



## THE INNOVATIVE OF ANXIETY DISORDER HEALING: NUTRI MORINGA PUDDING FOR HIV/AIDS-INFECTED PATIENTS

Ingga Yonico Martatino<sup>1†</sup> --- Rizki Habibie<sup>2</sup> --- Alimatus Sahrah<sup>3</sup> --- Adhitya Angga Wardhana<sup>4</sup>

<sup>1</sup> College of Public Health Sciences - Chulalongkorn University, Bangkok, Thailand, Faculty of Psychology - Mercu Buana University of Yogyakarta, Indonesia

<sup>2</sup> Internist/ Medical Doctor - State Hospital of Waluyo Jati, Kraksaan, Probolinggo, Indonesia, Physician – State Hospital of Dr. Shaleh, Probolinggo, East Java, Indonesia

<sup>3</sup> Mercu Buana University of Yogyakarta, Indonesia

<sup>4</sup> Surgeon, State Hospital of Dr. Soetomo, Surabaya, Indonesia

### ABSTRACT

Anxiety disorder is a common psychologically symptom in HIV/AIDS-infected patients. These disorders include panic disorder, generalized anxiety disorder, obsessive-compulsive disorder, and post-traumatic stress disorder (PTSD). Among HIV/AIDS-infected patients receiving medical care, 20.3% have been found to have an anxiety disorder, with 12.3% meeting the criteria for panic disorder, 10.4% for PTSD, and 2.8% having generalized anxiety disorder. Patients with other psychiatric disorders, such as adjustment disorders, major depression, psychosis, or substance use disorders, can also present with significant anxiety. Medication such as antidepressant (benzodiazepines) has negative effect to solve this problem. Recent studies showed that gamma amino butyric acid (GABA) is also important on decreasing of anxiety. Moringa Pudding is a new innovation was combined between pudding with *M. oleifera* extract plant in psychotherapeutic. It has shown the most effective treatment of anxiety disorder's healing. Moringa Pudding contained GABA largely 10mg/kg *M. oleifera* extract as an inhibitory neurotransmitter in CNS. This study examined the effects of Moringa Pudding on decreasing of anxiety disorder. The research subject is determined by the purposive sampling and it was conducted on HIV/AIDS patient. A pretest with the anxieties scale followed by first group (n=50), then selected a sample that has the highest anxiety score (n=30) and they will be the subjects. The result of the post-test by Paired Sample t- test analysis (SPSS 19) with a value of  $t = 0.008$  or  $P < 0.05$ , where the results show a significant or hypothesis is accepted.

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**Keywords:** Anxiety, Moringa pudding, HIV/AIDS, GABA.

## Contribution/ Originality

This study originates new treatment with GABA on increasing of CD4 (immune system) for HIV/AIDS-infected patients in Nutri Moringa Pudding. GABA is a natural calming and anti-epileptic and anti anxiety agent. It is vital for proper brain functioning. GABA also helps their bodies make endorphins – chemicals that make them feel happy, escape stress hormonal (cortisol, serotonin) and it can increase CD4 indirectly.

## 1. INTRODUCTION

Indonesia's first case of HIV was reported in 1987 and between then and 2009, 3,492 people died from the disease (Fred, 2012). Of the 11,856 cases reported in 2008, 6,962 of them were people under 30 years of age, including 55 infants under 1 year old (Seligson and Peterson, 2010). There are a high number of concentrated cases among Indonesia's most at risk including injection drug users (IDUs), sex workers their partners and clients, homosexual men and infants who contract the disease through the womb or from being breast fed (Chris, 2012). In the last 15 years, HIV/AIDS has become an epidemic in Indonesia. The highest concentration areas are Papua, Jakarta, East Java, West Java, Bali and Riau and all are considered to be zones that need immediate attention.

Due to the increasing number of IDUs, the number of new infections has grown rapidly since 1999. Moreover, a generalised epidemic is already under way in the provinces of Papua and West Papua, where a population based survey found an adult-prevalence rate of 2.4% in 2006 (Broman, 2009). A whopping 48% of Papuans are unaware of HIV/AIDS, and the number of AIDS cases per 100,000 people in the two provinces is almost 20 times the national average. The percentage of people who reported being unaware of HIV/AIDS increases to 74% among uneducated populations in the region (Braet *et al.*, 2007). (The epidemic in Indonesia is one of the fastest growing among HIV/AIDS in Asia. The epidemic of injecting drug use continues to be the primary mode of transmission, accounting for 59% of HIV infections, and heterosexual transmission accounted for 41% in 2006. According to the Indonesian Ministry of Health, recent surveys report that more than 40% of IDUs in Jakarta have tested positive for HIV, and about 13% tested positive in West Java. Many IDUs sell sex to finance their drug habits. Yet in 2005, 25% of IDUs in Bandung, Jakarta, and Medan said they had unprotected paid sex in the last 12 months (Baxter, 2010).

The Indonesian archipelago stretches more than 3,000 miles along the Equator. Cultural practices and levels of urbanization have an impact on the HIV/AIDS epidemic (Fredrickson *et al.*, 2008). For instance, a culture of paid and "transactional" sex among young men and women aged 15 to 24 has been a driving factor in Papua. Among 15 to 24 year olds, HIV-prevalence rates were 3% in 2006, according to the Ministry of Health (Hunter and . Prevalence rates among sex workers in East Java's major urban areas ranged from 9% in Surabaya to 16% in Malang and Probolinggo in 2004 (Haruddin, 2012).

Numerous factors put Indonesia in danger of a broader epidemic. Risky sexual behaviors are common. Only 54.7% of sex workers and 56.5% of men who have sex with men (MSM) use condoms consistently, and just 18.5 percent of IDUs consistently use both sterile needles and condoms, according to Indonesia's 2006 report to the United Nations General Assembly Special

Session on HIV/AIDS (UNGASS). Many IDUs are also sex workers or clients of sex workers, increasing the likelihood of HIV/AIDS spreading to the general population. Awareness of HIV status among at-risk populations is low. According to a 2004–2005 study cited in the UNGASS report, 18.1% of IDUs, 15.4% of MSM, 14.8% of sex workers, and 3.3% of clients of sex workers had received HIV testing in the previous 12 months and knew their test results (Hoshi *et al.*, 2007). Stigma and discrimination persist and many people living with HIV hide their status for fear of losing their jobs, social status, and the support of their families and communities, thus decreasing the likelihood that they will receive proper treatment and increasing the chances of HIV spreading undetected.

Feelings of anxiety are a normal, healthy response to the diagnosis, onset, or progression of HIV infection (Daniel *et al.*, 2009). But it's important to recognize the difference between this type of anxiety and the sort that signals a clinical disorder. HIV itself does not cause anxiety disorders, but HIV+ people tend to experience more anxiety than the general population. Certain medications used to treat HIV can also cause anxiety symptoms. Fortunately, anxiety disorders are among the most treatable of psychiatric conditions, and respond well to pharmacological and nonpharmacological treatment (Phillipe and Cella, 2009). Among HIV/AIDS-infected patients receiving medical care, 20.3% have been found to have an anxiety disorder, with 12.3% meeting the criteria for panic disorder, 10.4% for PTSD, and 2.8% having generalized anxiety disorder (Nevid, 2012).

People living with HIV can experience symptoms of anxiety across the spectrum of anxiety disorders. Adjustment disorder is the most common psychiatric disorder that manifests as anxiety, and is common after receiving an HIV diagnosis (Gropen *et al.*, 2011). The other major types of anxiety disorder are panic disorder and agoraphobia, social phobia and other phobias, obsessive compulsive disorder (OCD), post traumatic stress disorder (PTSD), generalized anxiety disorder (GAD), acute stress disorder and anxiety disorder due to a general medical condition (McDowell and Newell, 1999).

HIV+ people experience some anxiety disorders, such as OCD, no more frequently than those who do not have the virus (Post and White, 2004). But the experience of having HIV can prompt or exacerbate other disorders, such as PTSD, especially when someone has an underlying risk for them. Anxiety can present in a variety of ways, including shortness of breath, chest pain, racing heart, dizziness, numbness or tingling, nausea or the sensation of choking. When there are no underlying medical explanations for these symptoms, clinicians are advised to consider an anxiety disorder as the cause (Ruggert and Warner, 2001).

Anxiety disorders can seem to flare up at key moments in the experience of HIV disease, such as at the time of initial HIV diagnosis, diagnosis with an opportunistic infection, a declining CD4 count or a “blip” in viral load, or any other reminder of ongoing HIV infection. It's helpful to recognize that these experiences may trigger anxiety, even symptoms of panic disorder and depression, for an HIV+ person. Besides the discomfort of anxiety disorders, they can interfere in an HIV+ person's overall success in managing HIV because they are a major cause of nonadherence to medication (Post and White, 2004).

There is a main question “What are appropriate treatments for an HIV+ person suffering from

an anxiety disorder”. Anxiety is portrayed as a frame of mind concerned about future in association with preparation for possible, upcoming undesirable happenings. The present treatment for the disorder is having a lot of side-effects. An agent with good therapeutic effect and less side-effects is needed for the treatment of anxiety. State Hospital of Waluyo Jati has found an innovation through Nutri Moringa Pudding on decreasing of anxiety level in HIV/AIDS-infected patients. To investigate the Gamma Amino Butyric Acid (GABA) extract of Moringa oleifera Pudding in HIV/AIDS-infected patients. It showed by statistic result by paired sample t-test (SPSS) t. 0.0008, it means  $P < 0.005$ . the hypothetic was accepted.

## 2. METHOD

The research subject is determined by the purposive sampling and it was conducted on HIV/AIDS patient. A pretest with the anxieties scale (Nevid, 2012) followed by first group (n=50), then selected a sample that has the highest anxiety score (n=30) and they will be the subjects and treated by Nutri Moringa Pudding for a week. Post-test be held a week after treated. Fixed schedule of moringa pudding consumption be done 3 times a day.

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The Anxiety Scale by Nevid input form consists of 30 vignette like questions designed to rate 3 aspects such as emotional, cognitive, and physiologic of subjects in terms of severity and role in the core character. The questions are clustered in matrix format across three core character types, namely Types A, B, and C. By referencing the strength of scores related to their type domain characteristics, the likely triggers and expressions of maladaptive behavior is identified, which can be applied to a variety of settings and objectives. The matrix structure and associated characteristics are illustrated in Diagram 1 below.

Tabel-1. Anxiety Scale

| Domain      | Item Scale           |                  | %    |
|-------------|----------------------|------------------|------|
|             | Favorable            | Unfavorable      |      |
| Emotional   | 2,9,10,23,24,28      | 3,4,7,8,19,25,26 | 72 % |
| Cognitive   | 13,15,16,27          | 11,12,17,18      | 14 % |
| Physiologic | 1,5,6,14,20,21,29,30 | -                | 14%  |

## 3. DISCUSSION

There Anxiety disorders are a serious concern for HIV+ people who don't have good coping strategies and a strong social support network, such as family, friends, or a faith community. Individuals with a history of abuse physical, sexual, emotional are more likely to have an anxiety disorder (Daniels, 2010)

People who have unresolved grief, whatever the source, should be screened for anxiety. Those with a personal or family history of anxiety disorders also are at higher risk for developing them. A person with HIV who appears to have symptoms of an anxiety disorder should be given a thorough medical evaluation that includes taking a history of anxiety symptoms to determine onset, frequency, and severity/ anxiety scale (Strongman, 2012). The interviewing clinician should ask about stressful life events, family history, drug and alcohol use (past and present), and any

medications the patient is taking (Lee, 2008). Kennedy *et al.* (2010) explained that a complete diagnostic evaluation includes testing thyroid, liver, and kidney function, and evaluating for other psychiatric disorders associated with comorbid anxiety (e.g., depression).

Certain neuropsychiatric disorders that are common in people with advanced HIV disease (AIDS) must be ruled out before diagnosing anxiety, particularly HIV-associated dementia which can include anxiety. Delirium also commonly features anxiety and agitation. It's especially important to treat the delirium and avoid using anti anxiety medications, which can have serious adverse affects (Jocham and Ullsperger, 2009).

A host of general medical conditions are associated with anxiety and must also be ruled out during the diagnostic process. These include fever, dehydration and metabolic complications, CNS opportunistic infections, neurosyphilis, respiratory conditions, endocrinopathies (problems with the endocrine system), cardiovascular disease, and hyperventilation syndrome.

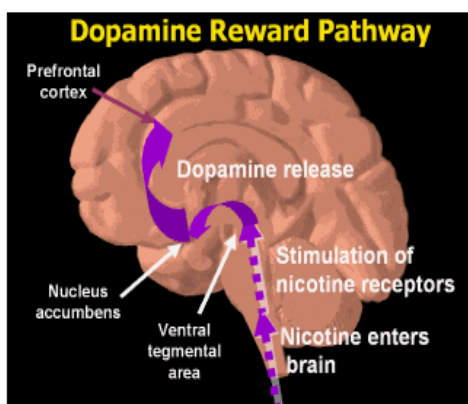
A number of HIV-related medications can cause anxiety as a side effect, especially at first. These include acyclovir, antiretrovirals (e.g., efavirenz), corticosteroids, isoniazid, interferons, interleukin-2, and pentamidine. Anxiety is also a side effect of a variety of medications used for other psychiatric complaints (e.g. depression, delirium). In both cases, the anxiety-producing medication should be replaced. If this isn't possible, the anxiety should be treated, preferably with nonpharmacological methods. Cause the medicine has many side effect to their body. There are three different methods used to successfully treat anxiety disorders: pharmacological, nonpharmacological, or a combination of the two. Each patient's experience of an anxiety disorder is unique and must be treated as such.

Although many anti-anxiety medications are effective, there are also a number of good nonpharmacological treatments to choose from. When someone suffering from anxiety disorder is already taking a variety of medications, or there is concern about potential complications or interactions between medications, it may be preferable to pursue a nonpharmacological approach (Topçuoğlu *et al.*, 2009)

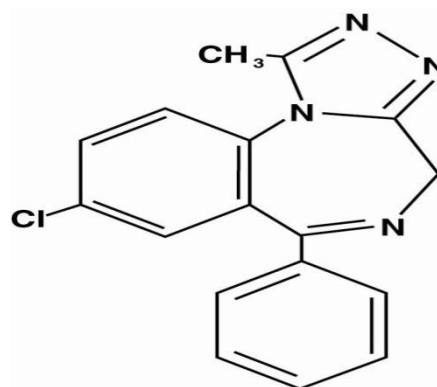
Medications used to treat anxiety disorders include SSRIs; benzodiazepines, the most commonly used but potentially causing withdrawal symptoms when stopped; venlafaxine; and buspirone. Other anti-anxiety agents that can be effective include antihistamines, beta-adrenergic blocking agents, neuroleptics, tricyclic antidepressants. It's important to consider drug-drug interactions and potential side effects if the treating physician chooses to treat anxiety with one of these medications. Nonpharmacological treatments of HIV-related anxiety include treated by Nutri Moringa Pudding it does not has side effect.

*Moringa oleifera* (Moringaceae) is a food plant with multiple medical uses, distributed in many countries of the tropics and subtropics. It has an impressive range of medical uses with high nutritional value. *M. oleifera* has antibacterial activity and are reported to be rich in antimicrobial agents (Parrota, 2010). These are reported to contain an active antibiotic principle, pterygospermin, which has powerful antibacterial and fungicidal effects to prevent a pain hormonal such as cortisol and sitokinin. These are to be responsible of anxiety if it is in abnormal condition (Lizzy, 2011). In Nutri Moringa Pudding, a similar compound is found to be responsible for the antibacterial effects and it will result GABA, dopamine in body. The possesses antimicrobial activity attributed to the

presence of 4- $\alpha$ -L-rhamnosyloxy benzyl isothiocyanate. The aglycone of deoxyniazimicine isolated from the chloroform fraction of an ethanol was found to be responsible for the antibacterial and antifungal activities to prevent of pain hormonal secretion, then produce GABA, dopamine, and encephaline. Nutri Moringa Pudding has been shown to possess antifungal activity that showed antibacterial effect against pathogen bacteria in digestivus system. It was found to inhibit the growth of microorganisms. Different nutrients of this pudding contain a profile of important minerals, and are a good source of protein, GABA, vitamins,  $\beta$ -carotene, amino acids and various phenolics (Toefilo, 2003). Indonesia has used *Moringa oleifera* modification such as “Nutri Moringa Pudding” cause it is plant provides a rich and rare combination of zeatin, quercetin,  $\beta$ -sitosterol, caffeoylquinic acid and kaempferol such as Walujo Jati hospital in Kraksaan, Probolinggo, East Java Indonesia used it since 2012 to overcome anxiety, malprotein nutrition, diabetes, and cancer. In addition to its compelling high nutritional value, *M. oleifera* is very important for its medicinal values.



Picture-2. Nutri Moringa Pudding Implication



Picture-1. GABA-ergic

Selected samples were 30 subjects treated by Nutri Moringa Pudding showed the reduction of HIV/AIDS-infected patients with 10 mg/kg GABA-ergic in Moringa Pudding. The result of the post-test by *Paired Sample t- test* analysis (SPSS 19) with a value of  $t = 0.008$  or  $P < 0.05$ , where the results show a significant or hypothesis is accepted.

Tabel-2. Hypotetic Resume

|                        | Pre-post result     |
|------------------------|---------------------|
| Z                      | -2.549 <sup>a</sup> |
| Asymp. Sig. (2-tailed) | .008                |

a. Based on positive ranks.

b. Paired samle t- Test

10mg GABA in Nutri Moringa Pudding to overcome anxiety disorder. GABA (gamma-aminobutyric acid) is an amino acid. It is the main inhibitory (calming) neurotransmitter in the brain. Neurotransmitters are chemical messengers between neurons (nerve cells). The body make

GABA from glutamine – a vital amino acid in the brain (Parrota, 2010). Amino acids are the building blocks of proteins. GABA is a natural calming and anti-epileptic and anti anxiety agent . It is vital for proper brain functioning. GABA also helps bodies make endorphins – chemicals that make them feel happy. Lizzy (2011) said GABA influences our mood because it reduces high levels of the hormones adrenalin, noradrenalin and dopamine, and it affects the neurotransmitter serotonin.

Having enough GABA in the brain is linked to being relaxed and happy. Having too little GABA is linked to the feeling anxious, sleeping problem insomnia, stressed, tense and depressed. when people are nervous or anxious their brains produce more beta brain waves than alpha brain waves. Taking GABA increases the amount of alpha waves. Alpha waves are linked to clear thinking, good focus and being in “the zone” or “the flow”. In these mind states, in which people are focused, calm and productive, they have high amounts of alpha brain wave activity, finally it can increase CD4 of HIV/AIDS-infected patients.

#### **4. CONCLUSIONS**

This scientific paper has showed the effect of Nutri Moringa Pudding on decreasing of HIV/AIDS-infected patients. The research showed that the GABA, dopamine, and encephaline in Nutri Moringa Pudding may have produced by multiple mechanisms. It was 20-200mg/kg of the GABA in pudding extract, it appeared that supplementation was able to cause a reduction of anxiety in HIV/AIDS-infected patients

Pharmacology intervention has many side effect that it can be danger for human. Nutri Moringa Pudding show the innovative of anxiety disorder and it saved for everyone who consumed it. Promotion Nutri Moringa Pudding must be done by physician, nutritionist, health practice, psychologist, consultant, etc. the value added that Nutri Moringa Consumption showed a good result for PEM (Protein Energy Malnutrition) cases, cause it has double protein from eggs.

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## Appendix



Picture-3. Nutri Moringa Pudding Sachet



Picture-4. Nutri Moringa Pudding



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