ORIGINAL ARTICLE

Analysis of Efforts to Increase Knowledge, Attitudes, and Adherence of Antiretroviral Consumption in People With HIV/AIDS, Jepara City, Indonesia

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ABSTRACT

Introduction: The need for ARV (Anti Retro Viral) for the population aged 15-49 years increased from 145,706 in 2011 to 248,903 in 2016. People with HIV/AIDS who received ARVs were estimated at 16.60% in 2011 increased to 18% in 2016. In Indonesia up to September 2014, there were 108,060 people with HIV/AIDS who received ARV therapy from 33 provinces and 300 districts / cities. There were 19,670 people with HIV/AIDS who stopped ARV, 15,046 were not followed up due to various causes and as many as 14,547 died. **Methods:** This research used a quasi-experimental methods with non equivalent control group design and used a pretest, posttest 1 and posttest 2. There was two groups, the first group was treated using SMS (Short Message Service) reminder and leaflets and the second group was treated with the usual method (counselling). **Results:** Research with the Mann-Whitney statistical test shows that after 1 month of treatment, there was differences in the average score of knowledge (p value = 0.001), attitude (p value = 0.008), and adherence of Antiretroviral Consumption (p value = 0.010) between the intervention group and the control group. After 2 months of treatment, there was differences in the average knowledge score (p value = 0.001), attitude (p value = 0.001), and adherence of Antiretroviral Consume (p value = 0.001) between the intervention group and the control group. **Conclusion:** There is the interventions that able to improve the knowledge, attitudes and adherence of taking antiretroviral at PLWHA.

Keywords: HIV/AIDS, Antiretroviral, SMS reminder

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INTRODUCTION

Treatment after exposure to HIV infection in a person is Anthroviral therapy. HIV is a retrovirus, so this drug is called an antiretroviral (ARV) drug. ARVs do not kill the HIV virus, but can only slow the rate of growth of the virus (1). From the Report on the Situation of HIV & AIDS in Indonesia up to September 2014, there were 108,060 PLWHA who had ARV therapy from 33 provinces and 300 districts / cities. There were 19,670 PLWHA who stopped ARV, 15,046 were not followed up due to various causes and as many as 14,547 died (2) (3) (4).

Based on HIV AIDS projections in Indonesia, the ARV needs for the population aged 15-49 years increased from 145,706 in 2011 to 248,903 in 2016. While PLWHA who had ARVs were estimated at 24.20 (16.60%) in 2011, increasing by 4,594 (18%) in 2016 (4). ARV therapy is the only drug choice available. Compliance with taking medication is the key to success in the treatment process in PLWHA patients who can provide hope for living longer and better. Adherence with the use of antiretroviral drugs is one factor that can extend the life expectancy of PLWHA. ARVs work against infection by slowing down HIV reproduction in the body (6) (7) (8).

Central Java Province is a province with a large number of HIV / AIDS cases, because it ranks 6. HIV cases in Central Java in 2014 amounted to 8.368 people, while AIDS cases reached 3.767 people (9). The increasing number of cases of HIV / AIDS, also increasing access to ARVs. In Central Java Province, there were 42 numbers of Health Service Units (UPK) as of September 2014. The total number of those entering HIV care totaled 8,935, who met the ARV requirement of 7,049, who died 1,334, stopped undergoing ARV therapy by 121 and were not followed up by 1,041. So the number of

PLWHA with ARVs is 2,816.

Cases of HIV AIDS in Jepara Regency have spread throughout the districts (21 districts). Based on data from the AIDS Commission, from January 2014 there were 8 HIV cases and 4 AIDS cases. Then increased to 28 cases of HIV until June 2014.20 Based on RA Kartini Hospital VCT data in 2011 there were 54 HIV reactive patients, in 2012 there were 2012 patients, an increase in 2013 of 71 patients, and in 2014 there were 58 patients, so there were a total 246 HIV reactive patients. Jepara Regency is the regency that has the highest target of 600 PLWHA and based on achievements there have been 326 PLWHA reached (50%) (10).

Hospital of R.A Kartini is the only health service that is equipped with CST services to provide ARV supplies for PLWHA in Jepara Regency. Based on recapitulation data of Sun Poly patients, in 2011 there were 97 PLWHA who consumed ARVs, in 2012 there were 55 PLWHA, in 2013 there were 67 PLWHA, while in 2014 there were 69 PLWHA. Preliminary studies conducted to assess the compliance of PLWHA, where every month PLWHA routinely take drugs, there are 18 PLWHA who are not obedient to take medication, this is due to various reasons such as trauma with ARV side effects, shame to take drugs, use of herbal medicines and still feel healthy so there is no need to take ARVs. Based on data, in 2011-2014 there were 78 PLWHA who died with opportunistic infections. However, if the patient is obedient and regularly takes medication, it can reduce viral replication and disease progression in reducing opportunistic infections and mortality (11).

With ARV treatment is increasingly proven in the prevention and treatment of HIV / AIDS (12) (13). It is proven that early treatment and ARVedication adherence are one of the effective methods in efforts to tackle HIV. Efforts to give ARV early and the expansion of treatment have begun through the strategic use of ARV initiatives. However, at present, medication adherence is still a challenge that needs to be addressed. This is due to various reasons such as trauma with ARV side effects, shame to take drugs and still feel healthy so there is no need to take ARVs. However, if the patient is obedient and regularly takes medication, it can reduce viral replication and disease progression in reducing opportunistic infections and mortality. Based on the background above, it encourages researchers to conduct a research on the Effects of SMS Reminder and Leaflets as a Media to Increase Knowledge, Attitudes and Adherence in Consuming ARVs on PLWHA.

MATERIALS AND METHODS

A quantitative approach has been used through a questionnaire that was distributed among People Living With HIV/AIDS (PLWHA). This research is a quasi experiment. The design used in this study was non equivalent control group design with pretest, posttest 1 and posttest 2. In this study, the group was divided into two, namely the first group was treated using SMS reminder and leaflets and the second group was treated with the usual method given to PLWHA, namely counseling. The form of this design can be described as in Fig.1.

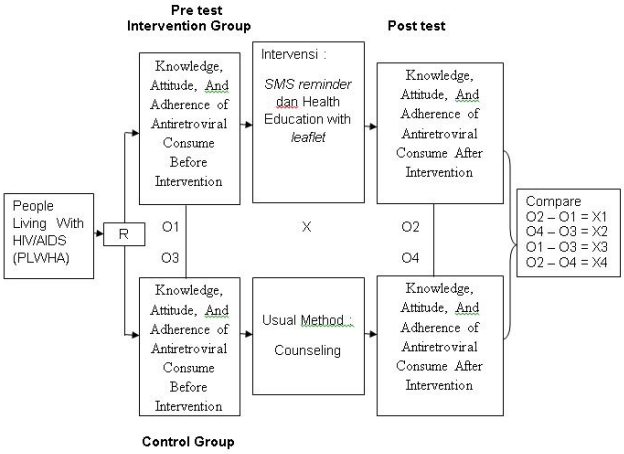

Figure 1: Research Design

The research subjects were selected, one group as the first group to be given SMS reminders and leaflets and one other group as the second group to be treated with the usual method, namely counseling by health workers. Reminder SMS will be given to the intervention group 3 times a week for 2 months. While the leaflet will be distributed after the pretest is done. Pretest is done shortly before given SMS reminder and leaflet intervention. The first posttest was conducted after 1 month of intervention. The second posttest was conducted after 2 months of intervention. Sampling is done by purposive sampling. The validity and reliability test of the questionnaire was conducted at a sampling place that was not the object of research, namely KDS Arjuna Plus BKPM, as many as 30 people. Ethical approval for this study was obtained from the Widya Dharma Husada Ethics Committee (Ref No: KE/126/01/2019) .

RESULTS

Health promotion media through SMS reminder and leaflet were developed through need assessment and pretesting using Focus Group Discussion method to PLWHA outside the research respondents.

Development of Health Promotion Media

Development of SMS Reminder Media

The first stage in this research is to carry out a need assessment (needs analysis) of health promotion media about ARVs and HIV needed by PLWHA in Jepara Regency. Need Assessment is done by Focus Group Discussion (FGD) with 6 respondents. Example of SMS Reminder:

(In Bahasa)
Hallo ODHAers. Selamat Pagi ibu, apa kabarnya hari ini bu? Pantun dulu yook bu. Pagi-pagi main catur, hati-hati diskak matt.
Minum ARV secara teratur, bikin badan sehat dan kuat. Ada sedikit info nih bu. Bu, apa saja sih akibatnya kalo minum obat tidak teratur atau sering telat? Kalo minum obat tidak teratur, ternyata bisa menyebabkan daya tahan tubuh kita jadi turun bu, jadi gampang sakit, sehingga muncul risiko infeksi oportunistik dan kegagalan pengobatan ARV.
Naah, supaya tetap sehat, jangan sampai lupa atau telat minum obat ya bu. Supaya badan tetap sehat dan kuat. Ayoookkk semangaat minum ARV.
ODHAers? Positif, positif, JOSS!!!!

(In English)
Good morning mom, how are you today mom? Let me give you the traditional poet first ma'am. In the morning playing chess, be careful will be checkmate.
Consump ARV regularly, make your body healthy and strong.
There is a little info mom. Ma'am, what are the consequences if you consump ARV irregularly or often late? it can cause your body's immune system to go down, so it's easy to get sick, there is a risk of opportunistic infections and failure of ARV treatment.
So, Keep healthy, don't forget consump ARV regularly, ma'am. So that the body remains healthy and strong. Let Keep the spirit to consump ARV.
PLWHA? Positive, positive, JOSS !!!!

The results of the Need Assessment by Focus Group Discussion (FGD) with 6 respondents are as follows:

1) The content of SMS
The contents of the information conveyed via SMS are considered important by respondents because they are useful as a reminder to take medicine for PLWHA.

"Ya...apik sih (bagus) mbak isinya, ngingetin untuk minum ARV soalnya masih banyak yang suka lupa kalo mau minum obat... Kayak misalnya suka nunda minum obat, ehh...dadine (jadinya) malah kebablasan nggak minum. Kadang orang HIV sering lupa, mungkin karena kebanyakan minum obat."

It means
"Yeah This (Message) is good, Reminder to Consume ARV, because there are many PLWHA often to forget to Consume ARV…. Example delay to Consume ARV, and then forget to Consume ARV. Usualy PLWHA is forgetful person, maybe its because too many Consume ARV

(M/Man/44 Years Old)

2) Acceptance of the Message Delivered in the SMS Reminder
All respondents agreed that both words, words and phrases contained in the SMS Reminder could be accepted by the community because the message contained in the SMS Reminder was a suggestion or an invitation to take ARV regularly. There is nothing impossible in this SMS Reminder to do

"Bisa diterima kok, soalnya kan malah seneng dapat SMS pengingat minum obat, jadi ada yang nyemangatin. Nggak ada yang mustahil, bisa dilakuin kok mbak."

It Means
"It can be accepted, the problem is that I even like being able to text as a reminder to Consume ARV, so there is someone who is excited. Nothing is impossible you, can do it, sis"

(NS/perempuan/30 tahun)

Development of Leaflet Media
The development of leaflet media was carried out by pretesting. The ARV leaflet is a leaflet that has been prepared by the Jakarta Provincial AIDS Commission, while the HIV leaflet is a leaflet that has been prepared by the National AIDS Commission. Following is the design of the ARV and HIV leaflet media that has been created by the AIDS Commission. Fig. 2 and Fig. 3 show the ARV and HIV leaflet media before need assessment.
Based on Need Assessment, most respondents said the HIV leaflet was quite interesting. The basic color of the white leaflet is in contrast with the writing so there is no need to change the color. However, some respondents complained that the writing was too small and too dense. In addition, respondents also agreed with the Figures on the leaflet which could add to the attractiveness of the HIV leaflet.

Figure 2: Leaflet ARV (Anti Retro Viral) before Need Asessment (Before Improvement)

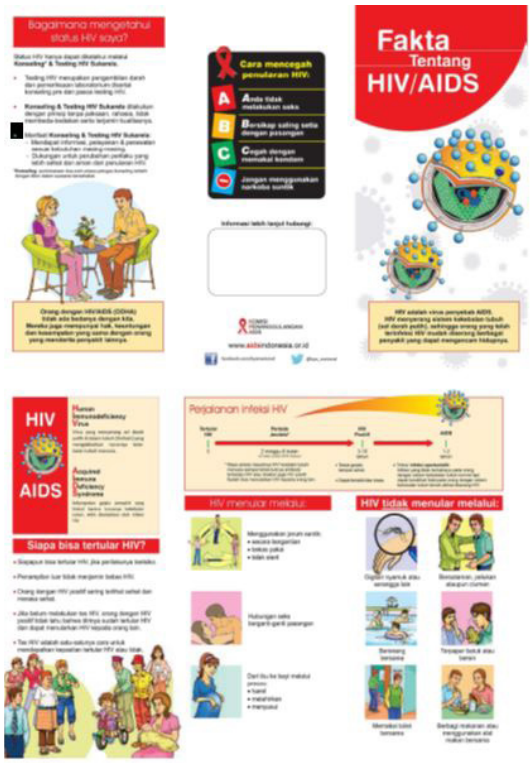

Figure 3: Leaflet HIV AIDS before Need Asessment (Before Improvement)

Figure 4: Leaflet ARV (Anti Retro Viral) After Need Asessment (After Improvement)

"Kalo ini untuk ODHA, kalo dikasih tulisan kayak gini, susah, diganti aja tulisannnya pake gambar"

it means
"If this (leaflet) is for PLWHA, if PLWHA was given this leaflet, its hard to understand it. Better the narrative is replaced with the picture"

(PM/Man/25 Years Old)

Fig. 4 and Fig. 5 show the ARV and HIV leaflet media after need assessment.

Data Analysis of Knowledge, Attitudes and ARVs Medication Adherence

Knowledge, attitude and practice of adherence to consume ARV of respondents in the intervention group and the control group were measured 3 times, namely before treatment (pretest), 1 month after treatment (posttest 1) and 2 months after treatment (posttest 2). Table I show the difference analysis of knowledge, attitude, and antiretroviral medication adherence on control group and intervention group. Table II show The Difference Analysis of Knowledge, attitude, and Practice of ARV Medication Adherence of Respondents on pretest, posttest 1 and 2 months after treatment (posttest 2).

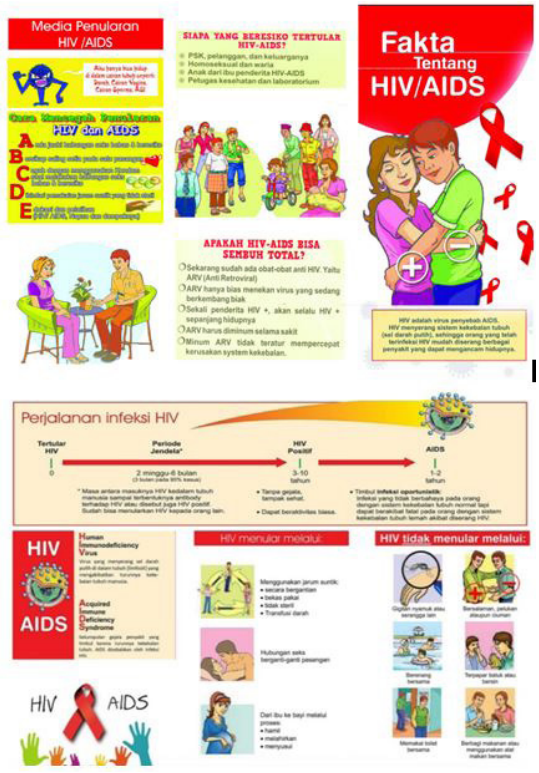

Figure 5: Leaflet HIV AIDS After Need Asessment (After Improvement)

DISCUSSION

Knowledge of Respondents

Before being given treatment, it is known that the average knowledge score in the control group and the intervention group did not differ, where the average knowledge of the intervention group was 74.1 higher than the average knowledge of the control group that was 71.8. So based on the Mann-Whitney statistical

Table I: Difference Analysis of Knowledge, Attitude, and Antiretroviral Medication Adherence on Control Group and Intervention Group

Variable	Treatment	Mean (Control Group)	Mean (Intervention Group)	*P value*
Knowledge	*Pretest*	71.8	74.1	0.502
	Post Test 1	71.6	77.7	*0.001*
	Post Test 2	72.3	78.8	*0.001*
Attitude	*Pretest*	14.4	14.4	0.707
	Post Test 1	14.1	15.3	*0.008*
	Post Test 2	14.0	15.6	*0.001*
Performance	*Pretest*	11.6	11.9	0.554
	Post Test 1	11.5	12.9	0.010
	Post Test 2	11.6	13.3	*0.001*

Significant difference at *P*<0.05

Table II: The Difference Analysis of Knowledge, attitude, and Practice of ARV Medication Adherence of Respondents on *pretest, posttest* 1 and 2 months after treatment (*posttest* 2)

Variable	Group	Mean			*P value*
		Before	After 1 month	After 2 months	
Knowledge	Intervention	74.1	77.7	78.8	*0.001*
	Control	71.8	71.6	72.3	0.560
Attitude	Intervention	14.4	15.3	15.6	*0.022*
	Control	14.4	14.1	14.0	0.100
Performance	Intervention	11.9	12.9	13.3	*0.024*
	Control	11.6	11.5	11.6	0.157

Significant difference at *P*<0.05

test it was concluded that there was no significant difference in the average knowledge score between the intervention group and the control group.

Treatment / intervention began to be given to the intervention group in the form of giving SMS Reminder 3 times a week and leaflets. Providing interventions in the form of SMS Reminder and leaflets can increase PLWHA's knowledge of HIV and ARV which will also lead to changes in attitudes and better practice of taking ARVs. As research conducted by Amelya (2012) that providing information about HIV / AIDS and ARV therapy is very important given and can be considered as one way to prevent new infections. PLWHA have many needs for knowledge, but the basic needs needed are basic information about HIV and its treatment. This is due to PLWHA who have knowledge and good attitude will be more adherent to taking ARVs than PLWHA who have less knowledge (14)

After being given an intervention / treatment of SMS Reminder and leaflets for 1 month for the intervention group, it was seen that the intervention group had a higher average score of knowledge (77.7) compared to the control group (71.6). After 2 months, it was seen that the intervention group had a higher average score of knowledge (78.8) compared to the control group (72,3). From the results of the Mann-Whitney statistical test, it can be concluded that there are significant differences in the average knowledge score between the intervention and control groups. In this study there was an increase in knowledge in the intervention group about HIV and ARV. This is in line with research by Bire, Subronto and Lazuardi (2014) whose results are the use of SMS as a promotional medium, effective in increasing knowledge of HIV / AIDS. An increase in comprehensive knowledge about HIV / AIDS from 30% to 76.7%. Research conducted by Hermawati (2012), obtaining the results of education with leaflet media can significantly increase knowledge of self-medication drugs with a value of p = 0.015 (15)

Attitide of Respondents

Before being given treatment, the average score of the respondents' attitudes in the control group and the intervention group was relatively the same, where the average attitude of the control group was 14.5 and the median value was 15.0 higher than the intervention group which was 14.4 with a median value of 14.5 . So from the results of the Mann-Whitney statistical test it can be concluded that there is no significant difference in the average attitude score between the intervention group and the control group. After being given an intervention / treatment of SMS Reminder and leaflets for 1 month for the intervention group, it was seen that the intervention group had a higher average score of attitude (15.3) compared to the control group (14.1) which was only given an intervention by the method it is usually done. From the results of the Mann-Whitney statistical test, it can be concluded that there is a significant difference in the average attitude score between the intervention group and the control group.

Provision of SMS Reminder interventions and leaflets to the intervention group continued for up to two months and re-measured. From the results of posttest 2, it was found that the average attitude score of the intervention group was higher (score 15.6) compared to the control group (score 14). From the results of the Mann-Whitney statistical test, it can be concluded that there is a significant difference in the average attitude score between the intervention group and the control group.
There was an increase in better attitudes in the intervention group. In line with Sukanto's research (2013) about counseling with an effective SMS method for changing attitudes about pulmonary TB drugs with a proven Wilcoxon test attitude variable obtained a significant value of 0.02. (16)

Adherence of Respondents

Before being given treatment, the average score of practice of adherence to taking ARVs in the control group and the intervention group did not differ much, where the average compliance of the intervention group was 11.9 with a minimum value of 9 higher than the control group which was 11.6 with a minimum value of 8, 0 The

maximum value for the two groups is the same, namely 14. So from the results of the Mann-Whitney statistical test it can be concluded that there is no significant difference in the average score of ARVs between the intervention group and the control group. After being given an intervention / treatment of SMS Reminder and leaflets for 1 month for the intervention group, it was seen that the intervention group had a higher average score of practice (12.9) compared to the control group (11.5) which only provided interventions with the same method. It is usually done. From the results of the Mann-Whitney statistical test, it can be concluded that there are significant differences in the average practice score between the intervention group and the control group.

Provision of SMS Reminder interventions and leaflets to the intervention group continued for up to two months and re-measured. From the results of posttest 2, it was found that the average score of the practice of the intervention group was higher (13.3) compared to the control group (11.6). From the results of the Mann-Whitney statistical test, it can be concluded that there are significant differences in the average practice score between the intervention group and the control group.

There is an increase in more compliant practices in the intervention group. The results of this study are in line with by Rodrigues et al (2013) in India, which concluded that SMS Reminder can improve adherence to ARV therapy in PLWHA with a p value = 0.016 (17). And research by Prasetyo et al (2012), with the results of leaflet media with assertive slogans can improve medication adherence in tuberculosis patients (18). Research conducted by Kamila, et al (2010) states that the presence of positive perceptions or attitudes in peer support will have implications for the treatment of PLWHA (19). Other supporting research conducted by Tuwohingide, et al 2019, Pop-Eleches, et al, 2011 and Onyeonoro, et al (2013) with 282 respondents showed that respondents' perceptions were very good with average adherence (97.8%) (20), (21), (22).

CONCLUSION

Based on the results of the pretest, posttest 1 and posttest 2 it can be concluded that the SMS Reminder and leaflet interventions are able to improve the knowledge, attitudes and adherence of taking ARVs. The researchers hope that the SMS Reminder and leaflet interventions can be used as one of the innovations for promoting HIV and ARV health. But, the HIV leaflet and SMS reminder should be interest. The figure on the leaflet which could add to the attractiveness of the HIV leaflet. In the SMS reminder, words and phrases contained in the SMS Reminder should be accepted by the community.

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