

INIPSA

*A NUTRITION INTERVENTION WITHIN A
COMPREHENSIVE ANTIRETROVIRAL
TREATMENT (ART) CARE PACKAGE*

THE QUANTITATIVE RESULTS OF THE PRELIMINARY STUDIES (BENIN, BURUNDI, MALI, SENEGAL)

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February 2006

Table of contents

1. Introduction	4
2. The methodology of the preliminary studies	4
2.1. Choosing the sites and the sample size in Mali	6
2.2. Choosing the sites and the sample size in Benin	6
2.3. Choosing the sites and the sample size in Senegal	6
2.4. Choosing the sites and the sample size in Burundi	7
2.5. Comparison with the general population	8
3. Quantitative characteristics of patients surveyed in the different countries	8
3.1. Socio-demographic characteristics	9
3.2. Socio-economic characteristics of the surveyed population	13
3.3. HIV-positive status and care of PLWHA	16
3.4. Number of ART drug intakes and food habits of PLWHA under treatment	22
3.5. Biometric characteristics of PLWHA under ART	23
3.6. Self perceived health by the PLWHA under ART	24
3.7. Housing and sanitary conditions of the surveyed population	25
4. Conclusions	28

List of tables

<i>Table 1: Distribution by sex among treatment centres of total number surveyed and total number expected</i>	5
<i>Table 2: Sex ratio in the surveyed sample of PLWHA</i>	8
<i>Table 3: Socio-demographic characteristics of men in the four countries in percentage or in numbers of years (in brackets: difference in percentage or in numbers of years with population of the capital)</i>	10
<i>Table 4: Socio-demographic characteristics of women in the four countries in percentage or in numbers of years (in brackets: difference in percentage or in numbers of year with population of the capital)</i>	12
<i>Table 5: Economic characteristics of men in the four countries studied in percentage (in brackets: difference in points of percentage or in numbers with the population of the capital)</i>	14
<i>Table 6: Economic characteristics of women in the four countries studied in percentage (in brackets: difference in points of percentage or in numbers with the population of the capital)</i>	15
<i>Table 7: Learning about being HIV-positive in the total population surveyed in four countries</i>	17
<i>Table 8: Year of the first consultancy in a treatment centre in the total population surveyed in the four countries</i>	17
<i>Table 9: Length of time of ART treatment in the total population surveyed in the four countries</i>	18
<i>Table 10: Sharing information about being HIV-positive for surveyed men in the four countries</i>	18
<i>Table 11: Sharing information about being HIV-positive for surveyed women in the four countries</i>	19
<i>Table 12: Possibility to talk freely about the disease in the last 30 days for the men in the four countries</i>	19
<i>Table 13: Possibility to talk freely about the disease in the last 30 days for the women in the four countries</i>	20
<i>Table 14: Participation in an association in the last 30 days for men in the four countries</i>	20
<i>Table 15: Participation in an association in the last 30 days for women in the four countries</i>	21
<i>Table 16: Possibility to confide to health centre staff in the last 30 days for the total population surveyed in all four countries</i>	21
<i>Table 17: Change in eating habits since the beginning of the treatment in the total surveyed population in the countries</i>	22
<i>Table 18: Food aid for surveyed men in the four countries</i>	23
<i>Table 19: Food aid for surveyed women in the four countries</i>	23
<i>Table 20: Physical health in the total population in the four countries</i>	24
<i>Table 21: Psychological health in the total population in the four countries</i>	24
<i>Table 22: Side effects of the treatment in the total population in the four surveyed countries</i>	25
<i>Table 23: Housing conditions of men in the four surveyed countries</i>	26
<i>Table 24: Housing condition of women in the four surveyed countries</i>	27
<i>Table 25: Sanitary conditions in the total population in each of the four surveyed countries</i>	28

1. Introduction

International consensus has been reached on the spread of HIV/AIDS and its considerable impact on developing countries, in particular in sub-Saharan countries¹, therefore requiring a scale-up of antiretroviral treatment (ART) within the national health policies of these countries.

In this context, it has become widely recognized that ART treatment should be part of a global care package for people living with HIV/AIDS (PLWHA). This global treatment package includes preventive education, medical check-ups and psychosocial support in addition to ART treatment as its core component. The modalities of the global treatment package vary from country to country, depending on national policies and circumstances. Nutritional support has been recognised only recently as an essential component of this package. This recognition by international agencies was anticipated by healthcare providers who were already including nutritional support in their treatment packages in order to respond to malnutrition and to the nutritional needs of patients. International organizations and partners for development consider financing this nutritional component but ask for operational research in order to gain knowledge about the cost/benefit and impact of these types of interventions.

The aim of these preliminary studies was to provide the basic information needed to elaborate an appropriate methodology for the evaluation of the impacts of nutritional support within a global treatment package. The studies looked at patients on ART in treatment centres in four African countries (Benin, Burundi, Mali, Senegal) where WFP is providing nutritional assistance (WFP no longer provides nutritional support to Senegal).

2. The methodology of the preliminary studies

The methodology of the preliminary studies was similar for all four countries. Small variations are explained in the sections below. The methodology had to be changed for the study in Senegal, since the principle of the waiting queue for the random sampling could not be applied. The surveys, carried out in October and November 2005, had three specific objectives:

- collect basic medical information based on the registrations made by the centres in order to describe the characteristics of patients under ART;
- assess socio-economic, medical and nutritional status of a sample of patients under ART with a questionnaire and learn about their perception of the different components of the global care package ;
- assess the qualitative point of view of associative and health staff on the different components of the global care package in the centres through a survey; identify the local components of the global treatment package; and if there is a nutritional support component, observe how it is implemented.

This report is related to the second objective and based on the quantitative results of the survey of sample patients, even though some comments refer to results from the qualitative surveys.

¹ Sub-Saharan Africa represents 65% of PLWHA, 74.2% of deaths due to Aids and 63.3% of new infections in 2004. UNAIDS-WHO « Spot on Aids epidemic, December 2004

Patients were selected by random sampling while they were queuing in front of the pharmacy in their respective country with the exception of Senegal (see below). Indications from the pharmacist or doctor helped to identify patients under ART. The samples do not guarantee a perfect representation of the patients treated on the sites. Patients who dropped out of treatment or suspended it for whatever reason were not interviewed.

Nevertheless, the selection procedure assured a good representation of patients who are following the treatment, as they were selected while getting their drugs from the pharmacy.

Table 1: Distribution by sex among treatment centres of total number surveyed and total number expected

Treatment centre	Male	Female	Total	Total number surveyed	Expected number
Mali					
CESAC-Bamako	23,7	76,3	100,0	59	60
Hôpital Gabriel Touré	18,8	81,2	100,0	16	20
Hôpital Point G	41,2	58,8	100,0	17	10
APROFEM	20,0	80,0	100,0	5	10
WALE	0,0	100,0	100,0	5	10
CERKES	30,0	70,0	100,0	10	10
CESAC-Mopti	40,0	60,0	100,0	10	10
Total Mali	24,7	75,3	100,0	122	130
Bénin					
C N H U, Cotonou	33,3	66,7	100,0	24	20
Arc-en-ciel, Cotonou	33,3	66,7	100,0	12	10
Hôpital de zone, Tanguiéta	55,5	44,4	100,0	18	20
C H D du Borgou, Parakou	50,0	50,0	100,0	12	10
Hôpital St Camille, Davougou, Abomey	31,2	68,7	100,0	16	15
MSF Dogbos	29,4	70,6	100,0	17	15
C H D de l'Ouémé Porto-Novo	35,7	64,2	100,0	14	10
Total Bénin	38,1	61,9	100,0	113	110
Sénégal					
CTA, Dakar	29,2	70,8	100,0	24	40
Enquête Sida service	33,3	66,7	100,0	12	10
PTA, Zinguinchor	45,5	54,6	100,0	11	10
Hôpital régional de St-Louis	46,2	53,9	100,0	13	20
Centre de santé de Richard Toll	37,5	62,5	100,0	8	10
Hôpital St Jean de Dieu, Thiès	43,8	56,3	100,0	16	10
Total Sénégal	38,1	61,9	100,0	85	100
Note : one interviewed person did not know which centre he was attending, so it's 85 instead of 84					
Burundi					
ANSS	11,9	88,1	100,0	42	42
Hôpital Prince Régent-Charles	42,9	57,1	100,0	14	14
Nouvelle Espérance	19,1	81,0	100,0	21	21
CHU Kamenge	43,8	56,3	100,0	16	18
SWAA Bujumbura	14,3	85,7	100,0	21	21
SWAA Gitega	27,3	72,7	100,0	11	7
CARITAS Gitega	30,0	70,0	100,0	10	10
Total Burundi	23,0	77,0	100,0	135	136

2.1. Choosing the sites and the sample size in Mali

All treatment sites delivering ART in Mali were surveyed with the exception of the site in Kayes due to logistical costs. The sample size was determined beforehand in proportion to the number of patients receiving ART in each treatment centre. Due to the narrow timeframe it was decided to interview 5% of the patients under treatment in each centre with a minimum of 10 patients for centres treating less than 200 patients. It was planned to interview a total of 130 patients in Mali.

Due to good organization the planned number was almost achieved. Unfortunately an error occurred in the APROFEM and WALE centres, both part of the SOLTHIS project, only 5, rather than 10 patients were interviewed. In total 122 patients were interviewed, excluding 2 refusals. The interviews were conducted face-to-face and confidentiality was respected. Patients gave their informed consent. It should be mentioned that the rate of refusal was very low and no withdrawals occurred during the interviews.

2.2. Choosing the sites and the sample size in Benin

Due to Benin's national policy of decentralising treatment for PLWHA, 23 treatment centres exist throughout the country. Consequently centres could not be randomly selected. The selection criteria reflect the different types of centres and their treatment modalities: public/associative/private, urban/semi-urban, and religious in order to achieve the best representation possible. Additional criteria were current nutritional activities (food aid and/or nutritional education) and a minimum number of 50 patients under ART treatment in each centre.

The INIPSA sample differs from the sample used in BASP '96 (549 patients under ART or not), which evaluated the medical treatment package for PLWHA in Benin from 2000 to 2004. This study covered all treatment centres with or without nutritional support. In particular it included the Service de Santé des Armées (camp Guezo) and the Ambulatory treatment centre (CTA d'Akapka), two important centres that INIPSA did not take into account for a number of reasons. The INIPSA sample size was determined beforehand in proportion to the number of patients receiving ART in each treatment centre. Due to the narrow timeframe it was decided to interview 5% of the patients under treatment in each centre with a minimum of 10 patients for centres treating less than 200 patients. Thus a total of 110 patients were to be interviewed in Benin.

Due to good planning and the smooth course of the interventions, a total of 114 patients were interviewed, four more than the planned 110. There were no refusals.

2.3. Choosing the sites and the sample size in Senegal

In Senegal different types of centres (public, associations, religious) are treating a number of patients big enough to be taken in to account for our survey. The sample size was determined beforehand in proportion to the number of patients receiving ART in each treatment centre. Due to the narrow timeframe it was decided to interview 5% of the patients under treatment in the CTA of Dakar and in the Regional Hospital of Saint-Louis with a minimum of 10 patients for centres treating less than 200 patients. Thus, it was planned to interview a total of 100 patients in Senegal.

Different from the other countries, PLWHA under treatment in Senegal were not selected by random sampling while they were waiting in the queue in front of the pharmacy. Except CTA in Dakar all centres were informed beforehand and patients were invited by

the care staff or the staff from associations to come to the interviews. A small compensation to cover their transport costs was offered. Therefore the sample in Senegal might not be representative for all patients under treatment in the sites. Patients who dropped out of treatment and patients that were on treatment but refused to come to the interview were not assessed. These patients might have different characteristics (which could not be assessed) from the interviewed patients.

All surveyors reported that it was difficult to carry out the survey in CTA in Dakar for a number of reasons: delays in the study, reluctance of the staff, over-surveyed patients, frequency of the surveys on the site, etc. A month before our survey started a study on nutritional knowledge and practices of PLWHA and the health care staff in Dakar and Ziguinchor was conducted by HKI². If the INIPSA team had this information prior to starting its survey, a better coordination with HKI would have been possible. The planned minimum number of patients in CTA could not be achieved. Therefore the sample may not adequately reflect the patients under ART treatment in Senegal.

The sample size was significantly reduced and 15% fewer patients (less than actually planned) were interviewed. This was fundamentally caused by a lack of planning of the intervention: In the CTA of Dakar, the biggest centre surveyed in this study only 24 patients instead of 40 were interviewed. Of the total 100 patients initially planned only 85 were interviewed. In some centres social workers insisted on assisting the interviews, thus the interviews could not be conducted face to face and the objectivity of some answers might have been affected. In the other centres confidentiality conditions were respected and the patients gave their informed consent. No refusals or withdrawals occurred during interviews.

2.4. Choosing the sites and the sample size in Burundi

Most treatment centres are found in Bujumbura. For security reason only a few centres are located outside the capital. For logistical and security reasons it was decided to survey only ART treatment centres in Bujumbura and two centres (SWAA and CED-Caritas) in Gigeta, a village near to the capital with a sufficiently large number of patients under treatment. However, the survey tried to achieve a good representation of different treatment centres: public/ associative/ private, religious or not.

The sample size was determined beforehand in proportion to the number of patients receiving ART in each treatment centre. Due to the narrow timeframe it was decided to interview 5% of the patients under treatment in each centre, with a minimum of 10 patients for centres treating less than 200 patients. Thus interviews were planned for 136 patients in Burundi.

Thanks to good planning the intended number of patients could almost be achieved. 135 patients were interviewed. No refusals occurred. The surveyor reported difficulties to interview all planned patients in the Prince Régent-Charles' Hospital. Only few patients came to the centre and some asked relatives to pick up the ART medication for them. Others pretended not to be under ART treatment in order to avoid the interview. The survey in this centre cannot be considered representative.

² Ministry of health STD-Aids unit, CNLS, HKI, USAID, CRS « Basic study on the nutritional knowledge and practices of PLWHA and the staff in charge of the treatment package in health centres and community based structures', provisional report, November 2005

2.5. Comparison with the general population

The data of the INIPSA preliminary surveys were compared to other data sources on the general population of the capital cities. Even though the scaling-up initiatives aim to make treatment available to the rural population, most treatment centres are located in the capital cities, the others being located in a few main towns.

For Benin, Mali and Senegal 1-2-3 surveys³ provided the reference data. These surveys were carried out in each country in 2001 on a representative sample of the capital city. The 1-2-3 surveys used a standardised methodology in particular concerning the ILO definition of activity ('to have worked at least an hour, or actively searched for a job, in the past week'). In order to assure good comparisons the socio-economic measuring tools of INIPSA's preliminary study are the same as in the 1-2-3 surveys. However, there is no data of a 1-2-3 survey available for Burundi, therefore a national survey from 2002 called CWID⁴ (Core Welfare Indicator Questionnaire) was used for Burundi. The tools used in this study are very similar (in particular for employment) but less precise concerning under-employment, socio-professional category and the housing conditions.

In any case, the time difference between the reference surveys (2001-2002) and the INIPSA surveys (2005) cannot explain the demographic and socio-economic gaps observed. The comparison analyses the differences between the surveyed PLWHA and the general urban population aged 18 to 59 in the capital cities of each country.

3. Quantitative characteristics of patients surveyed in the different countries

This report summarizes the results of the preliminary studies conducted in the four countries and compares these results in order to highlight differences among the patients' characteristics in the different countries. The comparison will take into account sex (men will be compared with men and women with women) and when something interesting can be revealed the entire populations studied in each country will be taken into account. It has to be kept in mind that the samples of men are very small; it is therefore difficult to assure that differences in observations in this category are significant. Comparison among women and men will spot gender differences.

Table 2: Sex ratio in the surveyed sample of PLWHA

Sex	Mali	Benin	Senegal	Burundi
Male	26,2%	38,1%	38,1%	23,1%
Female	73,8%	61,9%	61,9%	76,9%
Total (n=)	122	113	84	135

³ At the West African Economic Monetary Union's request (WAEMU), studies on the labour market and on the informal sector were accomplished in 2001-2003 in seven countries of this region, by national institutions, conducted by AFRISTAT experts and economists from IRD (DIAL research unit). The first results give accurate, new and homogenous figures on the labour market and the informal sector in the capital of each country. (Fiche d'actualité scientifique de l'IRD N°218, janvier 2005, <http://www.ird.fr/fr/actualites/fiches/2005/fiche218.htm>).

⁴ These surveys (Core Welfare Indicator Questionnaire - CWIQ) were launched by the World Bank to quickly collect a series of indicators on the life style conditions of the population (<http://www4.worldbank.org/afr/stats/cwiq.cfm>).

3.1. Socio-demographic characteristics

The average age of men in the samples in each country is approximately 40 years, thus men are in average 7 years older than their counterparts in the urban populations.

With the exception of Mali socio-demographic characteristics of men show a significant difference in the relationship with the head of the household compared to the general urban population. The general tendency observed in **Benin, Senegal and Burundi** is an **over representation of men who are head of household** and an **under representation of men who are sons of the head of household**. Male patients who are head of households are overrepresented by at least 15 points. In Benin as much as 88% of the male sample is head of a household. On the other hand, the representation of children of heads of households is at least 16 points under the percentage in reference populations. Patients who have another relationship to the head of the household (brothers, cousins, uncles) are underrepresented in Benin and Senegal and slightly overrepresented in Burundi.

A **higher proportion of widowers** compared to respective urban populations was found in all four countries. In Benin 4.6% of the men in the sample were widowers compared to 0.3% in the urban population. In Burundi 19.4% of men were widowers, 18 points more than in the reference population. This result is not surprising given the high mortality due to HIV/AIDS.

Furthermore, a **higher proportion of divorced men** was found in all samples in the four countries which could be cause or consequence of the illness. In Benin 26% of men in the sample were divorced and 3% in Mali, which is still three times more than in the urban population.

In Benin, Senegal and Burundi bachelors are underrepresented and are with an average age (if measurable) of over 30, 8 years old compared to their counterparts in the urban populations.

Mali shows an important under representation of monogamous men (-20 points) and an important over representation of polygamous men (+30 points), a tendency that is to a smaller extent also found in Senegal and Benin. On the contrary, in Burundi an over representation of monogamous men (+9%) and a lower level of polygamy than in the urban population was found.

Summarizing the findings of the preliminary study concerning socio-demographic characteristics it can be said that men are **older** than their counterparts in the general population and **more often head of households**. **Senegal is the country where the status differs most** from the compared urban population whereas in **Mali the repartition is very similar** to what is observed in the urban population. This is surprising as these 2 countries have similar social structures. The surveyed men live in unusual family configurations, being **more often divorced or widowers** and more polygamous, in countries where this is practiced. In all countries, the matrimonial structure of the studied population differs significantly from the general population.

Table 3: Socio-demographic characteristics of men in the four countries in percentage or in numbers of years (in brackets: difference in percentage or in numbers of years with population of the capital)

	Mali	Benin	Senegal	Burundi
Link with the head of the household				
Head of household	68,8 (1,2)	88,4 (20,8)	59,4 (27,0)	80,7 (14,8)
Husband of the head of household	0,0 (-0,1)	0,0 (-0,4)	0,0 (-0,4)	0,0 (-0,4)
Child of the head of household	18,8 (-0,3)	7,0 (-13,0)	9,4 (-27,6)	0,0 (-16,7)
Father of the head of household	0,0 (0,0)	0,0 (-0,1)	0,0 (0,0)	0,0 (0,0)
Other relative of the head of household	12,5 (0,6)	2,3 (-8,6)	15,6 (-12,5)	16,1 (5,6)
Other members	0,0 (-1,2)	2,3 (1,3)	15,6 (13,5)	3,2 (-3,8)
Total	100,0	100,0	100,0	100,0
Marital Status				
Married monogamous	31,3 (-20,2)	41,9 (-5,7)	34,4 (-0,9)	64,5 (9,2)
Married polygamous	40,6 (30,2)	16,3 (8,6)	9,4 (1,0)	3,2 (0,7)
Free union	3,1 (3,1)	0,0 (-2,0)	0,0 (-0,1)	0,0 (n.d.)
Bachelor (never married)	12,5 (-24,4)	11,6 (-29,8)	34,4 (-20,1)	9,7 (-29,4)
Divorced / separated	3,1 (2,2)	25,6 (23,9)	15,6 (14,2)	3,2 (1,8)
Widower	9,4 (9,1)	4,6 (4,3)	6,3 (6,0)	19,4 (17,7)
Total	100,0	100,0	100,0	100,0
Median age for each marital status				
Married monogamous	36 (-2)	40 (3)	45 (5)	45 (8)
Married polygamous	45 (0)	45 (0,5)	48 (0)	/
Free union	/	/	/	/
Bachelor (never married)	/	37 (13)	33 (8)	/
Divorced/separated	/	37 (-1)	35 (-3,5)	/
Widower	/	41,5 (-8,5)	43,5 (1)	46,5 (2)
Total	41 (7)	40 (9)	40 (9)	44 (13)

The **average age** of the surveyed women is 33 years, thus **similar** to the average age in the respective urban population. This is not true for Burundi, where women are 10 years older than their counterparts in the reference population.

Women who are head of households are over represented while women who are wives of head of household are under represented.

In Burundi 70% of the surveyed women are head of households, 52 points more than in the respective urban population. The respective numbers for the other countries are 22% (16 points above the urban population) for Mali and 36% (13 points) for Benin. Whereas only 17% of the surveyed women are wives of heads of households in Burundi (38 points less than in the urban population) and 33% in Benin (17 points less). This difference is even clearer in Mali, where only 28% of surveyed women are wives of head of households compared to 71% (43 points difference) in the respective urban population.

Furthermore, we found an under representation of women who are children of the head of household in Burundi (-9 points), which could be due to the fact that the surveyed population is older than urban population. In Mali there is a higher proportion of women who are in another relationship to the head of household (sisters, cousins, aunts) (+26%), the same tendency was also found in Benin and in Burundi but in smaller proportions (+6% for both countries). This category is under represented (-13 points) in Senegal.

Related to the over representation of women as heads of households, widows and divorced women a **lower proportion of married women** can be found in the samples of all 4 countries. The under representation of monogamous women is most significant in Mali (-42 points) and least in Benin (-19 points). The over representation of widows was expected given the high mortality of men due to HIV/AIDS

The highest proportion of widows was found in Burundi with 54% of surveyed women, 40 points more than in the reference population. In Mali and Benin this proportion is also high with 31% and 21% respectively. In all countries an **under representation of single women was found**, i.e. Senegal (-23%) and Burundi (-8%). The over representation of divorced women among the surveyed in Mali, Benin and Senegal might be cause or consequence of HIV/AIDS. In Burundi the rate of divorce is similar for both the sample and the urban population. Furthermore, in Benin, Senegal and Burundi a lower proportion of polygamous women was found (probably due to a high proportion of divorced women or widows). In Mali a higher proportion of free unions was found, which is surprising in a country where this type of lifestyle is usually not tolerated.

To sum up, **in all four countries women were found to be more responsible for their households** than their counterparts in the reference populations, and tended to live in **more unusual family situations**, being less likely to be in a stable relationship and more likely to be **divorced or widows**.

Table 4: Socio-demographic characteristics of women in the four countries in percentage or in numbers of years (in brackets: difference in percentage or in numbers of year with population of the capital)

	Mali	Benin	Senegal	Burundi
Link with the head of the household				
Head of household	22,2 (15,6)	35,7 (12,8)	27,5 (17,1)	70,2 (52,0)
Wife of the head of household	27,8 (-42,6)	32,9 (-16,6)	29,4 (-3,5)	17,3 (-37,6)
Child of the head of household	14,4 (-2,2)	15,7 (-0,2)	27,5 (-0,9)	4,8 (-9,4)
Mother of the head of household	1,1 (0,3)	0,0 (-0,3)	0,0 (-0,7)	0,0 (-0,4)
Other relative of the head of household	34,4 (26,0)	15,7 (6,3)	11,8 (-12,6)	15,7 (5,9)
Other members	0,0 (-1,4)	0,0 (-1,8)	3,9 (0,8)	0,0 (-2,7)
Total	100,0	100,0	100,0	100,0
Marital Status				
Married monogamous	11,2 (-42,2)	31,4 (-19,0)	29,4 (-8,3)	22,1 (-30,1)
Married polygamous	29,2 (4,8)	1,4 (-14,5)	15,7 (-4,1)	2,9 (-0,9)
Free union	6,7 (6,7)	1,4 (-1,0)	0,0 (-0,1)	0,0 (n.d.)
Bachelor (never married)	13,5 (-4,1)	20,0 (-2,9)	9,8 (-23,2)	18,3 (-7,7)
Divorced / separated	7,9 (6,2)	24,3 (19,9)	17,7 (12,1)	2,9 (-2,1)
Widow	31,5 (27,6)	21,4 (17,4)	27,5 (23,5)	53,9 (40,0)
Total	100,0	100,0	100,0	100,0
Median age for each marital status				
Married monogamous	33,5 (3,5)	30 (-2)	36 (2)	40 (10)
Married polygamous	35 (-1)	24 (-15)	35 (-4)	/
Free union	29,5 (n.d.)	24 (-6)	/	/
Bachelor (never married)	26 (3)	25,5 (2,5)	34 (10)	33 (10)
Divorced/separated	39 (2)	38 (-1)	36 (-2)	/
Widower	34,5 (-12,5)	40 (-10)	39,5 (10,5)	40 (-5)
Total	34 (4)	32 (2)	35 (3)	40 (10)

3.2. Socio-economic characteristics of the surveyed population

The surveyed men have a lower level of education in all four countries compared to their counterparts in the respective urban populations. They are over represented in the less educated categories and under represented in the category of secondary and higher education. The highest proportion of uneducated men was found in Mali: 53% of surveyed men were uneducated or had received only Koranic education, thus 16 percent more than in the urban population. In Benin uneducated men or men with Koranic education are only 7% (2 points below the urban comparison population). However, men are still less educated than their counterparts in the urban population due to an over representation (+ 26 points) in the category of primary education and an under representation in secondary and higher education. In all four countries the surveyed men are under represented in the category of higher education: -6 points in Mali and Senegal, -16 points in Burundi and -17 points in Benin.

Conclusion: The surveyed population is less educated than the reference populations. In Mali and Senegal uneducated men are over represented, while in Benin and Burundi men with only primary education are over represented.

The occupational profile of men varies from one country to another: In Mali, Benin and Senegal samples show a **higher percentage of men who are in the labour force**⁵ compared to the reference population, a **lower rate of managers and employers** and most importantly **more independent workers (self-employment)**. Keeping in mind that we do not have detailed statistical information about the reference population in Burundi, it seems that the employment structure of the male population in the sample and the reference population are much more similar. We found the same proportion for men in the labour force in the sample and the reference population with an under representation of unwaged workers (-6 points).

In the three other countries the activity rate varies from 80% to 100%, thus is much higher than in the respective urban populations (+13 points in Mali, +2 points in Senegal). The wage rate is much lower in Benin (23%, -36 points), but higher in Senegal (50%, +14 points).

⁵ People in labour force are essentially busy actives: people who, during the reference week, have at least worked for an hour for a wage (employees) or for other benefits (workers other than employees and unpaid family workers) or who usually have a job but are temporarily absent from work (for health reasons, accidents, vacation or holiday, strike or other work problems, education or training leave, parental or maternity leave, etc.) but have a formal link to their work. Labour force includes unoccupied people i.e.: unemployed, people without a job but actively searching one and immediately free to work.

Table 5: Economic characteristics of men in the four countries studied in percentage (in brackets: difference in points of percentage or in numbers with the population of the capital)

	Mali	Benin	Senegal	Burundi
Level of education				
None/Koranic only	53,1 (15,5)	7,0 (-1,8)	43,8 (17,9)	12,9 (1,3)
1 st fundamental cycle	18,8 (4)	55,8 (26,2)	15,6 (-17,3)	54,8 (24,2)
2 nd fundamental cycle	12,5 (-2,9)	20,9 (-2,3)	21,9 (2,9)	19,4 (3,1)
General high school	3,1 (-3,8)	2,3 (0,5)	9,4 (7,3)	0,0
Technical or professional high school	6,3 (-6,5)	11,6 (-5,6)	3,1 (-4,7)	9,7
University	6,3 (-6,3)	2,3 (-17,1)	6,3 (-6,1)	3,2 (-16,2)
Total	100	100	100	100
Socio-professional category				
Manager, engineer	15,6 (2,3)	6,9 (-4,3)	9,7 (0,6)	3,2
employee, qualified worker	3,1 (-4,4)	0 (-9,4)	3,2 (-8,6)	6,5
employee, semi-qualified worker	12,5 (6,0)	9,3 (3,0)	16,1 (9,8)	16,1
Labour	6,3 (0,9)	0 (-4,7)	3,2 (-3,5)	25,8
Employer	0 (-6,6)	0 (-8,3)	0 (-2,1)	3,2
Independent worker	59,4 (24,1)	72,1 (39,1)	35,5 (9,3)	12,9
apprentice/family help	3,1 (-2,1)	4,7 (-2,1)	3,2 (-7,3)	3,2 (1,3)
Inactive	0 (-13)	4,7 (-9,6)	12,9 (-1,7)	19,4 (1,8)
Unemployed	0 (-7,2)	2,3 (-3,6)	16,1 (3,3)	9,7 (5,3)
Total	100	100	100	100
<i>Sample</i>	32	43	32	31
Main rates				
Rate of activity	100 (13,0)	95,3 (9,6)	87,1 (1,7)	80,6 (-1,8)
Wage rate	40,6 (-3,3)	22,5 (-36,1)	50 (13,9)	77,2 (5,6)
Unemployment rate	0 (-8,2)	2,4 (-4,5)	17,9 (2,9)	12,0 (6,7)
Visible under employment rate (< 35 h)	62,5 (50,8)	85 (68,6)	27,7 (10,8)	36,3 (n.d.)
<i>Of which... Under employment due to work</i>	15 (-20)	50 (-28,9)	36 (-36)	50 (n.d.)
<i>Under-employment linked to health problems</i>	60 (10)	35,3 (26)	27 (19)	50 (n.d.)
<i>Under-employment for other reasons</i>	25 (10)	14,7 (2,9)	36 (15)	0 (n.d.)

Table 6: Economic characteristics of women in the four countries studied in percentage (in brackets: difference in points of percentage or in numbers with the population of the capital)

	Mali	Benin	Senegal	Burundi
Level of education				
none/Koranic only	49,4 (-3,4)	37,1 (5,5)	39,6 (-0,1)	16,4 (-10,6)
1 st fundamental cycle	23,6 (6,2)	48,6 (18,9)	37,5 (5,6)	43,3 (16,2)
2 nd fundamental cycle	14,6 (0,6)	8,6 (-11,6)	18,8 (2,8)	22,1 (5,5)
General high school	1,1 (-1,9)	0 (-1,6)	2,1 (0,4)	2,9
Technical or professional high school	11,2 (1,8)	5,7 (-5,2)	0 (-6)	15,4
University	0 (-3,5)	0,0 (-6,1)	2,1 (-2,6)	0,0 (-6,1)
Total	100	100	100	100
Occupational category				
manager, engineer	3,3 (-1,4)	0 (-4,6)	0 (-2,9)	1,0
Employee, qualified worker	5,6 (3,5)	1,4 (-2,2)	0 (-3,8)	8,7
Employee, semi-qualified worker	6,7 (5,7)	1,4 (-0,7)	13,5 (10,7)	6,7
Labour	0 (-1,2)	0 (-1,9)	0 (-5,8)	3,9
Employer	0 (-1,4)	0 (-3,9)	1,9 (1,4)	6,7
Independent worker	65,5 (21,6)	75,7 (22,9)	65,4 (39,3)	30,8
Apprentice/family help	12,2 (10,4)	11,4 (5,6)	0 (-2,7)	6,7 (-14,7)
Inactive	1,1	/	/	/
Unemployed	3,3 (-29,6)	8,6 (-10,8)	15,4 (-21,8)	28,9 (1,0)
Total	2,2 (-8,9)	1,4 (-4,5)	3,9 (-14,3)	6,7 (-1,4)
<i>Sample</i>	100	100	100	100
Main rates				
Rate of activity	96,7 (29,6)	91,4 (10,8)	84,6 (21,7)	71,1 (1,0)
Wage rate	29,1 (12,6)	15,9 (-13,4)	19 (-39,5)	41,8 (-7,3)
Unemployment rate	2,3 (-14,3)	1,6 (-5,8)	4,6 (-24,4)	9,5 (-1,7)
Visible under employment rate (< 35 h)	55,9 (16,5)	85,7 (64,1)	59,6 (26,1)	20,9 (n.d.)
<i>Of which... Under employment due to work</i>	25 (1)	50 (-22,0)	20 (-43)	57,1 (n.d.)
<i>Under-employment linked to health problems</i>	38 (9)	37 (21,2)	32 (21)	35,7 (n.d.)
<i>Under-employment for other reasons</i>	36 (9)	13 (0,8)	48 (21)	7,1 (n.d.)

It is interesting to note that in the countries with **the lowest wage rate** (Benin 22% and Mali 41%) **the rate of under-employment⁶ is the highest** (85% in Benin and 63% in Mali), whereas we found the opposite in countries with a high wage rate (Senegal 50% and Burundi 77% have an under-employment of 28% and 36% respectively). In all countries the surveyed populations saw the cause for their under-employment less frequently related to the work itself than the reference population (i.e. -20 points in Mali and -36 points in Senegal). Health problems as reason for under-employment are much more important among the surveyed population in Mali, Benin and Senegal (+10%, +26%, +19% respectively) and mentioned as cause for under-employment by the majority of surveyed population in Mali (60%) and Burundi (50%), but not in Benin (35%) and in Senegal (27%).

The women of the sample are less educated than the surveyed men. They were also found to be less educated than their counterparts in the urban reference population.

As we found for the male population of the sample, women with **lower levels of education are over represented** and women with **higher education levels are under represented**. 49% of the women surveyed in Mali have not benefited from any instruction or only from Koranic education (-3 points) while this is true for 16% in Burundi (-11%).

The occupational profile of the surveyed women is similar in all four countries with **an over representation of independent workers (mostly self-employed) and an under representation of inactive or unemployed women**. The activity rates are 11 to 30 points higher than in the urban reference populations with the exception of Burundi, where the activity rates are similar (71%) in surveyed and reference population. Furthermore, the unemployment rate varies from 2% to 10%, thus is 2 to 24 points lower than in the urban population.

The high level of under employment is very evident in Benin (86%, +64 points), in Senegal (60%, +26%) and in Mali (56%, +17 points). The under employment rate in Burundi is only 21%, and probably similar to the rate of the reference population, even though we do not have comparative figures.

38% of surveyed women in Mali saw health problems as the reason for their under employment (9 points more than in the urban population). In Benin and Burundi the majority saw their under employment related to the work/employment situation (50%, 22 points less than in the reference population in Benin and 57% in Burundi without any comparative figures for the latter). In Senegal the majority of the surveyed population mentioned other reasons than health and working problems as cause for their under employment (48%, 21 points more than in the urban population).

3.3. HIV-positive status and care of PLWHA

When assessing the time span people had known their HIV status, the year of their first consultancy in a treatment centre and the duration of their ART treatment, no significant differences between women and men can be found. Therefore the following considerations

⁶ Visible under-employment includes all people with waged or an unwaged employment, whether present or absent from work, who have involuntarily worked less than the normal time of work in their activities and who have been looking for extra work or free to do more work in the reference period. In the INIPSA studies, like in the 1-2-3 Surveys, the minimum reference time of work was 35 hours. A persons in visible under employment in our studies is someone who works less than 35 hours.

regard the total sample population, keeping in mind that the sample is more representative for women than for men.

Between 67% and 82% of the surveyed people **became aware of their HIV-positive status** in the last 2 years (since 2003). In Burundi only 39% of the surveyed PLWHA became aware of their HIV-positive status in the last two years and 40% already before 2000. This indicates that HIV detection has been working for a longer time. However, **surveyed patients started to attend health care centres quite recently** in all four countries: 61% (Burundi) to 92% (Benin) came to the centre for the first time between 2003 and 2005. **People start to attend the care centres as soon as they learn about their HIV-positive status**, with the exception of Burundi where a period in which people know their HIV-positive status without attending treatment centres precedes the first consultancy. **A link between the scaling up of national programs for detection and free treatment of HIV/AIDS in 2003 and the increase of people being detected and attending the health care centres can be observed in Benin, Senegal and Mali.** This indicates that national health programs have encouraged people to get tested and start treatment. Compared to the other countries the percentage of detected people in 2005 is very low in Burundi 8% (Mali 30%, Benin 40% and Senegal 18%). This could indicate that associations that were taking in charge patients before public structures have decided not to accept anymore patients because their centers are saturated.

Table 7: Learning about being HIV-positive in the total population surveyed in four countries

Since when do you know that you are HIV-positive?	Mali	Benin	Senegal	Burundi
2000 or before	9,1	9,0	24,4	39,9
2001	4,1	3,5	4,9	8,2
2002	13,9	6,2	3,7	13,3
2003	16,4	17,7	17,1	14,1
2004	27,9	31,9	31,7	21,5
2005	28,7	31,9	18,3	3,0
Total	100,0	100,0	100,0	100,0
<i>Sample</i>	<i>122</i>	<i>113</i>	<i>82</i>	<i>135</i>

Table 8: Year of the first consultancy in a treatment centre in the total population surveyed in the four countries

When did you start coming to this centre?	Mali	Benin	Senegal	Burundi
2000 or before	6,0	2,6	21,7	24,2
2001	5,1	0,9	4,8	6,1
2002	15,3	4,4	4,8	8,3
2003	15,3	15,0	15,7	22,0
2004	30,5	37,2	28,9	31,1
2005	30,5	39,8	24,1	8,3
Total	100,0	100,0	100,0	100,0
<i>Sample</i>	<i>118</i>	<i>113</i>	<i>83</i>	<i>132</i>

Table 9: Length of time of ART treatment in the total population surveyed in the four countries

When did you start your ART?	Mali	Benin	Senegal	Burundi
2002 or before (35 months or more)	10,7	1,8	22,0	8,9
2003 (23-34 months)	7,4	6,2	18,3	11,9
2004 (11-22 months)	38,5	24,8	32,9	32,6
2005 (less than 10 months)	43,4	67,2	26,8	46,7
Total	100,0	100,0	100,0	100,0
<i>Sample</i>	<i>122</i>	<i>113</i>	<i>82</i>	<i>135</i>

After what has been previously mentioned it is not surprising that most people started **ART treatment only recently**. 79% to 92% of the studied population has been under ART for 22 months or less. Only in Senegal ART treatment has been implemented for a longer period (less than 60% started in the last 22 months). The treatment was not really available before 2003 in Benin (2%), 67% of the patients of the sample started ART in 2005 (within the last 10 months preceding the survey).

Men and women differ more significantly in their behaviour regarding sharing information or confidence with others and taking part in associations.

In **Senegal and Benin men are less likely to inform other people about their HIV-positive status** (respectively 34% and 30% have not told anyone they are HIV-positive) than in **Burundi and in Mali** (respectively 16% and 21%). In all four countries men do not inform their parents very often, but a small majority confides their HIV-positive status to their partner (from 50% to 63%).

Table 10: Sharing information about being HIV-positive for surveyed men in the four countries

Have you shared the information about being HIV-positive to someone with whom you live?	Mali	Benin	Senegal	Burundi
With no one	21,1	30,2	34,4	16,1
With father of mother	15,6	13,9	9,4	9,7
<i>Sample</i>	<i>32</i>	<i>43</i>	<i>32</i>	<i>31</i>
With the partner (for those in couple)	62,5	56,0	50,0	61,9
<i>Of which</i> <i>monogamous</i>	70,0	55,5	63,6	60,0
<i>Polygamous</i>	61,5	57,1	/	/
<i>Free union</i>	/	/	/	/
<i>Sample in couple</i>	<i>24</i>	<i>25</i>	<i>14</i>	<i>21</i>

/: samples are too small

Women share the information about their HIV-positive status less often in Mali and Burundi (respectively 31% and 25% have not talked to anyone) than men (21% and 16%). The opposite is true in Benin, where only 14% of women have not shared the information with anyone compared to 30% of men. In Senegal no difference was found between the behaviour of women and men, a third of both men and women do not confide their status

to anyone. In all four countries women share the information more often with their parents (17% to 34%) than men (9% to 16%), this is particularly clear in Benin (20 point difference). Women share the information less often with their partner (4 to 7 points less) than men, with the exception of Benin, where 79% of the women have done so compared to 56% of men.

Table 11: Sharing information about being HIV-positive for surveyed women in the four countries

Have you shared the information about your HIV+ status to someone with whom you live?	Mali	Benin	Senegal	Burundi
With no one	31,3	12,9	32,7	25,0
With father of mother	23,3	34,3	17,3	20,2
<i>Sample</i>	<i>90</i>	<i>70</i>	<i>52</i>	<i>104</i>
With the partner (for those in couple)	54,8	79,2	43,5	57,7
<i>Of which monogamous</i>	80,0	77,2	40,0	65,2
<i>Polygamous</i>	57,7	/	/	/
<i>Free union</i>	0,0	/	23	26
<i>Sample in couple</i>	<i>42</i>	<i>24</i>	<i>14</i>	<i>27</i>

/: samples are too small

The possibility to talk freely about the disease in the last month varies from one country to another for the men. **In Mali, Benin and Senegal men do not talk much about the disease to their family (22% to 30%), but prefer talking to employees of the care centres (31% to 34%).** The opposite is true in **Burundi, where men talk more often to their close relatives (58% to a relative with whom they live, 52% with a relative with whom they do not live) than to employees in centres (29%) and in associations (32%).** In Mali and in Benin very few men go to associations to talk about their disease (9% and 2%). This situation is reversed in Senegal where men often go to associations to talk about their disease (38% of the cases), keeping in mind that in Senegal the sample is biased, because the studied population was invited by the associations to the interviews. In Burundi associations are also very often solicited (32%), even though we cannot find a particular reason for this.

Table 12: Possibility to talk freely about the disease in the last 30 days for the men in the four countries

Have you had the possibility to talk freely about your illness, about your difficulties, your troubles and health problems?	Mali	Benin	Senegal	Burundi
With no one	25,0	41,9	37,5	19,4
With a parent with whom I live	21,9	25,6	18,8	58,1
With a parent with whom I do not live	6,3	4,7	3,1	51,6
With a domestic employee	0,0	0,0	3,1	0,0
With a centre employee	34,4	32,2	31,3	29,0
With a member of an association	9,4	2,3	37,5	32,3
<i>Sample</i>	<i>32</i>	<i>43</i>	<i>32</i>	<i>31</i>

Table 13: Possibility to talk freely about the disease in the last 30 days for the women in the four countries

Have you had the possibility to talk freely about your illness, about your difficulties, your troubles and health problems?	Mali	Benin	Senegal	Burundi
With no one	28,9	50,0	11,8	23,1
With a relative with whom I live	21,1	30,0	27,5	38,5
With a relative with whom I do not live	13,3	7,1	15,7	33,7
With a domestic employee	0,0	0,0	0,0	0,0
With a centre employee	27,8	28,6	35,3	19,2
With a member of an association	30,0	1,4	37,3	35,6
<i>Sample</i>	<i>32</i>	<i>70</i>	<i>52</i>	<i>104</i>

The gender difference found in Senegal is surprising: women talk more freely (only 12% have not talked to anyone) compared to men (38%). In **Mali and in Senegal women prefer talking to people from outside of the family, in particular to associations** (even though it has to be kept in mind that the result for Senegal is biased). On the contrary to men, **women in Benin talk more often to their family** (37%) than to employees of centres or associations (30%). In **Burundi women talk less frequently to their family** (only a third) than men (more than half) but talk **as much to associations as men** (a third). In addition, in Mali associations are much more solicited by women (30%) than by men (9%), a gender difference that is not found in the other countries.

In all countries a relatively high number of men participate in HIV/AIDS **associations** (44% to 56%), **with the exception of Mali** (less than 13%). Men invest little time in other types of associations, with the exception of religious associations (9% to 14%, Mali only 3 %).

Table 14: Participation in an association in the last 30 days for men in the four countries

During the last 30 days, have you participated in activities of an association of :	Mali	Benin	Senegal	Burundi
Fight against HIV/AIDS, PLWHA	12,5	44,2	56,3	51,6
Proximity (neighbourhood, village)	9,4	0,0	3,1	3,2
Sports, cultural	9,4	2,3	6,3	3,2
Corporative (union, craftsmen...)	3,1	2,3	3,1	6,5
Religious	3,1	13,9	9,4	9,7
<i>Sample</i>	<i>32</i>	<i>43</i>	<i>32</i>	<i>31</i>

In **Mali women** participate more actively in associations than men (27% for PLWHA associations and 12% for religious associations), but **in general are less active than in the other countries**. Both types of associations (PLWHA associations and religious associations) are frequented by approximately 21% of the women in Benin. The highest participation rate of women in these associations was found in Burundi and Benin, but is in

the latter probably due to the distortion explained before. The surveyed populations are less frequent in all other types of associations.

Table 15: Participation in an association in the last 30 days for women in the four countries

During the last 30 days, have you participated in activities of an association of :	Mali	Benin	Senegal	Burundi
Fight against HIV/AIDS, PLWHA	26,7	22,9	59,6	80,8
Proximity (neighbourhood, village)	13,3	1,4	11,5	2,9
Sports, cultural	7,8	0,0	0,0	1,9
Corporative (union, craftsmen...)	2,2	4,3	1,9	6,7
Religious	12,2	21,4	3,9	9,6
<i>Sample</i>	<i>90</i>	<i>70</i>	<i>52</i>	<i>104</i>

The possibility for patients to have a personal conversation with one of the staff members of the centres in the last 30 days was used as a measure for the availability of staff. It was not differentiated between men and women, since only small gender differences could be found. This seems to confirm the concept that the possibility to talk to staff members depends first of all on their existence (not all categories are represented in each centre) and on their readiness to help patients.

Table 16: Possibility to confide to health centre staff in the last 30 days for the total population surveyed in all four countries

Except for the doctor and the nursing staff, have you been in contact with other staff members in the last 30 days:	Mali	Benin	Senegal	Burundi
Reception staff	54,9	0,9	7,3	25,9
Pharmacist	65,6	9,7	26,5	29,6
Social worker	12,3	17,7	74,7	31,1
Psychologist	5,7	0,0	7,2	15,6
Health mediator	4,1	7,9	4,8	11,1
Nutritionist	5,7	0,9	7,2	2,2
Member of a PLWHA association	19,7	0,9	49,4	9,6
Others	7,4	10,6	2,4	2,2
Patients' discussion groups	32,8	35,7	48,8	35,6
<i>Sample</i>	<i>122</i>	<i>113</i>	<i>83</i>	<i>135</i>

In Senegal 75% of the studied population had the possibility to have a personal conversation with a social worker in the last 30 days compared to 12% - 31% in the other countries. 49% of the patients in Senegal had also a personal conversation with a member of a PLWHA association; however, again we have to keep in mind that this result is probably distorted by the selection of the patients.

In Mali the reception staff (55%) and the pharmacist (66%) are particularly requested. Also in Burundi the reception staff plays a significant role (26%) while being negligible in

Senegal (7%) and Benin (1%). **The pharmacist also has an important role in Senegal (27%) and in Burundi (30%) but less in Benin (10%).** Psychologists, health workers, nutritionists and other professionals are much less available, even though one must say that psychologists (16%) and health workers (11%) are a bit more important in Burundi than in the other countries (less than 8%).

It is important to note that a third of the studied populations participates in patients' discussion groups (only a quarter of Malian men), with the exception of Senegal, where participation is even more important (almost half).

3.4. Number of ART drug intakes and food habits of PLWHA under treatment

We will not discuss the number of antiretroviral drugs intakes per day for the single countries or differentiate it by gender. But it is important to notice that in all four countries all patients, men and women, follow their prescriptions. The number of intakes is depending on the type of drugs prescribed and available in the country. Furthermore we find the number of intakes corresponding to the prescribed dosage of the drugs. It seems that the prescription is most standardised in Burundi, where 100% of the people surveyed are taking their ART medication twice a day; 95% state they never omitted their treatment in the last 7 days. In Senegal and Mali 4% state unusually frequent intakes (more than 3 intakes), which seems to indicate that in these countries the modalities of intakes are not always very clear (possible confusion between ART and treatment for opportunistic infections). Nonetheless, the results show a good compliance and adherence to treatment. This analysis is encouraging since it shows that the information on modalities of drug intake is well transmitted and understood by the patients. However, it is clear that it has to be kept in mind that our sampling method does not take into account patients who dropped out.

70% to 81% of the surveyed have changed their eating habits due to the treatment and/or the illness. In Benin all of the surveyed people notify that they have changed their eating habits and 90% state that they have changed them a lot (42% to 50% in the other countries).

Table 17: Change in eating habits since the beginning of the treatment in the total surveyed population in the countries

Have your eating habits changed because of your treatment?	Mali	Benin	Senegal	Burundi
Yes, a lot	55,4	90,3	44,1	41,5
No, a little	17,4	9,7	36,9	28,9
No, not at all	27,3	0,0	19,1	29,6
Total	100,0	100,0	100,0	100,0
<i>Sample</i>	<i>121</i>	<i>113</i>	<i>84</i>	<i>135</i>

These changes in behaviour are difficult to explain relying on the evidence we gained from our survey. It could seem likely that people, thanks to nutritional education, are more or less aware of nutritional needs. But this is not corresponding to the results of the qualitative and quantitative surveys, where the percentage of people who benefited from nutritional education is very low in all four countries. Another hypothesis could be that

diets and eating habits vary a lot from one country to another and are more or less naturally adapted to the treatment.

Table 18: Food aid for surveyed men in the four countries

Number of meals received from the food aid	Mali	Benin	Senegal	Burundi
No food aid	90,6	93,0	93,7	67,7
1-7 meals	6,3	0,0	6,3	3,2
More than 7 meals	3,2	7,0	0,0	29,1
Total	100	100	100	100
<i>Sample</i>	32	43	32	31
% who have not always eaten enough and who have been hungry	25,0	39,5	34,4	38,1

Table 19: Food aid for surveyed women in the four countries

Number of meals received from the food aid	Mali	Benin	Senegal	Burundi
No food aid	85,4	71,4	92,3	44,1
1-7 meals	14,6	7,1	5,8	1,0
More than 7 meals	0,0	21,5	1,9	54,9
Total	100	100	100	100
<i>Sample</i>	89	70	52	104
% who have not always eaten enough and who have been hungry	38,9	31,4	33,3	68,4

Food aid varies from one country to another and between women and men. In fact in **Burundi 32% of the men and 56% of the women received food aid**. Whereas in **the other three countries food aid has been very limited** and only 7-9% of men and 8-29% of women have benefited from it. These figures are quite low and far from what was expected according to the description of the activities in the centres (cooking workshop in particular) in these three countries. The biggest gender difference was observed in Benin (food aid for 7% of men and 29% of women). **Burundi also differs** from the other countries in the fact that **68% of the women have not been able to eat enough** compared to 31% to 40% of men and women (except men in Mali only 25%) in the other countries. The collected data indicates that food aid is most frequent but also most needed in Burundi, and maybe still not efficient enough.

3.5. Biometric characteristics of PLWHA under ART

With the exception of Benin, the systematic analysis of weight and size of the patients, and in particular of their Body Mass Index (BMI), was inconclusive. Indeed, even though patients in the four countries knew their weight, they did not know their height. This could be due to:

- The surveyed PLWHA do not remember the figures, as it could be expected from a relatively uneducated population. Nevertheless, this hypothesis does not seem very plausible as most of them remembered their weight.
- Health care staff does not regularly measure the height of PLWHA.

- Health care staff does not inform the PLWHA about the measurements or does not do so systematically.

It seems in any case **essential that all centres invest in measuring tools and that the staff systematically informs the patients.** This could enable patients under treatment alongside with the staff to follow their weight in proportion to their height.

Only few PLWHA knew their CD4 level. The same reasons as mentioned for weight and the height could apply.

3.6. Self perceived health by the PLWHA under ART

The differences between women and men concerning the perception of mental and physical health are not significant, with the exception of Mali, where physical health is more negatively perceived by men (43% stated physical health problems for more than a week in the last 30 days) than women (17%).

In Mali and Benin the surveyed PLWHA had more problems with physical health (with respectively only 24% and 20% who did not suffer at all), whereas 52% in Senegal and 86% in Burundi did not state any physical health problems.

Table 20: Physical health in the total population in the four countries

For how many days has your physical health (illnesses and health problems) not been good this month?	Mali	Benin	Senegal	Burundi
0	24,3	20,4	51,6	85,9
1-7 days	51,5	54,8	29,9	4,4
8-15 days	14,9	18,6	9,3	3,7
More than 15 days	9,3	6,2	9,4	5,9
Total	100	100	100	100
<i>Sample</i>	<i>107</i>	<i>113</i>	<i>84</i>	<i>135</i>

Table 21: Psychological health in the total population in the four countries

For how many days has your mental health (depression, stress, emotional problems) not been good this month?	Mali	Benin	Senegal	Burundi
0	34,5	31,0	51,5	88,4
1-7 days	27,8	47,0	15,2	4,4
8-15 days	4,7	16,9	4,5	5,4
More than 15 days	32,0	5,4	28,8	0,8
Total	100	100	100	100
<i>Sample</i>	<i>107</i>	<i>113</i>	<i>84</i>	<i>135</i>

It seems that **physical health is perceived in very different ways in the different countries.** The proportions of people suffering from health problems were almost exactly inversed: 80% suffering in Benin and only 14% in Burundi. It's difficult to believe that such big differences are due to the fact that people are detected at a more or less early stage of their illness in the single countries. **Differences in perception must be analysed with the differences in the length of time of the consultation in the centres and the length of**

time of the treatment. Benin is indeed the country where detection, the creation of health care centres and the availability of treatment are the most recent. This could explain the fact that patients are in worst physical state than in others. As for Burundi, even though ART have been recently available, treatment centres and detection are quite old, which could explain the fact that patients suffer less in this country. Besides, it is possible that the physical sufferings linked to HIV/AIDS are nothing compared to the sufferings endured during the long and bloody civil war in Burundi.

Also regarding psychological health no differences in gender were found. In **Mali and Benin psychological health is perceived more positive** (35% and 31% respectively stated that they did not suffer at all) **than physical health** (24% and 21% respectively), while the perceptions are similar in Senegal and Burundi. **The differences among the countries correspond to the differences found regarding physical health:** psychological health is perceived best in Burundi and worst in Benin. Nevertheless, perceptions of mental health are more unequal in Mali and in Senegal where an important proportion of PLWHA suffered from depression, stress or emotional problems for more than 15 days in the past month (respectively 29% and 32% compared to only 5% in Benin and 1% in Burundi).

Table 22: Side effects of the treatment in the total population in the four surveyed countries

How do you cope with the side effects of your treatment?	Mali	Benin	Senegal	Burundi
Very badly	2,5	4,4	8,3	3,0
Badly	3,3	2,7	4,8	9,7
A bit badly	5,8	12,4	23,8	9,7
Not too badly	11,7	80,5	15,5	16,4
No side effects	76,7	0,0	47,6	61,2
Total	100,0	100	100,0	100,0
<i>Sample</i>	<i>120</i>	<i>113</i>	<i>84</i>	<i>135</i>

Also concerning side effects no significant gender differences were found in the countries with the exception of Mali where men complained more about side effects (only 67% without side effects) than women (80%).

It is encouraging to note that only **few people suffer from strong or very strong side effects** (between 7% in Benin and 13% in Senegal). It is most surprising that in Benin no one declares to live without side effects whereas 48% to 77% do so in the other countries; this has to be linked to the stronger perception of physical suffering in the country. In Benin 81% of the studied population stated that they managed to cope with the side effects (compared to 12% - 16% in the other countries).

3.7. Housing and sanitary conditions of the surveyed population

It is difficult to make a good comparison: Housing conditions differ a lot in the different countries, not only PLWHA, but the whole population. Furthermore, the data used for the comparison (a representative survey on the general population of the capital) is not always adapted to the geographical diversity of our sample. Regarding the housing conditions our sample differs from the population of the capital (housing conditions in

Benin and Senegal are more similar to rural than to urban housing conditions). In Burundi no comparative figures on housing conditions are available.

Without looking at the details it can be said that in Benin an unusually high proportion of the surveyed people lives in ‘houses in rows’ (76% compared to 12% in the population of Cotonou) and an unusually low proportion lives in ‘solid’ housing conditions (concrete, cement, stone) (30% compared to 79% in Cotonou). In Mali an unusually high proportion of surveyed people lives in semi-hard clay houses compared to the Bamako population (49% compared to 10%). In all cases no significant gender differences regarding the housing conditions can be found.

This is not the case for the owner status where significant differences between gender and countries can be observed.

Table 23: Housing conditions of men in the four surveyed countries

Housing conditions: Owner status	Mali	Benin	Senegal	Burundi	
Owner with a title	28,1 (-0,8)	4,7 (-16,9)	62,5 (7,4)	16,1	22,5 (-22,1)
Owner without a title	15,6 (-5,5)	16,3 (-3,3)	6,3 (-1,9)	3,2	
Owner without any precision	3,1 (n.d.)	2,3 (n.d.)	3,1 (n.d.)	3,2	
Lodger	28,1 (-8,9)	11,6 (-23,9)	21,9 (-8,4)	64,5 (15,1)	
Lodged by the employer	6,3 (3,3)	2,3 (1,4)	3,1 (1,8)	3,2	12,9 (6,9)
Free lodging by someone else	9,4 (0,4)	62,8 (44,0)	3,1 (-0,2)	9,7	
Others	9,4 (8,5)	0,0 (-4,2)	0 (-0,8)	0,0 (n.d.)	
Total	100	100	100	100	
Sample	32	43	32	31	

Owners are under represented in Mali (-7%), Benin (-20%) and Burundi (-22%), thus PLWHA are facing a greater instability regarding housing than the urban populations. **In Mali and in particular in Burundi we find an over representation of lodgers.** In Benin an **over representation of men who are living with someone else** can be assessed (63%, 44 points more than in the urban population), while all other status are under represented. Thus a great instability regarding the owner status has to be notified in Benin. Senegal differs from the other countries with a small over representation of owners (+5 points) and an under representation of lodgers (-8 points), but in general the situation is similar to the situation of the respective male urban population.

Conclusion: the biggest difference in housing conditions (between surveyed males living with HIV/AIDS and the respective urban population) was found in Benin, due to the high number of men living in somebody’s house for free.

The housing conditions of women regarding the owner status are more similar to the reference population with the **exception of Benin, where women who are living with someone else for free are over represented** just as men (61%, thus 44 points more than in Cotonou). Women in Mali are more often owners with a title than without, but apart from that no significant differences with the urban populations can be found.

Table 24: Housing condition of women in the four surveyed countries

Housing conditions - owner status	Mali	Benin	Senegal	Burundi	
Owner with a title	38,9 (6,8)	7,1 (-16,6)	62 (4,3)	26,9	37,5 (-3,6)
Owner without a title	8,9 (-14,3)	2,9 (-17,7)	4 (-4,3)	7,7	
Owner without any precision	7,8 (n.d.)	2,9 (n.d.)	2,0 (n.d.)	2,9	
Lodger	27,8 (-4,9)	25,7 (-7,9)	26 (-2,4)	49,0 (-2,3)	
Lodged by the employer	2,2 (0,2)	0,0 (-0,8)	0 (-0,9)	0,0	13,5 (6,1)
Free lodging by someone else	8,9 (0,1)	61,4 (43,7)	4 (0,9)	13,5	
Others	8,9 (7,7)	0,0 (-3,9)	2 (1,5)	0,0 (n.d.)	
Total	100,0	100	100	100	
Sample	90	70	52	104	

The general **quality of housing** in the surveyed people is **lower** than in urban populations, with greater dependency concerning the owner status. This is particularly true for Benin.

These results are not surprising since they confirm the findings of the **socio-economic and socio-demographic part of this study (i.e. instable and unusual family situations)** and again show the **more precarious living situation of the surveyed PLWHA**. Thus strengthening the hypothesis that patients with instable socioeconomic situations are attending health care centres where treatment is free of charge, even though they are not as well treated (in particular concerning confidentiality) as in other private centres chosen by patients with more means. This situation is particularly true for Benin, whereas the situation of the surveyed PLWHA in Burundi does not differ much from the urban population of Bujumbura.

In order to assess the sanitary conditions of the houses, water supply and sanitary facilities have been chosen as indicators. Gender differences are not significant. With the exception of Burundi, a general over representation of PLWHA, who supply themselves with water from a well and an under representation of households using taps from another household has been found. In part this could be due to the fact that the studied population is not exclusively urban as the reference population. Nevertheless, this does not explain the non-existence of people using a tap from another household in Benin. It could indicate that the studied population is more isolated, but this hypothesis definitely needs further investigation. It could also be due to the fact that the surveyed people are living in houses in rows with private taps (which would explain the over representation of 18 points of this type of water supply).

In **Mali, Burundi and Benin a lower proportion of people using flushing sanitary facilities** was found (-19%, -13%, -7% respectively). More than 50% of the urban population uses flushing sanatoria in Senegal; these sanitary facilities are much more developed than in the three other countries, where the majority uses latrines. The main difference between the studied population and Dakar's population concerns the use of shared flushing sanatoria; whereas private flushing sanatoria are less used in the studied population (-36 points of percentage), shared flushing toilets are used more frequently (+27

points). In Benin the main difference concerns the use of latrines: ordinary latrines (a hole in the ground) are more frequently used (+56 points) than improved ones (-59 points). It is also the case in Mali, in a less drastic way (+39 points and -21 points).

Table 25: Sanitary conditions in the total population in each of the four surveyed countries

Water supply	Mali	Benin	Senegal	Burundi	
Taps	33,6 (-0,1)	65,5 (17,9)	73,5 (-3,5)	43,3 (-2,0)	
Ditch	3,3 (0)	0 (-0,2)	1,2 (0,7)	0,0 (n.d.)	
Fountain	19,7 (-0,8)	0 (-0,4)	6 (-1,8)	29,1	39,6 (0,0)
Tap of another household	0 (-7,6)	0 (-44,6)	1,2 (-11,1)	10,5	
Well	42,6 (8,4)	28,3 (21,1)	14,5 (12,4)	0 (-0,7)	
Spring, river.	0 (-0,6)	6,2 (6,1)	3,6 (3,5)	17,2 (2,8)	
Total	100	100	100	100	
Sanitary facilities					
Private, inside and flushing	4,1 (-7,1)	4,4 (-6,9)	10,7 (-2,8)	8,9	11,1 (-13,1)
Private, outside and flushing	3,3 (0,1)	0,9 (n.d.)	8,3 (-33,4)	1,5	
Flushing, shared with a household	0,8 (-11,9)	0,0 (n.d.)	50 (26,5)	0,7	
Improved latrines	27,1 (-20,6)	15 (-58,8)	21,4 (3,6)	25,9	88,9 (13,7)
Ordinary latrines	63,9 (39,2)	57,5 (55,9)	6 (4,2)	63	
Others	0,8 (0,2)	22,1 (9,8)	3,6 (1,8)	0 (-0,6)	
Total	100	100	100	100	
<i>Sample</i>	<i>112</i>	<i>113</i>	<i>84</i>	<i>135</i>	

To sum up, the **sanitary conditions** of the entire surveyed populations in all countries are **poorer than in reference populations**. This is particularly noticeable for the **sanitary facilities**, with a **less frequent use of flushing sanitaria** and a **more frequent use of latrines**.

4. Conclusions

These preliminary studies reveal the characteristics of PLWHA under ART in the four surveyed countries and enable us to compare their situations. This comparison shows:

- A strong link between HIV and the family status/structure: **divorced, widowers and widows are over represented** and women and men are **more often heads of households**. The PLWHA surveyed are **living in unusual family situations** and **have important responsibilities and increased needs** since they have to care for **their families**.
- A general **under-education** in the four countries. The surveyed populations **received no education or only primary education**. A **high proportion** is working in the

informal sector. The activity rate is high in all four countries with the exception of Burundi. But the under employment rate is also very high. The underemployment is due to health problems and a lack of means. The studied populations seem to reject the status of assisted people. They want to work or feel the necessity to work as they have greater family responsibilities, but a majority does not manage to do so for reasons, which are not related to health.

- Only recent awareness of being HIV-positive and only recent start of attendance of treatment centres in all countries, with the exception of Burundi. All of the surveyed PLWHA started the ART care recently with the exception of people in Senegal. The most recent start of detection and attendance and ART care was found in Benin.
- PLWHA are more isolated in Benin and Senegal than in Mali and Burundi. A big number of PLWHA does not share the information about being HIV-positive with their partners; this is the case in Senegal. Even less people talk about their disease during daily life. People talk more freely about their disease in Burundi than in Benin and important gender differences can be found. In Mali and in Senegal women and men prefer talking to associations and other people outside the family. In Burundi women talk in the same proportions to their family and to associations, but they talk less to family members than men.
- PLWHA seem to follow the prescription regarding the intakes of ART drugs in all four countries, even though these observations may be distorted by the fact that the interviews were held when people came to the centres to get their treatment. The number of omissions of ART drugs admitted by PLWHA is small, even though treatment has created a lot of changes in the food habits. Treatments are very much appreciated for their efficiency and are well tolerated. The majority of patients in all four countries does not complain about side effects.
- Food aid is very limited in Mali, Benin and Senegal, even in those centres that were selected on the criteria of food assistance. This result contrasts very much with the image that PLWHA under ART are receiving extensive assistance. It seems that the demand for food aid and other types of support is not satisfied in any of the four countries. Even though food aid is already more frequently implemented in Burundi, it is still the country where PLWHA are most in need.
- Perceptions of physical and psychological health vary a lot from one country to another. Physical and psychological health is not very well perceived in Benin whereas patients in Burundi think most positive about their health status. The different perceptions must be related to the differences regarding start of attendance and start of the treatment in the single countries.
- The studied PLWHA live in poorer housing conditions with poorer sanitary conditions than the respective urban populations. This constitutes an increased risk of opportunistic infections.

Taking socio-economic, demographic and health characteristics into account, surveyed PLWHA living in Benin differ most from their respective urban population: they face greater instability, are more marginalized and suffer more physically and psychologically. In Burundi the surveyed population is most similar to the urban reference population and seems to cope best with the disease, both physically and psychologically, even though a greater demand for aid was found.