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PAT-979 660 EFFECTIVENESS OF AROMATHERAPY AND HAND MASSAGE ON ANXIETY AND BLOOD PRESSURE IN HYPERTENSIVE PATIENTS : A SYSTEMATIC REVIEW Rizky Asta Pramesti Rini 1 Faculty of Nursing, Universitas Airlangga, Surabaya, East Java, Indonesia E-mail: rizkyastapramestirini@gmail.com ABSTRACT Hypertension is systolic blood pressure equal to or above 140mmHg and or diastolic blood pressure equals or above 90mmHg. Stress and anxiety are the main risk factors for hypertension. Anxiety can stimulate the release of epinephrine hormone from the adrenal gland which can cause an increase in heart rate and narrowing of the blood vessels, to which it can increase blood pressure. Non-pharmacological treatment can be performed using aromatherapy and hand massage to determine changes in anxiety levels in hypertensive patients.

In journal articles with Quasi-experimental, Randomized Controlled Trial (RCT), and non-randomized controlled design, cross-sectional and intervention studies were taken through a search tool with a database called Scopus, Pub med, Science direct using the PICO framework method. A total of 15 articles were selected according to the inclusion criteria involving 14,406 participants. Significantly, aromatherapy and hand massage had a positive effect to reduce anxiety levels in hypertensive patients. Systematic review is considered sufficient to know the effectiveness of aromatherapy and hand massage on reducing the anxiety and blood pressure levels in hypertensive patients.

However, a systematic review assessment which focused on RCT research articles is required to determine the effectiveness of aromatherapy and hand massage. Keywords: aromatherapy, hand massage, anxiety, blood pressure

1. Introduction Hypertension is the most common cardiovascular disease and is a major risk factor for global disease load (World Health Organization, 2017). Hypertension is a condition in which systolic blood pressure is equal to or above 140mmHg and or diastolic blood pressure is equal to or above 90mmHg. Hypertension is a global

challenge with high levels of morbidity and mortality. Hypertension is multifactorial resulting from the influence of a combination between genetic and environmental factors.

Modified risk factors of hypertensive patients who experience high emotions are the increase of developing mental health disorders, especially anxiety and depression. Anxiety is a significant cause of increased blood pressure and is an independent predictor of hypertension (Sharma et al 2016). According to Kretchy et al (2014) hypertensive patients have symptoms of anxiety, stress and depression and show the influence of negative emotions on the treatment of hypertension. Anxiety is the main response to stressors.

In hypertensive patients, anxiety symptom is in the stage of the disease process. Anxiety factor can affect the severity of hypertensive patients. Anxiety affects the severity of hypertension and physiological effects including abnormal heart rate, blood pressure (BP), heart output, and heart rate which can cause severe procedural complications and worsen CHD symptoms (Lijuan Mei et al., PAT-979 661 2015). Hypertension can be treated by pharmacological or non-pharmacological methods.

Pharmacological treatment is long-term, used in treating hypertension in the form of diuretics, beta blockers, ACE inhibitors, angiotensin II receptor blockers, and vasodilators. Non-pharmacological treatment is used as a complement for pharmacological treatment. Thus, blood pressure can be controlled and maintained (Hikayati et al., 2012). Non-pharmacological treatment uses aromatherapy and hand massage to determine blood pressure changes and anxiety in hypertensive patients. 2. Method 2.1.

Literature Search Strategy The literature used in this Systematic review was obtained through 3 (three) electronic databases, namely: Scopus, Pubmed and Science Direct which published between 2006 and 2018. The keywords used in the article search technique were "Aromatherapy", "Hand massage", "Anxiety", and "Blood pressure". 2.2. Inclusion and Exclusion Criteria 3.4.1. Design of the Study The design of the study which became the inclusion criteria on this Systematic Review was anxiety and published in English. 3.4.2. Population Population in this Systematic Review includes: 1.

All studies indicated patients who received aromatherapy interventions and hand massage with or without a control group 2. Men and women > 25 years old 3. Finding the effect of aromatherapy and hand massage on anxiety in hypertensive patients Studies identified through Keywords data based searching Scopus N:13.000 Pubmed N: 1.263, Science Direct N:143 Studies excluded due to duplication N:585 Full text article

for assessed for eligibility N:139 Record exclude based on title and abstract N:13.682 Studies randomized trial included in systematic review N:15 Full text article exclude with reasons N:124 PAT-979 662 2.3.

Intervention Various types of aromatherapy interventions and hand massages which affected anxiety and blood pressure against various types of related diseases. 2.4. Clinical Results The main result as well as the main objective of this systematic review was to know the effect of aromatherapy interventions and hand massage on anxiety and blood pressure. The studies contributed to this research were used without any limitation of time for the duration of the intervention. 2.5. Studies Selection The standard applied to select the studies as suggested in the systematic review method guide was PRISMA.

The steps were as follows: 1. Removal of duplication 2. Independent examination for titles, abstracts and keywords and removing irrelevant quotes according to inclusion criteria 3. If the title and abstract seemed to meet the inclusion criteria and in accordance with the objectives of the systematic review, the next step was selecting the journals with full text 4. The final step was selecting journals which used aromatherapy and hand massage to reduce bias. 2.6. Data Extraction The data was extracted from each study which met the requirements.

The extracted data included the characteristics of aromatherapy and hand massage toward anxiety, characteristics of results and summary of results. 2.7. Data Analysis The studies were grouped according to the effects of aromatherapy and hand massage on anxiety. If possible, the studies were then grouped by time, follow-up and control group type. 3. Results 3.1 Literature Search and Studies Selection In figure 1, in summarizing the search results and selecting the studies, this research adopted PRISMA guidelines (Liberati et al. 2009).

The selection of journals based on the keywords used resulted in 14,406 potentially relevant studies, 585 duplications were deleted and 13,682 titles and abstracts found were traced. A total of 139 studies with full text were obtained with 124 studies excluded because they did not meet eligibility criteria, namely did not use English, not intervention. Eventually, 15 studies were selected for systematic review. 3.2 Population The samples of 15 studies used in this systematic review indicated that the minimum number of the sample was 14 women with ages ranging from 18-20 years to parasympathetic autonomic activity, while the highest number of samples is 891 in hypertensive patients.

Patients with following conditions were involved as samples in this research:

Hypertension, PAT-979 663 Dementia, Coronary Angiography, Acute Coronary Syndrome, myocardial infarction, patients who would undergo surgical procedures, disorders of parasympathetic nerve activity. 3.3 Clinical Result Measures Research indicated that result measures used to assess anxiety were: DASS (Depression Anxiety Scale), MMSE (Mini Mental State Examination), HARS (Hamilton Anxiety Rating Scale), VAS (Visual Analog Scale), SRAS (Self Rating Anxiety Scale), STAI (State AND Trait Anxiety Inventory) and AAS (Average Anxiety Score) 3.4 The Effect of Aromatherapy and Hand Massage on Anxiety 3.4.1.

Aromatherapy Inhaling essential oils has a direct and sustained effect on blood pressure during the day, and stress reduction. Essential oil has a relaxing effect to control hypertension (Kim et al., 2012). SAS scale can evaluate anxiety levels in hypertensive patients as much as 12% (Tie et al.2006). According to Zahra et al, (2014) Aromatherapy inhalation with lavender aroma could reduce anxiety in patients with myocardial infarction. Thus, health care providers, especially nurses, can use this inhalation scent to improve anxiety management after myocardial infarction. 3.4.2.

Hand Massage Hand massage effectively relieves anxiety without side effects among patients with coronary angiography (May et al., 2015). Hand massage is a simple, comfortable massage, and done with relaxation. For people who are experiencing stress, having difficulty maintaining a personal relationship with others, hand massage may be beneficial to reduce pain because it has a relaxing effect and reduces anxiety (kunikata et al., 2012). According to Nayoung et al (2015) hand massage and music therapy can reduce anxiety and improve sleep quality in elderly women. 4.

Discussions The researchers conducted a systematic review using RCT design, Cross sectional, non- random, and quasi-experimental to determine the effect of aromatherapy and hand massage on anxiety. Fifteen studies were examined to know the relationship between aromatherapy and hand massage. There are several important findings regarding the effectiveness of aromatherapy and hand massage, including: 4.1. Aroma therapy Aromatherapy is a therapeutic use of essential oils from plants. Essential oils can be absorbed into the body through the skin or the olfactory system. Olfactory stimulation results in changes in physiological parameters such as blood pressure.

According to Zahra et al (2014) after administration of aromatherapy, anxiety in the experimental group was significantly lower than the control group. he s ca n lva y ortsollves 0.02 g dfrom0.16µg L o 0.14 µg L. 4.2. Hand Massage Hand massage on autonomic activity and anxiety decreased significantly by (P <0.01) (Kunikata et al 2012). Hamilton anxiety score in hand massage group showed that there was a significant decrease of (P <0.1). After filling out the DASS -21 questionnaires, most (72.5%) of the PAT-979 664

hypertensive patients were aware of the symptoms of complications regarding psychological symptoms, mild to severe depressive symptoms, anxiety 70% and 10% stress. 5.

Conclusion **Aromatherapy and hand massage** are complementary therapies which can be performed to reduce anxiety in hypertensive patients. In addition to pharmacological therapy, this **therapy can be used as an adjunct** to treat hypertensive patients.

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