ILO) WFP co-convenes the Inter-Agency Task Team on addressing HIV in humanitarian emergencies, with the Office of the United Nations High Commissioner for Refugees.

The HIV and AIDS epidemic in the Middle East and North Africa (MENA) continues to grow, with a 10 percent increase in new infections and a 9 percent increase in the annual number of AIDS-related deaths between 2010 and 2018[2].MENA region is characterized by very low HIV testing and Anti-Retroviral Treatment (ART) coverage, and the gaps in achieving the global UNAIDS 90-90-90 targets are significant. There is a growing and convincing evidence that malnutrition aggravates the effects of HIV and accelerates AIDS-related illnesses in people living with HIV. Evidence has shown important linkages between improved HIV status, AIDS outcomes and good nutrition [3]. **HIV weakens the immune system along with nutrient intake, absorption and use** [4]. People living with HIV have 10–30 percent higher energy requirements than a healthy adult without HIV, and children living with HIV 50–100 percent higher than normal requirements [5].

2 Source: UNAIDS 2019 estimates

3 WFP, WHO and UNAIDS Guidance note on food and nutrition. Available Online.

4 Piwoz E, Preble E (2000). HIV/AIDS and nutrition: a review of the literature and recommendations for nutrional care and support in sub-Saharan Africa. United States Agency for Development; Semba RD, Tang AM (1999)

5 WH0 (2003). Nutrient requirements for people living with HIV/AIDS. p. 1; Seume-Fosso E et al. (2004).

Adequate nutrition is essential to preserve the immune system, manage infections, improve response to treatment, sustain healthy levels of physical activity, and sustenance of optimal quality of life for PLHIV. In Tunisia, the HIV epidemic numbers since the last 10 years are staggering. Since 2000, new HIV infections increased by 22 percent, and there was a 306 percent increase in AIDS-related deaths.**The number of people living with HIV in Tunisia is estimated to be 2,997** [6].

Malnutrition in Tunisia faces nutrition transition problems including deficiencies in vitamins and minerals, and obesity. Micronutrient deficiencies including anaemia, or iron deficiency, is estimated at 28 percent for children under 5 and for pregnant and breastfeeding women.
Tunisia's adult population faces a malnutrition burden, 31.2 percent of women of reproductive age have anaemia whereas 34.6 percent of them are obese compared to 17.6 percent of men [7]; and 12.9 percent of adult women have diabetes, compared to 12.1 percent of men [8].

Interventions in the areas of food security, nutrition and social protection are crucial in increasing access and adherence to anti-retroviral treatment. Linking the continuum of care with health systems, food systems and the social protection systems ensures the well-being of the vulnerable groups [9]. Therefore, the data and evidence on the food security and nutrition status of people living with HIV in Tunisia needs to be documented for the planning of appropriate interventions for this vulnerable group.

Objectives

The main objective of this assessment is to generate evidence on the food security and nutrition situation among people living with HIV (PLHIV) in Tunisia. The evidence will guide decision making on appropriate nutrition and food security actions for PLHIV in Tunisia.

Detailed objectives include:

1 - To estimate the proportion of the food insecure PLHIV in Tunisia.

2 - To determine the prevalence of malnutrition (undernutrition, overweight and obesity) among PLHIV in Tunisia.

3 - To assess the socio-economic status of HIV affected population in Tunisia.

4 - To map and identify gaps of the social protection services and assistance provided to HIV affected population.

5 - To identify opportunities for aid modalities that contribute to food security for PLHIV in Tunisia.

Methodology

Desk review

A thorough and critical review of available literature was conducted at the early stages of this study. The review covered aspects of association between food insecurity, malnutrition, and HIV.

It also covered the epidemiological situation of HIV and malnutrition rates in Tunisia.The following documents among others were reviewed at this stage:

- Tunisian National Strategic plan for fight against HIV/ AIDS (2018-2022) as well as all brochures and documents produced by Ministry of Health.
- Bio-behavioural surveillance assessments.
- All study reports produced by civil society organizations working on HIV in Tunisia.
- National studies produced by Tunisian Government including latest household surveys on income, expenditure, and health.
- Academic literature on HIV-ART and food security

The study was launched on 16 March 2020 during a meeting of the steering committee members who represented Ministry of Health, Ministry of Social Affairs, UNAIDS, the study consultant, and WFP team.

6 UNAIDS Tunisia Factsheet. Available Online.
7 Sources: UNICEF global databases Infant and Young Child Feeding, UNICEF/WHO/World Bank Group: Joint child malnutrition estimates, UNICEF/ WHO Low birthweight estimates, NCD Risk Factor Collaboration, WHO Global Health Observatory.
8 Sources: INSP, Tunisian Health Examination Survey 2019
9 Saskia de Pee, MW. Bloem (2014). Adherence to HIV and TB Care and Treatment, the Role of Food Security and Nutrition

Quantitative assessment

The estimated number of people living with HIV in Tunisia during this study design is 2,997 [10,11]. Less than half of this population are under treatment [12] in one of four infectious diseases centres across the country. This study initially reached a sample of 1,003 PLHIV respondents which is almost one third of all PLHIV population in Tunisia. However, after data processing and cleaning, the final number of observations considered was 986 PLHIV. The study design differentiates between two main groups of PLHIV that were reached with different approaches:

a. PLHIV who are under treatment

This group was reached using a stratified random sample technique with each of the four treatment centres acting as a stratum. Sample size was calculated in proportion to number of PLHIV registered in each centre to ensure full representation. Lists of PLHIV registered for treatment were obtained from heads of centres and served as sample frame.

Respondents were selected randomly from these lists and interviewed either during consultation visits across the week or on Saturdays when they visit the centres for the weekly appointment of blood sample for the viral load and CD4 testing.

b. PLHIV missing treatment

This group was reached following a snow balling technique among members of informal community. Partner NGOs, PLHIV community leaders, peer educators, and study enumerators (who are living with HIV themselves) served as access keys to PLHIV population who do not adhere to ART.
Sample size was calculated in respect to total number of PLHIV missing treatment regardless of their location since there is no further information on stratification of this hard-to-reach group. Interviews with this group took place in informal settings including coffee shops, respondents' residence, and local NGOs offices.

Table (1.1) presents number of PLHIV under treatment registered in each centre, number of PLHIV missing treatment, and number of respondents reached in each category/area. Survey questionnaire is adapted from WFP standard food security assessment including modules on Food Consumption Score, Women Dietary Diversity, Coping Strategy Index, and Food Expenditure Share.

Questionnaire design took place during March 2020 by WFP RBC team followed by a field visit to one of the local NGOs and interviewing a group of 5 PLHIV to adapt food security modules to the Tunisian context and sensitize questionnaire language to local dialect. Study tool is provided in Annex I of this report.

A total of 16 enumerators were recruited based on their field experience with HIV community members and similar research work. Enumerators were living with HIV themselves to reduce sensitivity during data collection.

Training workshops were held across governorates to familiarize enumerators with study tool and digital data collection techniques. The training also covered ethical considerations, confidentiality, and inclusion criteria of study participants.
Training of enumerators took place between 20-27 of July 2020 while survey data collection extended between 28 July to 13 September 2020.

Data collection was all digital utilizing WFP corporate system for mobile data collection (MODA) on Android devices. Digital data collection improved the data quality, reduced time and effort required for field work.

It also allowed for displaying the questionnaire both in French and Arabic. Progress of number of responses reached was monitored daily by WFP RBC team and study coordinator. Data analysis extended over November 2020 using STATA 15.0 software for statistical analysis.

10 https://www.unaids.org/en/regionscountries/countries/tunisia
11 Note thatdeclared number by MoH might be higher than SPECTRUM estimate
12 Number of PLHIV under treatment is provided by MoH

Table 1. 1 Sample frame and sample size

	PLHIV registered for treatment		PLHIV missing treatment	
	Number of registered PLHIV	Sample size	Number of PLHIV missing treatment	Sample size
Tunis	845	323		
Souse	178	139		
Monastir	167	121		
Sfax	120	62	1,687	**339**
Other	-	2		
Sub-total	1,310	**647**		
Total sample size				**986**

Qualitative assessment

Qualitative information was collected to complement insights emerging from the survey. A total of 8 focus group discussions were held with key populations of PLHIV. Table (1.2) shows number of focus groups and participants for each key population. Qualitative data collection followed a semi-structured interview guide that was adapted based on discussion flow (interview guide is provided in Annex II of this report). Focus group discussions covered topics like stigma within the family, stigma and marginalization within the workplace, mental health, and social services.

Each focus group interview took about 60 to 90 minutes. Qualitative data collection and analysis was pushed to early 2021.

Table 1. 2 Key populations interviewed for qualitative information

Population	Total number of groups/ participants	Location
Men having Sex with Men (MSM)	2 groups (15 participants)	Tunis - Sousse Monastir
Sex workers	1 group (8 participants)	Tunis
Migrants	2 groups (17 participants)	Tunis
Injecting Drug Users (IDUs)	2 groups (14 participants)	Tunis
Pregnant and Lactating Women (PLW)	1 group (6 participants)	Tunis

Eligibility criteria and ethical approval

This study targeted people living with HIV who are 18 years or older. To avoid any bias in status of food security among PLHIV, the study did not interview respondents who belong to the same household to have the widest possible coverage of all households. Informed consent was obtained from all study participants before the interview. Respondents were ensured their right to respect, dignity, and confidentiality prior to data collection. Participation was voluntary and respondents had the right to withdraw at any time.

In addition to recruiting PLHIV enumerators to reduce sensitivity, they were specifically trained not to disclose any data collected during interviews. Once a questionnaire is submitted, the enumerator had no further access to it. No enumerator had access to view questionnaires submitted by other colleagues.

Data collected was stored safely on a WFP secured server for analysis purposes with no names attached to it.The study was approved by the Ethics Committee of Fattouma Bourguiba Educational Hospital in Monastir.

Study limitations

- Data collection was put on hold for almost 3 months due to lockdown and movement restriction imposed by the government at the beginning of COVID-19 outbreak.
- Training of enumerators needed to be broken into several workshops to account for limited number of people in gatherings and COVID-19 precautionary measures. Training workshops also took place in different governorates to account for movement restrictions of enumerators across cities. Only the study coordinator obtained a government approval to move across cities to hold training workshops with remote support of WFP RBC team.
- The centres of infectious diseases that provide HIV treatment and hosted data collection were also managing the COVID-19 response across Tunisia. This caused a lot of logistic challenges and delays due to prioritizing the emergency.
- Data collection was face-to-face in infectious health centres during the gap between first and second waves of COVID-19 outbreak. This required providing enumerators with personal protective kits as well as trying to finish field work as soon as possible before second wave lockdown restrictions are imposed.
- PLHIV were interviewed on the same day of their medical examination without prior notification and the interview takes around 40 minutes which slightly impacted response rate.
- PLHIV population who are not under treatment were specifically hard to reach outside the capital. In addition, some hard-to-reach populations were unrepresented, i.e. prisoners.
- The four infectious disease centres considered as sampling stratum provide services to PLHIV across the country. This means remote PLHIV need to travel hundreds of kilometres to reach the centre which does not ensure geographic representation.

CHAPTER 2

Profiling PLHIV Population

Key findings

• Out of all study participants, 34 percent did not adhere to ART; the main reason for this was:

34 % of PLHIV did not adhere to ART

82 %

fear of stigma within family

64 %

followed by stigma from health workers

59 %

transportation cost to and from health centres

• 23 percent of PLHIV respondents reported suffering from a chronic disease other than HIV, this included hepatitis C, hepatitis B, and diabetes.

• The average household size of interviewed PLHIV is 2.7 members and the median HH income is TND 600 (USD 220) per month.

• On average, PLHIV respondents' households spendt:

41%	19 %	12%
expenses on food	expenses on rent	expenses for utilities

52 percent of all PLHIV respondents were in debt, food expenditure is reported as the main reason for HH debt.

• Three out of every five PLHIV respondents were unemployed.

• Out of employed PLHIV respondents, 66 percent described their jobs as intermittent, seasonal, or temporary. The most common jobs included cleaning, waitering services, hairdressing, security, driving, and daily work.

• Three in each five interviewed men were infected because of unprotected sex with male partners (MSM). One in each four male respondents was infected by HIV due to injecting drugs (IDU). Among female respondents, 85 percent reported being infected due to unprotected sex while only 4 percent were sex workers.

• Shelter, psychosocial support, food quality, food quantity and medicine were the unmet needs ranked first by 70 percent of respondents. In addition, 75 percent of respondents reported cash is the most suitable type of assistance for their needs followed by 13 percent preferring food vouchers.

• Mapping of services PLHIV currently receive in Tunisia showed that Government of Tunisia is the main provider of screening and treatment services. However, only 22 percent of respondents under treatment reported they receive food vouchers from local NGOs and 4 percent reported receiving cash assistance from the government.

Less than 10 percent of PLHIV under treatment reported receiving health or nutrition education services from local NGOs which points out a need for WFP SBCC intervention.

Demographic characteristics

Table (2.1) shows the socio demographic characteristics of this survey respondents. Almost half of the respondents fall in the age bracket 35-50 followed by 27 percent in the age bracket 24- <35. Female respondents represented 37 percent of the total sample while less than 1 percent of respondents identified as gender non-binary.

Most respondents of this study belonged to the Tunisian population with only 7 percent of migrants, mostly belonging to Côte d'Ivoire. Migrant females seemed to be significantly higher than migrant males (12 percent vs 4 percent). Three quarters of respondents had some kind of education while only 8 percent were illiterate.

Education is found to be significantly correlated

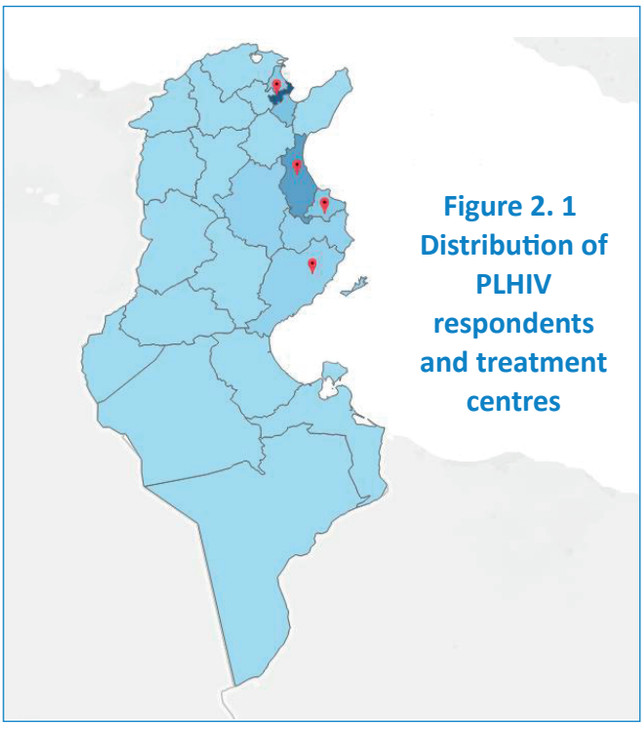


Figure 2. 1 Distribution of PLHIV respondents and treatment centres

with gender (p-value=0.000) with higher percent of males surviving into secondary and higher education.

Two thirds of respondents (40 percent) lived in the capital, Tunis and 18 percent lived in Sousse as shown in figure (2.1). Most of this survey respondents lived in the north eastern part of the country where treatment centres are located.

Migrants were mostly concentrated in Ariana, Tunis, Sousse and Sfax respectively. Slightly more than half of the respondents were never married while the other half were either married, separated, or widowed. It is worth to mention though that never married males were twice as much as never married females in this sample.

Table 2. 1 Socio-demographic characteristics

Attribute	Frequency	Percent
Age		
15-<24	31	3.1
24-<35	266	27.0
35-<50	474	48.1
50-<65	203	20.6
65+	12	1.2
Total	**986**	**100.0**
Gender		
Female	362	36.7
Male	618	62.7
Other*	6	0.6
Total	**986**	**100.0**
Nationality		
Tunisia	917	93.0
Côte d'Ivoire	49	5.0
Cameroon	6	0.6
Libya	4	0.4
Mali	3	0.3
Guinea	2	0.2
Bahrain	1	0.1
Burkina Faso	1	0.1
France	1	0.1
Morocco	1	0.1
Switzerland	1	0.1
Total	**986**	**100.0**

* Autres: personnes non-binaires

Attribute	Frequency	Percent
Level of education		
Illiterate	82	8.3
Can read and write	141	14.3
Basic education354	35.9	
Secondary education	288	29.2
Higher education	121	12.3
Total	**986**	**100.0**
Marital status		
Never married	509	51.6
Married	233	23.6
Divorced or separated	173	17.6
Widowed	71	7.2
Total	**986**	**100.0**

Household (HH) composition

The average household size of interviewed PLHIV is 2.7 members, 2 out of every 3 respondents of this survey were heads of their HHs, and 23 percent of respondents lived alone (single-person HH).

Examining the HHs composition, it is found that **27 percent of families were female headed HHs.** Figure (2.2) presents a typical HH composition as well as percent of HHs with one or more family members in certain categories.

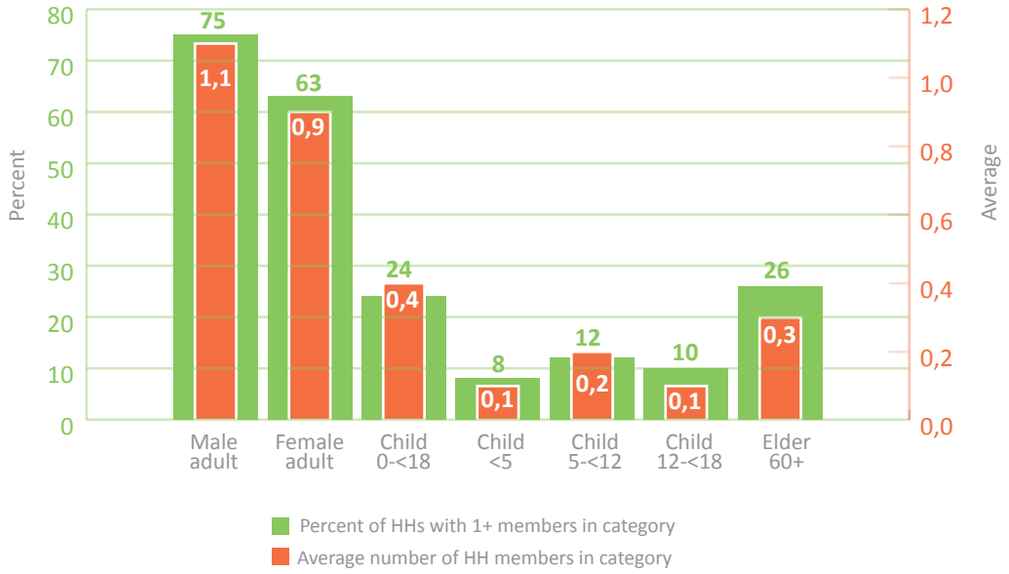
An average HH is composed of 1 adult male, 1 adult female, and potentially a child below 18 or an elder above 60 years old.

The burden of children and elder population did not seem universal, only 24 percent of HHs included at least one child below 18 and 26 percent of HHs included at least one elder member over 60 years old. Percent of HHs with children under 5, children 5-18 and teenage children are further detailed in figure (2.2).

The overall dependency ratio for study participants was 34 dependent members (children or elders) for every 100 adults (working age males and females).

However, since not all adult members generate income, respondents were asked about sources of income for each HH member and/or whether this member was dependent, **57 percent of all HHs included at least one dependent member.**

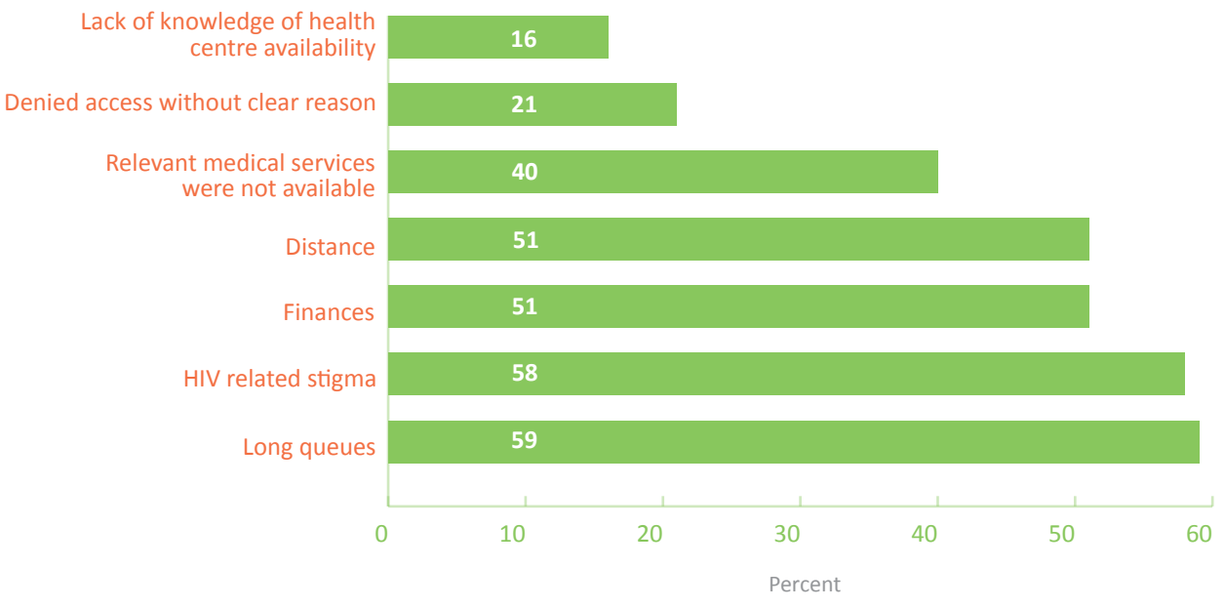
Figure 2. 2 Household composition



Health care, chronic illness and disability

Access to public health care facilities seemed to be universal among study participants, 91 percent reported having access to public hospital or clinic. Yet, barriers like long queues, stigma, finances and distance faced more than half of the respondents while accessing health care services.

Figure 2. 3 Barriers accessing health care services



Out of all survey respondents, 6 percent reported having some kind of disability while 23 percent reported suffering from a chronic disease other than HIV. Figures (2.4) and (2.5) show the most common types of disability and chronic diseases among respondents.

Figure 2. 4 Types of chronic diseases (n=224)

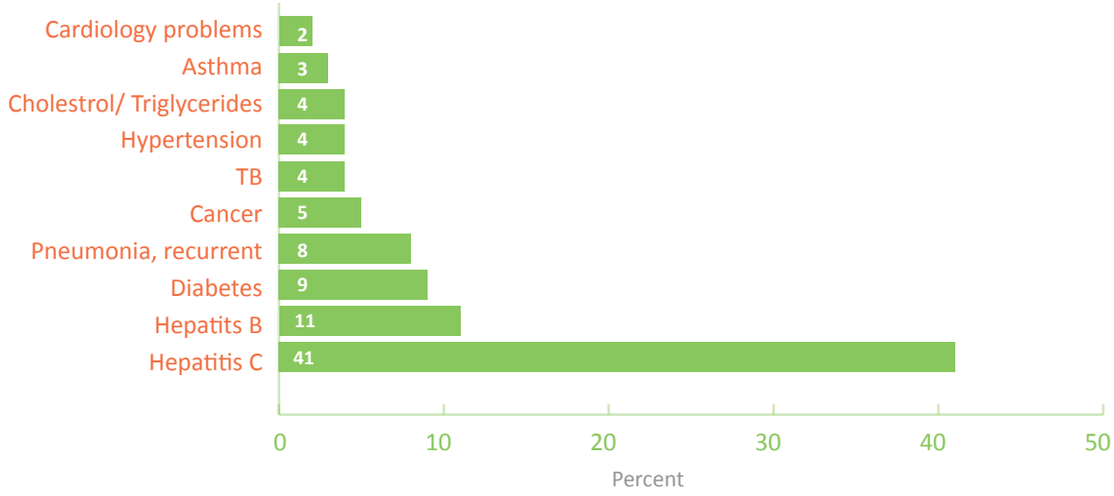
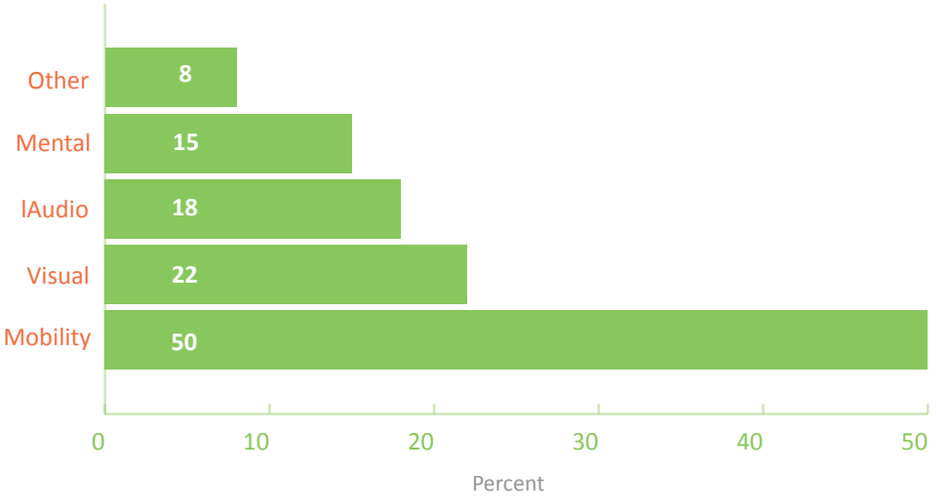


Figure 2. 5 Types of Disability (n=60)



It is observed that Antiretroviral treatment is also effective on other diseases like hepatitis C and B since prevalence of these chronic diseases among PLHIV who are not under treatment is significantly higher (p-value=0.000).

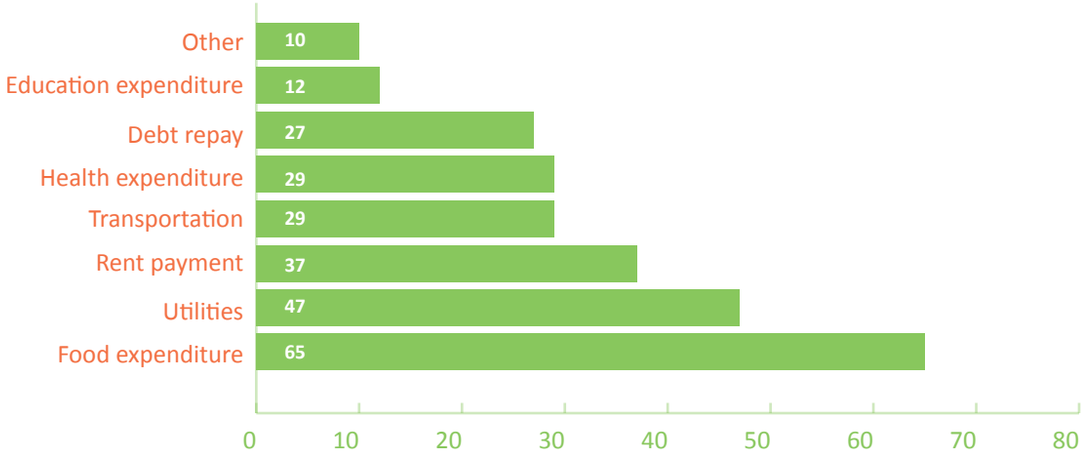
Prevalence of hepatitis C, for example, increased to 60 percent among those who miss treatment and decreased to only 28 percent among those receiving treatment. Similarly, Prevalence of hepatitis B increased to 21 percent among those missing treatment and decreased to only 4.5 percent among PLHIV receiving treatment.

The burden of HIV and chronic disease also extended to HH members with **27 percent of HHs including two or more members living with HIV** (additional member over main respondent). In addition, 7 percent of HHs included two or more members suffering from chronic diseases.

Livelihoods and HH finances

The median HH income for PLHIV participants is TND 600 (USD 220) per month that is primarily earned as self-generated income (34 percent), work salary (32 percent), or aid (20 percent). The median income per capita is TND 225 (USD 82) per month. Only 5 percent of respondents reported their HHs had any kind of savings. Financial debt, on the other side, is found to be a burden on PLHIV with 52 percent of all respondents reporting their HHs are in debt with a median debt value of TND 250. Food expenditure and utilities are the main reasons PLHIV respondents' HHs were in debt as shown in figure (2.6). Friends and relatives were the main sources that respondents borrowed money from. HH expenditure slightly exceeded income with median HH expenditure of TND 620 that is split mainly among food, rent, utilities and transportation. Further analysis of HH food expenditure is presented in the following chapter.

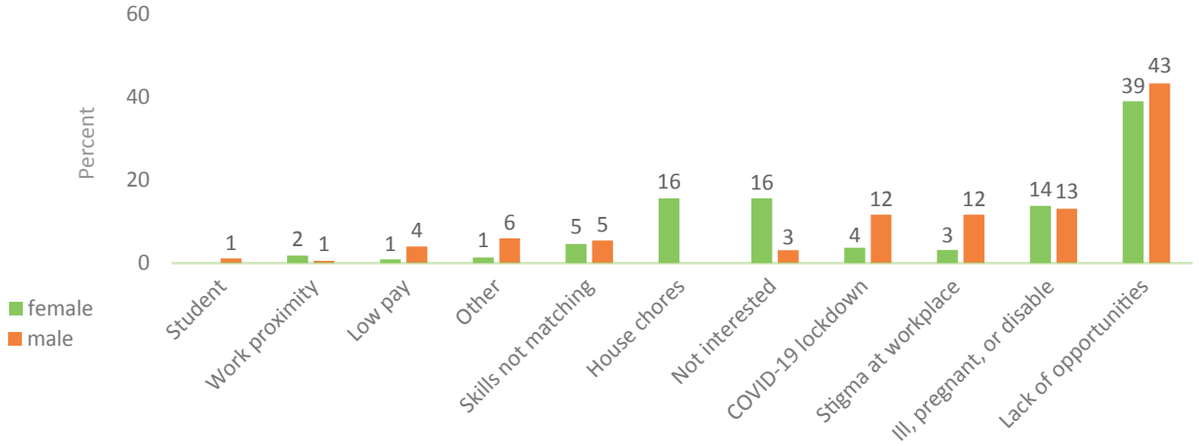
Figure 2. 6 Reasons PLHIV households are in debt (n=512)



On the individual level, almost three out of every five PLHIV respondents were unemployed (58 percent). Employment status did not vary significantly by gender, 60 percent of females and 57 percent of males were unemployed. Common reasons of unemployment were lack of opportunities and physical hinderance like illness or disability. Other reasons that considerably varied by gender included caring for children/ household chores and lack of interest for females and HIV-related stigma and COVID-19 lockdown for males as shown in figure (2.7).

Among respondents who were employed, 78 percent were employed privately and 13 percent were employed for the government. The most common private jobs for PLHIV respondents included cleaning, waitering services, hairdressing, security, driving, and daily work (construction work, plumber, mechanic, blacksmith, tailor, cook, etc). Out of employed PLHIV respondents (n=414), 66 percent described their jobs as intermittent, seasonal, or temporary.

Figure 2. 7 Reasons for unemployment, by gender (n=572)



Housing and Wealth Index

Figure (2.8) shows that most of PLHIV respondents (86 percent) lived in private housing. Others lived either in shared housing (e.g. wekala) or in informal settings like a hut or cabin on the road, while 4 percent were homeless and reported living on the streets. Household wealth index for this study was composed using principal component analysis using a set of HH assets, HH amenities as well as dwelling ownership as shown in table (2.2).

These set of variables were chosen after multiple iterations to determine the most effective set of variables that indicate the level of HH wealth.

Figure 2. 8 PLHIV respondents housing

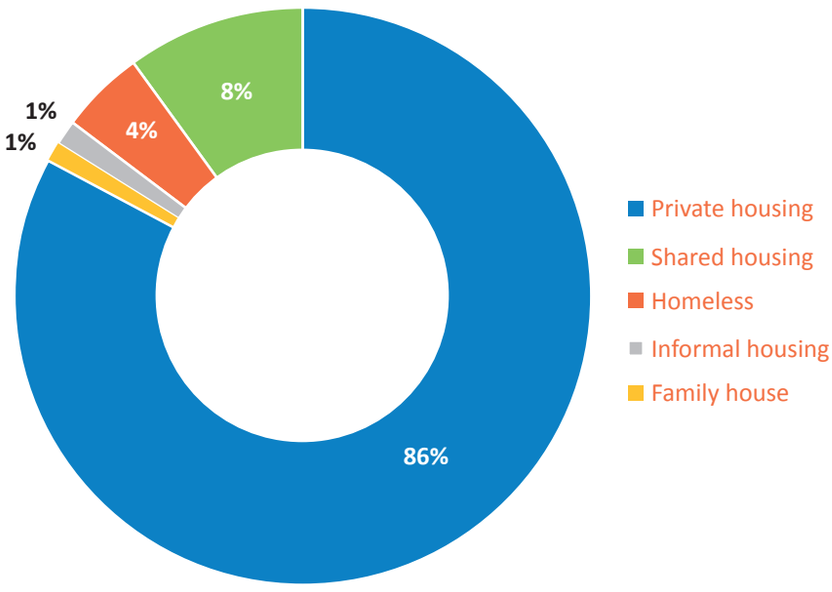


Table 2. 2 Variables considered for HH wealth index

Durable assets	1. Fridge 4. Freezer 7. Cooker/ stove 10. Oven/ microwave	2. Washing machine 5. Air conditioner 8. Fan 11. Water heater	3. Television 6. Satellite 9. Smartphone 12. Wireless router
Household amenities	13. HH Ventilation (windows, doors, AC) 14. Drinking water (piped in dwelling or bottled water) 15. Sanitation facility (flush connected to sewage)		
Other variables	16. Dwelling ownership		

Wealth index varied by head of HH (p-value=0.015) with female headed HHs concentrating in the three middle quintiles, and male headed HHs falling in extreme quintiles (richest and poorest) significantly higher than their female counterparts. This might indicate the effort done by female headed HHs to maintain middle class status for their families.

Wealth index also significantly varied by respondents' level of education (p-value=0.000) and HH size (p-value=0.000). The higher the level of education, the more likely the respondent belonged to a richer HH. PLHIV who lived alone were more likely to be poor with 46 percent of the single-person HHs belonging to the poorest wealth quintile. Wealth status also varied by ART status and HIV key populations (p-value=0.000).

Among PLHIV who miss treatment, 32 percent belonged to the poorest quintile versus only 14 percent among those who adhere to treatment as shown in figure (2.9).

Furthermore, 47 percent of injecting drug users and 30 percent of sex workers belonged to the poorest quintile as shown in figure (2.10).

Figure 2. 9 Wealth index by ART status

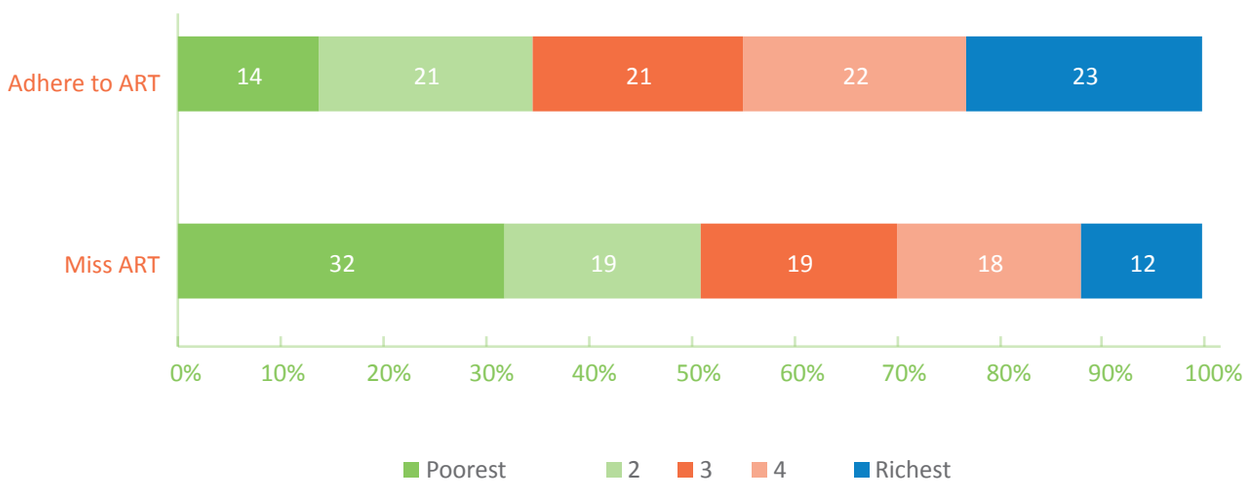
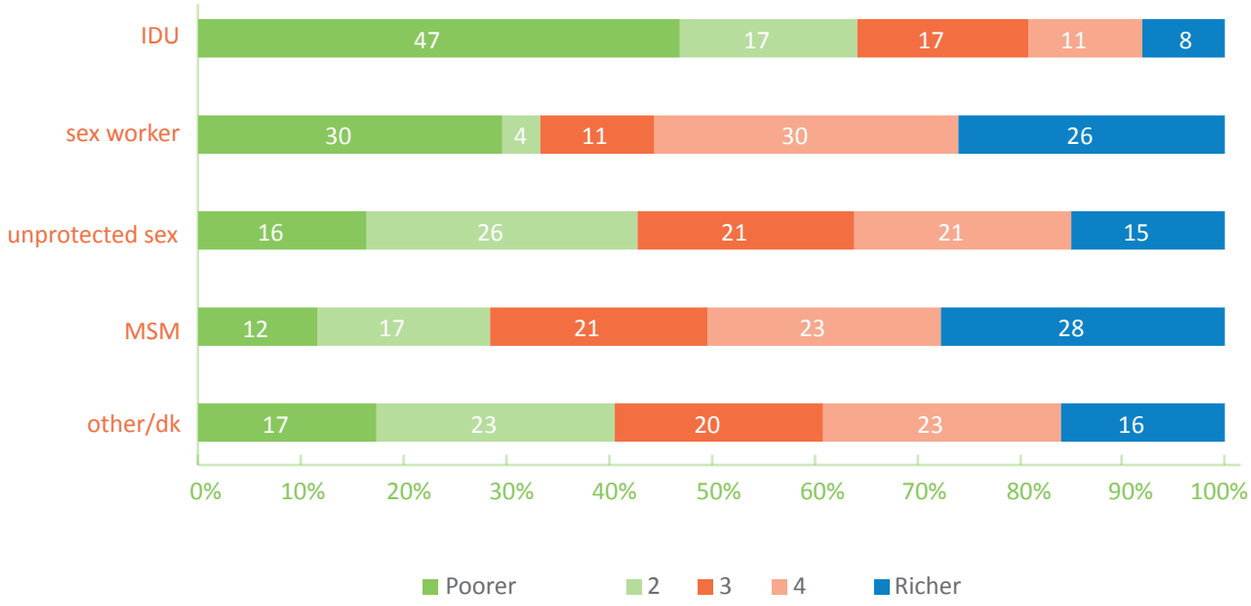


Figure 2. 10 Wealth index by PLHIV key population



HIV and Antiretroviral Treatment

Respondents to this survey were asked in detail about their HIV situation and related services, treatment, and barriers facing them in accessing these services.

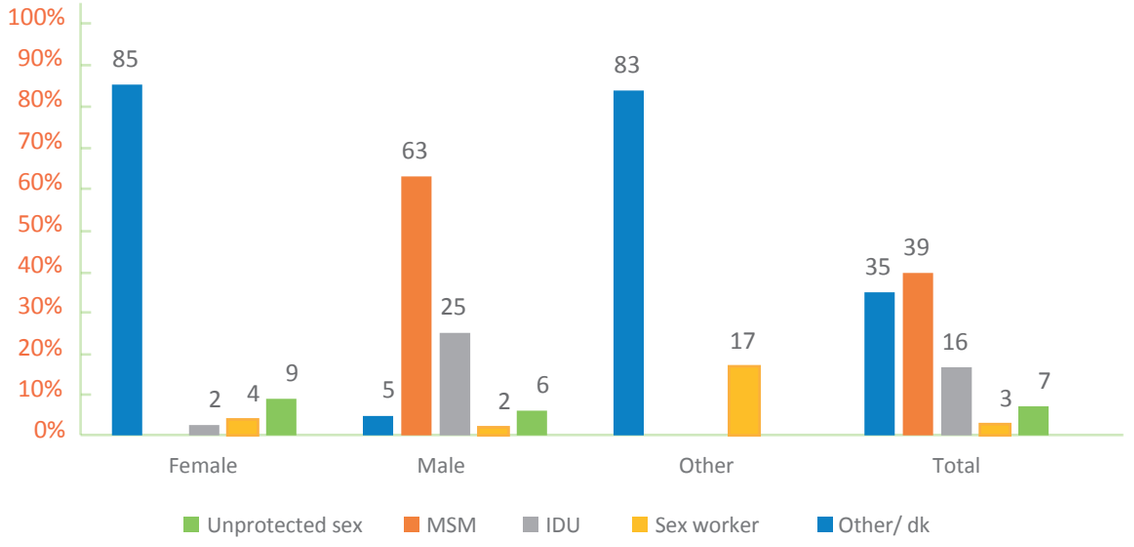
Half of all respondents reported they have been living with HIV for more than 5 years while 17 percent got infected only during last year.

Public laboratories and hospitals were the most common places PLHIV first got diagnosed at (60 percent) followed by self-testing (24 percent) and mobile clinics (9 percent).

Looking at mode of HIV transmission, it is found that **unprotected sex and injecting drugs are the main reasons for infection**. Three in each five interviewed men were infected because of unprotected sex with male partners (MSM). Additionally, one in each four male respondents was infected by HIV due to injecting drugs (IDU).

Among female respondents, 85 percent reported being infected due to unprotected sex with partner/casual relations while only 4 percent were sex workers. Other reasons for infection that did not exceed 10 percent were mother to child transmission, blood transfusion, tattooing, being a victim of violence, and working as health service provider.

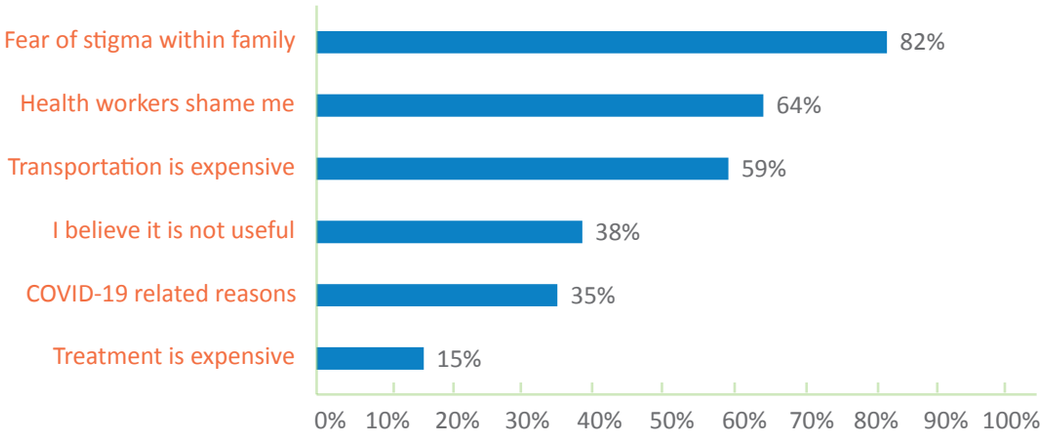
Figure 2. 11 Mode of Transmission (MOT), by gender



This survey is designed to purposively represent all PLHIV population in Tunisia including those who are not registered in treatment centres. Accordingly, **66 percent of survey respondents were under treatment** while **34 percent did not adhere to ART.** The main barrier PLHIV who do not adhere to ART reported was fear of stigma within family (82 percent). This requires further understanding of PLHIV family members perception and attitude towards HIV.

Other barriers as shown in figure (2.12) include stigma from health workers (64 percent), transportation cost to and from health centres (59 percent), and personal perception that treatment is not useful (38 percent).

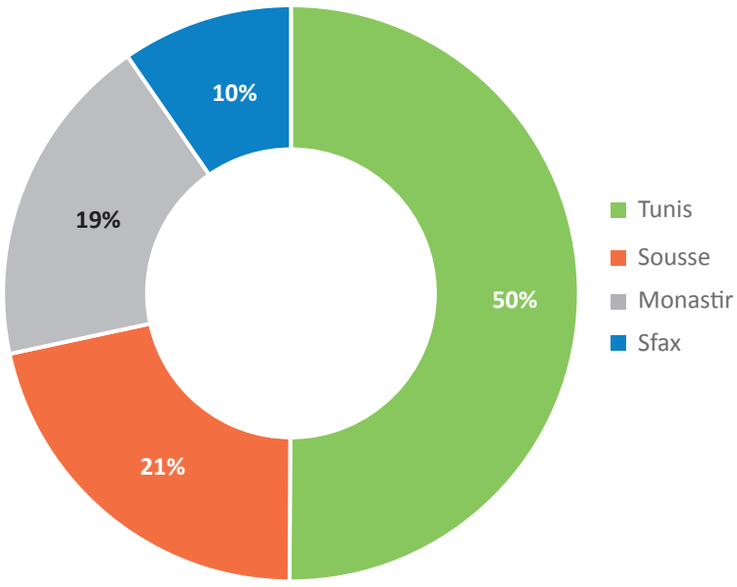
Figure 2. 12 Barriers accessing ART (n=339)



Almost all respondents who adhere to ART have initiated their treatment in the same year of diagnosis. Half of respondents under treatment received ART in Tunis treatment centre, these included residents of Tunis - the capital, Ben Arous, Ariana, Manouba, and Bizerte. Sousse treatment centre provided for 21 percent of respondents coming from Sousse and Kairouan. Monastir centre covered for Monastir, Tunis Sousse and Mahdia regions while Sfax centre covered for Sfax, Medenine and Gabes. The average (median) time respondents spend to reach treatment centre is 30 minutes for Sousse centre, 50 minutes for Sfax centre, and 1 hour for Tunis and Monastir centres. The average (median) transportation cost to reach treatment centre ranges from 2 dinars for those receiving treatment in Souse, to 10 dinars for those receiving treatment in Monastir and Sfax, and 15 dinars for those receiving treatment in Tunis.

Almost all respondents who are under treatment receive their ART tablets every 1-3 months and 68 percent of them reported they have experienced viral suppression.

Figure 2. 13 Distribution of respondents adhering to treatment by health centre (n=647)



Services and unmet needs

Respondents were asked to rank their unmet needs from a list of 18 essential needs. **Shelter, psychosocial support, food quality, food quantity and medicine** were the needs ranked first by 70 percent of respondents. Respondents were also asked about type of assistance that best suits their needs among services WFP can provide. As expected, 75 percent of respondents reported cash is the most suitable followed by 13 percent preferring food vouchers as shown in figure (2.14). This study mapped the services PLHIV in Tunisia receive as well as main service providers. Table (2.3) shows that Government of Tunisia is the main provider of screening and treatment services with more than 80 percent of respondents who receive treatment reporting they have been receiving these services monthly or quarterly for years. Only 22 percent of respondents under treatment reported they receive food vouchers from local NGOs and 4 percent reported receiving cash assistance from the government under social protection scheme. Less than 10 percent of PLHIV under treatment reported receiving health or nutrition education services from local NGOs which points out a need for WFP Social and Behavioural Change Communication intervention.

Figure 2. 14 Most suitable type of assistance

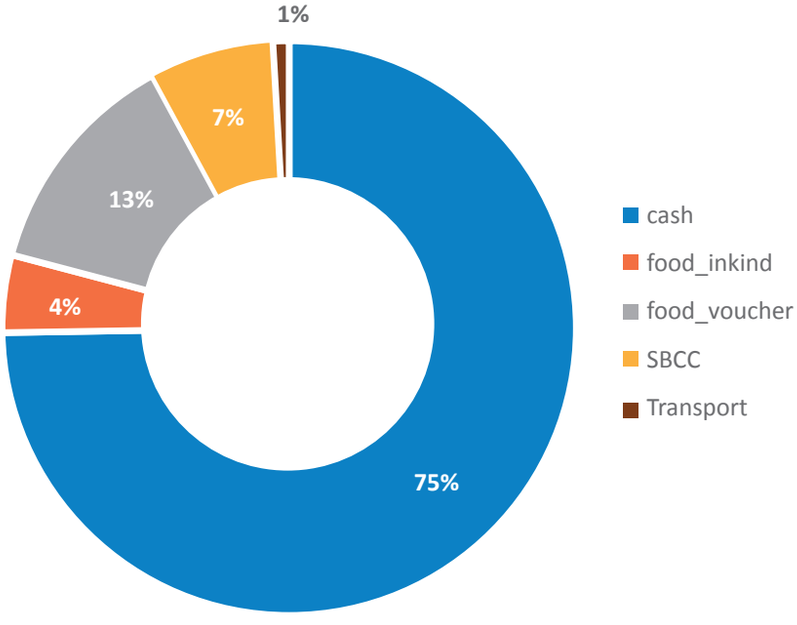


Table 2. 3 Mapping of services for PLHIV under treatment

Type of assistance	percent receiving assistance (n=647)	Assistance main provider	Value of assistance in TND (median)	Duration of assistance in month (median)	Frequency of receiving assistance
Free ART treatment	81.0	Government	Don't know	50	monthly or quarterly
Free screaning assistance	81.9	Government	Don't know	60	Quarterly
Food voucher	21.8	NGOs (ATL, ATP)	70	24	quarterly or bi-annually
Cash Assistance	3.7	Government	180	75	Monthly
Health or Nutrition Education	8.4	NGOs (ATP)	-	24	monthly or quarterly
COVID-19 related assistance	9.4	NGOs (ATP)	100	5	Monthly

Cash assistance and food vouchers are types of assistance that significantly varied by region of residency. Even though prevalence of cash assistance is very low, it was higher among those who lived in Tunis the capital versus those who lived outside the capital (6.5 percent vs. 2.3 percent). On the other hand, food vouchers were more prevalent among those who lived outside the capital (26 percent vs. only 14 percent among capital residents). It is critical to consider other socio demographic characteristics of location when analysing centralization of services.

For example, unemployment is found to be significantly higher among those residing in Tunis the capital with a higher dependence on aid as a source of income when compared to those residing outside Tunis (i.e. unemployment increases to 70 percent among capital residents versus only 50 percent among noncapital residents).

PLHIV who live in Tunis the capital also had slightly lower median income standing at TND 450 per month in comparison to TND 600 for those living outside the capital. Capital residents usually belonged to the poorest quintiles as well.

PLHIV under COVID-19

There is no evidence that prevalence of COVID-19 infection was high among PLHIV or their family member. Only 6 out of 2000+ PLHIV family members showed COVID-19 symptoms in the three months prior to data collection and none tested positive for the pandemic.

Yet, COVID-19 created massive uncertainty among PLHIV with lack of guidance on how the pandemic affect their health condition.

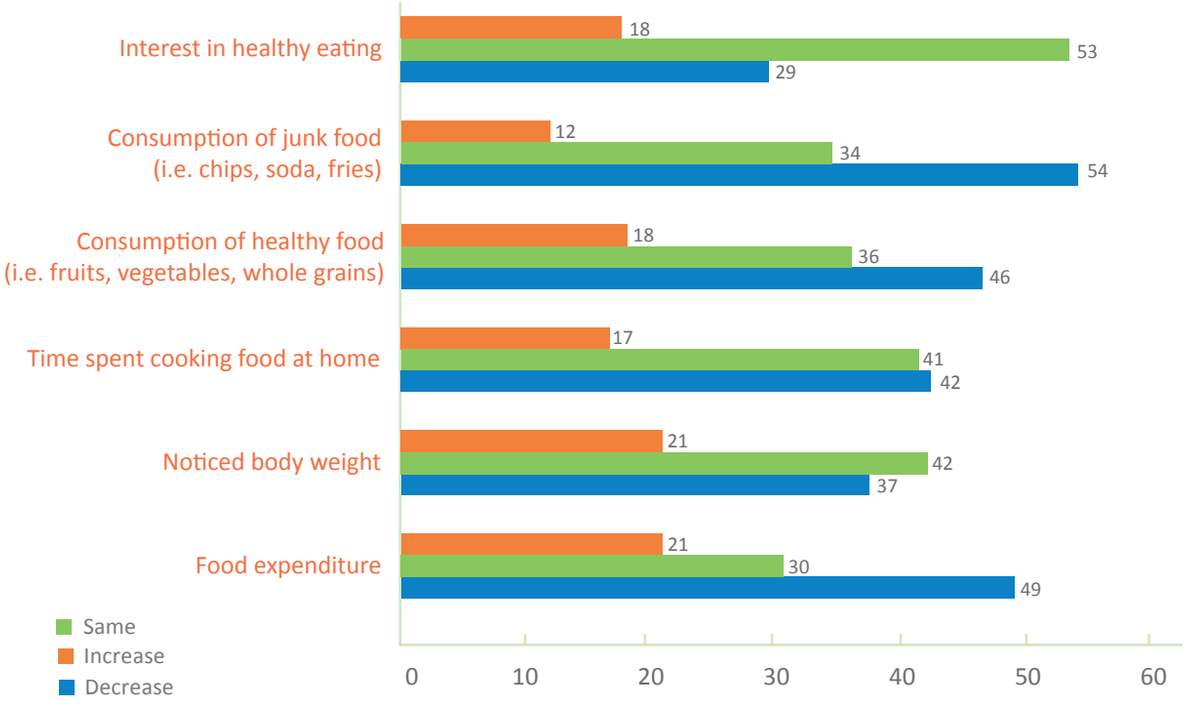
COVID-19 also created a disruption in accessing ART across the country. In some cases, volunteers and PLHIV community leaders needed to home deliver treatment to PLHIV. This study contributes to the evidence building around HIV and COVID-19 pandemic by exploring behavioural change related to food consumption and nutrition during the pandemic breakthrough.

One third of this survey respondents reported eating more during COVID-19 breakthrough due to increased anxiety and depression.

Figure (2.15) illustrates change in other nutrition related behaviours, it indicates very limited increase in healthy eating habits like general interest in healthy eating, consumption

of healthy food and spending time cooking at home. However, consumption of junk food also seemed to decrease among PLHIV respondents during the COVID-19 breakthrough.
Respondents were also asked if they noticed any changes on their body weight during the pandemic, only one fifth reported an increase in body weight. Almost half of the respondents unexpectedly reported a decrease in food expenditure during the COVID-19 breakthrough.

Figure 2. 15 COVID-19 related behavioural change



HIV related risk behaviour

In order to evaluate awareness level among PLHIV regarding risk behaviour, respondents were asked whether they shared needles or engaged in unprotected sexual intercourse during the 30 days prior to study.
Out of all respondents, 13 percent reported injecting drugs in the 30 days prior to data collection, slightly less than half of them shared at least one needle. Figure (2.16) examines this finding among PLHIV who reported being infected due to injecting drugs, 47 percent of them reported sharing a needle in the past 30 days which indicates that risk behaviour persists. Risk related to unprotected sex seemed to be less persisting, less than one quarter of respondents who reported being sexually active in the past 30 days reported engagement in unprotected sex. Figure (2.17) disaggregates this finding by key population.

Figure 2. 17 Percent of IDUs sharing a needle during past 30 days

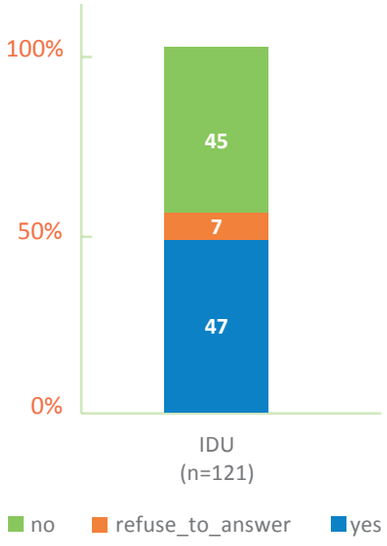
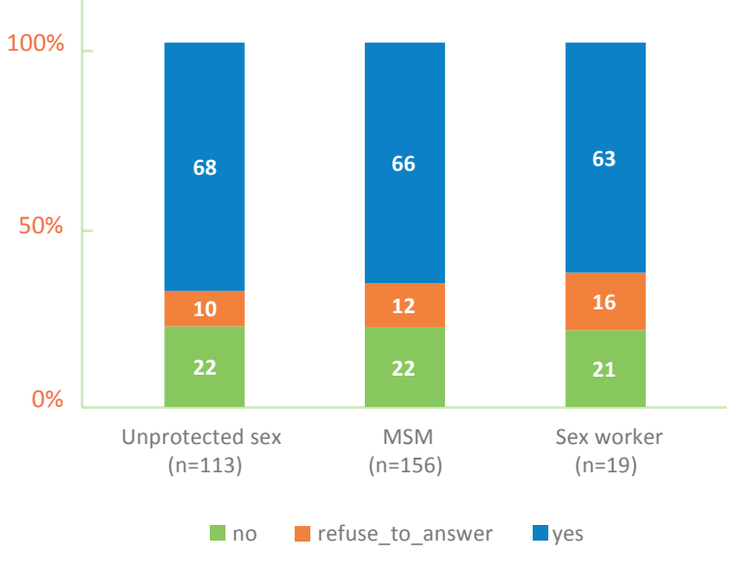


Figure 2. 16 Percent of key populations using protection/ condom during intercourse in past 30 days



CHAPTER 3

Situation of Food Security

Key Findings

- Food insecurity among PLHIV in Tunisia reached 39 percent with significant to extreme food consumption gaps or need to resort to loss of livelihood assets or irreversible coping strategies to meet food needs.

- Food insecurity is almost double among those who miss ART compared to those who adhere to treatment (57 percent vs. 30 percent, respectively). PLHIV who miss ART usually belong to the poorest quintile which indicates the vulnerability status of this group.

- Food insecurity is significantly higher among sex workers (59 percent) followed by injecting drug users (54 percent).

- 27 percent of all PLHIV respondents' households fall in the poor food consumption group which implies that these households do not consume staples and vegetables every day and never or very seldom consume protein-rich food such as meat and dairy.

- A significant deficiency is noticed in the Hem Iron rich food intake with 43 percent of PLHIV respondents' households never consuming this food group. Rare intake of Hem Iron rich foods results in iron deficiency, one of the main causes of anaemia which significantly impacts productivity and quality of life.

- Overall, 30 percent of respondents resorted to emergency livelihood based coping strategies in the 30 days prior to data collection; 16 percent begged, 18 percent engaged in illegal activities (theft, prostitution) and 9.4 percent resorted to entire household migration or homelessness.

- More than half of all households resorted to lowering quality of food, reducing portion per meal and reducing number of meals per day for an average of 3 days per week.

- Malnutrition seemed to be concerning among PLHIV participants, 31 percent of all respondents were either overweight or obese while 6 percent were underweight. Obesity is significantly higher among females with 13 percent of female participants being obese versus only 3 percent of their male counterparts. Overweight/ obesity was double among those adhering to ART in comparison to those missing treatment.

This chapter presents the methodology and results of computing the Consolidated Food Security Index of PLHIV population in Tunisia. The Food Security Index is a console of three core WFP indicators; Food Consumption Score; Food Expenditure Share, and Livelihood-based Coping Strategy Index. Detailed guidance is available in the Consolidated Approach on Reporting Indicators of Food Security (CARI) guidance document [13]. Further indicators examined in this chapter include the Food Consumption Score for Nutrition [14], the Consumption-based Coping Strategy Index, the Women Dietary Diversity Score, and the situation of Malnutrition.

Each of these indicators will be presented separately in the following sections.

13 WFP (2015). Consolidated Approach to Reporting Indicators of Food Security (CARI) guidance document. Available Online.

14 WFP (2015). Food Consumption Score Nutritional Quality analysis (FCS-N). Technical Guidance document. Available Online.

Consolidated Approach to Reporting Indicators on Food Security (CARI)

Food Security Index is a console that combines food security indicators into a summary indicator that represents the population overall food security status.

The console represents two domains of food insecurity; the current status domain that is based on the Food Consumption Score; and the coping capacity domain that is based on Food Expenditure Share and Livelihood-based Coping Strategy Index.

After calculating each of these three indicators, they are converted into a 4-point scale to calculate the console following a simple average process yielding in a score between 1-4 that is then rounded and used to assign each HH to a food security group.

Table (3.1) shows the completed Food Security console classifying all PLHIV respondents HHs into one of four categories: food secure, marginally food secure, moderately food insecure, and severely food insecure.

After assigning each HH to a food security group, the food secure and marginally food secure groups are recoded into one group (food secure), and the moderately food insecure group is recoded together with the severely food insecure into one group (food insecure).

Table (3.2) presents the final prevalence of food insecurity among population of interest. **Food insecurity among PLHIV in Tunisia reached 39 percent**. This group has significant to extreme food consumption gaps or need to resort to loss of livelihood assets or irreversible coping strategies to meet their foodneeds.

Table 3. 1 Consolidated Approach for Reporting Indicators of Food Security

Domain		Indicator	Food secure (1)	Marginally Food secure (2)	Moderatel y food insecure (3)	Severely food insecure (4)
Current Status	Food consumption	Food consumption group	Acceptable		Borderline	Poor
			54.3%		**18.6%**	**27.2%**
Coping Capacity	Economic Vulnerability	Food expenditure share	Score <50%	50% - 65%	65% - 75%	Score>75%
			69.0%	**20.2%**	**6.8%**	**3.9%**
	Asset Depletion	Livelihood coping strategy categories	None	Stress	Crisis	Emergency
			31.9%	**23.4%**	**15.0%**	**29.7%**
	Food Security Index		**28.8%**	**32.1%**	**33.8%**	**5.3%**

Table 3. 2 Prevalence of Food Insecurity among PLHIV population

Food insecurity index	Description	Food secure/ Food insecure
Food secure (1)	Able to meet essential food and non-food needs without engaging in atypical coping strategies	**60.93%** Food secure
Marginally Food secure (2)	Has minimally adequate food consumption without engaging in irreversible coping strategies; unable to afford some essential non-food expenditures	
Moderately food insecure (3)	Has significant food consumption gaps, OR marginally able to meet minimum food needs only with irreversible coping strategies	**39.07%** Food insecure
Severely food insecure (4)	Has extreme food consumption gaps, OR has extreme loss of livelihood assets will lead to food consumption gaps, or worse	

The Food Security index is disaggregated by HH characteristics, ART situation and Mode of Transmission for further understanding of the situation of food security among these sub-groups.

No statistically significant relation was found between food security and gender of respondent or gender of head of HH. However, a significant relation is observed between food security and wealth groups (p-value=0.000).

Prevalence of food insecurity increased to 70 percent among the poorest wealth quintile and decreased to 5 percent among the richest as shown in figure (3.1).

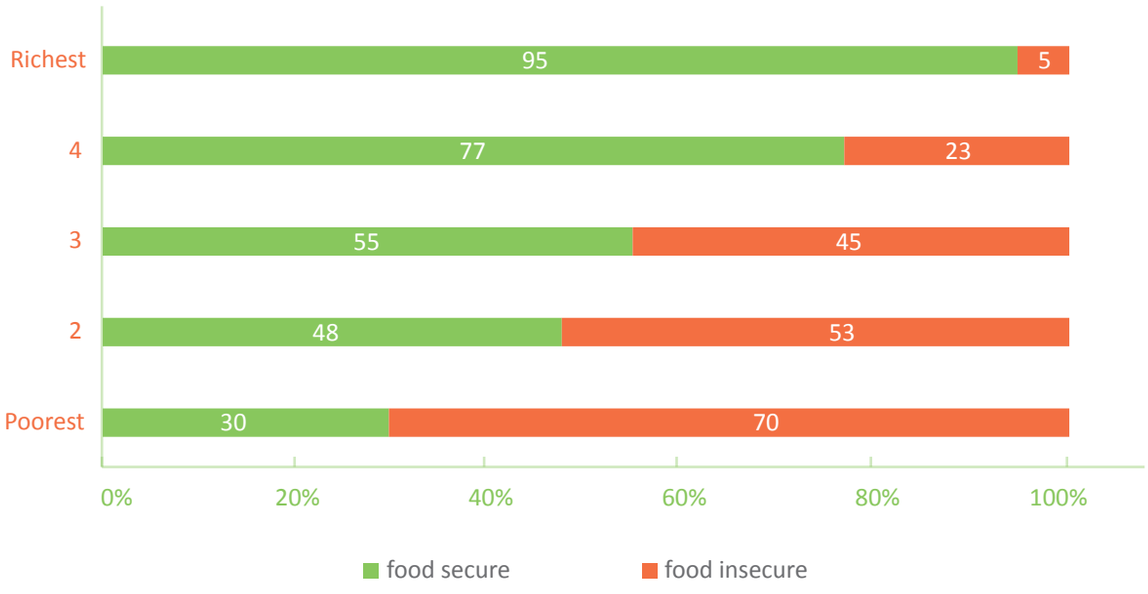
In addition, single-person HHs where more vulnerable to food insecurity since 52 percent of these HH were food insecure compared to only 36 percent of HHs with 4-6 members, and 29 percent in HHs with 5+ members (p-value=0.000).

Respondents' education was also significantly correlated with their HHs status of food security.

Respondents with basic or no education are more likely to belong to food insecure HHs compared to respondents with secondary or higher education.

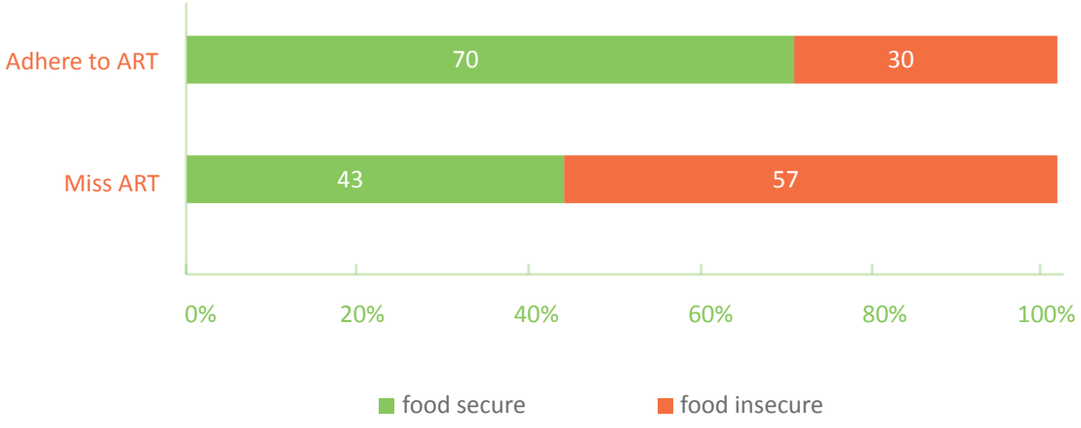
Food security also varied by HHs primary source of income, 59 percent and 69 percent of HHs whose primary source of income was aid or family support, respectively, were food insecure compared to only 20 percent of HHs whose primary source of income was work salary. Additionally, Food insecurity was significantly higher among PLHIV who are currently unemployed compared to employed ones (45 percent and 31 percent respectively). Location of residence is another factor found to be highly correlated with food insecurity; 48 percent of PLHIV residing in Tunis the capital were food insecure versus 34 percent of non-capital residents.

Figure 3. 1 Food security index, by wealth quintiles



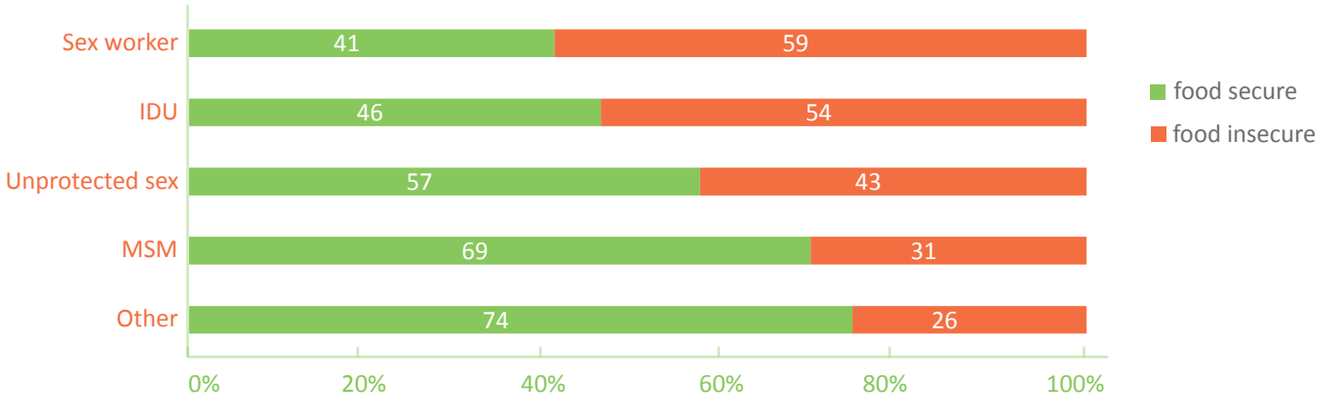
Correlation between food security and adherence to ART is also found to be statistically significant (p-value=0.000) where food insecurity is almost double among those who miss ART compared to those who adhere to treatment (57 percent vs. 30 percent, respectively) as shown in figure (3.2). It is worth to mention though that those who miss ART usually belong to the poorest quintile which indicates the vulnerability status of those not under radar.

Figure 3. 2 Food security index, by ART adherence



Looking at key PLHIV population, it is observed that food insecurity is significantly higher among sex workers (59 percent) followed by injecting drug users (54 percent) as shown in figure (3.3).

Figure 3. 3 Food security index, by PLHIV key population



Food Consumption Score (FCS)

The Food Consumption Score is one of the main three indicators reported on as part of consolidated Food Security Index.
FCS is a proxy of households' food access and a core WFP indicator used to classify households into three different groups: households with poor consumption, borderline consumption, and acceptable consumption.

The food consumption score examines the consumption of eight food groups weighted by their dietary value, as defined by WFP[15], using seven-day recall period preceding the assessment.

The ninth food group, condiments, is not used in the FCS calculation. Table (3.3) illustrates the food groups along with their respective weights.

PLHIV participants eat only 2 meals per day on average.

Table 3. 3 Food Consumption Score, food groups, and respective weights

Food group	Examples/ Explanation	weight
Cereals, grains, roots and tubers	rice, pasta, bread, couscous, sorghum, potato, sweet potato	2
Legumes / nuts	beans, cowpeas, peanuts, lentils, hummus, nuts	3
Milk and other dairy products	fresh milk / raied, leben, yogurt, cheese, other dairy products (Exclude margarine / butter or small amounts of milk for tea / coffee)	4
Meat, fish and eggs	goat, beef, chicken, fish, including canned tuna, escargot and / or other seafood, eggs (meat and fish consumed in large quantities and not as a condiment)	4

15 WFP (2019). Programme Indicator Compendium. Corporate Results Framework. Available Online

Groupe alimentaire	Exemples / Explication	poids
Vegetables and leaves	spinach, onion, green peas, tomatoes, carrots, peppers green beans, lettuce, etc.	1
Fruits	banana, apple, lemon, oranges, etc.	1
Oil / fat / butter	vegetable oil, palm oil, margarine, other fats / oil	0.5
Sugar, or sweet	sugar, honey, jam, cakes, candy, cookies, pastries, cakes and other sweet (sugary drinks)	0.5
Condiments / Spices	tea, coffee / cocoa, salt, garlic, spices, yeast / baking powder, tomato / sauce, meat or fish as a condiment condiments including small amount of milk / tea coffee	0

These weights are multiplied by number of days per week the HH ate this food group and summed across all food groups.

The final FCS then is used to classify HHs into one of three groups based on pre-set threshold as illustrated in Table (3.4).

The table also shows that **27 percent of all PLHIV respondents fall in the poor food consumption group** which implies that these HHs do not consume staples and vegetables every day and never or very seldom consume protein-rich food such as meat and dairy.

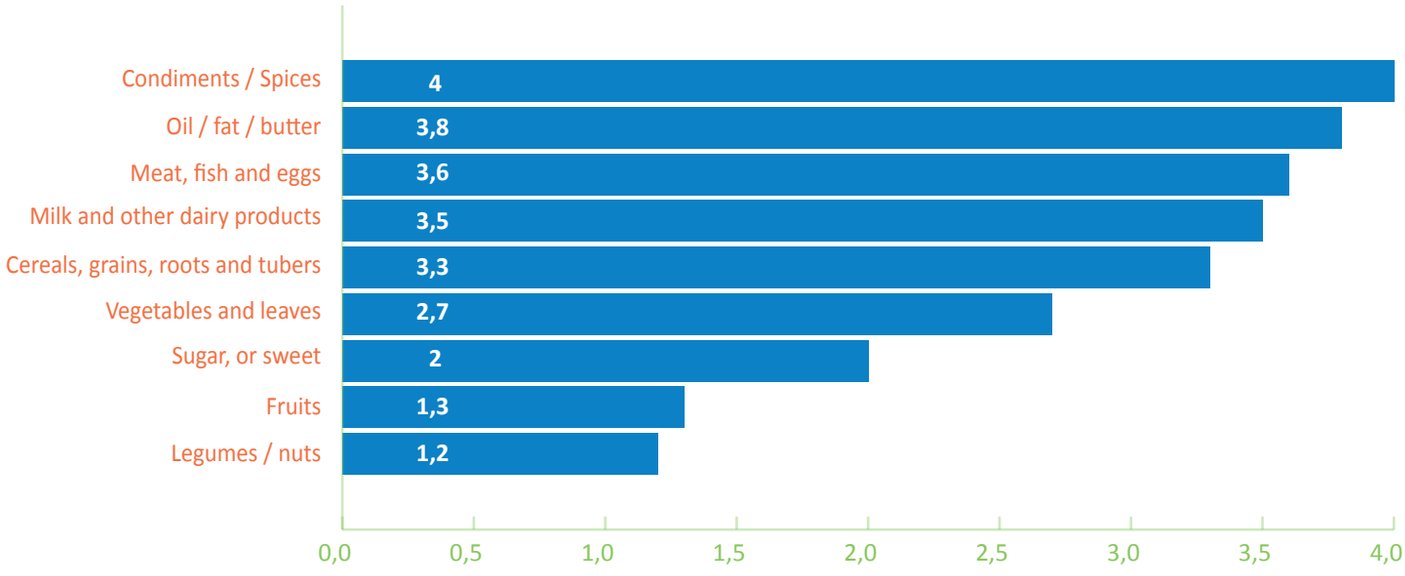
Table 3. 4 Food consumption score threshold and food consumption groups prevalence among PLHIV respondents

Food Consumption Group	Threshold	Interpretation	Percent
Poor food consumption	**0 - 28**	Households that are not consuming staples and vegetables every day and never or very seldom consume proteinrich food such as meat and dairy.	**27.2%**
Borderline food consumption	**28.5 - 42**	Households that are consuming staples and vegetables every day, accompanied by oil and pulses a few times a week.	**18.6**
Acceptable food consumption	**> 42**	Households that are consuming staples and vegetables every day, frequently accompanied by oil and pulses, and occasionally meat, fish and dairy	**54.3**
Total			**100**

This observation is further examined by the unweighted average number of days each food group is consumed by PLHIV respondents.

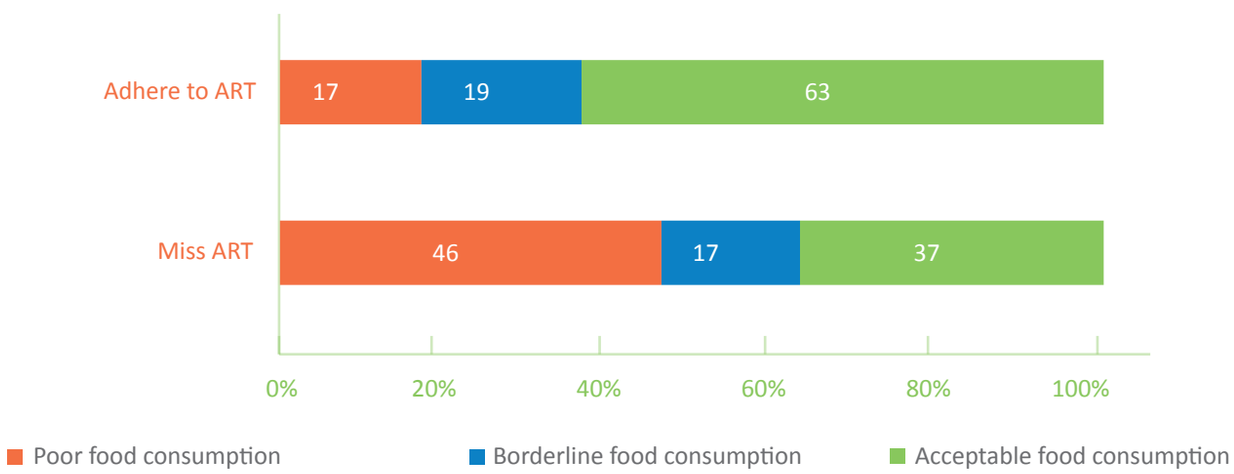
Figure (3.4) shows that condiments like coffee and tea, and oil or fats are the two food groups consumed no less than 4 days a week. These are followed by protein, dairy and starchy food with an average of 3-3.5 days a week. Fruits and vegetables are consumed between 1-3 days per week. Pulses, legume and nuts are only consumed once per week on average.

Figure 3. 4 Average number of days per week each food group is eaten



Similar to the pattern found with consolidated food security index, no significant relation is found between Food consumption score and gender of respondent or gender of head of HH. Figure (3.5), however, shows that poor food consumption is almost three times higher among those who miss treatment compared to those who adhere to ART (pvalue = 0.000). Same pattern is noticed by wealth groups where poor food consumption increased to 58 percent among the poorest quintile. Poor food consumption is also found to be the highest among sex workers and IDUs.

Figure 3. 5 Food consumption score, by ART adherence



Three of every four PLHIV respondents reported they rarely care if the food they eat is healthy.

Food Consumption Score – Nutrition (FCS-N)

In specific contexts when the nutrition situation needs to be further studied, the Food Consumption Score is adapted by adding food groups that are rich with macro and micronutrients. These groups include orange vegetables, green leafy vegetables, orange fruits, flesh meat, organ meat, fish and eggs.

These food groups along with other FCS groups build up three main categories of Protein rich foods, Vit A, and hem iron rich foods as illustrated in table (3.5).

Table 3. 5 Nutrient rich food groups included in FCS-N

	Food group	Examples / Explanation
Vit A rich foods	Dairy	fresh milk / raieb, leben, yogurt, cheese, other dairy products
	Organ meat	liver, kidney, heart, legs and other organ meats
	Eggs	Eggs
	Green leafy veg	carrot, red pepper, pumpkin
	Orange fruits	apricot, peach
Protein rich foods	Pulses	beans, cowpeas, peanuts, lentils, hummus, nuts
	Dairy	fresh milk / sour, yogurt, cheese, other dairy products
	Flesh meat	beef, pork, lamb, goat, rabbit, chicken, duck, other birds
	Organ meat	liver, kidney, heart, legs and other organ meats
	Fish	fish, including canned tuna, escargot, and / or other seafood (fish in large quantities and not as a condiment)
	OEufs	
Hem iron rich foods	Flesh meat	beef, pork, lamb, goat, rabbit, chicken, duck, other birds
	Organ meat	liver, kidney, heart, legs and other organ meats
	Fish	fish, including canned tuna, escargot, and / or other seafood (fish in large quantities and not as a condiment)

FCS-N collects number of days each of these food groups is consumed over the 7 days prior to data collection. The number of days each group is consumed is summed per nutrient rich category and the final score is recoded as follows:

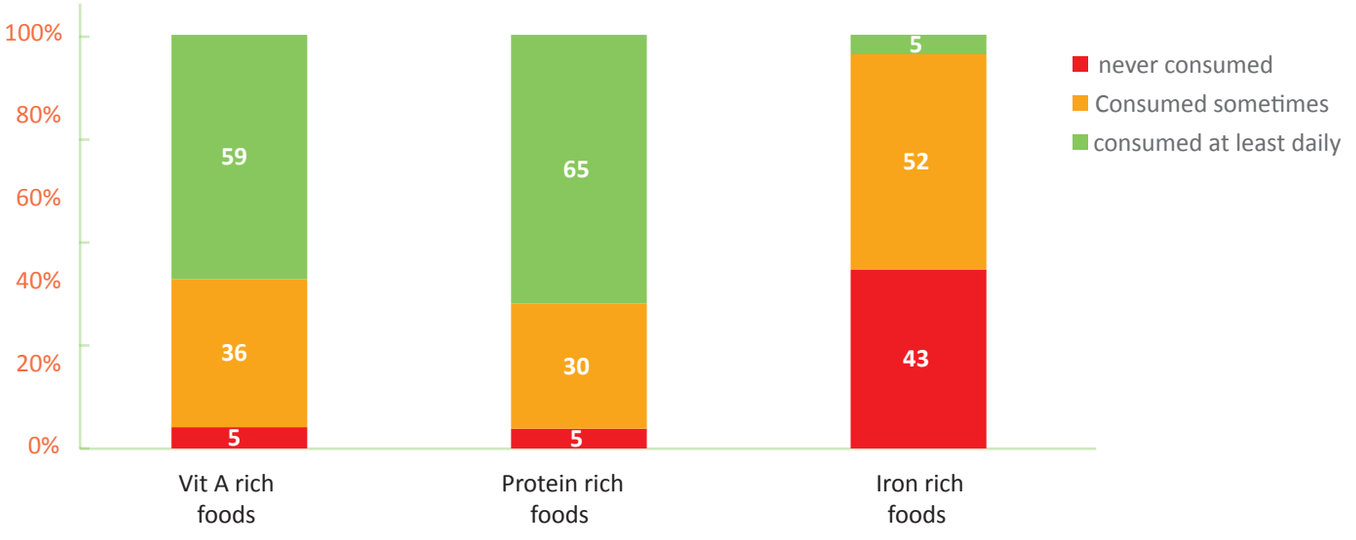
- Never consumed: 0 days
- Consumed sometimes: 1-6 days
- Consumed at least daily: 7+days

It is worth to notice that some food items are repeated for including more than one nutrient.

For example, flesh meat, organ meat and fish are repeated food items across protein rich food group and hem iron rich food group. Figure (3.6) shows the results of FCS-N for each nutrient rich food category. **A significant deficiency is noticed in the Hem Iron rich foods with 43 percent of PLHIV respondents never consuming this food group** in the week prior to data collection.

This can be interpreted by the relatively expensive food items composing the hem iron rich food group with no plant-based or cheaper replacement.
Rare intake of Hem Iron rich foods results in iron deficiency, one of the main causes of anaemia which significantly impacts productivity and quality of life.

Figure 3. 6 Consumption of FCS-N food groups

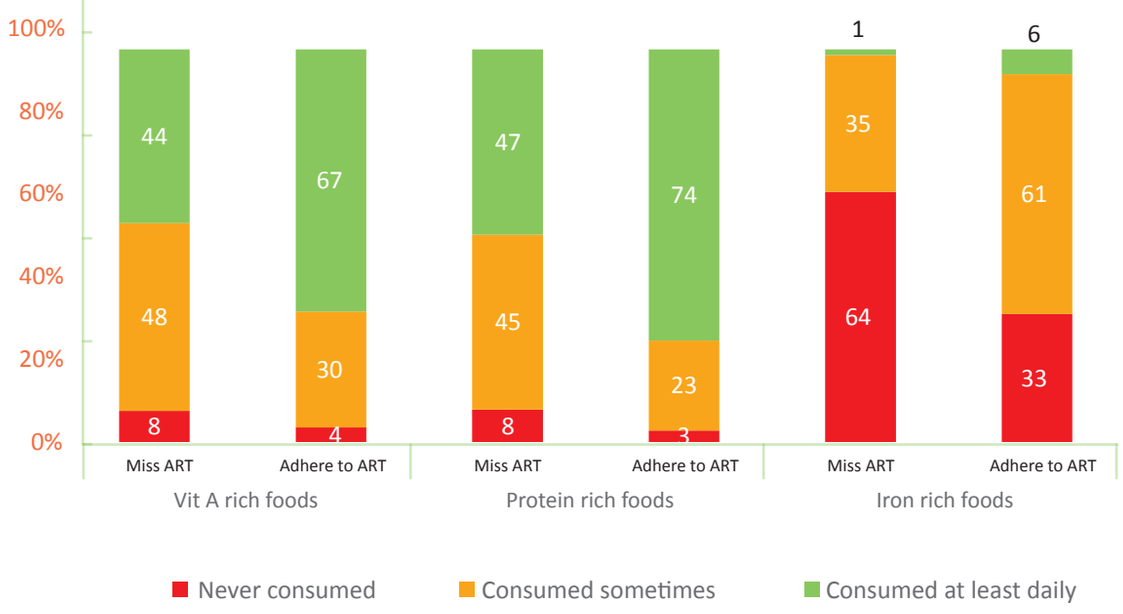


The same pattern is observed when disaggregating results of Food Consumption Score- Nutrition by adherence to ART or wealth index. Figure (3.7) shows that 64 percent of those who miss ART have never consumed iron rich foods in the 7 days prior to data collection versus 33 percent of those adhering to ART not consuming this food group for the same reference period.

Hem iron rich food group is also rarely consumed among IDUs (72 percent) and sex worker (52 percent).

This is strongly correlated to poverty status of these key populations and relatively expensive prices of food items in the iron rich group.

Figure 3. 7 FCS-N, by ART adherence



Livelihood-based Coping Strategy Index (CSI)

The livelihoods-based coping strategy index measures the coping capacity of a HH on the long term. It is composed of 10 coping strategies with different levels of severity as shown in Table (3.6). These strategies are selected from WFP master list of coping strategies after consultation with PLHIV community leaders during the design phase. The index includes four stress strategies, three crisis strategies and three emergency strategies:

- Stress strategies indicate a reduced ability to deal with future shocks as the result of a current reduction in resources or increase in debts.
- Crisis strategies are often associated with the direct reduction of future productivity.
- Emergency strategies also affect future productivity but are more difficult to reverse or more dramatic in nature than crisis strategies.

The livelihood coping strategies module collects information on whether the HH has resorted to this strategy in the 30 days prior to data collection. It also asks whether the HH has exhausted this strategy before in which case they are considered as resorting to this strategy and recorded as 'yes' for the main indicator.

Table 3. 6 Livelihood-based Coping Strategies with level of severity and percent of HH employing them

Livelihood-based Coping Strategy	Percent of HHs employing this strategy	Severity
Sold household assets/goods (radio, furniture, television, jewellery etc.)	32.0	Stress
Sent household members to eat elsewhere	16.5	Stress
Purchased food on credit or borrowed food	45.5	Stress
Borrowed money	54.2	Stress
Sold your ART tablets	1.3	Crisis
Withdrew children from school	3.0	Crisis
Reduced expenses on health and education	23.8	Crisis
Begged	15.6	Emergency
Engaged in illegal income activities (theft, prostitution)	15.6	Emergency
Entire household migrated (or homelessness)	9.43	Emergency

Households are then grouped and ranked according to the most extreme strategy they employ. HHs that do not resort to any of these strategies are recorded as neutral.
Table (3.7) shows the level of severity of coping strategies that PLHIV in Tunisia resort to, **30 percent of respondents resort to emergency coping strategies.** No significant relation is found between severity of coping strategies and respondents' gender or head of household gender, but as expected, severity of coping strategies increases for poorer HHs, among sex workers and IDUS, and PLHIV missing ART (all statistically significant with pvalue= 0.000)

30% of PLHIV

resorted to **emergency** coping strategies.

16 % Begging

18 % Theft and prostitution

9 % Migration and homelessness

Table 3. 7 Percent of HHs employing various levels of coping strategies

Severity level	Frequency	Percent
Neutral	314	31.9
Stress	231	23.4
Crisis	148	15.0
Emergency	293	29.7
Total	986	100

Food Expenditure Share (FES)

The FES is a proxy indicator for the economic vulnerability of a household. In general, the higher the expenses are on food in relation to other goods and services, the more economically vulnerable the household. On average, PLHIV respondents HHs spend 41 percent of their total expenses on food followed by rent (19 percent) and utilities (12 percent).
Out of all HHs, 11 percent spent more than 65 percent of their budget on food. This pattern did not change by any of the population characteristics. Food expenditure share is found to be slightly higher among those living in Tunis the capital (42 percent) versus those who live outside the capital (39 percent).

This finding is aligned with other findings showing capital residents to belong to poorer wealth quintiles and have less average income.

Table 3. 8 Food expenditure share

Seuils de part des dépenses alimentaires	Fréquence	Pourcentage	
<50 percent	666	69	89
50 percent-<65 percent	195	20	
65 percent-<75 percent	66	7	11
>=75 percent	38	4	
Total	965	100	

Consumption-based Coping Strategy Index, Reduced (rCSI)

The Reduced Coping Strategy Index measures the stress level a household is facing when exposed to food shortage by assessing the frequency of adoption of 5 food-related coping mechanisms, as well as their relative severity.

It is calculated from the below five standard strategies using a 7-day recall period..

Table 3. 9 Consumption-based Coping Strategies

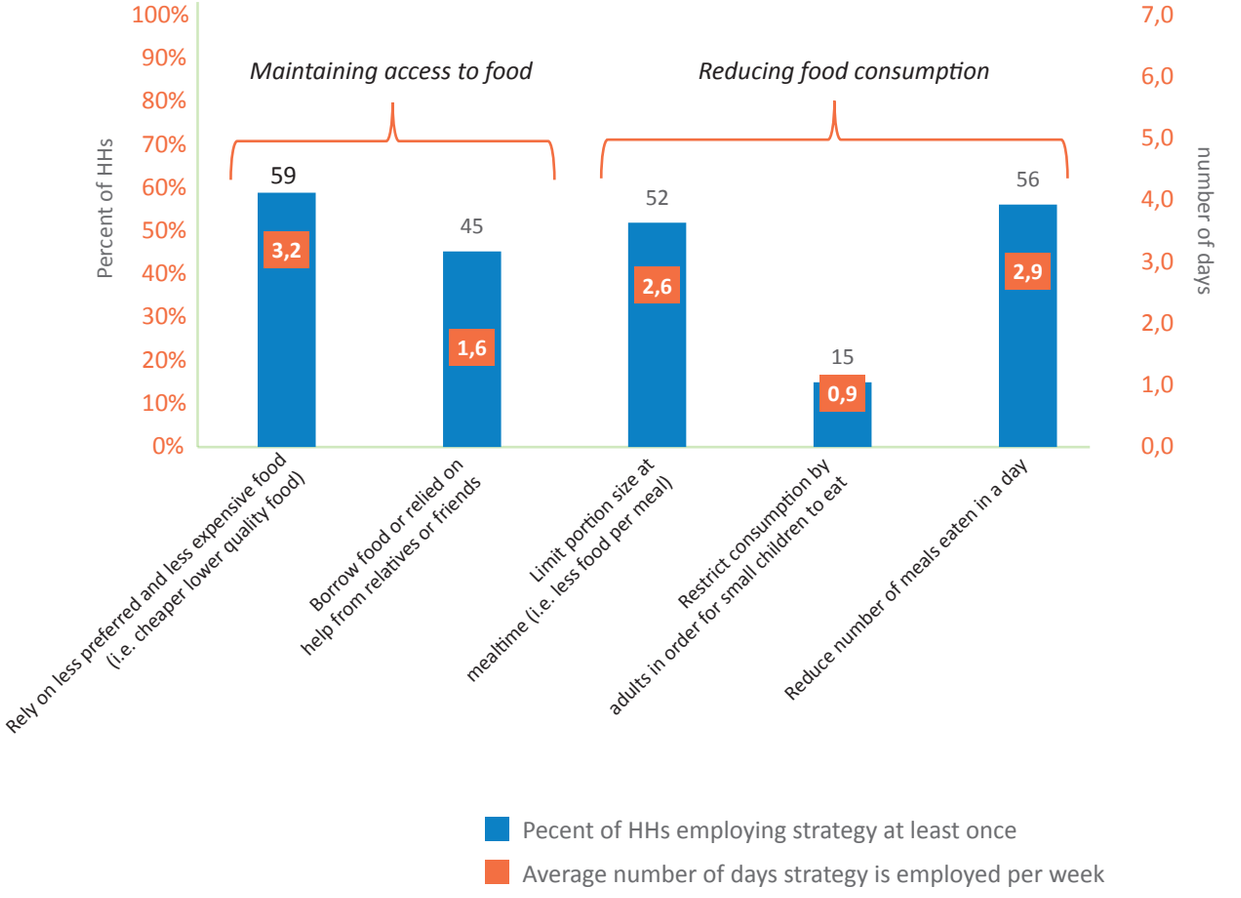
Strategy	weight
Rely on less preferred and less expensive food (i.e. cheaper lower quality food)	1
Borrow food or relied on help from relatives or friends	2
Limit portion size at mealtime (different from above: i.e. less food per meal)	1
Restrict consumption by adults in order for small children to eat afin que les enfants puissent manger	3
Reduce number of meals eaten in a day	1

The rCSI module asks about the number of days a HH resorted to any of these strategies in a given week and records answer scores between 0 -7. These scores are then multiplied by their respective weights. The weighted frequency scores are then summed up per HH to calculate overall rCSI score that ranges between 0-56 and expressed as mean score. The mean rCSI score for PLHIV population in Tunisia is 14.

Figure (3.8) shows percent of HHs employing each of the consumption based coping strategies at least once as well as average number of days the strategy is employed during the week prior to data collection.

More than half of all HHs resorted to lowering quality of food, reducing portion per meal and reducing number of meals per day for an average of 3 days per week.

Figure 3. 8 Consumption-based Coping Strategy Index, Reduced (rCSI)



Women Dietary Diversity Score (WDDS)

The WDDS reflects the probability of micronutrient adequacy of the diet and therefore food groups included in the score are tailored towards this purpose. It utilizes similar food groups as the food consumption score but for the individual rather than the HH and with a 24-hours recall period. The index is composed from 9 food groups[16] as follows

Table 3. 10 Women dietary diversity food groups

Food group	Examples
Starchy staples	rice, pasta, bread, couscous, sorghum, potato, sweet potato
Dark green leafy vegetables	Spinach, broccoli, amaranth and / or other dark green leaves
Other vitamin A rich fruits and vegetables	Orange vegetables (vegetables rich in Vitamin A): carrot, red pepper, pumpkin Orange fruits (Fruits rich in Vitamin A): papaya, apricot, peach
Other fruits and vegetables	All other fruits and vegetables
Organ meat	liver, kidney, heart, legs and other organ meats
Meat and fish	Flesh meat: beef, pork, lamb, goat, rabbit, chicken, duck, other birds Fish/ shellfish: fish, including canned tuna, escargot, and / or other seafood
Eggs	
Legumes, nuts and seeds	beans, cowpeas, peanuts, lentils, hummus, nuts
Milk and milk products	fresh milk / raeib, leben, yogurt, cheese, other dairy products

The dietary diversity module assigns the value of 1 to each food group if it was consumed by the respondent in the 24-hours prior to data collection. Scores is then calculated by summing the food groups per respondent. Scores thus range from 0-9 and are expressed as mean number of food groups consumed across the female population. On average, female PLHIV respondents consumed **4 out of 9 food groups** in the day prior to survey.

Malnutrition

Malnutrition occurs when nutrient and energy intake does not meet, or exceeds, an individual's requirements to maintain growth, immunity and organ function[17]. Malnutrition can have several forms:

- Undernutrition occurs when the intake or absorption of energy or one or more nutrients (protein and/or micronutrients) is less than required. Undernutrition can result in chronic malnutrition, acute malnutrition and/or micronutrient deficiencies.
- Overnutrition is the overconsumption of nutrients and energy to the point at which health is adversely affected. Overnutrition can result in overweight and obesity, as well as nutrition-related noncommunicable diseases.

There are multiple ways to assess malnutrition including anthropometry, clinical assessments and biochemical assessments. Anthropometry is the measurement of physical dimensions of the body. The common physical dimensions used for interpreting nutritional status are weight, height or length, and mid-upper arm circumference (MUAC). This survey collected anthropometric measures from respondents (weight, height) to assess their nutritional situation. Enumerators were provided with scales and measuring tapes to collect weight and height during interviews that took place in health care facilities or local NGOs pre-

16 FAO (2010). Guidelines for measuring household and individual dietary diversity. Available Online.

mises. However, it was difficult for enumerators to use these instruments during interviews that took place in informal settings with PLHIV that are not under the radar. In these cases, self-reported anthropometric measures were recorded, and few unrealistic observations were dropped.
Body Mass Index (BMI) is calculated for each respondent following the formula BMI = weight (kg)/ height (m)2. Table (3.11) shows BMI cut offs adopted to define nutrition situation of respondents as well as percent of respondents falling in each group.
Overweight/ obesity seemed to be concerning, **31 percent of all respondents were either overweight or obese while 6 percent were underweight.**

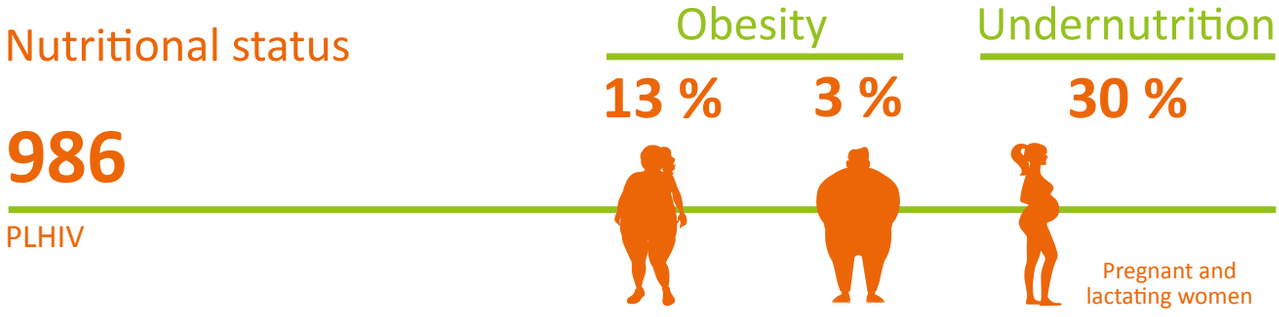
Table 3. 11 Status of malnutrition

Nutrition status	BMI threshold [18]	Percent (n=960)
Underweight	<18.5	5.7
Normal	18.5-<25	63.5
Overweight	25-<30	24.2
Obese	30-40	6.6

Nutrition status is found to be significantly different by gender (p-value=0.000). Following the pattern noticed in the MENA region, obesity is found to be significantly higher among females, 13 percent of female PLHIV respondents were obese versus only 3 percent of male respondents as shown in figure (3.9).

All other disaggregation criteria were also significantly correlated with status of malnutrition. Figure (3.10) shows that underweight is more prevalent among the poorest while overweight/ obesity is more prevalent among the richest. Examining ART status, overweight/ obesity was more than double among those adhering to ART in comparison to those missing treatment as illustrated in figure (3.11). Prevalence of underweight seemed to be highest among IDUs while overweight/ obesity was highest among those who got infected due to unprotected sex and Men having sex with Men as shown in figure (3.12).
For Pregnant and Lactating Women (PLW), only MUAC was used to assess nutrition status since their BMI is altered by body fluids.

However, number of interviewed PLW is very small thus table (3.12) only presents an indication of their nutrition situation, 30 percent of interviewed PLW suffered from undernutrition.



18 Adopted from Centre of Disease Control and Prevention

Table 3. 12 Status of malnutrition for pregnant and lactating women

Nutrition status for PLW	MUAC threshold [19]	Percent (n=24)
Underweight	<23	29.2
Normal	23-33	70.8
Obese	>33	0

Figure 3. 9 Malnutrition, by gender

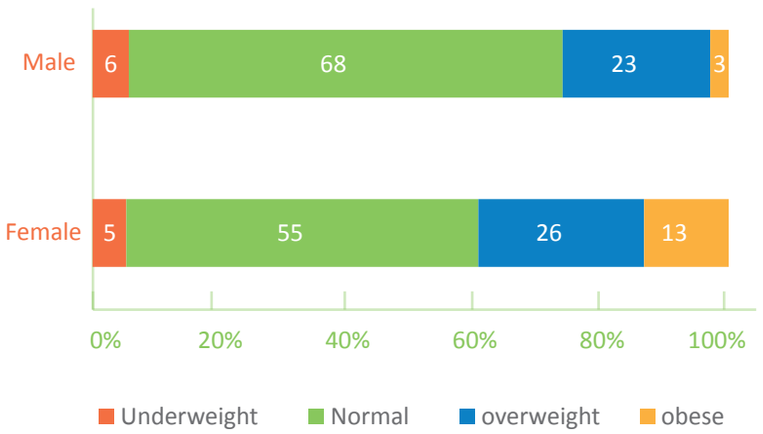
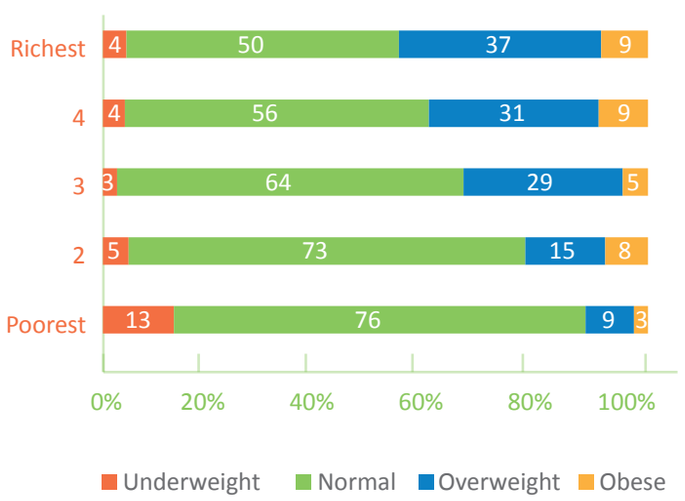


Figure 3. 10 Malnutrition, by wealth quintiles



19 WFP (2018). Food and Nutrition Handbook. Available Online.

Figure 3. 11 Malnutrition, ART adherence

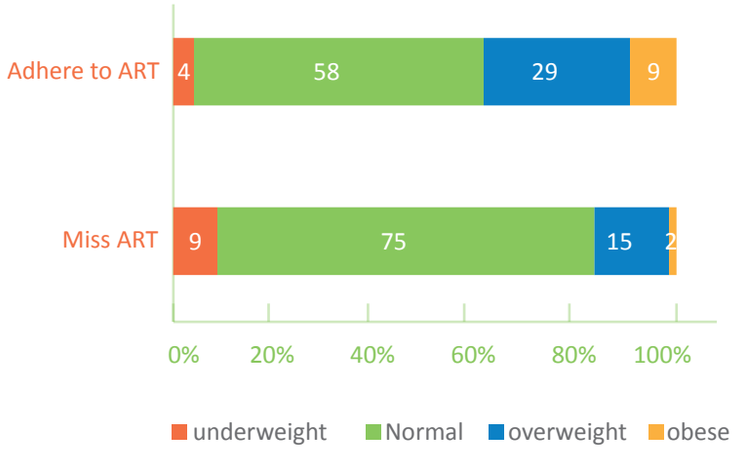
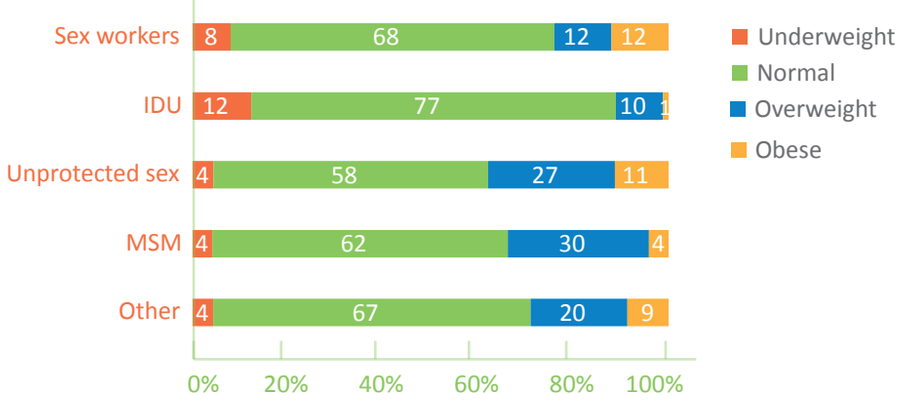


Figure 3. 12 Malnutrition, by PLHIV key population



CHAPTER 4

Qualitative assessment

This chapter presents highlights of qualitative assessment using focus group methodology held with PLHIV on food security, nutrition and overall well-being. Qualitative information fills in contextual gaps that are difficult to comprehend through the survey. The below findings emphasize on the fragile mental health condition of PLHIV as well as the discrimination they suffer from in workplace, in health facilities, and within their own families.

Stigma and discrimination

The stigma associated with AIDS is deeply rooted in Tunisia for more than 40 years. It is caused by multiple factors including the misconceptions about the virus, the myths about modes of transmission, insufficient access to treatment, challenges of public policies addressing HIV, the fact that AIDS is incurable, as well as fears related to illness and death. Stigma can lead to discrimination and other violations of human rights including civic dignity, right to work, and equality which fundamentally affects the well-being of people living with HIV. Stigma and discrimination fuel HIV-transmission as they constitute major obstacles to preventing new infections. They also hinder efforts of providing adequate care and mitigating impact of HIV. Covering up the underlying problem of discrimination may lead to denying its existence and refusing to recognize that action must be taken quickly. This can lead to people living with HIV being mistaken for some kind of "problem" rather than a solution to contain and manage the epidemic. Stigma and discrimination associated with HIV hinders prevention efforts as people fear finding out whether they are infected. Thus, they do not seek information on mitigating risk of exposure and adopting a safe behaviour:
In some cases, PLHIV do not disclose their status even to family members and sexual partners due to fear of loneliness. They are also afraid of the stigma that will follow their family members in case of disclosure:

"Society doesn't accept us; it is normal that it affects our families too. After all, they are not isolated like us, but they will end up being." (female PLHIV)

Impact of stigma and discrimination on PLHIV is multiplied due to intersection of HIV status with other marginalized social categories including sexual orientation, sex work, injecting drugs, illegal migration or being imprisoned. PLHIV interviewed perceived stigma as an obstacle on all levels that they started to internalize it:
"I don't want to face reality and look for a job because in the end they will find out I am HIV-positive, and I will be fired anyway" (female PLHIV)

Mental health issues

PLHIV are highly prone to mental health problems. Unacceptance and secrecy around HIV as well as association of HIV transmission with sexual orientation leaves PLHIV with feelings of guilt and regret while not allowing a chance of self-acceptance.

"We feel guilty because of society, we are not accepted and isolated. I regret being infected." (male PLHIV)

PLHIV may experience dizziness, anxiety, sleeplessness, and neurological problems because of the infection. This can be a direct result of HIV infection, side effects of treatment, or a combination of both. In addition, the seemingly inevitable association between HIV and death creates a state of uncertainty paralleled with a wide array of negative emotions including anxiety, fear, hopelessness, and depression. Furthermore, panic, hysteria, and hatred exercised by the society against PLHIV contribute to a general state of depression. Suicidal thoughts remain a threat to people living with HIV. Even though ART is widely available in Tunisia, some PLHIV who adhere to treatment and experience significant increase of CD4+ count still face challenges with their emotional wellbeing as the association between HIV and death persists.
Many PLHIV who survived the first wave of AIDS in the 1980s and 1990s still have unresolved issues including the emotional burden caused by the loss of friends and loved one. Survivor guilt and posttraumatic stress disorder are more common among PLHIV of older age. As ART, or rather good adherence to treatment, allows people to reach an older age, they risk seeing their network of friends gradually shrinking and finding themselves alone and isolated which can cause depression and anxiety.

"I risk dying on my own. My friends were lucky enough to find me to bury them, I risk not finding anyone to bury me" (male PLHIV)

Still widespread, HIV stigma places an additional psychological burden on people with HIV, and many cannot cope without the right support. In addition, because mental and emotional health issues are generally stigmatized in the society, those affected with HIV may have difficulty recognizing disturbances in their mental health and seeking help to alleviate the distress caused by emotional issues.

Professional life

Professional life of PLHIV in Tunisia is disturbed once they get diagnosed as they struggle to balance between requirements of their medical condition and work. Symptoms, treatment, side effects, scheduling medical consultations, hospitalization, diet requirements, rest and sleep requirements are all factors that affect their work performance.
PLHIV often find themselves requiring work leaves which leads to disclosure of their medical condition and thus the cycle of stigma and discrimination starts. PLHIV endure unpleasant comments and inappropriate looks from colleagues in workplace due to HIV-related stigma. Discrimination against PLHIV in workplace can end by termination or resignation when it becomes too difficult to manage.
PLHIV in Tunisia have the right to appeal against discrimination and forced termination, yet the legal procedures are long and exhausting.

"I have just lodged a complaint for an unfair dismissal against my former employer. I went through a difficult period, I had opportunistic infections and a high viral load. Suddenly it required repetitive work absence, the reason my former boss used against me." (male PLHIV)

Following PLHIV across their career life shows frequent changes in employment status and/ or profession due to instability of work they experience with HIV. Very little awareness-raising activities on the labour market have been implemented for people living with HIV.

"We are not concerned by the job market; we have been condemned since we received the liaison letter from our doctor who declares our seropositivity for HIV. I remember this moment which changed my life." (male PLHIV)

Interviewed PLHIV also expressed uncertainty around social security. Even though the life expectancy of a person living with HIV is now very close to a healthy person, they still do not have equal access to social security schemes. Challenges PLHIV experience in their career and uncertainties related to social security reinforces the psychological burden they live with.

In some cases, livelihood assistance is the only form of intervention PLHIV need.

Medical care and treatment

The quality of medical care in the area of HIV in Tunisia are satisfactory for PLHIV. They get between 2-4 routine medical consultations per year and test for CD4 count and viral load frequently to monitor the progress. Even though PLHIV trust the health care system in Tunisia, their level of satisfaction with health care services vary from one region to another across the country.
For example, distance and wait time form a major obstacle for those who follow up in Tunis but live outside the capital. On the visit day, PLHIV need to arrive early in the morning to register at the reception of the hospital, wait for their turn to see the doctor, get the consultation, and finally receive treatment from the hospital pharmacy. This visit cycle can last for around five hours on each visit which creates some frustration among PLHIV. Other centres like Monastir seemed to have better communication channels and counselling services which attracted PLHIV:

"I am in contact with my doctor on Whatsapp, he is always there for me, even when he is on a mission abroad. The other advantage in the centre of Monastir is the day hospital, a pleasant place, we have all the necessary care even to have our treatment.
Despite the distance (130km from my home), I prefer to go there because of the comfort compared to other centres". (male PLHIV)

PLHIV appreciated the role of social health workers guiding them through the health care system.
Social health workers had significant impact on increasing adherence to treatment through home visit and referrals. Based on NGOs observations, treatment adherence among PLHIV who receive social support is better compared to those who do not receive any support. Social health workers in Tunisia seem to have a comprehensive case management approach staring by understanding the person situation and needs, available resources, and convenient method of referral. As critical as their role is, social health workers are not recognized as professional health providers to avoid mixing their role with nurses. Thus, the support they provide through listening and guiding PLHIV is not streamlined across Tunisian health care system or civil society organizations. Their role is currently funded through Global Fund and other donors which risks their sustainability. PLHIV suffer discrimination and poor health services in any department other than infectious diseases. They are sometimes denied treatment, surgery, and dental care. Interviewed PLHIV shared their negative experiences in various department.

One of the pregnant women described her situation:

"I will never forget my first childbirth in the maternity ward. Apart from the staff who treated me like I had the plague, they wrote on a white paper (HIV ++). Luckily for me, the 7 other women in the same room did not understand the meaning. They even stuck the same sheet on my baby's cradle. I had to suffer at the time of childbirth because the midwives and the nurses refused to approach me. It continued even after childbirth; they gave instructions to other hospitalized women not to approach me. Suddenly I had no one to give me a drink. I was waiting for the authorized visit at 1 p.m. and 6 p.m., in the meantime, I was disabled." (female PLHIV)

Others suffered with receiving dental care:

"Currently my appointment (with the dentist) has been postponed for more than 9 months, for reasons that I do not know …" (male PLHIV)

One of the social workers interviewed explained that a possible reason of discrimination against PLHIV in other health departments is that service providers lack awareness on modes of transmission and protection measures. This requires additional intervention among health service providers to raise awareness and reduce stigma and discrimination among PLHIV.

Civil society

Civil society organizations in Tunisia complement the national policy on fight against HIV/AIDS. NGOs mainly work on cascading prevention efforts, counselling and testing of HIV. Few organizations have been focusing on prevention activities in schools and academic institutions during the early years of HIV epidemic breakout. Screening services provided by NGOs are increasingly recognized in Tunisia especially in coastal area. There are more than 20 testing centres managed by NGOs across the country.

However, the use of screening services remains limited due to poor accessibility in rural areas, reluctance among potentially infected population, and lack of awareness around services provided.

Although pre and post-test counselling is provided and anonymity is increasingly respected in these screening centres, they are not considered within the structure of the health care system.
Psychosocial support is integrated in the work of all organizations through peer educators who accompany newly diagnosed PLHIV through initial medical screening and provide psychosocial support throughout the journey. Home visits and support groups are examples of activities provided by psychologists and peer educators within civil society organizations. Food aid and income generating activities are also offered to PLHIV and their family members.

Yet, these activities are relatively recent and limited due to lack of funding. Despite all these efforts, the role of PLHIV community leaders and peer educators have not been fully recognized by policy makers and civil society organizations.
Interviewed PLHIV community leaders expressed frustration about marginalization and neglect especially during the breakout of COVID-19 and related movement restriction:

"We are ignored. The active associations seek their visibility. Proof is, we were not consulted for the campaign of December 1, 2020. We are a part of an association with the slogan «You are not alone» but we spent the lock down alone, by ourselves, living in the fear of dying from COVID-19, no association took the time to call us, to reassure us, to check our needs, to see if we have enough ARTs! Well … We're alone, that's the reality." (male PLHIV)

"As soon as we see what is happening, we sometimes feel humiliated, we see parked vehicles, a human resource which presents a quarter of subsidy, the slogans of associations on the fight against exclusion, but we are excluded, really excluded … Ending AIDS with such negligence ! It will be a boost." (male PLHIV)

Concerns were also raised about centralization of NGOs support in the big city while the western part of the country is not covered. According to interviewed respondents, NGOs do not invest sufficient effort to reach PLHIV living in remote areas with similar activities provided to those living in the city.

Food assistance

Often neglected, food security and nutrition are essential for individuals, households and communities affected by HIV. On one side, food insecurity and poor nutritional status can accelerate the progression to opportunistic HIV infections and weaken adherence to treatment.

On the other side, HIV infection jeopardizes food security through reduced work capacity and compromising household livelihood. Interventions in the area of food security and nutrition are essential to achieve the goal of universal access to prevention, treatment, and comprehensive care of PLHIV.

Food assistance does not seem to be an integral component of the response to the HIV epidemic in Tunisia. Only few organizations provide food assistance in the form of one or two food vouchers distributed across the year to PLHIV families. Interviewed PLHIV explained that this assistance is insufficient to meet their nutritional needs as it can only cover one month of consumption. They also expressed concerns about maintaining the state of food security and nutrition after food assistance withdrawal.
The interplay between HIV, poverty, and food security is closely observed through this study.

Poverty increased vulnerability to HIV infection and exaggerated its impact.

Insufficient and unstable income, occasional work and long-term unemployment, poor housing, and fragile health situation are all poverty-related factors that exacerbate HIV impact on infected people and their family members.

Intersection of all these factors with HIV stigma and discrimination increase PLHIV suffering and can end with complete isolation or loneliness.

CHAPTER 5

Conclusion and Recommendations

- Social safety nets for PLHIV can help mitigate the significant social and economic impacts of PLHIV on households and individuals

- Strengthen national health and social protection systems, institutions and technical capacity and programmes to protect and improve access to food and enhance nutrition outcomes at scale with focus of HIV integration.

- Combined social protection interventions targeting PLHIV have benefits for HIV prevention, treatment and adherence and bear direct positive outcomes.

- Food, cash or voucher assistance can help PLHIV with ART adherence, reduce the risk of HIV transmission by reducing negative coping mechanisms,

- Poor Food Consumption Score (FCS) calls for food assistance to the most vulnerable PLHIV. Adequate dietary intake and macro and micronutrient absorption are crucial for effective treatment outcomes

- Reinforce SBCC strategies for appropriate dietary and nutrition related practices for PLHIV with focus on a balanced diet with adequate energy and micronutrient intake.

- Higher overweight and obesity rates observed among adults PLHIV and their potential links with non-communicable diseases as well as related risk factors calls for counselling via social behavioural change communication efforts

- Higher underweight percentage among pregnant PLHIV women calls for counselling calls for prioritizing the nutritional needs of undernourished pregnant PLHIV

Challenges and Study Limitations

1. Data collection for this study was planned to take place during April 2020 but due to the outbreak of COVID-19 it was postponed to August 2020 when lockdown restrictions were lifted. Yet, travel restriction still hindered RBC support during data collection.

2. COVID-19 related infection risk given that interviews were face-to-face in health facilities and enumerators are PLHIV themselves.

3. Reaching PLHIV who are not under treatment required networking and outreach in informal settings which sometimes affected quality of data especially with using measurement instruments to record anthropometrics.

4. Most of WFP food security indicators are designed to measure household level food security status. However, in the case of PLHIV in Tunisia, it is sensitive to approach their households especially if family members are not aware of the health situation of PLHIV. Thus, individual PLHIV interviewed were asked about food intake of their households even if they are not the caregivers or heads of their households.

ANNEXES

Annexe I : Study Questionnaire

Introduction

	Question	Answer		skip to
1	Date of the interview	DD | __ __ | MM | __ __ | YYYY | __ __ __ __ |		
2	Name of interviewer	| _____ |		
3	Interview number for this day	| __ __ |		
4	Questionnaire ID	| _____ |		
5	Place of interview	| _____ |		
6	Consent form has been read to participant and they agreed to participate in this study?	No Yes	0 1	**Disqualify**
7	Have you or any of your HH members participated in this study before?	No Yes	0 1	**Disqualify**

Individual information

	Question	Answer		skip to
8	What is your nationality?	Tunisian other, mention | _____ |	1 97	
9	Respondent date of birth	DD | __ __ | MM | __ __ | YYYY | __ __ __ __ |		
10	Respondent gender	Male Female Other	0 1 98	**12** **12**
11	For female respondents: are you currently pregnant or lactating?	No Yes	0 1	
12	Respondent marital status	Never Married Married Divorced/ Separated Widowed	01 02 03 04	

Individual information

	Question	Answer	code	skip to
13	Where do you live?	Tunis Ben Arous Nabeul Bizerte Jandouba Siliana Monastir Sfax Kasserine Gabes Tataouine Tozeur Ariana Manouba Zaghouan Beja El Kef Sousse Mahdia Kairouan Sidi Bouzid Medenine Gafsa Kebili	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	
14	How many people live in your household (sharing food and facilities) including yourself?	| __ __ |		
15	Are you the head of the household?	No Yes	0 1	

HH roster

16. For each member who lives in your household (including yourself and starting with the head of household), tell me the following information. Member number:	17. What is the relation of (This member) to head of household **01** = Head **02** = Wife or husband **03** = Son or daughter **04** = Son-in-law or daugte -inlaw **05** = Grandchild **06** = Parent **07** = Parent-inlaw **08** = Brother or sister **09** = Other relative **10** = foster/ Adopted/ stepchild **11** = Not related **98** = Don't know	18. (This member)'s gender? **0** = Male **1** = Female	19. Age	20. Marital status **01** = Never Married **02** = Married **03** = Divorced / separated **04** = Widowed	21. If (This member) is female, is she currently pregnant or lactating? **0** = No **1** = Yes **99** = Not Applicable	22. (This member) source of income/ dependency status? **01** = employment salary **02** = selfgenerated income (freelancing, home-based business, independent service provision, etc...) **03** = external support (government/ global fund/ UN/NGOs) **04** = (This member) is dependent **97** = other, mention	23. Is (This member) living with HIV **0** = No **1** = Yes **98** = Don't know	24. If (This member) is HIV positive, is s/he under treatment ? **0** = Non **1** = Oui **98** = Don't know	25. If (This member) is HIV positive and not under treatment, what is the main reason of missing treatment? **01** = treatment is expensive **02** = transportation is expensive **03** = fear of being shamed by health worker **04** = fear of stigma within family **05** = it is not useful **97** = other, mention **98** = Don't know	26. Did (This member) suffer from any COVID-19 related symptom in the past 3 months (fever, difficulty breathing or shortness of breath, chest pain, dry cough)? **0** = No **1** = Yes **98** = Don't know	27. Was (This member) a confirmed case of COVID-19 through a laboratory test? **0** = No **1** = Yes **98** = Don't know	28. Does (This member) suffer from any chronic health problems other than HIV or COVID-19? **0** = No **1** = Yes **98** = Don't know	29. If yes, what are the health problems (This member) suffers from? **01** = Tuberculosis **02** = Hepatitis B **03** = Hepatitis C **04** = Cancer **05** = Pneumonia - recurrent **06** = Heart weakness **97** = Other, mention	30. Is (This member) currently enrolled in education (childcare/ school/ university) ? **0** = No **1** = Yes **98** = Don't know	31. How many years of education (This member) completed?	32. Has(This member) ever dropped out of school? **0** = No **1** = Yes **98** = Don't know	33. If yes, what are the main reasons for (This member) dropping school? **01** = can't afford school fees **02** = school is too far/ difficult transport **03** = work outside home for food or cash **04** = help with household activities **97** = other, mention **98** = Don't know
1	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|
2	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|
3	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|
4	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|
5	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|	|____|

HH income and expenditure				
	Question	**Answer**		**skip to**
34	What is the primary source of income for your HH?	Employment salary	01	
		self-generated income (freelancing, home-based business, independent service provision, etc…)	02	
		family support (parents, partners, etc,…)	03	
		external support (UN/NGOs assistance, charity,	04	
		borrowing	05	
		other, mention | _____ |	97	
35	How much is your HH total income per month?	Tunisian Dinar: | __ __ |		
36	Does your HH currently have any savings?	No	0	
		Yes	1	
37	Is your HH currently in debt?	No	0	**41**
		Yes	1	
38	If yes, how much is your debt amount?	Dinar tunisien : | __ __ |		
39	What are the main reasons for you to incur debt? **(multiple answers allowed)**	food Expenditures	01	
		Rent	02	
		Utilities (electricity/gas/ water)	03	
		health related expenditures (medical, pharmaceutical)	04	
		Education related expenditures	05	
		Transport	06	
		debt repayment	07	
		other, mention | __ _ __ __ __ __ __ ___ |	97	
40	Where/who did you borrow money from?	relatives	01	
		friends	02	
		employer	03	
		landlord	04	

HH income and expenditure				
	Question	**Answer**		**skip to**
40		bank/credit institution	05	
		shop owner (opened a tab)	06	
		other, mention | __ _ __ __ __ __ __ ___ |	97	
41	How much does your HH spend on each of the following per month?			
	a. food Expenditures	Tunisian Dinar: | __ __ |		
	b. rent	Tunisian Dinar: | __ __ |		
	c. utilities (electricity/gas/ water)	Tunisian Dinar: | __ __ |		
	e. other health related expenditures (medical, pharmaceutical)	Tunisian Dinar: | __ __ |		
	f. education related expenditures	Tunisian Dinar: | __ __ |		
	g. transport	Tunisian Dinar: | __ __ |		
	h. debt repayment	Tunisian Dinar: | __ __ |		
	i. other, mention | _____ |	Tunisian Dinar: | __ __ |		
HH Wealth				
	Question	**Answer**		**skip to**
42	What type of dwelling do you live in?	Studio or Apartment	01	
		Villa or Independent house		
		Room in collective residence (wikala)	02	
		other, mention | _____ |	97	
43	Is your dwelling owned or rented?	owned	01	**46**
		rented	02	
		other, mention | _____ |	97	
		don't know	98	
44	If rented, have you ever faced times when you were unable to pay the rent?	No	0	
		Yes	1	
		don't know	98	

HH Wealth				
	Question	**Answer**		**skip to**
45	In such cases, what did you do?	Landlord agreed to receive rent at later date	01	
		borrowed money	02	
		moved out	03	
		other, mention | _____ |	97	
46	Have you ever been forced to move out of your household?	No	0	**48**
		Yes	1	
47	If yes, why did you have to move out?	Financial stress	01	
		family disagreement	02	
		HIV related stigma	03	
		Other	97	
48	how many rooms are there in your dwelling excluding the kitchen & sanitary facilities (shared by entire HH)	One	0	
		Two	1	
		Three or more	2	
49	What is the main source of ventilation your HH have access to?	No ventilation	01	
		windows	02	
		doors	03	
		AC	04	
		other, mention | _____ |	97	
50	Do you have access to electricity in your HH?	No	0	
		Yes	1	
51	What is the main source of drinking water your HH have access to?	bottled water	01	
		piped water, into dwelling	02	
		piped water, outside dwelling	03	
		dug/ spring water	04	
		tanker truck/ cart	05	
		Public fountain/ public tab	06	
		river/ stream	07	
		other, mention |_____|	97	

HH Wealth				
	Question	**Answer**		**skip to**
52	What is the main source of cooking fuel in your household?	None	01	
		cooking gas (network/ Cylinder)	02	
		electricity	03	
		charcoal	04	
		wood/ fire	05	
		other, mention | _____ |	97	
53	What type of toilet facility do you have access to?	flush, connected to sewage system	01	
		flush, connected to covered well/ canal/ valley/ ground water	02	
		waterless toilet	03	
		other, mention | _____ |	97	
54	What is the main method for garbage disposal in your dwelling?	placed in outside dumpster	01	
		placed in dumpster inside building	02	
		burnt	03	
		other, mention |_____|	97	
55	Do you have any of these items in your household?			
	a. fridge	0 = No	1= Yes	
	b. freezer	0 = No	1= Yes	
	c. cooker/stove	0 = No	1= Yes	
	d. microwave or oven	0 = No	1= Yes	
	e. washing machine	0 = No	1= Yes	
	f. dishwasher	0 = No	1= Yes	
	g. air conditioner	0 = No	1= Yes	
	h. electric fan	0 = No	1= Yes	
	i. Central heating	0 = No	1= Yes	
	j. water heater	0 = No	1= Yes	

Richesse des ménages				
	Question	**Answer**		**skip to**
55	k. coloured TV	0 = No	1= Yes	
	l. radio/ tape recorder/ CD player	0 = No	1= Yes	
	m. Satellite Dish	0 = No	1= Yes	
	n. camera	0 = No	1= Yes	
	o. sewing machine	0 = No	1= Yes	
	p. Landline phone	0 = No	1= Yes	
	q. Smart phone	0 = No	1= Yes	
	r. desktop computer	0 = No	1= Yes	
	s. Laptop	0 = No	1= Yes	
	t. Wireless internet router	0 = No	1= Yes	
	u. bicycle	0 = No	1= Yes	
	v. motorcycle / scooter	0 = No	1= Yes	
	x. private car	0 = No	1= Yes	
	y. truck/pick-up truck	0 = No	1= Yes	
	z. Does the family hire a domestic worker, guard, driver, gardener, etc…	0 = No	1= Yes	

Household Food Consumption Score for Nutrition (FCS-N) and Individual Diet Diversity Score (DDS)			
	Question	**Answer**	**skip to**
56	Individual DDS In the last 24 hours (from this time yesterday to now) did you consume food from any these food groups? *Consider all food consumed inside or outside home*	0 = No 1= Yes	
57	HH FCS-N Over the last 7 days, how many days did your household consume the following foods?	0 = Not eaten 1 = 1 day 2 = 2 days 3 = 3 days 4 = 4 days 5 = 5 days 6 = 6 days 7 = Everyday	
58	Food sources What was the main source of the food eaten by your household in the past 7 days?	0 = Not consumed 1 = Bought with cash from local shop/ market 2 = Bought with cash from roadside vendor 3 = Bought on credit 4 = Exchanged/borrowed 5 = Received as gift 6 = Food assistance 7 = Own production	

Household Food Consumption Score for Nutrition (FCS-N) and Individual Diet Diversity Score (DDS)

	Question	Answer					
1	**Cereals, grains, roots and tubers:** rice, pasta, bread, couscous, sorghum, potato, sweet potato	56.1	| ____ |	57.1	| ____ |	58.1	| ____ |
2	**Legumes / nuts:** beans, cowpeas, peanuts, lentils, hummus, nuts	56.2	| ____ |	57.2	| ____ |	58.2	| ____ |
3	**Milk and other dairy products:** fresh milk / sour, yogurt, cheese, other dairy products (Exclude margarine / butter or small amounts of milk for tea / coffee)	56.3	| ____ |	57.3	| ____ |	58.3	| ____ |
4	**Meat, fish and eggs:** goat, beef, chicken, fish, including canned tuna, escargot, and / or other seafood, eggs (meat and fish consumed in large quantities and not as a condiment)	56.4	| ____ |	57.4	| ____ |	58.4	| ____ |
4.1	**Flesh meat:** beef, pork, lamb, goat, rabbit, chicken, duck, other birds	56.4.1	| ____ |	57.4.1	| ____ |	58.4.1	| ____ |
4.2	**Organ meat:** liver, kidney, heart, legs and other organ meats	56.4.2	| ____ |	57.4.2	| ____ |	58.4.2	| ____ |
4.3	**Fish/shellfish:** fish, including canned tuna, escargot, and / or other seafood (fish in large quantities and not as a condiment)	56.4.3	| ____ |	57.4.3	| ____ |	58.4.3	| ____ |
4.4	**Eggs**	56.4.4	| ____ |	57.4.4	| ____ |	58.4.4	| ____ |
5	**Vegetables and leaves:** spinach, onion, green peas, tomatoes, carrots, peppers, green beans, lettuce, etc.	56.4.5	| ____ |	57.4.5	| ____ |	58.4.5	| ____ |
5.1	**Orange vegetables (vegetables rich in Vitamin A):** carrot, red pepper, pumpkin	56.5.1	| ____ |	57.5.1	| ____ |	58.5.1	| ____ |
5.2	**Green leafy vegetables:** spinach, broccoli, amaranth and / or other dark green leaves	56.5.2	| ____ |	57.5.2	| ____ |	58.5.2	| ____ |
6	**Fruits:** banana, apple, lemon, oranges, etc.	56.5.6	| ____ |	57.6	| ____ |	58.6	| ____ |
6.1	**Orange fruits (Fruits rich in Vitamin A):** papaya, apricot, peach	56.6.1	| ____ |	57.6.1	| ____ |	58.6.1	| ____ |
7	**Oil / fat / butter:** vegetable oil, palm oil, shea butter, margarine, other fats / oil	56.7	| ____ |	57.7	| ____ |	58.8	| ____ |
8	**Sugar, or sweet:** sugar, honey, jam, cakes, candy, cookies, pastries, cakes and other sweet (sugary drinks)	56.8	| ____ |	57.8	| ____ |	58.8	| ____ |
9	**Condiments / Spices:** tea, coffee / cocoa, salt, garlic, spices, yeast / baking powder, lanwin, tomato / sauce, meat or fish as a condiment, condiments including small amount of milk / tea coffee	56.9	| ____ |	57.9	| ____ |	58.9	| ____ |

Household Coping Strategy Index				
	Question	**Answer**		**skip to**
59	**During the last 7 days, how many times (in days) did your household members have to employ one of the following strategies to cope with a lack of food or money to buy it?**	0 = not applied 1 = 1 day 2 = 2 days 3 = 3 days 4 = 4 days 5 = 5 days 6 = 6 days 7 = Everyday		
59.1	Rely on less preferred and less expensive food (i.e.cheaper lower quality food)	| ____ |		
59.2	Borrow food or relied on help from relatives or friends	| ____ |		
59.3	Reduce number of meals eaten in a day	| ____ |		
59.4	Limit portion size at mealtime (i.e. less food per meal)	| ____ |		
60	**In the past 30 days, has your household applied any of the below strategies to meet basic food needs?**	0 = No 1 = Yes 2 = No, because I have exhausted this strategy and cannot do it anymore 99 = Not applicable		
60.1	Sold household assets/goods (radio, furniture, television, jewellery etc.)	| ____ |		
60.2	Sent household members to eat elsewhere	| ____ |		
60.3	Purchased food on credit or borrowed food	| ____ |		
60.4	Borrowed money	| ____ |		
60.5	Sold your ART tablets	| ____ |		
60.6	Withdrew children from school	| ____ |		
60.7	Reduced expenses on other health problems or education	| ____ |		
60.8	Begged	| ____ |		
60.9	Engaged in sex work	| ____ |		
60.1	Entire household migrated (or homelessness)	| ____ |		

Individual Respondent Education and Employment				
	Question	**Answer**		**skip to**
61	What is your level of education?	Illiterate	01	
		Reads and write, but no formal education	02	
		Basic education	03	
		Secondary education	04	
		Higher education	05	
		Post graduate education	06	
62	Have you worked/been employed in the past 6 months?	No	0	**64**
		Yes	1	
63	If no, why haven't you worked/ been employed in the past 6 months?	Lack of job opportunities in general	01	**next section**
		Lack of job opportunities matching my section skills	02	
		Lack of job opportunities with suitable pay	03	
		Job opportunities are far from my area (insufficient transport options)	04	
		Stigma at workplace	05	
		Currently in education /training/ university	06	
		I am not able to work (Illness, disability, injury, pregnant)	07	
		Childcare/Household responsibilities	08	
		I am not interested in working	09	
		COVID-19 and related lockdown	10	
		other, mention _____	97	
64	What sector is your most recent job?	Government/ Public Sector	01	
		Private sector	02	
		International organization	03	
		Local non-profit/ NGO	04	
		other, mention _____	97	

Individual Respondent Education and Employment				
	Question	**Answer**		**skip to**
65	What is the degree of stability in your most recent job?	Permanent	01	
		Temporary	02	
		Seasonal	03	
		Intermittent	04	
		Don't know	98	
66	Describe your most recent job/ employment.	| _____ |		
Individual Respondent Health and Eating Habits				
	Question	**Answer**		**skip to**
67	Do you suffer from any health problems other than HIV? **(multiple answers allowed)**	No	01	
		Yes, Tuberculosis	02	
		Yes, Hepatitis B	03	
		Yes, hepatitis C	04	
		Yes, Cancer	05	
		Yes, Pneumonia - recurrent	06	
		Yes, other - mention | _____ |	97	
68	When you have a medical need, what type of health facility do you usually have access to?	Public clinic/hospital	01	
		CBOs/NGOs	02	
		Private clinic/hospital	03	
		Pharmacy or shop	04	
		None	05	
		other, mention |_____|	97	
69	What are the kinds of difficulties you face to access health facility? **(multiple answers allowed)**	Finances (cost of transport, fee, etc.)	01	
		HIV related stigma	02	
		Relevant medical services were not available (specialization not available, medication not available, etc.)	03	
		Hospital/clinic personnel denied access without clear reason	04	
		Lack of knowledge of health centre availability	05	

Individual Respondent Health and Eating Habits				
	Question	**Answer**		**skip to**
69		Distance	06	
		Long queues	07	
		other, mention _____	97	
70	Do you have any kind of mental or physical disability?	No	0	**72**
		Yes	1	
71	What is the main disability? **(multiple answers allowed)**	Mental disability	01	
		Mobility disability	02	
		Visual disability	03	
		Audio disability	04	
		other, mention _____	97	
72	How many meals do you usually eat per day?	| ____ |		
73	How many meals do you eat outside (or delivery) per week?	| ____ |		
74	During the outbreak of COVID-19, did your spending on food change?	Yes, it decreased	1	
		Yes, it increased	2	
		No, it is the same	3	
75	During the outbreak of COVID-19, did the time you spend cooking food at home change?	Yes, it decreased	1	
		Yes, it increased	2	
		No, it is the same	3	
76	During the outbreak of COVID-19, has your consumption of HEALTHY FOODS, such as fruits, vegetables, whole grains, legumes, plain water, etc., changed?	Yes, it decreased	1	
		Yes, it increased	2	
		No, it is the same	3	
77	During the outbreak of COVID-19, has your consumption of JUNK FOOD, such as chips, soda, fries,cookies, sweet bread, etc., changed?	Yes, it decreased	1	
		Yes, it increased	2	
		No, it is the same	3	
78	During the outbreak of COVID-19, do you consider that your WEIGHT has changed during the COVID-19 outbreak?	Yes, it decreased	1	
		Yes, it increased	2	
		No, it is the same	3	

Individual Respondent Health and Eating Habits				
	Question	**Answer**		**skip to**
79	During the outbreak of COVID-19, have you felt that you are eating more due to feelings of anxiety, depression and / or boredom?	No	0	
		Yes	1	
80	How often do you usually care if the foods you eat are healthy or not?	Always	1	
		Usually	2	
		Sometimes	3	
		Never	4	
81	Has your interest in healthy eating changed since the COVID-19 / Coronavirus outbreak?	Yes, it decreased	1	
		Yes, it increased	2	
		No, it is the same	3	
Individual Respondent HIV and ART status				
	Question	**Answer**		**skip to**
82	When did you know you have HIV?	| __ __ __ __ | Insert year e.g. 2014		
83	How did you know you have HIV?	self-testing	01	
		screening in public health facility (clinic, hospital, lab)	02	
		screening in private health facility (clinic,hospital, lab)	03	
		screening in mobile clinic	04	
		other, mention | _____ |	97	
84	How did you get HIV?	unprotected intercourse: male partner	01	
		unprotected intercourse: female partner	02	
		sex work	03	
		injecting drugs	04	
		blood transfusion	05	
		Mother to child transmission	06	
		Other, mention | _____ |	97	

Individual Respondent HIV and ART status				
	Question	**Answer**		**skip to**
85	Are you under treatment?	No	0	
		Yes	1	**87**
86	Why are you not under treatment? **(multiple answers allowed)**	Treatment is expensive	01	**94**
		Transportation is expensive	02	
		health workers shame me	03	
		fear of stigma within family	04	
		I believe it is not useful	05	
		COVID-19 related reasons	06	
		other, mention _____	97	
87	How long have you been under treatment?	less than 1 year	01	
		1 year	02	
		2 years	03	
		3 or more years	04	
88	Where did you get your treatment in the past 3 months?	Tunis treatment centre	01	
		Sfax treatment centre	02	
		Sousse treatment centre	03	
		Monastir treatment centre	04	
		Delivered to my home	05	
		other, mention _____	97	
89	How far do you travel for treatment?	Time in minutes: | __ __ |		
		insert 0 if treatment is delivered to home		
90	How much do you pay for a treatment visit?	Tunisian Dinar: | __ __ |		
		insert 0 if the treatment is free		
91	How much do you pay for transportation for a treatment visit?	Tunisian Dinar: | __ __ |		
		insert 0 if treatment is delivered to home		
92	How often do you receive treatment?	once a year	01	
		twice a year	02	
		three times a year	03	
		four times a year	04	
		other, mention _____	97	

Individual Respondent HIV and ART status				
	Question	**Answer**		**skip to**
93	Did you experience viral suppression?	No	0	
		Yes	1	
		Don't know	98	
94	Rank your most stressing unmet needs	food quantity	| __ |	
		food quality	| __ |	
		Cleaning and disinfecting material (soap, chlorine, alcohol, etc)	| __ |	
		Personal protective equipment (face masks, gloves, hand sanitizers)	| __ |	
		Support for rent / improved shelter	| __ |	
		Cooking fuel, gas, electricity	| __ |	
		Medicines/health	| __ |	
		Education/books	| __ |	
		Psycho-social support	| __ |	
		condoms	| __ |	
		Clothes/shoes	| __ |	
		Kitchen assets for cooking	| __ |	
		Transport	| __ |	
		Youth activities	| __ |	
		Vocational training	| __ |	
		Sanitation/sewage	| __ |	
		Drinking Water	| __ |	
		Baby food	| __ |	
95	What type of assistance is most suitable for your needs?	In kind food	01	
		Food voucher	02	
		Transport assistance	03	
		Cash	04	
		Health/ Nutrition Education	05	
		other, mention |_____|	97	

Individual Respondent HIV-related Services						
	Type of assistance	**96.** **Do you currently receive this HIVrelated assistance?** 0 = No 1 = Yes	**97.** **Who provides this assistance?** 01 = UNAIDS 02 = Government 03 = ATL 04 = ATIOST 05 = ATP+ 97 = other, mention	**98.** **How much is the value of this assistance?** If answer is don't know insert 997	**99.** **For how long you have been receiving this assistance?** Insert duration in months	**100.** **How often do you receive this assistance?** 01 = every week 02 = every 2 weeks 03 = every month 04 = every 2 months 05= every 3 months 06= every 4 months 07= every 5 months 08= every 6 months 09= every 12 months 97 = other, mention
1	Free ART treatment	| ____ |	| ____ |	Tunisian Dinar: | __ __ |	Number of Months: | __ __ |	| ____ |
2	Free screening service	| ____ |	| ____ |	Tunisian Dinar: | __ __ |	Number of Months: | __ __ |	| ____ |
3	COVID-19 related service	| ____ |	| ____ |	Tunisian Dinar: | __ __ |	Number of Months: | __ __ |	| ____ |
4	Food voucher	| ____ |	| ____ |	Tunisian Dinar: | __ __ |	Number of Months: | __ __ |	| ____ |
5	Cash assistance	| ____ |	| ____ |	Tunisian Dinar: | __ __ |	Number of Months: | __ __ |	| ____ |
6	Health or Nutrition Education	| ____ |	| ____ |	Tunisian Dinar: | __ __ |	Number of Months: | __ __ |	| ____ |

Anthropometric measures			
	Question	**Answer**	**skip to**
101	Please weigh the respondent and insert weight in kilograms	kg: | __ __ |	
102	Please measure the respondent height and record it in centimetres	cm: | __ __ |	
103	**For pregnant and lactating female respondents:** please measure the middle upper arm circumference and record it in centimetres	cm: | __ __ |	

Individual Risk Behaviour				
	Question	**Answer**		**skip to**
104	Did you receive any injection drug in the past 30 days?	No	0	**106**
		Yes	1	
		refuse to answer	99	**106**
105	If yes, did you share the needle in at least one injection in the past 30 days?	No	0	
		Yes	1	
		refuse to answer	99	
106	Have you been sexually active in the past 30 days?	No	0	**end survey**
		Yes	1	
		refuse to answer	99	**end survey**
107	If yes, did you use a protection tool/ condom during your last intercourse?	No	0	
		Yes	1	
		refuse to answer	99	
108	How many sexual partners did you have in the past 30 days?	One	01	
		Two	02	
		Three or more	03	
		refuse to answer	99	
109	Are your sexual partners usually…	males	01	
		females	02	
		both	03	
		refuse to answer	99	

Annex II: Qualitative discussions guide

A. Tell me about yourself. *Probe:*

1. how old are you? what do you do? Record participants' age and gender

B. Tell me about the time when you knew you have HIV. *Probe:*

2. When did you know you are HIV positive?
3. What made you take the screening? (ask about mode of transmission)
4. Where did you do the screening?
5. How was the screening service? Was it a private process?
6. How did health workers/ social workers treat you?
7. What did you do next? Did you tell anyone? Who did you tell?

C. What support did you need at that time and how did you get it? *Probe:*

8. were you able to speak with your family? Or friends?
9. Did you get any psychological support from family/ friends?
10. Did you receive any medical advice? By who? What did they advise?
11. Did you seek help from any NGOs/ religious institutions/ government?

D. Tell me about the time when you started treatment. *Probe:*

12. How long was the time between you knew your HIV status and started treatment? What happened at that time? (ask about barriers to access treatment; price, distance,..)
13. What is the process of registering for treatment?
14. How did health workers treat you?

E. Tell me about the status now. *Probe:*

15. How long have you been on treatment?
16. How often do you come for treatment?
17. Do you notice any recovering?
18. How is your lifestyle changing over time? (building resilience... behaviour change?)
19. What services are available to you now? Psychological support? Free/ subsidized treatment? Food or cash transfers? How much? How often?

F. Tell me about your eating habits *Probe:*

20. How many meals you eat per day?
21. How much food? What types of food?
22. Do you usually feel hungry?
23. Do you have problems accessing enough food? Give me examples

G. If you are to receive assistance now, what will be your priority? *Probe:*

In-kind food? Food vouchers? Cash? psycho-social support? Condoms? Medicine?

H. How do you think we can encourage people to do HIV screening?

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