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#### The effectiveness of acupressure on depressive symptoms among nursing students

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#### Abstract

**Background:** The post-pandemic period of covid 19, the biggest cause of loss of income for parents of students, this can make students experience distress and depression. Symptoms of depressive disorders in adolescent students will have an impact on almost all activities on campus and will get worse if left untreated, the recommended form of treatment is complementary therapy such as acupressure therapy.

Purpose: To determine the effectiveness of acupressure on depressive symptoms among nursing students.

**Method:** Quasi-experiment with pretest-posttest one group design measuring depression using Beck Depression Inventory parameters, sample calculation using the Slovin formula, the number of samples used in this study were 20 participants.

**Results:** The average BDI score before acupressure was 26.80 in the moderate depression category, the average BDI score after acupressure was 19.00 in the mild depression category. The results of the statistical test obtained a p value = 0.001 < 0.05 which means that acupressure is effective in reducing depression levels.

**Conclusion:** After undergoing acupressure tonification massage therapy 30 times per session, 3 sessions per week for 4 consecutive weeks, it can reduce the level of depression.

Keywords: Acupressure Therapy; Depression; Nursing Students.

#### INTRODUCTION

Depression is a disorder of thought processes and content characterized by sadness, loss of hope and loss of interest in almost all activities. The estimated incidence of depression worldwide is 280 million (World Health Organization, 2023). Depression can impact all aspects of life including family, relationships and community. Depression can originate or be triggered by problems at school or in the work environment. The prevalence of depression in Indonesia at the age of over 15 years is 6.2% or as many as 19 million people experience mental emotional disorders of depression. Depression is the most common cause of mental health disorders in Indonesia (Ministry of Health of the Republic of Indonesia, 2018; Purborini, Lee, Devi, & Chang, 2021; Brooks, Prawira, Windfuhr, Irmansyah, Lovell, Syarif, & Bee, 2022).

Depression has been the number one mental health disorder for three decades. The prevalence of depression according to the literature has increased by 7 times during the Covid 19 pandemic (Bueno-Notivol, Gracia-García, Olaya, Lasheras, López-Antón, & Santabárbara, 2021 13 astaldelli-Maia, Marziali, Lu, & Martins, 2021). The Covid 19 pandemic has an impact on various sectors, including higher education. Campus closures and restrictions on social interaction, more massive use of social media (Sadeghi, Fors, Eisner, Taigman, Qi, Gorham, & Nielson, 2022; Papademetriou, Anastasiadou, Konteos, & Papalexandris, 2022). Based on regulations issued by the Ministry of Education of the Republic of Indonesia, learning methods are carried out entirely online to prevent the spread of covid 19. At the beginning of the pandemic, learning for students in higher education was conducted online.

Limited interaction with friends and colleagues creates social pressure for individuals. Based on Erik Erikson's developmental tasks, during this developmental period there will be an identity crisis that can affect the developmental tasks of this stage. In accordance with one study which states that good relationships with friends and peers can form a positive personality (Rageliene, 2016). The highly contagious Covid 19 is also a health threat. It can be a trigger for depressive disorders where health threats and stressful life events correlate with depressive symptoms (Stikkelbroek, Bodden, Kleinjan, Reijnders, & van Baar, 2016). In the post-pandemic covid 19 learning has started to return offline and especially nursing students in addition to learning theory in the classroom offline, clinical learning in hospitals has been carried out fully and offline. This can be a stressful condition for nursing students. Economic conditions that have not improved after the Covid 19 pandemic also have a lot of impact on students, including many students in arrears for tuition fees or practical fees which can cause new problems and have the potential to make students experience depressive disorders.

This depression, if left untreated, can become major depression and the most feared outcome of depression is attempted suicide. Suicide is the fourth most common cause of death in the age range of 15 -29 years. Some recent viral cases such as a family suicide on March 9, 2024 in Teluk Intan Apartment and a family suicide in Malang in 2023 were caused by prolonged depression (Jati & Trinugroho, 2024; Werdiono & Firdaus, 2023). This shows that depression must be intervened. Depression can be treated with selective serotonin reuptake inhibitor (SSRI) drugs such as fluocetine (Santarsieri, & Schwartz, 2015). The 2018 Riskesdas data states that only 9% of depressed patients were treated and the majority or 91% of depressed patients were not treated. Apart from the use of drugs, depression can also be treated psychologically using behavioral therapies such as behavioral activity therapy, problem solving therapy, interpersonal therapy, and also cognitive behavior therapy which the author has researched but the results of his research are still not effective (Jatnika, Badrujamaludin, & Ismafiaty, 2023). The results of a preliminary study conducted by the author obtained data on 64.8% of level I nursing students at Fitkes Unjani experiencing symptoms of

depression during the Covid 19 pandemic with a distribution of 20.4% experiencing mild depression, 24.0% experiencing moderate depression and 20.4% experiencing severe depression. The author is determined to continue to make efforts to overcome the problem of depression in nursing students considering that the incidence of depression in nursing students is very high by using other interactions, namely acupressure therapy.

Acupressure therapy is a therapy at acupuncture points without using needles but with massage using fingers. Acupressure is a therapy that is easy to do, safe, and does not cause side effects such as the use chemical drugs (Goel, 1999; Gach, 2011). Acupressure therapy can be done by massaging the body's meridian points (Weiss-Farnan, 2009; Indrayani, & Antiza, 2021). Acupressure therapy is considered an alternative therapy of choice, can be done by the client himself and is certainly cheap and tends to have no adverse side effects (Adams, Eschman, & Ge, 2017; Lestari, 2022). The lack of research examining the effectiveness of acupressure therapy and the lack of application of scientific methodology based on research is the reason for researchers to examine more deeply the effectiveness of acupressure therapy in treating depression. The selection of acupressure therapy for depression intervention in nursing students is in line with the excellence of the undergraduate nursing science program in the field of holistic therapy and home care.

#### 19 RESEARCH METHOD

Quasi-experimental with a pretest-posttest one group design, which was given acupressure therapy intervention. Then depression measurements will be carried out using the Beck Depression Inventory parameters befor after acupressure therapy was given. This study was conducted from June to August 2024 at the Complementary/Holistic Laboratory of the Faculty of Health Sciences and Technology, Jenderal Achmad Yani University.

Participants in this 18 by were undergraduate nursing students at the Faculty of Health Sciences and Technology, Jenderal Achmad Yani University. The sample size was determined using the Slovin formula, obtained as many as 20 participants. Having criteria for mild and moderate depression symptoms, and willing to be participants; while the exclusion

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criteria are: Students with severe mental disorders such as psychosis, and students who are not committed to following all stages of the intervention.

The instrument to assess 172 level of depression in nursing students uses the Beck Depression Inventory (BDI) II. The instrument consists of 21 statements 11elt by respondents in the last 2 weeks based on the diagnostic statistical manual for mental disorder, fifth edition, revised text (DSM-5-TR) (American Psychiatric Association, 2022). BDI is the most widely used instrument to assess depressive disorders and has been proven with validity having an average correlation coefficient of 0.72 for the population of psychiatric disorders and reliability of 0.93 (Jackson-Koku, 2016). BDI scale 0 for no symptoms, scale 3 for the most severe symptoms for all 21 statement items so that the maximum BDI score is 63. The level of depress is determined based on the respondent's score if a score of 0 -13 indicates minimal depression, a score of 14 - 19 indicates mild depression, a score of 20 - 28 indicates moderate depression and a score of 29 - 63 indicates severe depression. According to the BDI guidelines, it is stated that someone with a score of 11 and above is indicated to have symptoms of depressive disorder.

Acupressure therapy is carried out by massaging using the fingers which will smooth the flow of the

body's vital energy, which stimulates the secretion of neurotransmitters and adrenocorticotropic hormones and endorphin-mediated mechanisms, thereby reducing anxiety and depression. The strength of the acupressure massage given is 3 kg (Lin et al., 2016). Acupressure therapy in treating depression is carried out by researchers who are experts in their field of excellence in holistic therapy and home care, and have attended level 4 acupressure training and have also been certified by BNSP as acupressure therapists.

Participants took acupressure massage intervention at the SP 6 acupuncture point as many as 30 times clockwise massage per session, as many as 3 sessions per week for 4 consecutive weeks.

Measurement of depression disorders using the Beck Depression Index (BDI) was given 1 week before the intervention and 28 days after the intervention. Data analysis used a dependent t-test. The analysis was performed using SPSS version 22.00 for Windows.

This research hat2 net good clinical practice and its implementation has received approval from the Health Research Ethics Commission of the Faculty of Health Sciences and Technology, Jenderal Achmad Yani University, Cimahi with the number: 09/KEPK/FITKes-Unjani/X/2024.

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#### RESEARCH RESULTS

Table 1. Characteristic of Participants and Intervention Evaluation Results (N=20)

Variable	Results	p-value
Characteristic of Participants		
Age (Mean+SD)(Range)(Year)	(18.85±0.489)(18-20)	
7		
Gender (n/%)		
Male	4/20.0	
Female	16/80.0	
Depressive Symptoms (n/%)		
Before Intervention		
Severe	6/30.0	
Moderate	14/70.0	
After Intervention		
Moderate	9/45.0	
Mild	11/55.0	
Beck Depression Inventory (BDI) Score		
Before Intervention (Mean±SD)(Range)	$(26.80 \pm 3.622)(21-34)$	
After Intervention (Mean±SD)(Range)	$(19.00 \pm 0.022)(21.04)$	0.001
Difference (Mean±SD)(t)(df)	$(7.800 \pm 2.847)(10-26)$	0.001
Dilloronoc (Mean±OD)(t)(di)	(1.000 ± 0.01+)(0.00+)(19)	

As can be observed from the data presented in the table above, the mean age of participants was 18.85  $\pm\,0.489$ , with the majority of participants being female (80%). Prior to the intervention, the majority of participants exhibited moderate depression (70%), while after the intervention, the majority exhibited mild depression (55%). The BDI score prior to the intervention exhibited a mean and standard deviation of (26.80  $\pm\,3.622$ ), while the post-intervention score demonstrated a mean and standard deviation of (19.00  $\pm\,2.847$ ). The statistical test yielded a p-value of 0.001, which is less than the alpha value of 0.05. This indicates that acupressure therapy is an effective method for reducing depression.

#### DISCUSSION

The results demonstrated that, prior to the administration of acupressure therapy, the mean depression score based on the Beck Depression Inventory (BDI) II for the 20 participants was 26.80, indicating a moderate level of depression. Following the implementation of acupressure therapy, the mean

depression score based on the BDI II for the same participants was 19.00, indicative of a mild depression category. This illustrates a reduction in the mean depression score for nursing students by 7.8 points. The results of the bivariate analysis indicate that the p-value is 0.001, which suggests that acupressure therapy is an effective intervention for reducing depressive symptoms.

The results of this study are in accordance with the literature review of Komariah et.all, which states that acupressure therapy significantly has a large effect size in overcoming depression, besides that acupressure therapy can reduce several health problems including overcoming dysmenorrhea, anxiety and stress, overcoming stress and sleep status, relieving postpartum pain, reducing nausea and vomiting, enuresis frequency, lowering blood pressure, restless leg syndrome degree, reducing headache levels, and type 2 diabetes mellitus (Komariah, Mulyana, Maulana, Rachmah, & Nuraeni, 2021).

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Depressive disorders can be triggered by biochemical, genetic, personality and environmental risk factors (Ramadhanti & Budiyani, 2024). Some of the risks that increase the prevalence of depression in adolescents include biochemical disorders. decreased serotonin, negative interpersonal relationships, unsupportive social conditions and poor environment (Bernaras, Jaureguizar, & Garaigordobil, 159). Symptoms of depressive disorder include changes in eating habits, weight gain or loss, hypersomnia or insomnia, inability to make decisions or problem solve, impaired concentration, inability to cope with daily life, feeling worthless, hopelessness, extreme fatigue, pessimistic thinking, guilt or despair, even suicide (Videbeck, 2021). Depressive disorders are the most common disorders, with the highest onset in adolescents (Petito, Pop, Namazova-Baranova, Mestrovic, Nigri, Vural, & Pettoello-Mantovani, 2020). Depressive disorders are a critical problem in society and if they occur in adolescents will be a challenge in handling them considering that at this stage of development there is rapid psychological, intellectual and emotional development (Jamaludin, Wook, Noor, & Qamar, 2021).

Acupressure is the act of massaging the meridian points of the body which aims to smooth the flow of vital energy of the body so that there is a balance between the Yin and Yang elements of the body. Acupressure is a complementary therapy, along with acupuncture which is easy to learn, can be done alone for pain management, does not require expensive costs and does not require a large room to perform therapy (Adams, Eschman, & Ge, 2017). According to the basic theory of acupressure, the cause of disturbances in the body can be caused by blockages in the flow of vital energy in the body's meridians. Acupressure therapy can re-launch the flow of vital energy and the body returns to a balanced or healthy state, there are 6 meridian points or acupoints that can be used in depression therapy in hemodyalisis patients including points SP 6, ST 36, GB 34, Ki 1, BL 23 and HT 7 with a massage for 20 minutes per session consisting of 2 minutes of overall surface massage and 18 minutes of massage at 6 meridian points with a duration of 3 minutes each, 3 to es a week for 4 consecutive weeks with the results there is a difference in the mean depression score in the intervention group although the results of the comparison between the control and placebo groups

did not find significant differences (Kalani, Aghababaeian, Majidipour, Alasvand, & Bahrami, 2019). Research at the Zabol Special Patient Clinic stated that acupressure intervention is proven to effectively reduce depression and anxiety of patients undergoing hemodyalisis at point SP 6 for 8 minutes 3 times a week for 4 weeks (Dehghanmehr, Sargazi, Biabani, Nooraein, & Allahyari, 2020). The most widely used acupoint is point SP6 or sin yin jiao acupoint which is the Yin meridian of the foot with the acupoint location at 3 cun (4 fingers) above the inner ankle. Depressive conditions usually make a person become less interested or called Yin conditions so it is recommended to do a tonification massage for 30 massages per session, as many as 3 sessions per week for 4 consecutive weeks.

Acupressure has been demonstrated to alleviate depressive symptoms by stimulating specific points on the body, which are thought to enhance energy flow and relieve tension (Saras, 2023). The mechanism of action of acupressure in the reduction of depressive symptoms can be explained by reference to a number of factors. By applying pressure to specific points on the body (acupuncture points), acupressure can stimulate the nervous system and affect the flow of energy (qi) within the body. This can help to reduce tension and improve overall well-being. The stimulation of acupoints is believed to influence the strength and flow of energy (gi), thereby enhancing the vitality of the body's organs and promoting overall health (van Bussel, Spitz, & Demyttenaere, 2009).

Acupressure can trigger the release of endorphins, hormones that act as painkillers and can improve mood. Stimulation of acupressure points increases impulses in the nervous system, which are passed on to the central nervous system. The central nervous system will stimulate the pituitary and endocrine systems. The pituitary gland will secrete the hormone endorpin and the autonomic nervous system by increasing the parasympathetic nervous response and decreasing the sympathetic nervous response and/or decreasing the impulse in the nervous system to reduce pain (analgesic), increase behaviour in response to stress, improved and restore the function of visceral organs such as the cardiovascular system, gastrointestinal system, urinary system and genital system, improve the immune system, promote healing, inhibit ageing and maintain balance and

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maintenance of vital signs (Verma, Chandni, Sharma, Sharma, & Singh, 2024; Senudin, Syamsuddin, & Nurdin, 2019).

By stimulating specific points, acupressure can help reduce levels of cortisol, a stress hormone often linked to depression. The technique can also improve blood circulation, which supports physical and mental health. The process of acupressure often involves relaxation techniques, which can help increase self-awareness and reduce symptoms of depression (Lee, Kim, & Park, 2021; Aulya, 2023). While acupressure can be beneficial, it is important to remember that it is not a substitute for more comprehensive medical treatment for depression.

#### CONCLUSION

This study shows that there is a decrease in depression levels in nursing students using acupressure therapy, so that acupressure therapy is effective for reducing depression levels. acupoint SP6 or sin yin jiao at 3 cun (4 fingers) above the inner ankle, tonifying massage 30 times massage per session, as many as 3 sessions per week for 4 consecutive weeks, launches the flow of vital energy of the body, which stimulates the secretion of neurotransmitters and adrenocorticotropic hormone and endorphin-mediated mechanisms, thereby reducing depression levels.

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