

Brain Respiration to Overcome Stress People Who Live with HIV (ODHIV)

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Abstract: People living with HIV facing a chronic life-threatening illness and stigma from the society that can caused stress. By using brain respiration, they can manage their negative emotion and reduce the stress level. Quasi experimental method used in this research. The sampling technique was purposive sampling. 18 ODHIV that newly diagnosed HIV and had high stress level have contributed to this research. 9 of them become experimental group, and the rest become as control group. ODHIV in experimental group got Brain Respiration and ODHIV in control group was not. The measurement of stress level was done by doing pre-test and post-test. Stress level in this research has been measured by electrodermal activity (EDA) by using biofeedback device. EDA is autonomic nervous system that reflect mental state such as stress. Non parametric statistic Wilcoxon and Mann Whitney used in this research. The result showed that there was difference stress level before and after test on experimental group ($T_{count} = 1 < T_{table} = 5, \alpha = 0,05$). There was difference stress level between experiment and control group ($U_{count} = 2 > U_{table} = 1, \alpha = 0,05$). In conclusion, Brain Respiration can be used to reduce stress level people living with HIV.

1 INTRODUCTION

The number of people who live with human immunodeficiency virus (HIV) in Indonesia have increased significantly. Indonesia Ministry of Health stated that until December 2020, 543.100 cases has been recorded. Indonesia Ministry of Health have provided free treatment for people who diagnosed HIV to reduce the number of HIV transmission. Treatment that has given is antiretroviral therapy (ART) (Tarmizi, 2020). ART that used to treat HIV is just to suppress number of virus in the blood, but it can't eliminate the virus in the blood (O'Connor et al., 2017). Beside it, people living with HIV facing a chronic life-threatening illness and stigma from the society. It has aggravated the condition (Riley & Kalichman, 2015). This has made people who have diagnosed HIV become stress (Huang et al., 2020). Stress can increase viral replication of the virus and suppress the immune response people living with HIV. Therefore, stress-reduction interventions are urgently needed for the comprehensive care of people living with HIV (Riley & Kalichman, 2015).

The phenomenon about stress actually has been studied a lot. Krohne (2001) classified the study of stress into two approaches. The first approach refers to Lazarus theory (1991), and the second approach refer to Selye theory (1976). According to Lazarus (1991) stress is an interaction between individual and environment, where the interaction caused burden that exceed the capacity of the individual. Besides it, Selye (1976) used General Adaptation Syndrome (GAS) as point of view. GAS emphasize on individual physiological reaction in anticipation foreign object that entered the body. This is similar while an individual experiencing stress psychologically, where the stress triggers regarded as "foreign object" and therefore can influence immune system (Herbert & Cohen, 1993).

One of physiological reaction that happen while individual experiencing stress is autonomic nervous system will be activated. It refers to changes in sweat gland activity and reflect the intensity of our emotional arousal (Pop-Jordanova & Pop-Jordanov, 2020). People living with HIV who experienced chronic stress have high intensity of autonomic nervous system and endocrine (Qiao et al., 2017).

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Autonomic nervous system activity alteration can be measured by recording electro dermal activity (EDA) (Pakarinen, Pietila, & Nieminen, 2019). EDA can be measured by using biofeedback (Pop-Jordanova & Pop-Jordanov, 2020).

As we know before, stress experienced by people living with HIV must be managed. If stress level increased, the CD4 T-lymphocytes will be decreased. CD4 T-lymphocytes is a part of white blood cell that has a role to stimulate other immune cells to fight HIV (Effendy, Amin, de Vega, & Utami, 2019). The one of way to manage stress is by giving education to the brain. Brain Respiration can become the one of way to educate the brain (Crawford, Prince, Larick, Howley, & Patricia, 2019).

Brain Respiration is a training of mind, body, and soul which designed for human transformation to become a new human (Lee, 2002). Brain Respiration is a powerful technique to energize human brain. Brain Respiration is a special technique of breathing that can makes the brain active by using the "Bio-energy" or the power of life. Through the use of Brain Respiration, the blood and the energy circulation have activated. By activating the blood and energy, more blood is brought to the brain. It is really helpful to overcome stress, and create a peaceful state of mind. Brain Respiration is not only work on the function of the left brain, where the most of people have greater development, but it restores the whole brain function. It helps the human to find his/her whole or true self (Hayes, Lampi, & Leigh, 2007).

Brain Respiration programme consist of three area. They are Wake-Up Gym, Energy Focusing, and Brain Building. The first area is a stretching program that can wake-up the body. It is designed to stimulate the body's meridian system, which is the system that carries the energy to all parts of the body. It is like the veins and arteries carry blood to all of the major organs and systems of the body. The second area is Energy Focusing. This practice begins with learning to focus to the energy in the hands, then moving the energy to other parts of the body. It can help brain to be more focuss and have more power to think. The third area is Brain Building. It is a more direct stimulation of brain and expanding the use of the brain. This practice uses simple exercises, activities, and energy to stimulate the brain. These exercises and activities are easy and fun to do (Hayes et al., 2007).

2 METHODS AND MATERIALS

By knowing the benefit of Brain Respiration, this research wanted to know the effect of Brain

Respiration in reducing stress level on people who live with HIV.

2.1 Subject Identification

To ensure the effect of Brain Respiration, 18 people who live with HIV and had a high stress level have contributed in this research. 9 of them become experimental group, and the rest become as control group. The number of participants that have contributed to the research were based on the previous research. Number of participants that have contributed less than 20 participants (Sugimoto, Kanai, & Shoji, 2009). Beside it, participant that have selected in this study were the people that newly diagnosed HIV. People that newly diagnosed HIV can be more stress than people who live with HIV for several months or years (Huang et al., 2020).

2.2 Design and Research Procedure

This research used quasi-experimental design. Quasi-experimental is an experimental research design, and not all things can be controlled. Because of that, the research just controlled several things which can be controlled. Quasi-experiment will be done while the pure experiment can't be done (Graziano & Raulin, 2019).

Procedures that have been done in this research were as follow. The first, 20 persons people who live with HIV checked by using biofeedback to know the stress level. The result showed that 18 participants had high stress level and were selected to become as research participant. The second, 18 participants that have chosen divided into two groups. 9 participants become as experimental group, and the rest become as control group. The third, participants in experimental group got Brain Respiration treatment for one hour (Hayes et al., 2007). The fourth, participants in experimental group re-checked by using biofeedback to know the alteration of the stress level. The fifth, after the experiment completed, participant in control group got Brain Respiration treatment to maintain their wellbeing.

2.3 Data Analysis Technique

Analysis technique that has been used in this research was non-parametric statistic Wilcoxon to analyze two pairs of data (Siegel, 1997). Statistical hypothesis that used to test two pairs of data (pre-test and post-test) are as follow:

H0: There is no difference stress level before and after Brain Respiration on experimental group.

H1: There is different stress level before and after brain respiration on experimental group.

H0: There is no difference stress level before and after Brain Respiration on control group.

H1: There is different stress level before and after brain respiration on control group.

Analysis technique that has been used to see the difference stress level between experimental group and control group is non-parametric statistic Mann Whitney (Siegel, 1997). The statistical hypothesis is as follow:

H0: There is no difference stress level between experimental group and control group.

H1: There is different stress level between experimental group and control group.

2.4 Biofeedback Device

Biofeedback device that used in this research recorded the psychological arousal by measuring electrodermal activity (EDA). The device recorded EDA on standard polygraph test. The device measures EDA that comes as result of different electrical phenomena activity in the skin. The skin that has measured is palm skin. The biofeedback device produced by Art Medico

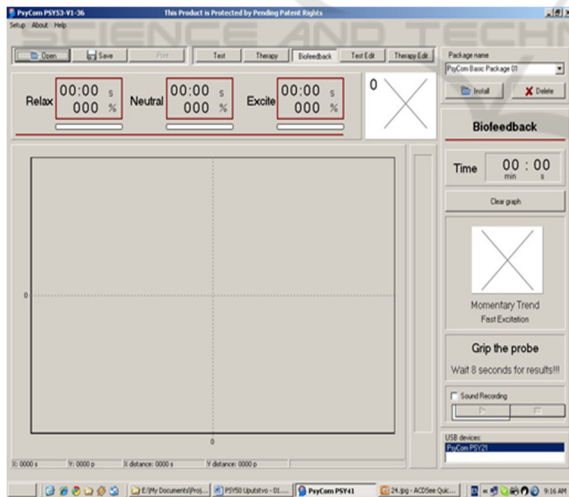


Figure 1: Biofeedback Mode.



Figure 2: The way to grip the biofeedback device.

3 RESULTS AND DISCUSSION

The following is an overview of the stress level that obtained from the biofeedback examination.

Based on the result of data processing pre-test and post-test by using non parametric Wilcoxon with $\alpha = 0.05$, result obtained is T-count = 1 and T-table = 5. If T-count less than T-table, so H0 is refused and H1 is accepted. It means there are different stress level before and after Brain Respiration. Therefore, it can be interpreted that Brain Respiration can reduce stress level on the people who live with HIV.

The result that obtained from the statistical analysis consistent with the result of the research which is conducted by Lee Park and Kim. They found that by doing Brain Respiration during one hour, several types of stress hormones such as cortisol, beta endorphin, dan catecholamine decreased (Lee, 2002).

Table 1: Stress Level Before and After Brain Respiration on Experimental Group.

Number of Participant on Experimental Group	Stress Level Before Brain Respiration (Pre-Test)	Stress Level After Brain Respiration (Post-Test)
1.	4	2
2.	4	4
3.	5	1
4.	4	1
5.	4	1
6.	4	1
7.	5	1
8.	5	2
9.	4	2

To see the difference stress level on control group who didn't get Brain Respiration, the research also has counted the stress level on control group, and the description is as follow.

Table 2: Stress Level Before and After without Brain Respiration on Control Group.

Number of Participant on Control Group	Pre-Test	Pos-Test (without Brain Respiration treatment)
1.	4	5
2.	5	4
3.	4	4
4.	4	4
5.	4	4
6.	4	4
7.	4	4
8.	4	4
9.	5	5

Based on the result of data processing pre-test and post-test by using non parametric Wilcoxon with $\alpha = 0.05$, result obtained is T-count = 9 and T-table = 5. If T-count more than T-table, so H0 is accepted and H1 is rejected. It means there are no different stress level before and after Brain Respiration. Therefore, it can be interpreted that without Brain Respiration stress level on people who live with HIV can not be diminished.

The result reinforced by the previous research. The research stated that stress experienced by people living with HIV has encouraged them to overcome the condition. However, they used the maladaptive coping if they are not directed in the right way (Chesney, Folkman, & Chmabers, 1996).

The research also compared the stress level between experimental group and control group to ensure that the change is caused by Brain Respiration. It will be described as follow.

Table 3: Comparison of Stress Level on Experimental and Control Group.

Number of Participant	Experimental Group Stress Level	Control Group Stress Level
1.	2	5
2.	4	4
3.	1	4
4.	1	4
5.	1	4
6.	1	4
7.	1	4
8.	2	4
9.	2	5

Based on the result of data processing pre-test and post-test by using non parametric Mann Whitney with $\alpha = 0.05$, the result obtained that U-count = 2 and U-

table = 17. If U-count less than u-table, so H0 is rejected and H1 is accepted. It means the stress level between experimental group and control group are different.

It showed that stress management intervention for people who living with HIV can facilitate the positive condition (Brown & Vanable, 2008). Park, Lee, and Lee (2000) in Hayes et al. (2007) stated that Brain Respiration can influence the endocrine responses related to stress. Brain Respiration can make the endocrine activity become more stable and make the individual condition become more stable.

4 CONCLUSIONS

Therefore, our finding result that Brain Respiration can become as the one of treatment that can help people who live with HIV to reduce the stress level. Brain Respiration can bring people who live with HIV (ODHIV) into a positive condition.

The number of ODHIV who participated in this research is still limited. It will be better if increase the number of participants for further research. Beside it, future research should also explore the impact of Brain Respiration interventions on health behavior changes that may be relevant to longer-term mental health outcomes.

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