C-PAPER Determine the morbidity status and health seeking behavior of PLHIV

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Abstract
HIV has claimed 36.3 millionlives so far (WHO, 2021). There is no cure,however, effective HIV prevention, diagnosis, treatment and care, have made it a manageable chronic health condition, enabling the PLHIV to lead long and healthy lives (CDC, 2021). Kenya has the fifth-largest HIV epidemic in the world with 1.5 million people living with HIV (PLHIV) in 2018. HIV/AIDS and malnutrition create a vicious cycle that may lead to death. The HIV prevalence in Narok county is 5% compared to the national figure of 4.5%. The purpose of the study is to determine the morbidity status and health-seekingbehaviour of PLHIV attending Narok County Referral Hospital. A cross-sectional analytical study design was adopted in the study to analyze the quantitative data. This constituted the 498 adult PLHIV aged 18 years and above attending the Comprehensive Care Clinic (CCC). Up to two-thirds of the respondents indicated that they had been sick in the past two weeks of whom a third indicated that they suffered from pneumonia: a common opportunistic infection (OI) among PLHIV. Half of the respondents sought treatment within 5 days and almost a half-sought medication from the hospitals which they chose for reasons that included the attitude of the health workers, availability of drugs and accessibility. Theseare mostly facility-based challenges and if added to those community-based e.g. stigmas, poverty and poor adherence, they become a huge barrier and this presents a wake-up call to every stakeholder to rededicate and redouble their efforts to reach declared goals.
Keywords: *Morbidity status, health-seeking behavior, PLHIV, HIV.*

I.   Introduction

HIV continues to be a major global public health issue, having claimed 36.3 million lives so far(WHO, 2021).There is no cure for HIV infection. However, with increasing access to effective HIV prevention, diagnosis, treatment and care, including for opportunistic infections, HIV infection has become a manageable chronic health condition, enabling people living with HIV to lead long and healthy lives(CDC, 2021).There were an estimated 37.7 million people living with HIV at the end of 2020, over two thirds of whom (25.4 million) are in the WHO African Region.Despite gains, universaltargets pace for reducing AIDS by 2030 have slowed, the "Fast Track" goalsaim for 95% of PLHIV being aware of their HIV status, 95% obtaining antiretroviral therapy (ART), and 95% of individuals on ART virally suppressed by 2030, (Waruru et al., 2021). For people living with HIV (PLHIV), appropriate health seeking behavior (HSB) could lead to timely and effective HIV treatment, resulting in the reduction of complications, mortality and decrease the transmission (Nwe& Aung, 2021; Rathore et al., 2021).

Problem statement

Sub-Sahara Africa withstands the worst of communicable diseases (CD) like HIV/AIDS and malaria, but also has an increasing incidence of (NCDs) non communicable diseases thus a double burden of disease, this leads to non-adherence to ARVs which is associated with increased morbidity and mortality as well as wasted healthcare resources (Abdulai et al., 2022). In 2020, Kenya had 1.4 million people with HIV, there was 4.2% adult HIV prevalence, 33,000 new HIV infections, 19,000 AIDS-related deaths and 86% people on antiretroviral treatment (Avert, 2020). The HIV prevalence in Narok county is 5% compared to the national figure of 4.5%, the number of people living with HIV on antiretroviral treatment is 3696 and the Mother-to-child transmission of HIV is (8.1%), (AVERT, 2021), (Id et al., 2021)(WHO, 2021)(Hogan et al., 2020; WHO, 2021; Gabbidon et al., 2020)(AVERT, 2019). (KDHS, 2014; MOH, 2018). Despite the success of ART which has resulted in longer and better quality of life, other comorbidities negatively affect mortality rate and life course outcome, these include: HIV-induced persistent immunodeficiency, inflammation, ART toxicity, HIV nephropathy, malignancies, diabetes mellitus, hypertension, lipid disorders, and vascular diseases (Osei-yeboah et al., 2021). Again major barriers to a positive HSB persist including stigma, health workers' negative attitudes,

discriminatory behaviors, fears, lack of knowledge and clinical competency in managing HIV, separate clinic days for comorbid conditions, high costs or lack and side effects of medications, transportation, lack of social support, facility deficiencies, cultural issues, distance to multiple facilities, multiple medications and increased pill burden, long waiting hours, frequent appointments, , food restrictions, alternate sources of care (herbalist and pastors), institutionalized structures, protocols, and policies obligatory for care providers, (Vaughan et al., 2020; Santos et al., 2020; Chimoyi & Hoffmann, 2021). Purpose of the studywas to determine the morbidity status and health seeking behavior of PLHIV attending Narok County Referral Hospital

II. Methodology

Study Design:A cross sectional analytical study design was adopted in the study to analyze the quantitative data. The design was the most appropriate for this study since the variables under test cannot be manipulated by the study; they were used as they are in their natural state.

Study Population: This constituted the 498 adult PLHIV above 18 years of age both male and female gender, confirmed HIV positive, attending the Comprehensive Care Clinic (CCC) at the Narok County Referral Hospital and who gave informed consent to participate in this study. Adult patients attending the clinic for the first time, bed ridden or mentally disturbed were excluded from the study.

Sample Size Determination: The desired sample size Calculation was done using the Fisher formula [54] whereby n= $[z^2pq/d^2]$, Therefore, the total sample for the study was 110 + 11 = 121 respondents. Purposive sampling was used to select Narok county referral hospital and the PLHIV attending the comprehensive care clinic at the hospital. Simple random sampling was applied to select the 121 respondents from the PLHIV visiting the clinic. Every 4th person was selected for the study in order to have an equal representation of both male and female in the sample (that is 498/121 =4).

Data Collection Tools: Primary data was key in this study as the researcher sought to find out first-hand information direct from the target population. The study used a researcher administered structured questionnaire. A 24-hour recall questionnaire was used to determine the foods that the patient had taken within the last 24 hours. Food Frequency Questionnaire (FFQ) was used to assess the frequency, source and adequacy of the foods the patient had taken within 7 days. A Focus Group Discussion, with about 8 to 10 individuals through an open discussion by a skilled moderator was done using an FGD guide to ensure consistency by the various FGD groups captured. A key informant guide qualitative in-depth interviews with the health workers at the CCC were held. Among those who participated were clinicians, nurse, lab technologist, nutritionist and a HIV testing counselor. An observation checklist was also used to capture more data about the state of the patient. The anthropometric International Journal of Sciences: Basic and Applied Research (IJSBAR) (2019) Volume 46, No 2, pp 13-30 20 form was used to record the height and the weight of the patients. This helped to record the physical status of the patients and patient's records. In terms of Height using the height meter, weight using adult weight scale, MUAC using adult MUAC tape and a measuring tape for Waist – Hip Ratio.

Data Analysis: Data collected from open-ended questions was edited, coded and entered into a computer spreadsheet in a standard format to enable the analysis of descriptive statistics and inferential statistics using SPSS 22.0 version computer package. Nutrisurvey computer package was also used to analyze dietary intake data while WHO cutoff points were used to analyze respondent's nutritional status. A body mass index of < 18.5, 18.6 – 24.9, 25 – 29 and > 30 computed as underweight, normal, overweight and obese nutritional status respectfully and controlled for sex and age of the patients. A MUAC of 0 – 21 cm indicated by a Red color on the measuring tape denotes severe malnutrition, 21- 23 cm indicated by the Yellow color on the measuring tape denotes moderate malnutrition and above 23 cm shown by Green color on tape denotes absence of under nutrition for adults. The measures of central tendency and dispersion; mean median, mode and standard deviations were used to analyze descriptive statistics i.e. demographic and socioeconomics data. Anthropometric data analysis was done using mean and standard deviation for BMI, MUAC and WHR which were correlated with dietary intake, morbidity and social demographic variable in order to establish the relationship between the variables at a P value of $P<0$.

Ethical Considerations: Clearance was sought from Kenyatta University Graduate School and Ethical Review Committee. The research permit was sought from the National Commission of Science and Technology (NACOSTI) and the permission from Narok County Referral Hospital administration. An informed consent was obtained for all participants before testing and commencing the study. In the consent form benefits of the study were explained and risks involved in participation in the study explained to the respondents. Confidentiality of the information to be collected from the subjects was assured. It was also explained that participation in the study was voluntary that the respondents had the right to withdraw at any stage of the study without losing the benefits from the treatment center. A number was allocated to each subject and at no time were their names disclosed to anyone. Participant's confidentiality and privacy was protected by ensuring that no names appeared on any part of the report. Any assessments were done in a private consultation room.

III.   Results

A.   Demographic and Socio-Economic Characteristics of Study Respondents

Demographic factors were considered for this study because they helped to describe the social characteristics of the respondents. This section considered the relationship of the respondents to the head of the family, the age, gender, education level, marital status, religion and level of income.

Table 1. Distribution of respondents by demographic characteristics

Variable	Description	Freq (n=120)	Percentage
Age	18 – 27 years	4	3
	28 – 37 years	41	34
	38 - 47 years	42	35
	Above 48 years	33	28
	Total	120	100
Relationship to household head	Self	105	87.5
	Spouse	5	4.2
	Grand Children	1	0.8
	Others	9	7.5
	Total	120	100
Gender	Male	63	52.5
	Female	57	48.5
	Total	120	100
Marital status	Single	21	17.5
	Married	51	42.5
	Polygamous	1	1
	Separated	24	20
	Widowed	19	16
	Cohabiting	4	3
	Total	120	100
Religion	Catholic	50	42
	Protestant	66	55
	Adventist	1	.8
	Muslim	1	1.6
	Traditionalist	1	.8
	Total	120	100

The study sought to establish the age of the respondents and the results show that majority of the respondents 42 (35%) were aged between 38-47 years, 41 (34%) were between 28-37 years and above 48 years were 33 (28%). The results show that majority 105(87.5%) of the respondents were the heads of families. On gender of the respondents the results show that there were 52% male and 48% female. The results in Table 4.1 show that most of the respondents 51 (42.5%) were married, separated were 24 (20%), singles were 21 (17.5%), while only 19 (16%) were widowed. The study sought to establish whether religion has an influence on the nutritional status of the PLHIV. The results indicate that most of the respondents 66 (55%) were Protestants, followed by 50 (42%) who are Catholics.

Table 2: Distribution of Respondents by Socio-Economic Characteristics

Variable	Description	Freq. (n=120)	Percentage
Education level	None	14	11.7
	Primary	67	55.8
	Secondary	35	29.1
	Tertiary	4	3.4
	Total	120	100
Occupation	Unemployed	7	5.8
	Farmer	12	10
	Business	26	21.7
	Salaried	11	9.2
	Casual	59	49.2
	Others (house wives etc.)	24	3.3
	Total	120	100

Income (Kshs)	0-1000	16	13.3
	1001-5000	45	37.5
	5001-10000	31	25.8
	10001-20000	20	16.7
	Over 20,000	8	6.7
	Total	120	100

The study also sought to establish the education level of the respondents. Most of the respondents 55.8% had basic primary education level and only 2.5% had attained tertiary education. Regarding the respondent's occupation, the results show that majority of the respondents 49.2% were casual laborers with only 3.3% either unemployed or doing no formal work.   The study also sought to establish the influence of income on the nutritional uptake by PLHIV. Most of the   households 37.5% had very little income level of between shs 1,000 to shs 5,000. While 6.7% were earning over shs 20,000.'*Our ability to seek medical assistance when we are sick is also affected by the lack of finances'* a respondent said '*many of our colleagues suffer a lot at home because they come from very poor families and they are not able to get the required care in terms of food, medication and even movement'*.

B.   Illness Status
The study sought to establish whether the respondents had been ill in the past two weeks or not. The results show that most of the respondents 72 indicated that they had been sick in the past two weeks of whom 42 (58%) were male and 30 (42%) were female. The remaining 48 said they had not been sick in the past two weeks, 44% were male and 56% were female.

The study further sought to establish the type of illness among those that had been ill during the two weeks' period. Only the 72 respondents who were sick were considered in this section. The results are presented in figure 1.
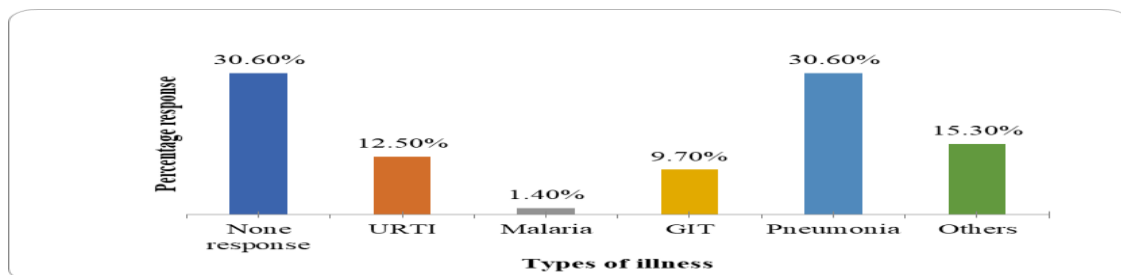

Figure 1: Types of illness

The finding in figure 1 show that most of the respondents 30.6% indicated that they suffered from pneumonia, 12.5% suffered from Upper Respiratory Tract Infection (URTI), 15.3% indicated that they suffered from other infections such as diarrhea, coughing and skin infections. Only 1.4% suffered from malaria. In total only 50 respondents had indicated the type of illness they had suffered in the last two weeks but 22 did not respond to the statement.

The respondents were further asked to indicate how soon they sought treatment for illness in terms of the number of days taken. This was presented in figure2.
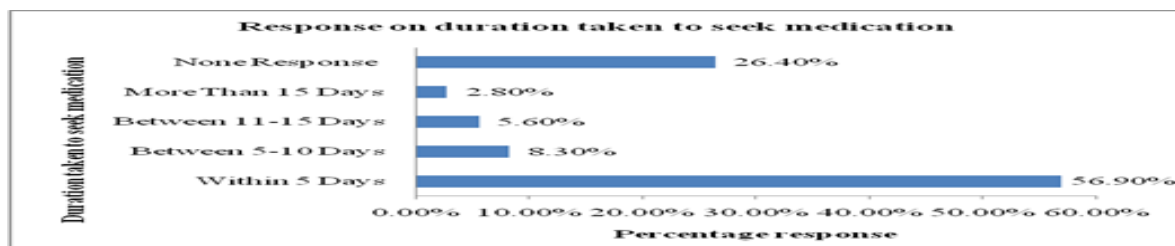

Figure 2: Duration Taken to Seek Medication

The results in figure 4.1 show that most of the respondents 56.9% sought treatment within 5 days, 16.7% sought treatment in between 5-15 days while 26.4 % of the respondents did not respond to the question.The study also sought to establish how the respondents managed their illnesses. The study results were also based on the number that indicated that they were ill in the last three months (n=72). The results are presented in Table 3.

Table 3: Distribution of Respondents by Gender and Illness Management

Where/how was the illness managed	Sex		Total
	Male	Female	
Health facility	13 (35.1%)	19(54.3%)	32(44.4%)
Foods	12 (32.4%)	8(22.9%)	20(27.8%)
Herbs	7(18.9%)	4(11.4%)	11(15.3%)
Others	5(13.5%)	4(11.4%)	9(12.5%)
Total	**37 (100%)**	**35 (100%)**	**72(100%)**

*others include; self-medication, over the counter drugs and not taking any action.

The results show that most of the patients 44.4% sought medication from the hospital, 27.8% managed their ailment from home using recommended food stuffs, and 15.3% used herbs while 12.5% did not have a specific method of managing the illnesses. The results further show that most women preferred going to the hospitals compared to male who preferred to manage their ailments using food stuff and herbs. It was also important to know from among those respondents who attended hospitals (n=32) what reason made them choose the hospital facility they attended to get treatment. The results are presented in figure 3.On why they need a balanced diet a respondent answered *"It enhances the body immunity system, body development and effective use of drugs.*
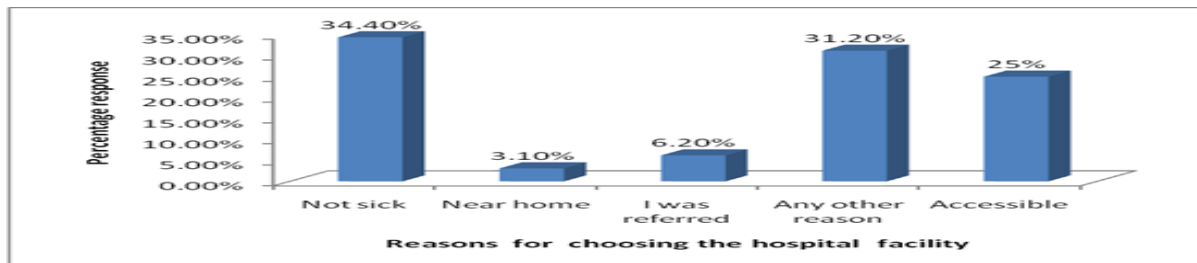

Figure 3: Reason for Choice of Facility

The results show that most respondents 31.2% choose the facility because of other reasons that included the attitude of the health workers and availability of drugs, 25% of the respondents indicated that they chose the facility for treatment because of its accessibility, while 6.2 % said that went to the facility because they had been referred while 3.1% said the facility was near home. The rest 34.4% did not respond to the question.

It was also important to find out whether the respondents completed medication as directed or not. The responses were based on the proportion that had indicated that they were sick and went to hospital for treatment. The results are presented in Table 4.

Table 4.Respondents ability to Complete Medication

Were you able to complete medication as directed	Freq.	%
No	8	25
Yes	14	43.75
Not sure	10	31.25
Total	**32**	**100.0**

Only 43.75% of the respondents were able to complete their medication as per the doctor's prescription, 25% did not complete their medication while 31.25% did not respond to the statement. The study further sought to establish the reason why the 8 respondents did not complete their medication. The results were presented in Table 5.The results show half of the respondents indicated that they did not complete their medication due to lack of money to buy them while another half said they did not complete for other reasons including; experiencing side effects as skin rush, nausea and vomiting.

Table 5. Reasons for not Completing Medication

Reason for not completing medication	Frequency	Percentage
Lack of Money to Buy Complete dosage	4	50
Others *	4	50
Total	8	100

*Others include; skin rush, not liking the drug, forgot and misplaced

C.   Side Effects from Medication
The results show that among those who indicated they suffered side effects, majority thought that this could be because of lack of appropriate food during the time of taking the medication. Some patients who did not complete their medication due to side effects said it was due to reaction by the body to the particular drugs. This is shown in Table 6.

Table 6. Side Effects Experienced from Taking Medication

Any side effects from Medication	Were you able to complete medication as directed			
	No		Yes	
	Freq.	%	Freq.	%
No	17	63	31	84
Yes	10	37	6	16
Total	27	100	37	100

Table 4.3 shows that a total of 37 respondents indicated that they had completed their medication and only 6 (17%) had experienced   side effects from the medication compared to the 84% who had not experienced any side effects. Among the 27 who had not completed their medication 17 (63%) said that they did not have any side effects   while 10(10%) said they had side effects from the medication.The respondents were asked indicate some of the side effects they suffered from medication. The results were presented based on only 24 respondents who respondents to the statement. This was presented in Table 7.

Table 7.Explanation for Nature of Side Effect Suffered

Variable	Description	Freq. (n=24)
Respondents on types of side effects from medication	Vomiting	13
	Heavy sweating	4
	Nausea	3
	Diarrhoea	3
	Fever	1
	Total	**24**

The results show that the most common side effect from medication among the respondents included; vomiting with a response rate of 54.2%, followed by heavy sweating 16.7%, nausea 12.5% and diarrhea 12.5%.

D.   Challenges faced by respondents in Seeking Treatment
Among the challenges that the patients face while seeking treatment, time taken by the respondents to reach the nearest health facility was considered and the results presented in figure 4.
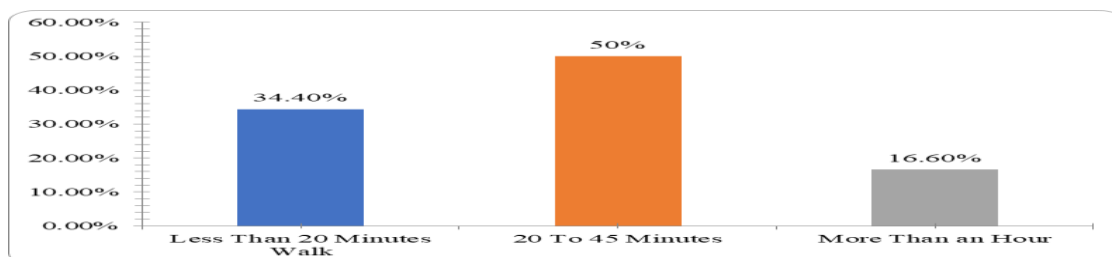

Figure 4.Duration taken to the nearest health

The results show that for most respondents 50%, required between 20-45 minutes to reach to their nearest health facility, 34.4% required less than 20 minutes' walk while 16.6% required more than an hour to get to the nearest health facility. Regarding the mode of transport used by the respondents, the results were presented in figure 5.
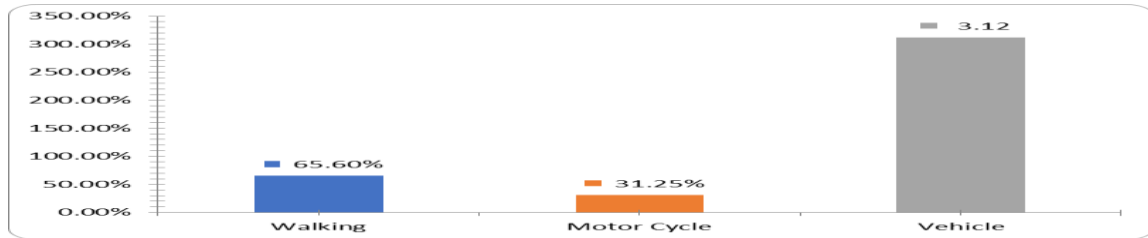
Figure 5. Mode of Transport to Health Facility

The results show that most of the respondents 31.25% said that they use a motor cycle while 3.12% said that they have to use a vehicle as the mode of transport to the health facility. Besides the distance the respondents were asked to indicate any other challenge preventing the respondents from attending clinics. The results are presented in figure 6.
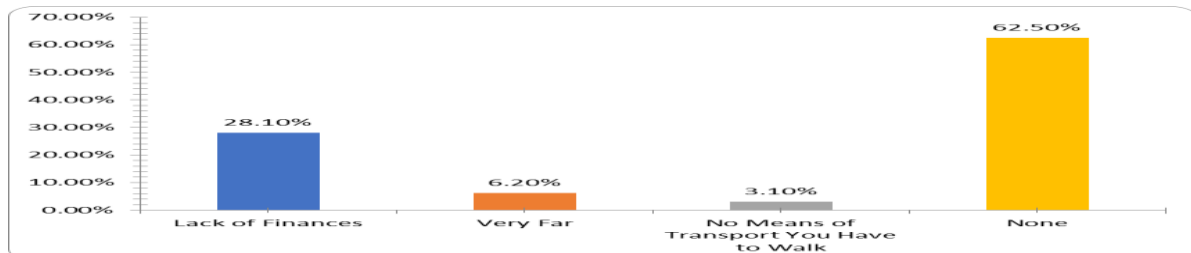

Figure 6. Challenges Preventing the PLHIV from attending Health Facility

The results show that among the other challenges preventing the patients from attending health care facilities are lack of finances with a response rate of 28.1%, the facilities are very far 6.2% while 3.1 % said that there is no other means of transport available- one has to walk. The rest 62.5 % did not respond to the statement. On morbidity the respondents answered, '*we must frequently visit the hospital for checkups to avoid the opportunistic infections which tend to weaken the body and make it more vulnerable to other diseases.* '*However, the challenge is that sometimes we have to travel for long distances for lack of money to get this medical attention, sometimes some prefer just to stay at home and manage the sickness instead of struggling to reach the hospital*'.

The study further sought to establish what the respondents do when faced with the challenges above. Figure 7. presents the findings.
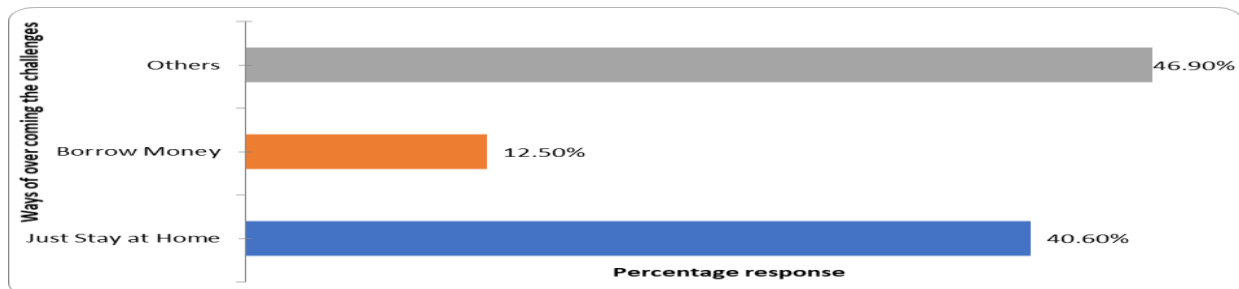

Figure 7.Ways Respondents Overcame the Challenges faced in seeking medication

The results show that most of the respondents 40.6% said that they just decide to stay at home since they are unable to get to the health facility. It was also noted that 46.9 % said they use other means (includes; ignoring e.g. headache/cough, using food and local herbs) while 12.5% said that they borrowed money to get to the health facility for treatment.

E.   *Use of Food Stuff to Manage Illness*
The study sought to establish whether the respondents take traditional food to manage the illness and if so which ones are used. This is presented in figure 8.
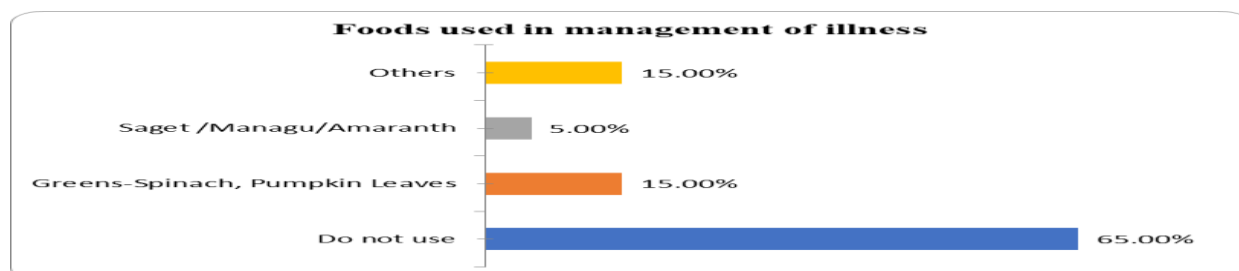
Figure 8. Foods used in managing illnesses among PLHIV

The results show that only 20 respondents indicated that they used food stuff to manage their illness. However, 15% used greens such as spinach and pumpkin leaves; another 15% used saget (spider flower), managu (black nightshade) and amaranths. When asked to indicate which illnesses they manage using the different types of food stuff the responses were summarized and presented in figure 9.
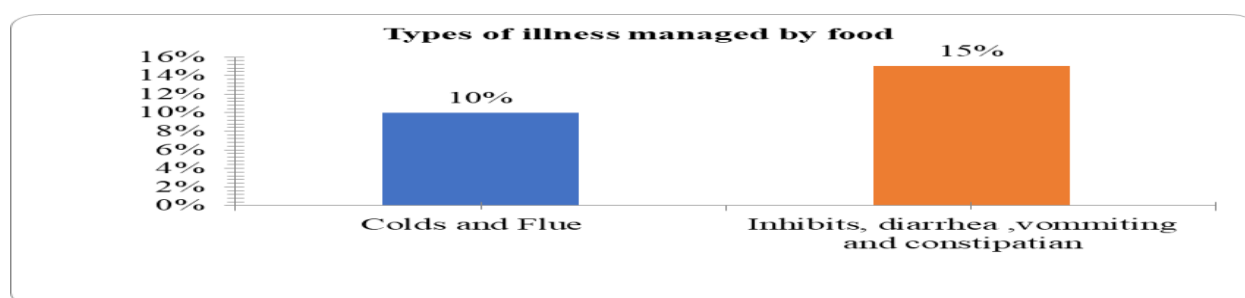

Figure 9.Illnesses managed through use of food

The results show that 15% of the respondents used different foods e.g. Spinach,pumpkin leaves, spider flower, black nightshade and amaranths to manage illnesssuch as; Diarrhea, vomiting and constipation while 10% said they used food tomanage colds and flu. On the important foods for the PLHIV, the respondentsanswered, "*That we should take a lot of green vegetables (Mboga), fruits and waterto help us maintain the body systems and enhance the immunity against otheropportunistic diseases*".

F. *Food Taboos and Beliefs*
The study also aimed at establishing whether household members were affected by various taboos and beliefs attached to food. The results are presented in table 8.

Table 8. Beliefs and Taboos Attached to Food

Groups affected	Groups affected most by beliefs and taboos attached to food		Food Shortage	
	Frequency	**Percent**	**Frequency**	**Percent**
Children	2	1.7	28	23.3
Women	21	17.5	35	29.2
Men	2	1.7	7	5.8
Sick Person	12	10.0	37	30.8
Not affected	83	69.2	13	10.8
Total	120	100.0	120	100

Examples of taboos and beliefs; E.g. Maasai taboos limit consumption of wild animals, chicken and fish, consumption of vegetables is limited since it's considered livestock feed. The belief that land is mainly for grazing livestock in some areas leads to decreased crop production and consumption affecting diversification. The men are prioritized in food serving thus less and poor-quality food is given to children.
Most respondents said they were not affected by the taboos and beliefs attached to the foods however, Table 4.23 gives a breakdown as follows; sick people 30.8% women 29.2%, children 23.3%. Only 5.8% of the men were affected by food shortages.Food shortages was considered as a period when families had to consume less food and of poor diversity either due to lack of money or food itself like during drought periods.

G.   Clinical Observation Health Related Problems

Table 9. Observed Health Related Problems from a Clinicians Perspective

Level	Fever	Fatigue	Fear	Headache	Body changes	Swelling	Dryness	others
Mild	6.9	11.2	7.5	6	5	2.5	3.8	3.8
Moderate	7.2	7.3	4.15	11.7	2.2	3.3	3.3	5.8
Severe	5.8	11.2	0	2.5	2.2	0	1.3	2.5

Severe fatigue and fever were observed among most patients while headache was moderate. Fear was present but in mild cases. Body changes could be seen in some patients showing severe signs of malnutrition and also some patients suffered dryness of the mouth moderately and some severely.

IV.   Discussion

The results have suggested that the male PLHIV attending the Comprehensive Care Clinic (CCC) at Narok County Referral Hospital were more than the female. This implies that the males were in a better position to follow up their routine checkups compared to female. This agrees with a study by (Barnett and Whiteside 2002) who indicated a similar trend in participant's gender composition among PLHIV. It is also noted that slightly more than half of these respondents had very low basic education (primary or below) compared to only a few who had attained tertiary and college education.Most of the respondents, almost half, were therefore casual laborers with only a very small percent having formal emolument, as indicated by the income level that most respondents earned.A third of the respondents earned less than ksh 5,000 compared to only a minimal percentage that earned more than ksh 20,000. Monthly income can be a strong and significant predictor of diet diversity among HIV patients (Onyango, 2014). With majority of the respondents earning below shs 5000, it shows that the respondents have a challenge financially which affects their welfare and ability to go for health services.

Half of the PLHIV were Protestants and half were in nuclear marriages compared to only one percent who were in a polygamous marriage. These results agree with the findings of (Barnett and Whiteside, 2002) who reported that HIV infection strikes the prime aged adults who are most productive in the society. The greatest impact of the epidemic is felt at the household level, where socio-economic factors combine with socio-cultural and epidemiological variables influence prevalence of HIV infection. The study through measures of central tendency for the socio- economic characteristics shows that HIV burden is high among adults on stable relationship such as marriage.

The study established that eighty percent of the respondents always take supper compared to any other meal in a day; lunch was sometimes taken by some of the respondents with majority not taking snacks at all. Among the side effects suffered by the respondents, vomiting came first followed by nausea. These results agree with the assertions of (Noble *et al*, 2008) who noted that due to the weakened immune system among the PLHIV various opportunistic infections can affect appetite and ability to eat.

The study established that almost half of the respondents had fallen ill within the past two weeks with pneumonia being the most common ailment. It was further noted that half of the respondents who were unwell sought medical assistance from the nearest hospital which they had to access by walking for lack of finances to board a motorcycle which was the next most available mode of transport. These findings agreed with the work of (Njuki et al 2014): Grundy 2010) who also noted that socio – economic status of PLHIV was very important in determining the utilization of HIV treatment and care services. The study also noted that slightly more than a third of the respondents completed their medicine compared to about a quarter that did not complete due to various reasons including lack of money to buy the full dose as prescribed. It was also established that if the PLHIV did not find an alternative in getting the money, they just stayed at home which makes it very hard to manage the opportunistic diseases. This implies that the low income earned by most of these people constraints them in most ways to access the right medication or medical care when they need it.

V.   Conclusion

The results indicate that half of the respondents sought treatment within 5 days and almost a half-sought medication from the hospitals which they chose for reasons that included the attitude of the health workers, drugs availability and accessibility. However, the community based challenges e.g. stigma, poverty and poor adherence remain a huge barrier to improved health seeking behavior (HSB) and this presents a wakeup call to every stakeholder to rededicate and redouble their efforts to reach the declared universal targets for reducing AIDS by 2030.

VI.   Recommendations

Community health which is one of the primary health care strategies (PHC) is one of the major arms of health services however, this is still very weak and the community health workers (CHVs) still work voluntarily with no pay. This activity needs to be strengthened as the best way to overcome community challenges.

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