

ISSN-0976-0245 (Print) • ISSN-0976-5506 (Electronic)

Volume 9

Number 7

July 2018



Indian Journal of Public Health Research & Development

An International Journal

SCOPUS IJPHRD CITATION SCORE

Indian Journal of Public Health Research and Development
Scopus coverage years: from 2010 to **2017** Publisher:
R.K. Sharma, Institute of Medico-Legal Publications
ISSN:0976-0245E-ISSN: 0976-5506 Subject area: Medicine:
Public Health, Environmental and Occupational Health
CiteScore 2015-0.02
SJR 2015-0.105
SNIP 2015-0.034



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www.ijphrd.com

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Print-ISSN : 0976-0245-Electronic-ISSN: 0976-5506, Frequency: Monthly

Indian Journal of Public Health Research & Development is a double blind peer reviewed international journal. It deals with all aspects of Public Health including Community Medicine, Public Health, Epidemiology, Occupational Health, Environmental Hazards, Clinical Research, and Public Health Laws and covers all medical specialties concerned with research and development for the masses. The journal strongly encourages reports of research carried out within Indian continent and South East Asia.

The journal has been assigned International Standards Serial Number (ISSN) and is indexed with Index Copernicus (Poland). It is also brought to notice that the journal is being covered by many international databases. The journal is covered by EBSCO (USA), Embase, EMCare & Scopus database. The journal is now part of DST, CSIR, and UGC consortia.

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Dr. R.K. Sharma
Institute of Medico-legal Publications
501, Manisha Building, 75-76, Nehru Place,
New Delhi-110019

Printed, published and owned by

Dr. R.K. Sharma
Institute of Medico-legal Publications
501, Manisha Building, 75-76, Nehru Place,
New Delhi-110019

Published at

Institute of Medico-legal Publications
501, Manisha Building, 75-76, Nehru Place,
New Delhi-110019



Indian Journal of Public Health Research & Development

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Knowledge, ARV Access and Compliance of PLHIV before and after Providing Health Education Based on Community ARV and Adherence Support Group (Caasg) in Bulukumba Regency

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ABSTRACT

HIV and AIDS is a global and very complex disease which in handling the need for active health education involving People living with HIV (PLHIV). Knowledge, access to ARVs and adherence are very important factor in maintaining the quality of PLHIV. This study aimed to analyze differences in knowledge, access to ARVs and adherence before and after the provision of health education interventions based on ARV and adherence Support Group (CAASG) in existing PLHIV in Bulukumba.

The study design was Quasi Experiment using pre-test and post-test with Control Group Design. The study group was divided into 2 (two) groups consisting of group I and group II. The group I was given a health education through lectures and modules, while the group II was given a health education with a leaflet. The number of samples were 42 respondents consisting of group I with the sample counted 24 people and the group II with the number of samples were 18 people.

Based on Cochran test results showed that there are differences of knowledge in treatment groups 1&2 ($p_1=0.004$, $p_2=0.026$), difference of ARV access ($p=0.004$) and difference of adherence in group 1 and 2 ($p_1=0.001$, $p_2=0.015$) and no significant difference in group II for ARV access

It is suggested to maintain the group that has been formed in order to increase knowledge, experience no barriers to accessing ARVs and have and maintain compliance with the treatment to obtain a better quality of life for PLHIV in Bulukumba.

Keywords: Health education, HIV and AIDS, knowledge, ARV access, adherence

INTRODUCTION

HIV and AIDS are major health problems and become one of the world's most serious health challenges, to date there are currently about 36.9 million people living with HIV (PLHIV) in the world, 17.1 million are unaware of the presence of HIV virus in the body they needed HIV testing services, 22 million did not get access to antiretroviral treatment including 1.8 million children¹⁻³. In 2030, deaths due to HIV and AIDS continue to increase⁴.

Sub-Saharan Africa is the largest contributor to HIV (71%), Asia Pacific (14%). In the Southeast Asian region, Indonesian adults aged 15-49 years who contracted the

HIV virus reached 0.5 / 1000 uninfected populations, the highest compared to Myanmar, Malaysia and Vietnam which only reached 0.3/1000 population^{3,5}.

The second largest province of HIV, after Papua in eastern part Indonesia, is South Sulawesi⁶ and Bulukumba is one of the districts in South Sulawesi, which ranks third in HIV and AIDS after Makassar and Pare -Pare which have number of HIV and AIDS sufferer as many as 188 people with the highest percentage in man that is equal to 110 people (60,6%), in woman counted 68 (37%) and transvestite counted 4 people (2,42%) with factor the highest risk of transmission in heterosexuals (58.7%), IDU's (37.1%) and pregnancy/

breast milk (4.19%) with the highest number of cases in Ujung Bulu sub-district as many as 93 cases (51%) and the lowest in Herlang sub-district (2%). One form of prevention in a national strategy undertaken in key populations is behavioral change interventions⁷. The process of changing one's behavior can be achieved through health education^{8,9}.

Health education is a process of change in oneself where the process of change that influences one's behavior includes the components of knowledge, attitudes, or practices related to the purpose of healthy life both individually, group and society^{8,9}. The purpose of this research is to know the effect of health education based on Community ARV and Adherence Support Group to knowledge, access of ARV and medication compliance to PLHIV in Bulukumba in 2016.

MATERIAL AND METHOD

The study design was Quasi Experiment using pre-test and post-test with Control Group Design. The study group was divided into two groups consisting of treatment group I and treatment group II. Treatment group I was given health education through lectures and modules, while the treatment group I I given health education leaflets. This research was conducted in Ujung Bulu Subdistrict. The population of the study were all PLHIV in Bulukumba Regency were 189 people. The sample chosen using purposive sampling technique and collected as many as 42 PLHIV. Univariate data processing analyzed and presented in the form of a frequency distribution table, using a bivariate test Cochran test and Mc-Nemar.

RESULTS

Characteristic of PLHIV Respondents: Based on Table 1, it can be seen that most respondents are in the adult age group with the number of 17 people (70.8%) in the group I and 16 people (88.9%) in group II, with the highest percentage of male sex with the number of 17 people (70.8 %) in the treatment group I and 11 people (61.1%) in the second treatment group), with the most senior secondary education being 1 to 3 people (54.2 %) in the treatment group I and 7 (38.9%) with nursing

diploma in the treatment group II. Respondents mostly worked with percentages with 20 persons (83.3 %) in the treatment group I and 16 (88.9%) in the 2nd treatment group, with the highest married status with unmarried category as big as 11 people (45.8%) in the treatment group I and 13 people (72.2%) in the treatment group II. The largest mode of transmission through heterosexuals by percentage 45.8 % in group I and 61.1% in group II, and most had public insurance with 87.5% percentage in group I and 88.9% in group II.

Table 1: The characteristic of participant in Bulukumba Regency

Characteristic	Group I	%	Group II	%
Sex				
Male	17	70.8	11	61.1
Female	7	29.2	7	38.9
Age Group				
Adolescent	4	16.7	2	11.1
Adult	17	70.8	16	88.9
Elderly	3	12.5	0	0
Education				
High	2	20	8	80
Low	22	68.8	10	31.3
Occupation				
Occupied	20	83.3	16	88.9
Non-occupied	4	16.7	2	11.1
Marriage status				
Single	11	45.8	13	54.2
Married	8	72.7	3	27.3
Divorced	5	71.4	2	28.6
Mode of transmission				
Heterosexual	11	45.8	11	61.1
IDU	7	29.2	5	27.8
LSL	6	25	2	11.1
Assurance				
Yes	21	87.5	16	88,9
No	3	12.5	2	11.1
Total	24	100	18	100

Distribution of knowledge changes, ARV access, and PLHIV compliance before and after the provision of community-based ARV & Adherence Support Group health education in each group.

Table 2: The changes of knowledge between intervention groups

Groups	KNOWLEDGE																p
	Pre-Test				Post-Test I				Post-Test II				Post-Test III				
	High	%	Low	%	High	%	Low	%	High	%	Low	%	High	%	Low	%	
Group I	12	50	12	50	14	58.3	10	41.7	15	62.5	9	37.5	20	83.3	4	16.7	0.004
Group II	8	44.4	10	55.6	10	55.6	8	44.4	12	66.7	6	33.3	14	77.8	4	22.2	0.026
Total	20	47.6	22	52.4	24	57.1	18	42.9	27	64.3	15	35.7	34	81	8	19	

p = Cochran test

Table 3: The changes of ARC access of PLHIV between intervention groups

Group	ARV ACCESS																p
	Pre-Test				Post-Test I				Post-Test II				Post-Test III				
	High	%	Low	%	High	%	Low	%	High	%	Low	%	High	%	Low	%	
Group I	11	45.8	13	54.2	13	54.2	11	45.8	16	66.7	8	33.3	20	83.3	4	16.7	0.004
Group II	11	61.1	7	38.9	12	66.7	6	33.3	11	61.1	7	38.9	14	77.8	4	22.2	0.261
Total	20	47.6	22	52.4	24	57.1	18	42.9	27	64.3	15	35.7	34	81	8	19	

p = Cochran test

Table 4: The changes of compliance of PLHIV between intervention groups

Group	COMPLIANCE																p
	Pre-Test				Post-Test I				Post-Test II				Post-Test III				
	High	%	Low	%	High	%	Low	%	High	%	Low	%	High	%	Low	%	
Group I	7	29.2	17	70.8	14	58.3	10	41.7	13	54.2	11	45.8	18	75	6	25	0.001
Group II	7	38.9	11	61.1	12	66.7	6	33.3	12	66.7	6	33.3	15	83.3	3	16.7	0.015
Total	20	47.6	22	52.4	24	57.1	18	42.9	27	64.3	15	35.7	34	81	8	19	

p = Cochran test

Tables 2, 3 and 4 show the test results of Cochran the treatment groups 1 and 2 show the significance of the knowledge variables (p1 = 0.001, p2= 0.026), the ARV access variables in the treatment group 1 (p = 0.004), the adherence variable in the treatment group 1 and 2 (p1= 0.001, p2= 0.015) which means there is at least a difference in the level of knowledge, access to antiretroviral drugs and adherence before and after a CAASG-based health education and group support. In the second treatment group showed the significance of the variable of ARV access (p = 0.261), which means there was no difference in ARV access before and after health education.

The post hoc analysis test is conducted to find out which measurement differs regarding the knowledge. Post hoc analysis is done by using Mc-Nemar test. The following table will illustrate the measurement of the difference in knowledge.

Table 5: The result of Mc-Nemar test from the first to the 3rd measurement

Assessment	n	p
Knowledge (baseline) & Knowledge (post 1)	24	0.625
Knowledge (baseline) & Knowledge (post 2)	24	0.25
Knowledge (baseline) & Knowledge (post 3)	24	0.008
Knowledge (post 1) & Knowledge (post 2)	24	1.000
Knowledge (post 1) & Knowledge (post 3)	24	0.07
Knowledge (post 2) & Knowledge (post 3)	24	0.125
Access (baseline) & Access (post 1)	24	0.5

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Access (baseline) & Access (post 2)	24	0.63
Access (baseline) & Access (post 3)	24	0.022
Access (post 1) & Access (post 2)	24	0.25
Access (post 1) & Access (post 3)	24	0.065
Access (post 2) & Access (post 3)	24	0.289
Compliance (baseline) & Compliance (post 1)	24	0.016
Compliance (baseline) & Compliance (post 2)	24	0.31
Compliance (baseline) & Compliance (post 3)	24	0.001
Compliance (post 1) & Compliance (post 2)	24	1.000
Compliance (post 1) & Compliance (post 3)	24	0.219
Compliance (post 2) & Compliance (post 3)	24	0.125

p = Mc-Nemar test

Based on table 5 it can be seen that differences in knowledge, access to ARV and adherence are found in the measurement between initial measurements and post t measurements 3, where the number of significance shown in the knowledge variables ($p = 0.008$), ARV access variables ($p = 0.022$), ($p = 0.001$).

DISCUSSION

The provision of health education by using a module for 3 months in the treatment group can increase the knowledge of PLHIV continuously. The results of research supported by the theory suggested that the longer the information is retained in short-term memory with the help of repetition, the more likely it is to enter long-term memory, thus becoming more permanent relative. Knowledge will be stored long in memory. So, it needs an effective repetitive learning method to suppress the decrease of one's knowledge, which is aided by user of media¹⁰.

The use of media / learning aids such as leaflets and modules in the implementation of health education is expected to increase the attention of PLHIV. This is supported by Bullet theory which states that the effectiveness of messages using the media can directly affect the intended target¹¹, which is in line with the theory which says that the use of learning media in health

education using modules can facilitate the reception of public health messages⁸.

A research showed that after being given a health education using learning aids booklets and posters, the knowledge and attitude of the intervention group increased significantly compared to the control group¹².

Learning aids are used on the principle that the knowledge that is present in every human being is accepted or captured through the five senses. The more senses used to receive something the more and more clearly the understanding or increase of knowledge obtained, thus the use of learning aids is intended to exert the senses as much as possible on an object so as to facilitate understanding⁸.

Access in this study include physical access (distance from home to the health service, the travel time from home to health care, the cost to get access to antiretroviral services) access to psychological (shame be shunned from society and have problems in communicating with health care providers). Based on information from health personnel who served in the VCT clinic, Sultan Daeng Radja Hospital in Bulukumba stated that the number of PLHIVs in the hospital were only 13 people, when compared with the number of PLHIV based on data from the District Health Office Bulukumba are 188 people. It means only about 6.91% who perform treatment at Bulukumba Hospital which is the only health facility that provides ARV drugs.

Some studies suggest that the distance to be a predictor of LTFU incidence that affects ARV access is more than 5 km distance from home to health service and travel time ≥ 1 hour to place of ARV services. It is likely that people living far from health facilities have less access to health care. Patients with close proximity to health facilities have a smaller LTFU risk¹³.

The results in Table 4 showed that the proportion of adherence of ODHA in treatment in the group I experienced an increase of 45.8%, while in the group II increased by 33.3% since the initial measurement until the final measurement, this indicates that the compliance of the treatment group I is greater than the group II.

The results of this study are supported by research conducted in Mozambique where participant who did not become a community CASG (ARV Community Support

Group) has LTFU higher levels ($p=0.04$) compared with participants who are members of CASG. The CASG is an effective strategy for reducing LTFU and improving adherence in supporting ART programs¹⁴. In line with research conducted in Ethiopia in tuberculosis patients, which showed improved adherence to TB patients who were members of *TB* than those who did not join as *TB Club* members with $p < 0.001$ ¹⁵.

The small opportunity for PLHIV in CASG to experience LTFU is because the goal of CASG is to facilitate group members in terms of drug procurement every month so that the possibility of not accessing ARVs and non-compliance is very small. In addition, because group members support each other and remind each other in terms of ARV therapy, medication schedule and the effects of disobedience in antiretroviral therapy. The failure of the therapy is often caused by non-compliance with antiretroviral drugs consumption, few factors related to health care delivery system, the drug and the person taking ARV drugs can influence the adherence to antiretroviral therapy¹⁶. Sub-Saharan-African compliance studies in 2012 show that clinics with adherence support, counseling services and compliance monitoring tools have lower LTFU rates¹⁵.

Studies conducted in Africa show that Adherence and a good response to antiretroviral therapy (HAART) can be achieved in home-based AIDS care programs in rural areas. Where the health care system should be continuously applied, evaluated, and modified interventions to overcome barriers to comprehensive AIDS care programs, particularly obstacles to adherence to antiretroviral therapy¹⁷.

CONCLUSION

Necessary follow-up and moral support, funding, infrastructure and environment of the relevant parties to the sustainability of the group CAASG that have been formed to support treatment access and adherence of PLHIV in treatment, so it will be easier access to treatment no fear of stigma and discrimination of the social environment.

Ethical Clearance: This research has received recommendation from Hasanuddin University ethics committee with number: 547/H4.8.4.5.31/PP36-KOMETIK/2017

Sources of Funding: Nil

Conflict of Interest: No conflict of interest in this study

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