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Antiretroviral Therapy Adherence among PLHIVs in Public and INGO Centre: Barriers and Braces

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Consistent adherence to antiretroviral therapy (ART) is necessary to obtain virological suppression and to achieve the vision of getting to Zero AIDS related deaths. A cross-sectional comparative mixed method study was conducted to find out ART adherence among adult people living with HIV (PLHIVs) in public and INGO centres, Yangon in 2013. Adult PLHIVs attending Out-patient Department and receiving ART not more than three years and ART adherence counselors and self-help group volunteers were included in the study. Adherence level was assessed by using multi-method tool. From each ART centre, 120 face-to-face interviews, 6 in-depth interviews and 4 key informant interviews were carried out. The study found 81.2% of high adherence level among PLHIVs in public and INGO ART centres. There were 75% adherence level at public centre and 87.5% at INGO centre (p=0.013). Adherence to ART medication (dose, schedule, instruction and follow-up adherence) was found as 71.7% in public ART centre and 77.3% in INGO ART centre. There were differences between two ART centres in current marital status, current occupation and per capita expenditure of PLHIVs. Differences between socio-demographic characteristics (age, gender and education) of PLHIVs from both centres were not statistically significant. Better adherence was found in those who had pill reminder habits (p=0.042), disclosure to family (p=0.047) and social support (p=0.009). Most common barriers for ART continuation reported by PLHIVs were financial (51.7%), transportation barrier (36.8%), social barrier (26.4%) and psychological barrier (13.8%). The study recommends using pill reminder, providing proper adherence counseling and ensuring family supports.

Key words: ART adherence, PLHIVs, Public and INGO Centre

INTRODUCTION

HIV/AIDS is one of the global burden diseases, recognized as a serious public health problem. Human immunodeficiency virus (HIV), causing acquired immune deficiency syndrome (AIDS), can spread throughout the world, affecting all population. Now, the challenges of HIV/AIDS epidemic are being combated through global solidarity response.[1] Adherence to ART plays a predominant role for the vision of getting to Zero AIDS related death. Consistent adherence to ART is important to achieve virological suppression. Poor adherence can lead to negative impacts on individuals, public health perspective and national health economics. Adherence means accepting (with the patient's active participation), agreeing (through a shared decision making) and following correctly a prescribed treatment (participation of the patient). Adherence to medication can be dose adherence-number and proportion of doses

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taken, schedule adherence-adherence to doses taken on time, dietary adherence-doses taken correctly with food, adherence to care - attendance of clinic appointments.[2]

In Myanmar, ART providing services are being implemented by public sector and partner organizations. National AIDS program has made provision of ART in public sector since 2005. At the same time some international non-governmental organization (INGO) and local non-governmental organization (NGO) are providing ART in private sector ART clinics. Scaling up of ART and sustainability of prevention and treatment services still remain as a challenge to achieve Millennium Development Goal (MDG) 6: To achieve universal access to treatment and care services. So, data concerning adherence level and support measures improving adherence are needed to be understood.

Objectives of the study were to find out ART (ART) adherence among people living with HIV/AIDS (PLHIVs) in public and INGO centres, Yangon, to describe barriers for ART adherence among adults PLHIVs in public and INGO centres, Yangon and to explore support measures that could improve adherence to ART.

MATERIALS AND METHODS

A cross-sectional, comparative mixed method study was conducted in one public ART centre and one INGO ART centre in Yangon in 2013. HIV infected/AIDS patients attending OPD at ART centres and receiving ART (first-line drugs) at least three months and not more than three years were study population.

Inclusion criteria - who gave informed consent, age of 18 years or older, having received ART (first-line drugs) and who had been issued at least one-month course pills from ART pharmacy at previous visit.

Exclusion criteria - who were not willing to participate, having any serious health problems that impaired their ability to answer the questionnaire by themselves, who had not been issued at least one-month course pills at previous visit, patients who were taking ART more than two years.

Sample size determination

Difference between two groups: comparison of two proportions (sample size in each group) $n=\{Z_{\alpha}+Z_{(1-ß)}\}^2\{p_1q_1+p_2q_2\}/(p_1-p_2)^2$ was used to determine the difference in the proportion of ART medication adherence between public and private ART centre. For public ART centre, 70% of PLHIVs are assumed to have optimal adherence according to different studies: 84.5%, 61.4% and 70%.[3-5]

For private ART centre, 85% of PLHIVs are assumed to have optimal adherence. By using above formula, required sample size was calculated as (117.6). In anticipation of incomplete interviews, by 10% (117.6), a minimum survey sample was 129~130 people for each centre. There was no incomplete interview among subjects of the study. Therefore, sample size was taken for 120 PLHIVs from each centre.

Sampling

All the patients who gave consent to participate in the study were selected. To determine support measures for adherence, in-depth interviews (IDIs) were conducted to 3 patients with optimal adherence >95% and 3 patients with sub-optimal adherence and when conduct IDI, patient's record and ART card were reviewed. Key informant interviews (KIIs) were conducted with 2 ART adherence counselors, 2 support group volunteers from the public ART centre and 2 counselors and 2 outreach adherence supporters from the INGO ART centre.

Data collection methods and tools

Structured questionnaires, semi-structured questionnaires for quantitative survey and interview guides for qualitative interview were used. Assessment of adherence and non-adherence using multi-method tool[6] (self-report; pill identification test; pill count method and visual analog scale) was done.

Data management and analysis

After data checking, quantitative data were entered into the computer and data analysis was done by SPSS software (version 16). Descriptive analysis was done by data summarization. The variables for support measures of adherence were analyzed for any association with the variables relating to ART adherence among PLHIVs (using Chi square test and Fisher-exact test for categorical data). Qualitative data obtained by tape recordings were transcribed into verbatim. After data checking and cleaning, coding and making codebook, qualitative data was analyzed by using a package used for analysis of textual data (Atlas ti version 5.2).

Ethical consideration

This study was approved by the Research Ethics Committee of the University of Public Health, Yangon.

RESULTS

In this study, 120 face-to-face interviews, 6 in-depth interviews and 4 key informant interviews from each ART centre were carried out.

Table 1. Socio-demographic characteristics of PLHIVs from Public and INGO ART centre

Socio-demographic characteristics	Centre		Total (%) (n=240)
	Public (n=120) (%)	INGO	
Age (year)			
20-35	53(44.2)	54(45)	107(44.6)
36-50	60(50)	61(50.8)	12(77.5)
51-63	7(5.8)	5(4.2)	12(0.8)
Gender			
Male	57(47.5)	65(54.2)	122(50.8)
Female	63(52.5)	55(45.8)	118(49.2)
Marital status			
Never married	25(20.8)	18(15)	43(17.9)
Married	54(45)	77(64.2)	131(54.6)
Separate/divorced	41(34.2)	25(20.8)	66(27.9)

Majority of age of the respondents from both centres were from 36 years to 50 years. Gender distribution of participants was also quite comparable. Similarly, educational status of PLHIVs from both centres was recognized as not having much different. The findings showed that more PLHIVs from the INGO centre were currently married (p=0.042) (Table 1). PLHIVs from INGO centres had more percentage of current jobs than public centre (p=0.002). Similarly, monthly per capita expenditure was relatively higher in PLHIVs from INGO centre than public centre as shown in Fig. 1.

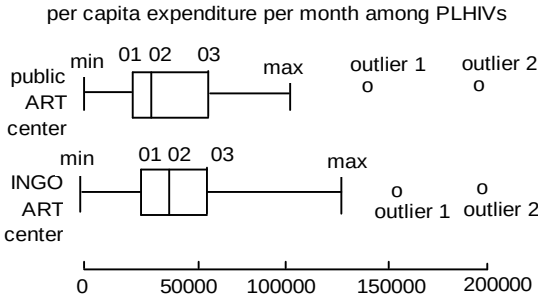

Fig. 1. Distribution of per capita expenditure per month among PLHIVs from the public and INGO ART centre (unit=MMK)

Table 2. Adherence assessment by multi-method tool

ART centre	Adherence level (%)		
	High	Moderate	Low
Public	90(75)	27(22.5)	3(2.5)
INGO	105(87.5)	14(11.7)	1(0.8)

Table 3. Adherence to ART medication and ART centre

ART centre	Adherers (%)	Non- adherers (%)	X^2 & p value
Public	86(71.7)	34(28.3)	X^2=1.001
INGO	93(77.3)	27(22.7)	p=0.317

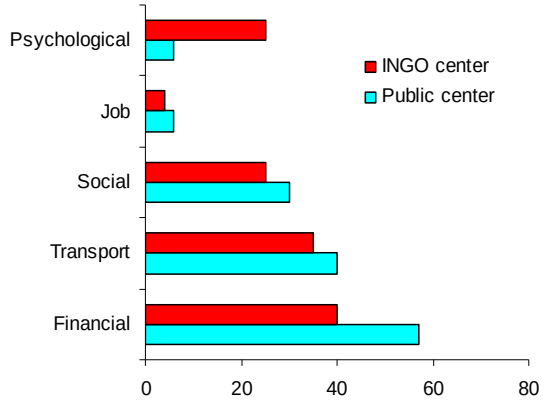

Fig. 2. Percentage of types of barriers among PLHIVs from public and INGO ART centre

The study found 81.2% of high adherence level among PLHIVs in public and INGO ART centres. There were 75% adherence level at public centre and 87.5% at INGO centre (p=0.013) by using multi-method tool (Table 2).

Adherence to ART medication (dose, schedule, instruction and follow-up adherence) was found as 71.7% in public ART centre and 77.3% in INGO ART centre (Table 3).

The study revealed that better adherence was found in those who had pill reminder habits (p=0.042), disclosure to family (p=0.047) and social support (p=0.009) compared to those who did not have. Main reasons for non-adherence were similar in both public and INGO ART centres. Most common barriers for ART continuation reported by PLHIVs were financial (51.7%), transportation barrier (36.8%), social barrier (26.4%) and psychological barrier (13.8%) (Fig. 2).

DISCUSSION

In this study, differences between socio-demographic characteristics (age, gender and education) of PLHIVs from both centres were not statistically significant. These findings made an agreement with the descriptions in one study, i.e., age, race, sex, educational level, socioeconomic status and the past history of alcoholism or drug use which did not reliably predict suboptimal adherence.[7] There were differences between two ART centres in current marital status (p=0.042), current occupation (p=0.007) and per capita expenditure of PLHIVs.

Although majority of participants mentioned about transportation barriers, reasons for follow-up missed were not due to financial reasons. In qualitative findings, their main reasons were social functions and responsibility. These findings were similar with the study done in ART centres in Maharashtra, India[8] and also consistent with a study done in Myanmar, where found that patient missed the follow-up visit mainly due to social problems.[4]

Adherence level difference between two ART centre was obviously seen in pill counting tool that assessed patients' recall memory about dispensed pills and taken pills. While considering overall adherence to ART medication (dose, schedule, instruction and follow-up), the study revealed 71.7% adherers at the public ART centre and 77.3% adherers at INGO ART centre and it was not statistically significant.

In this study, overall adherence level of public ART centre was 75%. This finding was different from the study with 85% adherence level of patients taking ART in Wabargi Specialist Hospital.[3] The differences for adherence level with other studies may be due to difference in using adherence measuremet tools and due to differences in socio-demographic characteristics, regional difference and time of study conducted.

With regard to barriers to ART continuation, there were more percentages of PLHIVs who had barriers in the public ART centre (44.2%) whereas 28.3% in the INGO centre. This finding was similar to the findings from the study conducted in Uganda mentioning that the costs involved in terms of transport, waiting times and other overhead costs as factors for impeding adherence and dropping out of treatment.[9]

Association between disclosure to family and adherence was statistically significant (p=0.039). The reasons for high disclosure rate in this study might also be due to the late clinical stage of patients, repeated counseling they have received and changing mental process and behavior. Nevertheless, the higher the disclosure status, the better the adherence of ART as 4.5 times in the study result.[3] During ART, 26.7% of public centre and 56.7% of INGO centre had got social support for various reasons. The association between the social support and adherence level was statistically significant (p=0.009). When pill reminder use and adherence were analyzed to understand the relationship, it was statistically significant (p=0.042). Key informants also suggested

that alarm reminder, using calendar and markings, pillboxes and alarm by phones, clocks, and watches were said to be useful methods.

Conclusion

In this study, better adherence was found in those who got using pill reminder habit, disclosure to family and social support. The study recommends providing support measures for ART adherence such as pill reminders, providing proper counseling for better adherence and ensuring family supports and community home based care.

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