

Household food security and associated factors among Adult people living with HIV/AIDS attending ART clinic in Hospitals of Hawassa Town, Southern Ethiopia 2018.

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Research note

Keywords: Food security, disclosures, Household size, Hawassa town

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Abstract

Abstract Objective Food security and adequate nutrition are fundamental to HIV treatment. There is emerging evidence that patients who begin ART without adequate nutrition have lower survival rates. The relationship between HIV epidemic and food security situation in Ethiopia is complex. Hence, it is likely that the epidemic will contribute to worsening widespread food insecurity. The aim of study was to assess the level of food security and associated factors among adult people living with HIV /AIDS attending ART Clinic in Hospitals of Hawassa city Administration 2018. **Results:** Based on food security assessment core module scale 360 (67.3%) people living with HIV/AIDS were food insecure. People living with HIV/AIDS who disclose HIV status were 3.9 (AOR=3.902, 95% CI (1.238, 12.301) times more likely to be food secured compared with their counterparts. Subjects with Low Dietary diversity were 4.69 times less likely to be food secured than those with high dietary diversity AOR=4.696, 95% CI (1.536, 14.356). **Key words:** Food security, disclosures, Household size, Hawassa town.

Introduction

Worldwide 78 million people have been infected with HIV and 34 million people have died of HIV related cause due to AIDS epidemic. In 2015, 36.7 million people were PLWHA; and among those 2.1 million became newly infected and 1.8 million, down from 3.1 AIDS-related deaths [1]. Sub-Saharan Africa remains the region most heavily affected by HIV worldwide, accounts more than 2/3 of all people living with HIV and for nearly three quarters of AIDS-related deaths in 2015 [2].

Ethiopia has one of the largest populations of HIV infected people in the sub-Saharan region of Africa. According to statistics single point estimate and federal HIV/AIDS Prevention and Control Office (FHAPCO), the HIV/AIDS epidemic in Ethiopia continues to pose a threat to the lives of its people. It is estimated that 759,338 people live with the virus in 2015 [2&3].

In SNNPR, it is estimated that 169,700 people live with the virus. Whoever enrolled in the program and of which a total of 20,340 PLWHA were started ART since the initiation of the program. The regional adult Population (15–49) age prevalence of PLWHA in 2010 was estimated to be 1.7% [3]. Food security and adequate nutrition are fundamental to HIV treatment. There is emerging evidence that patients who begin ART without adequate nutrition have lower survival rates. Given the importance of adherence in delaying viral resistance to first line drugs, nutritional support becomes even more important in the longer run for sustaining ART [4&5]. Many families throughout the developing world spend more than 50% of their household income on food, and food production and wage earning are adversely affected when an adult has AIDS [6].

Food insecurity and poverty may lead to high-risk sexual behaviors and migration, increasing the risk of acquiring HIV. At the same time, HIV weakens a household's ability to provide for basic needs [7].

In Hawassa city administration, little is known about the level of household food security and associated factors among adult people living with HIV /AIDS attending ART Clinic. Therefore, the objective of this study was to assess the level of food security and associated factors among adult people living with HIV/AIDS in case of Hawassa city administration hospitals 2018.

Main Text

Study design, study population and sampling procedure

Institution based cross-sectional study design was conducted from Oct-Dec/2018. The study was carried out in Hawassa town which is the administrative city of SNNPR. There are 3 governmental hospitals, 8 health centers, 1 non-governmental health center and 15 health Posts. Hawassa town have 367,907 total populations from this 208,510 Male and 159,397 were Females. Since 1998 E.C in Hawassa comprehensive referral specialized hospital and 1999 E.C in Adarea general hospital the initiation of ART service was started. The study participants were PLWHA on ART in Hawassa town Hospitals. The required sample size was estimated by using single population proportion method with the following assumption: The study done in DireDawa town showed that 72% of the respondent was food insecure. By using the 72% proportion, 5% Precision and 95% confidence level was taken [8]. The total sample size was 532. A systematic sampling procedure was used to select the study participants and the study samples were proportionally allocated for each Hospital.

Data collection instrument

A pretested and a structured questionnaire was used and questioners were adopted from the Global United States Household food security scale and from different literatures [9, 10 & 11]. Which consists of dietary diversity and meal frequency situation of the households, socio-demographic, socio-economic variables and behavioral factors. Three days training was given for all supervisors and data collectors before the process of data collection.

Data analysis

The data were entered and coded in to Epi-info version 3.5.4 and imported in to SPSS version 20. The presence of association between independent and dependent variables was determined using odds ratio at 95% confidence interval by applying logistic regression model. To measure food security status of the households, number of affirmative answers were provided by study participants for the 18 questions which were applicable to household in the presence of children; however, house hold without children were used only maximum 10 possible affirmative answers. Households responses had scored from a total of 18 questions (each score as 1 for affirmative response and 0 for negative response). The total scored range (1–18) was categorized in to four food security statuses as indicate below.

0 - 2

Food

secured

3 - 7

Food

insecure without hunger

8 - 12

Food

insecure with moderate hunger

13–18

Food

insecure with severe hunger

Households response were score for those who do not have children from a total of 10 questions (coded by 1 for affirmative response and 0 for negative response). Total score range (1–10) was categorized into four food security statuses as indicated below

0 - 2 Food secured

3 - 5 Food insecure without hunger

6 - 8 Food insecure with moderate hunger

9–10 Food insecure with severe hunger

Results

Socio-demographic characteristic of respondent

A total of 532 adult people living with HIV/AIDS were involved with a response rate of 100%. The mean ages of the study participants were 35.9. 114 (21.4%) of the respondents were attended elementary school and 144 (27.1%) of the respondents were educated up to high school level. 203 (37.8%) of the respondents were employed while 26.3 % (140) were jobless and financially dependent *See table 1*.

Clinical-condition

In terms of overall health condition 232 (43.6%) participants had been excellent and 162 (30.5%) very good report at the time of data collection. The mean CD4+ cell count of the respondents was 131 cells/ μ L at the time of initiation of therapy. During data collection, however, clients had a mean CD4+ cell count of 385 cells/ μ L. More than 83% of the patients who had their CD4+ cell counts recorded at the start of treatment and had CD4 cell count less than 180 cells/ μ L (median of 125 cells/ μ L) by the time of initiation of therapy; while inspection of the latest visit record of PLWHA revealed that some about 77% of the respondents had their latest CD4 counts > 235 cells/ μ L with maximum and median values of 1163 and 345 respectively.

Dietary diversity

Based on the assessment, cereal food group and beverages such as tea and coffee were among the most commonly consumed food groups by 98.1% and 95.5% of the respondents respectively. While eggs and fishes were among the least consumed food groups. 74.4% of the respondents answered that their usual meal frequency was three times a day during the preceding 24 hours, while 263 (49.4 %) of the study subjects reported that their food supply and number of meals in a day was not enough.

Food security

Majority of the PLWHA Households on ART in the study was food insecure. Most of them (any member of the households they are living in) eat less than the mean meal frequency (67.7%) and less than the mean dietary diversity (62.7%) in the preceding 24 hours of the survey. 396 (74.4 %) of the respondents were eat 3 times per day, 82 (16.2%) were 2 times per day. overall food security status of households PLWHA on ART about 172 (32.7%) were food secured and 360 (67.3%) were food insecure *see fig 1*.

Household size, dietary diversity, nutritional care was factor associated with food security *See table 2.*

Discussion

According to the food security assessment module score, which is validate for use in developing countries [12]. 32.7% to household with PLWHA on ART in Hawassa town were food secured. Sixty-seven percent of PLWHA on ART were food insecure ranging from mild food insecurity without hunger (30.5%) to sever food insecurity with hunger (13.7%). while the majority had insecure without hunger. The meal frequency and dietary diversity scores supported the findings of the core module which yielding significant proportion of PLWHA eating less than the mean frequency (67.7%) and dietary diversity (62.7). This might be explained by the fact that the disease reduces access to food for many affected households due to decreased labor availability and income, erosion of saving and productive assets, and increased health care and other related expenses [13]. This level of food insecurity closely compared to the findings of similar study in Zambia where, the results showed that most of those on ART were food in secured. Only 6 % were food secure, 24% insecure without hunger, 34% somewhat food insecure and 36% had severe food insecure with hunger [14]. However, the food insecurity figure in this study is markedly higher than the estimated level of food insecurity in general population at national level of our country (Ethiopia), 41% secure and 59% food insecure in 2010 [15].

This disparity of food insecurity among the general population and PLWHA may be explained by the popular notions that HIV/AIDS affects food security and livelihoods of individual, households and communities and the abilities of individuals& households to feed and care for themselves, while eroding the capacity of communities and institutions to provide basic service and support for people in need House hold size associated with food security.

The study indicated that small household size was 3.7 times more likely to be food secured compared with large house hold size (AOR = 3.769, 95%CI (1.313, 10.823). Household size revealed a negative relationship with food security and statistically significant ($p < 0.05$). Food security decreases by a factor of 3.8% as household size increases by one. The possible reason is that with existing high rate of unemployment and less employment opportunity coupled with low wage rate payment, an additional household member shares the limited resources that lead the household to become food insecure [16].

In 2007 Qualitative Cross sectional study conducted in Southern Ethiopia of Wolaita and sidama zone showed that the risk of food insecurity increases with household size: i.e. Households with 4–6 members were 79 % less likely to become food secured compared to household size with 0–3 and households with 7+members were 69 % less likely to become food secured. Compared with this study the food security status was lower than that of Wolaita and sidama zone study. Household with 4–6 members were 98 % less likely to be food secured compared with household size with reference category. similarly, households with 7+members were 96% less likely to become food secured. This indicates that large family size negatively affects household food security [17]. Household dietary diversity also affected the functional improvement of PLWHA on ART.

Not to disclosing HIV status usually was due to fear of discrimination or stigma. Stigma was one of the barriers to adherence to ART. One review paper reported being embarrassed to take medications in front of family, friends, or coworkers was one of the reason not to be adhere in USA [18].

People who do not disclose their HIV status due to fear of stigma and discrimination, will not take drugs at scheduled time in public, this leads to lack of maximum adherence level to have adequate viral suppression. This again resulted

in impairment of immune function, development of opportunistic infections, poor functional status and, decreased productivity. People who fear to disclose their HIV status will also have lack of social support like food aid and other similar events; hence they are prone to be food insecure. [16]. The association of food security with nutritional care variable in this study showed that household PLWHA on ART those have not nutritional care were 96 % less likely food secured than that of the house hold PLWHA on ART who have nutritional care. (AOR = 3.902, 95%CI (1.238, 12.301)).

Conclusion

Food Security status among PLWHA on ART in Hawassa town was low. Household size, dietary diversity, nutritional care and disclosure were significantly associated with house hold food security. Food security status integrating with nutritional support help to recover their immunity status into ART program and to maximize antiretroviral therapy.

Limitation

Causality not confirmed since the study design was cross sectional and better if it was supported by qualitative approach.

List Of Abbreviations

AIDS _____ Acquire immune deficiency syndrome

ART _____ Anti-retroviral therapy

DDS _____ Dietary diversity score

FHAPCO _____ Federal HIV/AIDS prevention and control office

HIV _____ Human immune virus

PLWHA _____ People living with HIV/AIDS

SNNPR _____ South nation, nationalities and people region

SPSS _____ statically package for social science

Declarations

Authors' contributions

RF has developed the proposal, collected data, and analyzed the data.

TS approved the proposal with due editorial revisions and revised subsequent drafts of the paper for intellectual content. All authors read and approved the final manuscript

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Competing interests

The authors declare that they have no competing interests

Availability of data and materials

All data pertaining to this study is contained and presented in this document.

Consent for publication

Not applicable

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Ethical approval and consent to participate

Ethical clearance was obtained from institutional review board of institute of public health and Permission from SNNPR Health Bureau of research and technology sub core process, Hawassa referral and Adarea District Hospitals. In addition, letter of support from NOSAP+ (Network of south Association of Positives) that works on the rights and well-being of member of PLWHA were taken before commencing the data collection process. During data collection process the data collectors were informed each study participant about the purpose and anticipate benefits of the research project and the study participants were also informing on their full right to refuse, withdraw or completely reject part or all of their part in the study and they were assured that their treatment and other benefits they gain from the hospital and/or other organizations was not be influenced by their participation in the study. Finally, they were asked for their informed written consent to participate or not to participate in the study and for their willingness on use of their files and records for the study.

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Tables

Table 1 Socio demographic characteristics of PLWHA on ART in Hawassa Town Hospitals, 2018.

Variables		Security	Insecure
		Frequency	Frequency
Sex	Male	67(35.8%)	120(64.2%)
	Female	105(30.4%)	240(69.6%)
	<20	21(58.3)	15(41.7)
	20-24	31(33.3%)	62(66.7)
Age	25-29	27(24.1%)	85(75.9%)
	30-39	40(27.2%)	107(72.8%)
	40-49	26(41.8%)	59(65.6%)
	50-59	21(34.4%)	29(58.2%)
	60(+)	6(66.7%)	3(33.3%)
Marital status	Married	61(128.1%)	156(71.9%)
	Unmarried	39(39.4%)	60(60.6%)
	Divorce	34(30.4%)	78(69.6%)
	Widowed	38(36.5%)	66(63.5%)
	/widower		
Household Size	Low(0-3)	122(36.6%)	211(63.4%)
	Medium(4-6)	37(21.6%)	134(78.4%)
	Large7(+)	13 (46.4%)	15(53.6%)
Educational status	No read/write	28(24.3%)	87(75.7%)
	Read & write	35(49.3%)	36(50.7%)
	Elementary	18(15.8%)	96(84.2%)
	High school	50(34.7%)	94(65.3%)
	Diploma +	41(46.6%)	47(53.4%)
Occupation	None	25(17.9%)	115(82.1%)
	Employed	70(34.8%)	131(65.2%)
	Farmer	10(62.5%)	6(37.5%)
	Trader	44(44.9%)	54(54.1%)
	Self employed	23(29.9%)	54(70.1%)

Table 2. Binary logistic regression analysis of determinants of Household Food Security among PLWHA on ART in Hawassa Town Hospitals, 2018.

House hold food security		COR (95% CI)		AOR95%	
Predictor		Levels			
		Secure	Insecure		
House hold size	Low(0-3)	122(36. %	211(63.4%	1	1
	Med(4-6)	37(21.6%)	134(78.4%	1.499(.690,3.255)	2.283(.829,6.283)*
	High7(+)	13(46.4%)	15(53.6%)	3.139(1.373,7.18	3.769(1.313,10.8)*
Dietary Diversity	Low \geq 3	4 (7%)	53(93%)	1	1
	Med 4	13(12. %	91(87.5%)	9.508(3.371,26.82)	4.696(1.54,14.36)**
	High \geq 5	155(41%	216(58.2)	5.023(2.711,9,307)	4.990(2.488,10.05)*
Meal frequency	Low	2(2%)	98(98%)	1	1
	High	170(39%	262(60.4%	31,794(7.737,130.64	28.450(6.524,124.064)**
Nutritional care	Yes	4 (5.7 %)	66(94.3%)	1	1
	No	168(36%	294(63.6%	9.429(3.377 26328)	3.902(1.238,12.301)*
Disclosure	Yes	126(29%)	308(71%)	1	1
	No	46(46.9%	52(53.1%)	2.115(1.349,3.316)	2.359(1.312,4.241)*
Educational					
Status	No read/writ	28(24. %	87 (75.7%)	1	1
	Read write	35(49.3%	36(50.7%)	2.710(1.492,4.926)	1.070 (.527, 2.175)
	Elem	18(15.8%	96(84.2%)	.897(.480, 1.678)	.591 (.283,1.234)
	High school	50(34. %	94(65.3%)	4.652(2.417,8.9)	2.131 (1.011,4.494)
	Diploma (+)	41(46.6%)	47(53.4%)	1.640(.954,2.818))	1.040(.567,1.906)

Figures

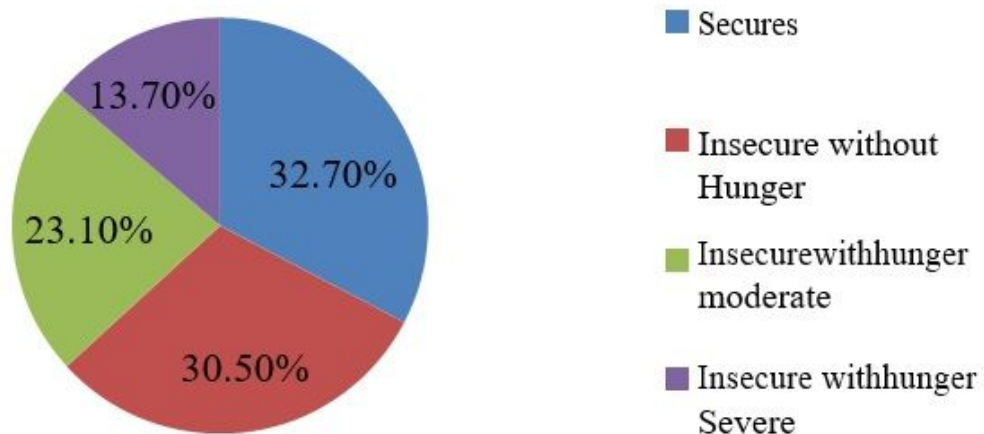


Figure 1

Food Security Status of Household Food among PLWHA on ART in Hawassa Town Hospitals, 2018.