

## Grading the Level of Adherence to the Care and Treatment of Providers and Clients on Antiretroviral Therapy Program in Dessie Referral Hospital, South Wollo, Ethiopia

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### Abstract:

**Background:** Antiretroviral therapy (ART) is one of the interventions implemented to reduce morbidity and mortality due to HIV/AIDS. The evaluation of implementation process and its fidelity can give insight in to the “black-box” of the program and give on time information for improvement of the program.

**Objectives of the evaluation:** The general objective of the study was to evaluate the quality and level of Adherence to the care and treatment among clients receiving of Antiretroviral Therapy Dessie Referral Hospital, Ethiopia, 2016.

**Methods:** The evaluation was conducted in Dessie Referral Hospital, Dessie. Adherence, quality of delivery, facilitating strategies, participant responsiveness, recruitment and context are the components of process evaluation measured. Case study design was employed and qualitative and quantitative methods were utilized. **Results:** The faithfulness of the implementation of the program was found to be 61.30%. As the selected indicators of adherence showed, 54.62% of the clients were given services in accordance with the national guideline. On average, only 46.46% of the clients on chronic care were receiving services for clinical or immunological assessment and 70.70% of the services related to prevention and management of common opportunistic infections were found adherent to the guidelines. Only 58.47% of the clients were initiated for antiretroviral therapy as needed by the guideline. Only 23.91% of the clients were given for Adherence assessment, counseling, and support.

**Conclusion and Recommendation:** The adherence to implementation of the program was found low regardless to the high effort being delivered to the program by partners. It needs implementation urgent improvement packages by all relevant stakeholders.

**Keywords:** Grading, Quality, Level of Adherence, Antiretroviral Therapy

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Date of Submission: 23-12-2018

Date of acceptance: 07-01-2019

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### I. Introduction

Even if there were repeated reports of the now called “AIDS-related” illnesses before, July 1982 saw the first reports of AIDS among hemophiliacs and injection drug users (IDUs) in USA. In January 1983, Communicable Diseases Control (CDC) reported the first case of heterosexual transmission in USA [1]. HIV/AIDS is a major public health concern and cause of death in Africa. Joint United Nations Programme on HIV/AIDS (UNAIDS) has predicted outcomes for the region to the year 2025. These range from a plateau and eventual decline in deaths beginning around 2012 to a catastrophic continual growth in the death rate with potentially 90 million cases of infection [2]. In Ethiopia, the first HIV infections were detected from stored sera 1984 and the first two hospitalized AIDS patients were reported to Federal Ministry of Health (FMOH) in 1986 [3]. By the first sero-survey conducted in 1984-85 among military recruited individuals showed a prevalence of 0.07 percent. Since then, HIV/AIDS has become a major public health concern in the country, leading the Government of Ethiopia to declare a public health emergency in 2002 [4]. In order to make the universal access targets, expansion of the service and early diagnosis and initiation of ART is recommended by WHO in 2010. If these recommendations were to apply in Ethiopia, the number of PLHIV in need of ART increases by half. This makes the target much inaccessible than before. In addition to these, challenges for ART program are identified to be adherence, side effects, viral drug resistance, stigma and discrimination, cost of medications and treatment, and vulnerable groups [5].

A major concern of the Ethiopian national ART Program is how to sustain a lifelong supply of free ARV for all those on treatment. Since the ART program is supported by donors such as the Global Fund for HIV/AIDS, Tuberculosis and Malaria and the US government’s Ethiopian AIDS Emergency Plan, a complete dependence on donors’ commitment is unadvisable. In addition to these concerns, the available resources should be effectively and efficiently utilized to bring about the expected outcomes of the program. This necessitates assessment of the program components and activities in the context in which they are working. [6].

### II. Objectives

- To assess the socio-demographics of clients who are receiving ART centre, Dessie.
- Evaluate whether the program components are delivered to the ART clients as designed in the national guidelines at Dessie Referral Hospital.
- Determine the adherence level of the ART clients for care and treatment at Dessie Referral Hospital.

### III. Methodology

#### 3.1 Study area

Study was conducted in the ART clinic of Dessie Referral Hospital, South Wollo, Ethiopia.

#### 3.2 Evaluation approach

As the evaluation was conducted to inform decision making and improve the service provision, the approach of the evaluation was formative.

#### 3.3 Source population

All the clients on chronic HIV/AIDS care and treatment and selected stakeholders in the ART center were the source populations for this study.

#### 3.4 Study population

Selected stakeholders of the program, clients on HIV/AIDS chronic care during the study period and register and format for clients on chronic care and treatment constituted the study population.

#### 3.5 Study units and sampling units

The head of the ART clinic, the heads of the Pharmacy and Laboratory in the ART center, individuals among selected stakeholder organizations and groups of the program, clients, and individual records of clients on chronic HIV/AIDS care and treatment were the study units and the sampling units of the study.

#### 3.6 Sample size

For the quantitative study, the single population proportion formula delivers a sample size of 252 (where  $p=21%$ ,  $CI= 95%$ ;  $Margin\ of\ error=0.05$ ) and this sample was proportionally assigned to the clients on ART (182) and on pre-ART (70). There were 9 in-depth interviews. For direct observations, 30 observation sessions for clients who were voluntary to participate in the study and who had visits in the study period were observed.

#### 3.7 Sampling procedure/technique

Systematic random sampling was done from the ART registry and purposive sampling was done for in-depth interview. Convenience sampling method was employed for direct observation.

#### 3.8 Data Collection

Quantitative and qualitative methods were used in complementing way. In-depth interviews provided qualitative data. The remaining tools are designed to provide both qualitative and quantitative data with the use of check list and questionnaire.

#### 3.9 Ethical Issues

Ethical Review was obtained from the Ethical Review Committee of College of Medicine & Health Sciences, Wollo University. This was confirmed before the start of the study by a formal informed written consent. As the study participants may not want to disclose their sero status, their consent was confirmed through the program staff for permission to contact with the data collectors.

### IV. Results

#### Socio-demographic Variables

Among the sampled clients on the ART registry, the documents of 138 client's on-ART and 53 clients on pre-ART were reviewed as they were found to be complete. On the exit interview, there were 57 clients who visited ART clinic. Among them, 49 were voluntary and interviewed. Among the interviewed clients, 30 [61.22%] were females and 31[63.26%] were on-ART, the remaining being male and pre-ART. The median age of the participants on the interview was 33 years [Range: 16 to 51].

**Table1. Socio-demographic characteristics of clients participated in the study**

		Clients on ART (N=138)		Clients Pre-ART (N=53)		All clients	
		Freq.	%	Freq.	%	Freq.	%
Age	0-14	11	8.00	8	15.10	19	9.95
	15-19	2	1.40	4	7.50	6	3.14
	20-24	18	13.00	15	28.30	33	17.28
	25-29	33	23.90	8	15.10	41	21.47
	30-34	35	25.40	5	9.40	40	20.94
	35-39	19	13.80	6	11.30	25	13.09
	40-44	7	5.10	3	5.70	10	5.24
	45-49	7	5.10	3	5.70	10	5.24
	50-54	3	2.20	0	0.00	3	1.57
> 55	3	2.20	1	1.90	4	2.09	
Sex	Male	41	29.70	12	22.60	53	27.75
	Female	97	70.30	41	77.40	138	72.25
Marital	Never Married	18	13.00	18	34.00	36	18.85

	Married	73	52.90	19	35.80	92	48.17
	Separated	15	10.90	4	7.50		
						19	9.95
	Divorced	17	12.30	6	11.30	23	12.04
	Widowed/er	15	10.90	6	11.30	21	10.99
Level of education	No education	32	23.20	19	35.80	51	26.70
	primary	39	28.30	11	20.80	50	26.18
	secondary	44	31.90	14	26.40	58	30.37
	Tertiary	23	16.70	9	17.00	32	16.75
Religion	Muslim	70	50.70	26	49.10	96	50.26
	Orthodox	29	21.00	12	22.60	41	21.47
	Protestant	35	25.40	13	24.50	48	25.13
	Catholic	4	2.90	2	3.80	6	3.14

**Level of Adherence**

Adherence measures whether the content of the ART program had been implemented or provided as often and for as long as prescribed for clients on chronic care. The major contents of the program to be measured by this dimension include clinical or immunological assessment, Prevention and Management of Common OIs, ART initiation and Adherence Counselling, assessment and support. As the 20 adherence indicators showed, 54.62% [weighted] of the clients were given services in accordance with the national guideline. The providers achieved acceptable scores in adherence to the guidelines in initiating ART for all eligible clients and evaluation of clients for OI adherence [90.47%].

The achievement of adherence dimension of the program evaluation, based on the selected indicators was presented on the table, below. As the cumulative score for adherence showed, only 54.62% [weighted] of the clients were given services which were as per the guideline. This is in need of urgent improvement based on the judgement criteria set with the stakeholders.

**Table 2. List of program components and their indicators which measure adherence dimension of the evaluation, 2016**

Major ART components	Sub-components	Indicators	Value (V%)
Clinical or Immunological Assessment	Follow-up Clinical monitoring and Determination of CD4 count levels	Average proportion of clients who were given clinical or immunological assessment services as per the national guideline [measured using 6 indicators]	46.46%
Prevention and Management of Common OIs	Provision of prophylaxis for OIs [CPT and INH], Evaluation of adherence to OI drugs and Co-management of OIs and HIV	Average proportion of clients who received services on Prevention and Management of Common OIs as per the national guideline [measured using 7 indicators]	70.00%
ART initiation	ART initiation using clinical criteria and undertaking relevant tests	Average proportion of clients who were initiated for ART as per the national guideline [measured using 4 indicators]	58.47%
Adherence Counselling, assessment and support	Adherence counselling, assessment or support for ART and Defaulter tracing	Average proportion of clients who received Adherence Counselling, assessment and support services as per the national guideline [measured using 3 indicators]	23.91%
<b>Overall Adherence [Content, frequency and duration] level</b>			<b>54.62%</b>

**Level of Adherence to care and treatment**

That data in the table shows that, adherence levels for clients for ARV drugs majority (90.91%) found to be good, less were at fare level (6.06%) and very few (3.03%) found to be poor. Whereas adherence levels for clients for OI drugs at their last visit 89.47% were good, 10.13% were in poor and no one at fare level.

**Table3. Adherence levels for clients for ARV and OI drugs at their last visit**

Adherence level at last visit	For ARV drugs			For OI drugs		
	n	Frequency	%	N	Frequency	%
Good	99	90	90.91	19	17	89.47
Fair		6	6.06		0	0
Poor		3	3.03		2	10.13

**V. Discussion**

The document review showed that the mean age of the clients was 27.99 [SD=11.14], from the document review. The mean for clients on ART was 29.21 [SD=10.52] and 24.82 [SD=12.14] for clients on pre-ART. This age was younger compared to clients who participated on a study in 2011 at Yirgalem hospital [mean=35.4, SD=8.5] [7]. The majority [70.30%] of the clients were females, which was found more higher that the proportion of females [54.7%] on the study in

2009 at Felege Hiwot Hospital. Majority of the clients [52.90%] were married, which was slightly greater than the study at Felege Hiwot Hospital showed [46.41%] [8].

The national guideline recommended CD4 counts to be done once in less than 6 months for clients on pre-ART and once in less than 12 months for clients on ART (9). Only 69.44% of clients on ART had at least one CD4 counts measured in 12 months. Only 22.60% of the clients who hadn't started ART [i.e. pre-ART] had CD4 counts determined twice per year, as the guideline recommends. This showed a great deviation from the recommendation of the national guideline and clients may be deteriorated before starting the treatment as their CD4 count level was not determined for eligibility.

OI drugs [especially, CPT, IPT and Fluconazole] were provided to prevent opportunistic infections that can occur due to the high immune-suppression of the clients. CPT reduces mortality by 50% among severely immune-suppressed HIV-infected adults, improves CD4 count levels, reduces hospitalization, and reduces mortality due to malaria, *Streptococcus pneumoniae*, non-typhoidal salmonellosis and diarrheal diseases, as studies cited by the national guideline for CPT showed [9]. But, this study showed that only 53.40% of the clients were getting CPT. Nearly half of the clients were not on the opportunity to get the benefits. This result was found comparable with the study at Felege Hiwot Referral Hospital [49.5%].

## VI. Conclusion

In conclusion, based on the selected indicators and judgement criteria set with the stakeholders, the process evaluation of the ART program showed that the ART services given at ART clinic of the hospital are in need of urgent improvement. The adherence level of the service providers and the clients showed lower level in all of the indicators utilized to measure the program.

## VII. Recommendations

- Establish a system to monitor and evaluate ART program implementation and strengthen the performance of the service.
- Devise a system that can frequently enable data completeness checks and update registers and other program documents as per clients visit.

**Conflict of Interest:** The authors declared no conflict of interest.

### Acknowledgement

We acknowledge all study participants and data collectors for their support. One who was involved in the design of the study, data analysis, and interpretation of the findings, report writing and manuscript preparation.

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Fasil Walelign Fentaye. "Grading the Level of Adherence to the Care and Treatment of Providers and Clients on Antiretroviral Therapy Program in Dessie Referral Hospital, South Wollo, Ethiopia." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 1, 2019, pp 05-08.