



## Self-efficacy, depression, and adherence to antiretroviral therapy (ART) among Indonesian women with HIV<sup>☆</sup>



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### KEYWORDS

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### Abstract

**Objective:** This study aimed at investigating the relationship between self-efficacy, depression, and adherence to antiretroviral therapy (ART) in Indonesian women with HIV.

**Method:** This study employed a cross-sectional research design. The participants were 120 women with HIV aged 18–60 years on self-administered ART regimens.

**Results:** This study shows a significant relationship between self-efficacy and adherence to ART ( $p$ -value = 0.004; OR 2.330). Women are living with HIV with high self-efficacy adherence to following their ART 2.33 times more often than those with low self-efficacy. It is shown that a significant relationship exists between depression and adherence to ART ( $p$ -value = 0.001; OR 3.647). Depressed HIV women took ART medication 3.64 times less often than who did not have depression.

**Conclusion:** It is recommended to increase the level adherence rate by improving self-efficacy and reduce depression.

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### Introduction

The World Health Organization (WHO) noted that there approximately as 36.7 million people living with HIV

(PLWH) as of July 2017, 51.5% of whom were women, of these 20.9 million were undergoing antiretroviral therapy (ART), with an estimated 60% being women.<sup>1</sup> In Indonesia in March of 2017, HIV with ART 79833, with number loss to follow up (LTFU) ART of 35521.<sup>2</sup> Patient LTFU from ART could have serious consequences, such as non-adherence and drug resistance.<sup>3</sup> Lampung, a province in Indonesia, accounts for a large number of HIV cases. In 2017, the number of HIV sufferers in Lampung increased to 2002 with 1320 using ART, 413 of whom were women.<sup>2</sup>

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When beginning ART, PLWH must be prepared for and have a solid understanding of its consequences. This is because ART is a lifelong process that has side effects and requires adherence.<sup>4</sup> Adherence of HIV patients to their medication regimens will bring optimal results, while a low level of adherence will make the virus resistant to the drug.<sup>5,6</sup>

PLWH's adherence to ART can be affected by their self-efficacy. The higher their self-efficacy, the better their adherence to the treatment.<sup>7,8</sup> If individuals have a high self-efficacy, they will manage their situation more effectively and will know how to handle it.<sup>9,10</sup> Self-efficacy in women living with HIV (WLWH) can affect their lives, enables them to access resources, allows them to use their skills, empowers them to overcome difficulties, and helps them maintain their health.<sup>11,12</sup>

Adherence to ART can also be affected by depression. Some studies found that PLWH who are depressed tend not to adhere to treatment. This is because, with ART, PLWH can feel depressed and view it negatively, focusing on its side effects, fearing that it will reveal them as HIV patients, and believe that ART is toxic to the body.<sup>13</sup> WLWH often experience depression because they feel ashamed and isolated, have stigmas toward HIV, experience high levels of anxiety, have difficulties in their dual roles as mother and wife and lack social support and coping skills.<sup>14,15</sup>

Adherence with ART is the key to extending the life expectancy of PLWH. Women can transmit HIV to their partners and fetuses if they do not adhere to the ART regimen. Based on this rationale, a study of the relationship between self-efficacy, depression, and adherence to ART in women with HIV is necessary.

## Method

### Participants and procedure

A total of 120 women with HIV were enrolled in this study. The sampling technique used was non-probability sampling, consecutive sampling in particular. Participants were recruited at one Voluntary Counselling and Testing (VCT) Clinic at the Dr. H. Abdul Moeloek Hospital in Lampung. This VCT Clinic provides HIV testing and care. The study's inclusion criteria called for women over 18 years old who had undergone ART for more than 6 months and could read and write. The exclusion criteria were HIV-positive women who suffered from mental disorders, such as schizophrenia, delusions, and hallucinations. This research was conducted in May of 2018.

### Measures

Variable adherence was measured using the Four-Item Morisky–Green–Levine Medication Adherence Scale (MGL-MAS). Values of 1–4 indicated no adherence and a value of 0 indicated adherence.<sup>16</sup> We calculated a correlation coefficient of 0.374–0.393 and a Cronbach's alpha value of 0.6. Variable self-efficacy was measured using the HIV Treatment Adherence Self-Efficacy Scale (HIV-ASES) with a cut-off point median of 115. Values of 1–114 indicated low self-efficacy, and values of 115–120 indicated high self-efficacy.<sup>17</sup> The correlation coefficient of the validity test was calculated

at 0.802–0.941, and its Cronbach's alpha value was 0.979. Depression was measured by the Center for Epidemiologic Studies Depression (CES-D) Scale.<sup>18</sup> Total scores of 1–16 indicated that respondents were not depressed, and total scores of 17–60 showed that respondents were depressed. The correlation coefficient of the validity test was  $>0.4$  ( $r=0.444$ ), and the Cronbach's alpha value was 0.934. All questionnaires were translated into the Indonesian language.

### Data statistics

Bivariate analysis was conducted to identify the relationship between self-efficacy, depression, and adherence to ART. This study used the chi-squared test because the data for each variable is categorical. The degree of significance in this study was 95%, or  $\alpha 0.05$ . Ethical approval was given by the Universitas Indonesia Faculty of Nursing Ethics Committee (No. 151/UN2.F12. D/HKP.02.04/2018).

## Results

Most respondents were 18–40 years old (81.7%), were unemployed (79.2%), were married (66.7%), and had received ART for more than 12 months (90%). Additionally, most respondents had high self-efficacy (61.7%), experienced depression (57.7%), and had adherence to ART (52.5%) (Table 1).

Bivariate analysis revealed a significant relationship between self-efficacy and adherence to ART ( $p$ -value=0.004;  $\alpha 0.05$ ) with an OR value of 2.330 (1.089–4.983). This indicated that WLWH with high self-efficacy were 2.33 times more likely to adhere to ART than were those with low self-efficacy. Statistical tests also indicated a significant relationship between depression and adherence to ART ( $p$ -value=0.001; OR 3.647; 1.697–7.837). Depressed women were 3.64 times more likely to not adhere to ART than were women who were not depressed (Table 2).

## Discussion

This study revealed that 81.7% of participants undergoing ART were 18–40 years of age. Over the last 10 years, HIV transmission has shown a consistent pattern, tending to attack people aged 20–49 years (those categorized within the reproductive age range).<sup>1</sup> Women at reproductive ages are more likely to engage in sexual activities, making them more likely to contract HIV. In addition, young women are greatly influenced by the gender roles and social norms that circulate in their communities; this reduces their ability to make their own decisions about their health and lives. Women infected with HIV could also be influenced by socioeconomic conditions. Difficulty in finding work sometimes motivates young women to engage in risky activities, such as becoming sex workers to meet their economic needs.<sup>16</sup>

This study found that women with high self-efficacy were associated with significantly better medication adherence. Self-efficacy is a multidimensional concept; it is defined as existing in PLWH who are confident in their ability to manage their HIV, believe that every problem can be controlled, and have the desire to overcome these problems (for

**Table 1** Distribution of respondents based on sociodemographic, duration of treatment, side effects, alcohol use, compliance, self-efficacy, and depression ( $N=120$ ).

Variable	Frequency	Percentage
<i>Age</i>		
18–40 years old	98	81.7
41–60 years old	22	18.3
<i>Level of education</i>		
Junior high school	32	26.7
Middle high school	67	55.8
Senior high school	21	17.5
<i>Employment</i>		
Unemployed	95	79.2
Employed	25	20.8
<i>Marital status</i>		
Single	3	2.5
Married	80	66.7
Widowed	37	30.8
<i>Length of treatment</i>		
6–12 months	12	10
>12 months	108	90
<i>Side effects</i>		
No side effects	77	64.2
Some side effects	43	35.8
<i>Alcohol use</i>		
Do not drink alcohol	119	99.2
Drink alcohol	1	0.8
<i>Adherence</i>		
No adherence	63	52.5
Adherence	57	47.5
<i>Self-efficacy</i>		
Low self-efficacy	46	38.3
High self-efficacy	74	61.7
<i>Depression</i>		
Depression	53	43.3
No depression	67	57.7

example, by maintaining a treatment regimen).<sup>17</sup> PLWH with high self-efficacy are able to manage the situation effectively, motivate themselves, and control their emotions so that they can handle their challenges. Their mindset strengthens them and helps them endure hardships.<sup>18</sup> High self-efficacy can make PLWH confident in its treatment and follow their ART regimens. In this study, respondents' self-perceptions were generally positive, and most respondents adhered to ART.<sup>19</sup>

The current findings show that depression is associated with adherence to ART. Several studies find that depressed patients may have negative beliefs about the importance of adherence; another explanation is that the negative side effects of ART may cause discomfort and open her HIV status. As a consequence, such patients may not follow ART regimens regularly.<sup>13</sup> WLWH who are depressed often lessens takes ART. Similar research conducted in the Dominican Republic stated that its 80 HIV participants undergoing ART experienced two kinds of depression: a lack of interest in activities and low moods. Accordingly, they found it difficult to adhere to their treatment programs. People who are diagnosed with HIV and have to undergo ART for life could experience depression.<sup>20</sup> Researchers argue that when WLWH are depressed, they feel helpless and have negative self-feelings, which decrease their motivation to care for themselves. As a result, they often overdose when taking drugs.

Research conducted in India in 2014 revealed that of the 85 participants studied, 25% were found to be depressed and not adherent to ART.<sup>21</sup> These results are also supported by several other studies, which found that depression significantly affected patient adherence to antiretroviral therapy.<sup>22</sup> Depression has also been shown to affect adherence to ART both in PLWH who have just begun ART and in those who have undergone it for more than 12 months.<sup>23</sup> The present study was only conducted in one place Dr. H. Abdul Moeloek hospital in Lampung, so its samples were homogeneous and not overly varied.

The results reveal a significant relationship between self-efficacy, depression, and adherence to ART in women with HIV. Young women's sexual activity further increases the overall incidence of HIV in women. Training to improve

**Table 2** Relationship between self-efficacy, depression, and adherence to ART.

Variable	Adherence				OR (95%/CI)	p value
	No Adherence		Adherence			
	N	%	N	%		
<i>Self-efficacy</i>						
Low	30	5	16	13.3	2.330 (1.089–4.983)	0.044 <sup>a</sup>
High	33	27.5	41	34.2		
Total	63	32.5	57	47.5		
<i>Depression</i>						
Depression	37	30.8	16	13.3	3.647 (1.697–7.837)	0.001 <sup>a</sup>
No depression	26	21.7	41	34.2		
Total	63	52.5	57	47.5		

Under Dr. H. Abdul Moeloek in Lampung ( $N=120$ ).

<sup>a</sup>  $\alpha < 0.05$ .

self-efficacy and early screening for depression in HIV patients must be provided to improve their adherence to ART.

## Conflict of interests

The authors declare no conflict of interest.

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