The Effectiveness of Warm Milk and Chamomile Tea on Anxiety Symptomps in the Elderly

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Abstract: The aging process will cause changes in anatomy and physiology. Generalized Anxiety Disorder is a matter of concern about everyday problems and the anxiety, tired, difficult to concentrate, irritable, muscle tension, and problem of sleeping. Matricaria recutita or Chamomilla recutita has been used as a traditional herb medicine because of its soothing effects. Milk contains many amino acids tryptophan which is one of the basic ingredients of serotonin, so the body can rest well. The purpose of this study is to invent the effect of warm milk and chamomile tea on symptoms of anxiety in the elderly. This is an experimental analytic study, using a pretest-posttest design with an 8-week purposive sampling technique located in Panti Jompo Karya Kasih, Medan. 54 participants completed the HAM-A Rating Scale before and after the intervention with 18 subjects each in the group of warm milk, chamomile tea and controls. Participants aged 60-74 years were men and women with good cognitive abilities. Based on the results of this study, it was found that the difference in scores before and after in the milk group was 21.56 and in the chamomile tea group it was 21.50. Through the T-independent test also obtained the value of P is 0.59 (p> 0.05) that means there is no significant difference regarding the provision of warm milk and chamomile tea to anxiety in the elderly.

1 INTRODUCTION

The aging process is a process of continuing managing or sustaining naturally and generally experienced by all living things. According to WHO, the elderly are individuals aged 60 years and over consisting of (1) elderly of 60-74 years, (2) age old of 75-90 years, and (3) very old age over 90 years (Indri, 2015). Meanwhile, based on the Law of the Republic of Indonesia Number 13 of 1998 and Government Regulation of the Republic of Indonesia Number 43 of 2014 said that the elderly are someone who is age of 60 years and over.

Through the results of population statistics in the world, Indonesia is one of the top five countries with the highest number of elderly in the world. In 2014, the number of elderly people in Indonesia became 18.71 million people and it is estimated that by 2025 the number will reach 36 million. From the results of statistics from the North Sumatra Province Statistics Agency in 2015, the number of elderly people reached 945,362.

Psychological changes can occur in the elderly, what is meant by changes of psychological in the elderly include short term memory, frustration, loneliness, fear of losing freedom, fear of facing death, changing desires, depression, and anxiety.(Maryam et al., 2008)

Anxiety, and fear are a completely natural human condition. If this feeling occurs and last long, it affects physical and mental health. This leads to clinical anxiety disorder. There are many types of treatments available to treat anxiety disturbance. Anxiety is involved in a some of psychiatric disorders, such as depression, panic attacks, phobias, generalized anxiety disorder, obsessive-compulsive disorder post-traumatic stress disorder and disorder. Anxiety affects 16.6% of the world's population and many efforts have been made to comprehend the pathophysiology of the disease and its treatment. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), anxiety is characterized by a constant feeling of worry that hinders the ability of a person to relax.

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Generalized Anxiety Disorder (GAD) is characterized by excessive worries about problems in daily life and the presence of anxiety, fatigue, difficulty concentrating, irritability, muscle tension, and problems of sleeping. GAD has a lifetime prevalence of around 5%, with almost 9 million affected by adults in the United States. GAD is a recurrent disorder that often requires long-term therapy. Current psychopharmacological treatments for GAD include benzodiazepines and selective serotonin-reuptake inhibitors or serotonin-norepinephrine reuptake inhibitors (SSRIs / SNRIs), but some patients do not respond to this therapy, while others cannot tolerate side effects. As a result, individuals who suffer from anxiety usually look for complementary and integrative medicine, including herbal medicine products to treat this.

Based on limited research shows that chamomile and some of its flavonoid components may have anxiolytic and antidepressant activity. Chamomile tea and flavonoids consist in it, namely apigenin which binds to benzodiazepine receptors in the brain so that it can deal with anxiety disorders, depression, and impaired sleep quality. Chamomile's side effect profile may be very attractive to patients who cannot tolerate SSRI / SNRI, or those who prefer natural products or reject conventional pharmaceutics because of stigma and other socio-cultural reasons. Chamomile contains flavonoids, which exert benzodiazepine-like activity and also have phosphodiesterase inhibitory action, which leads to increased he levels of cAMP. Milk contains many amino acids tryptophan which is one of the basic ingredients of serotonin. Increasing awareness of nutritional needs for parents preventing mental decline and nutritional status can greatly improve the quality of life in the elderly.

Chamomile tea has the action of phosphodiesterase inhibition, which leads to increase in cAMP level. A recent study evaluates standard of efficacy extract of Matricaria recutita (L), compared to placebo for eight weeks in Indonesia patients with mild to moderate GAD (DSM-IV). There are statistically significant reduction in HAMA scores in the group treated with extracts compared with placebo treated group.

Study was conducted by Jun et al. in 2016, in 38-week randomized placebo-controlled trial, found that among respondents with chamomile tea therapy, the difference magnitude (about 50%) in time to relapse between chamomile and placebo. Research conducted in January et al. in 2009 found that there was a significantly greater reduction in total score of HAM-A during chamomile therapy versus placebo (p = 0.047). The results found that chamomile may have simple anxiolytic activity in patients with mild to moderate.

According to Miller, 2009 drinking warm milk before going to bed can help ease sleep and become an alternative choice to reduce sleep disorders in the elderly. Milk contains many amino acids tryptophan which is one of the basic ingredients of serotonin, so it is recommended to drink milk before bed so that the body can rest well. (Widodo et al., 2015)

Anxiety is uneasiness feeling, nervousness and fear, which can lead to a serious mental illness. Common anxiety symptoms are assessed using the Hamilton Anxiety Rating Scale (HAM-A), a commonly used measure of observer results that is well validated.

Very few studies have been carried out to date that evaluate the long-term safety and efficacy of herbal medicines for anxiety. No further researchers have been found related to the effectiveness of warm milk to anxiety in the elderly.

Based on this background, the researchers concluded that further studies are needed to clarify whether long-term chamomile extract and milk can be developed into a safe and effective therapeutic agent for the treatment of GAD in the elderly. the difference in the effectiveness of warm milk and warm chamomile tea still requires more explanation about the handling of anxiety disorders in the elderly so that researchers want to do further research.

2 MATERIALS AND METHODS

2.1 Study Area

The sample in this study was taken using a purposive sampling technique. The research subjects were the elderly at the Karya Kasih Panti Jompo who met the inclusion criteria. (Figure 1).

2.2 Procedures

This study will compare the effectiveness of giving warm milk and warm chamomile tea to anxiety in the elderly. Milk used is elderly milk according to the age of the respondent and chamomile tea used is processed tea from chamomile flowers. In this study, before the intervention will be carried out an assessment of anxiety for all respondents. After the intervention was carried out for 8 weeks, an assessment of anxiety will be carried out in all respondents and compared to the results of the assessment between the two groups that have been

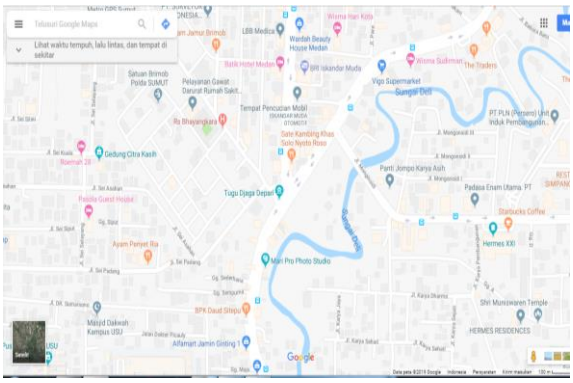

Figure 1: Location Yayasan Sosial Karya Kasih, Jl. Monginsidi No.Ujung, Anggrung, Medan Polonia, Kota Medan, Sumatera Utara 20157.

determined. This research was conducted for 8 weeks (5 August 2018 - 5 October 2018). The sample in this study was taken using a purposive sampling technique where the researcher chooses respondents in subjective and practical considerations (Sastroasmoro, 2017). The research subjects were the elderly in the Panti Jompo Kasih Kasih who met the inclusion criteria. The minimum required sample size is calculated based on the unpaired numerical comparative formula of two groups of one measurement (Dahlan, 2016). The criteria for drop out and must be excluded from the study is the frequency of treatment received by respondents is less than 80%. Patients are excluded from the trial if they have a current diagnosis major depressive disorder, bipolar disorder, panic disorder, phobic disorders, obsessive compulsive disorder disorders, post-traumatic stress disorder, acute stress disorder, induced substances anxiety disorders, psychosis, dementia, or substance abuse or internal dependence overtake 3 months. Other exclusion criteria are unstable medical conditions, liver or kidney insufficiency, malignancy, abnormal serum thyrotropin level ≥ 5 µIU / ml,or known sensitivity for chamomile, a plant from the asteraceae, mugwort, or birch pollen family. Use of anxiolytics, antidepressants, mood stabilizers, sedatives, is not permitted.

Patients are given approval based on ethical standards research ethics commission. Psychiatric history is obtained by using ICD-10 mini interview format. Evaluation of medical history, physical examination, which includes inspection blood pressure, pulse, and weight were obtained at each study visit.

Data was collected from direct measurements of anxiety using HAM-A questionnaire. The Hamilton Anxiety Rating Scale is a clinician-rated evaluation whose purpose is to analyze the severity of anxiety. The scale is intended for adults, adolescents, and children and should take approximately ten to fifteen minutes to administer. The Hamilton Anxiety Rating Scale is composed of fourteen items. A score of 17 or less indicates mild anxiety severity. A score from 18 to 24 indicates mild to moderate anxiety severity.

Lastly, a score of 25 to 30 indicates a moderate to severe anxiety severity. After 8 weeks of treatment in the group of warm milk, chamomile tea and the control group, data analysis will be carried out.

2.3 Data Analysis

The minimum sample size required is calculated based on the unpaired numerical comparison formula of the two groups in one measurement. The number of samples needed was 18 people in each treatment group by giving warm milk, chamomile tea and the control group.

The data obtained were analyzed using SPSS statistical test software. Then the analysis was carried out using an independent T-test.

3 RESULTS AND DISCUSSION

This study was conducted on 54 elderly people, namely 18 people were given warm milk intervention, 18 people were given intervention of chamomile tea, and 18 people as a control group. The frequency distribution of respondents included gender, type of treatment, and anxiety before intervention. The following describes the frequency of respondents based on gender, type of treatment, and quality of sleep before intervention.

Table 1: Subjects characteristics.

Characteristics	Frequency	Percent (%)
1. Sex		
Male	23	42,6
Female	31	57,4
Total	54	100
2. Intervention		
Milk	18	33,3
Chamomile tea	18	33,3
Control	18	33,3
Total	54	100
3. Baseline General Anxiety Disorder		
Mild	3	5,6
Moderate	51	94,4
Total	54	100

Based on table 4.1 shows that the number of male respondents is 23 people (42.6%) and women as many as 31 people (57.4%). The number of respondents in each type of treatment is the same, namely 18 people (33.3%). In addition, from the data concerning respondents' anxiety before being given an intervention, respondents who had anxiety in the mild category were 3 people (5.6%) and those who had seang anxiety as many as 51 people (94.4%).

Table 2: Differences in HAM-A on intervention group at baseline before get the chamomile, milk and control at the end of week 8.

Type Of Treatment	Pre test (Mean)	Frequency	Post test (Mean)	Frequency
1. Milk (n=1)				
Mild	20.00	1	18.33	3
Moderate	23.70	17	22.37	15
2. Chamomile tea (n=18)				
Mild	0	0	18.66	3
Moderate	23.88	18	22.06	15
3. Control (n=18)				
Mild	18.50	2	0	0
Moderate	23.62	16	24.11	18
Total		54		54

Based on table 4.2 shows the average anxiety in the elderly before intervention, namely 17 people in the warm milk group, 18 in the chamomile group, and 16 people in the control group. Likewise, it can be seen in the Delayed Score column, the moderately denied elderly, which is 15 people in the warm milk group, 15 in the chamomile group, and 18 in the control group. Through this table, it can be seen that the number of elderly questioned at a mild level is maintained, but there is an increase in the number of moderately complex elderly in each group given intervention.

Table 3: Differences in HAM-A scores on warm milk group at baseline and the end of week 8.

	Mean (SD)	*p value*
Pre test (n=18)	23.50 (2.09)	0.001
Post test (n=18)	22.00 (2.19)	

*T-independent test

Based on table 4.3 shows that the average score after giving intervention is a decrease of 23.50 to 22.00. Based on the results of the T-dependent test p value 0.001 (p <0.05) which means that there is a significant effect on the provision of warm milk to anxiety in the elderly, there is a significant increase after the intervention of warm milk.

Table 4: Differences in HAM-A scores chamomile tea group at baseline and the end of week 8.

	Mean (SD)	*p value*
Pre test (n=18)	23.88 (1.77)	0.001
Post test (n=18)	21.50 (1.54)	

* T-independent test

Based on table 4.4 shows that the average score after administration of intervention has decreased which is 23.88 to 21.50. Based on the results of the T-dependent test p value 0.001 (p <0.05) which means that there is a significant effect on the administration of chamomile tea to anxiety in the elderly.

Table 5: Differences in HAM-A scores control group at baseline and the end of week 8.

	Mean(SD)	*p value*
Pre test (n=18)	23.05(2.20)	0.001
Post test (n=18)	24.11(1.81)	

* T-dependent test

Based on table 4.5 shows that the average score of anxiety assessment after 8 weeks in the control group experienced an increase of 23.05 to 24.11. Through these results it can be said that respondents who were not given intervention experienced worsening worries.

Table 6: Differences in HAM-A score in Milk group changes between two groups.

Type of treatment	Mean(SD)	*p value*
Milk	22.00(2.196)	0.003
Control group	24.11(1.811)	

* T-dependent test

Based on table 4.6, the mean score before and after in the milk group is 22.00, while in the control group 24.11. In the T-independent test there were significant differences regarding changes in anxiety in the milk group and the control group (p = 0.003).

Table 7: Differences in HAM-A score in tea chamomile group changes between two groups.

Intervention	Mean(SD)	p value
Teh Chamomile	21.50(1.543)	0.001
Control	24.11(1.811)	

* T-independent test

Based on table 4.7 shows the mean before and after in the chamomile tea group is 21.50, while in the control group 24.11. In the T-independent test there were significant differences in anxiety in the elderly chamomile tea group and the control group (p = 0.001).

Table 8: Differences in HAM-A scores between General anxiety disorder who received low anxiety with the addition therapy and who only received chamomile tea and milk at the end of week 8.

Intervention	Mean (SD)	*p value*
Milk (n=18)	21.86 (2,32)	0.59
Chamomile tea (n=18)	21.50 (1,54)	

*T-independent test

Based on table 4.8 shows that the mean score before and after in the group giving warm milk is 21.86 and in the chamomile tea group is 21.50. Based on the results of the T-independent test showed that there was no significant difference regarding the administration of warm milk and warm chamomile tea to anxiety in the elderly.

Changes in the elderly include physical, social and psychological changes. Psychological changes in the elderly include short term memory, frustration, loneliness, fear of losing freedom, fear of facing death, changing desires, depression, and anxiety. (Maryam et al., 2008)

Based on the results of statistical analysis conducted, it can be concluded that there is a difference in the group of elderly who get the chamomile, milk and controls before the intervention test was performed on the HAM-A questionnaire assessment. Based on table 8, it was found that the difference in scores before and after in the milk group was 21.56 and in the chamomile tea group it was 21.50. Through the T-independent test also obtained p value of 0.59 (p> 0.05) which means that there is no significant difference regarding the provision of warm milk and chamomile tea to anxiety in the elderly. But there is a difference between pre and post feeding, namely the initial score of giving warm milk 23.50 to 22.00 while the initial score of giving chamomile tea 23.88 to 21.50. These results can be concluded that this study is in accordance with a study conducted by Jun et.al in 2016 which tested chamomile and placebo. But the effectiveness of anxiety about giving milk is still difficult to get supporting references that can be a reference in explaining the comparisons made in this study. But based on the results shown there were significant changes in anxiety given the treatment of the chamomile and warm milk every day for 8 weeks.

As an expected conclusion this study can be used as a reference material in handling anxiety in the elderly and provide additional knowledge of patients and families to improve anxiety in terms of non-pharmacological.

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