INTEREST: Jurnal Ilmu Kesehatan
Vol. 13, No. 2, November 2024
https://doi.org/10.37341/interest.v13i2.688

Original Research

The Influence Of Spiritual Emotional Freedom Technique On Cortisol Levels in Ischaemic Stroke Patients

Aria Nurahman Hendra Kusuma[1]*, Dwi Pudjonarko[2], Untung Sujianto[3]

[1] Doctoral Student, Medical and Health Sciences Doctoral Study Program, Diponegoro University, Semarang, Indonesia
[2,3] Lecturer in the Medical and Health Sciences Doctoral Study Program, Diponegoro University, Semarang, Indonesia

ABSTRACT

Background: *Ischaemic stroke patients experience an increase in cortisol of 38% over 90 days. The spiritual emotional freedom technique (SEFT) provides manual stimulation of acupuncture points, which makes the muscles feel relaxed so that they can control cortisol. This study set out to assess how SEFT affected the cortisol levels in patients who had suffered an ischaemic stroke.*

Methods: *A control group and pre- and post-test measures were part of the quasi-experimental research design. There were seventy-one patients in the research population of the study. The sample was measured using the Slovin formula, and the sampling strategy used was purposeful sampling. Over the course of three months, the intervention group had 12 sessions of SEFT once a week, whereas the control group received regular spiritual treatment from RSUD Dr. Moewardi Surakarta, an outpatient nurse. The ELISA method was used to measure cortisol levels. The Kolmogorov-Smirnov test was used to assess normality, and the Levene test was used to test for homogeneity in bivariate data. The Mann-Whitney method was used to analyze the data.*

Results: *The mean cortisol before intervention was 119.63, and the mean cortisol after intervention was 99.23. SEFT affects cortisol levels in patients who have had an ischaemic stroke, according to a statistically significant ($p<0.05$) p-value of zero.*

Conclusion: *Patients with ischaemic stroke experienced a significant drop in cortisol levels after using the SEFT. Furthermore, it is necessary to study the dominant factors that influence the cortisol hormone and the need for a multi-religious approach in an effort to develop spiritual-based interventions.*

ARTICLE HISTORY
Received: November 18th, 2024
Accepted: November 25th, 2024

KEYWORDS
cortisol levels, spiritual emotional freedom technique, stroke ischemic;

CONTACT
Aria Nurahman Hendra Kusuma
✉
ariaperawat@gmail.com
Undip Faculty of Medicine old dean building, 2nd floor Education zone complex, Dr. Kariadi Hospital. Jl. dr. Sutomo no. 18, Semarang, Indonesia 50244.

Cite this as: Nurahman Hendra Kusuma, A. ., Pudjonarko, D. ., & Sujianto, U. (2024). The Influence Of Spiritual Emotional Freedom Technique On Cortisol Levels in Ischaemic Stroke Patients. *Interest: Jurnal Ilmu Kesehatan*, *13*(2), 150–160. https://doi.org/10.37341/interest.v13i2.688

INTRODUCTION

A stroke is an emergency that must be helped immediately. According to the WHO in 2018, stroke caused the second death and became the main cause of disability by 87%. Currently, worldwide, 80 million people suffer from stroke, and 5.5 million people die each year, including 116 million years of disability. Reduced functioning is the root cause of disability, which can result in long-term health problems that make it difficult to carry out daily duties. Stroke patients who experience disability can have negative perceptions.

In the setting of their biopsychosocial life, patients have unfavorable perceptions about their future that cause them to feel pessimistic, anxious, and even depressed (Jambi et al., 2024). Anxiety can activate the hypothalamus-pituitary adrenal axis; through the hypothalamus, it will stimulate corticotropin-releasing hormone (CRH). Furthermore, CRH will increase the sympathetic adrenal medullary axis's secretion, which will activate the adrenocorticotropic hormone (ACTH). The adrenal cortex will release the hormone cortisol as a result of this mechanism (Mbiydzenyuy & Qulu, 2024). The hypothalamus controls the production of cortisol, a glucocorticoids that acts as an adaptive mechanism in response to stress.

Stroke patients experienced a 38% increase in cortisol over 90 days (Ilanchetchenni et al., 2024). Stroke patients with increased cortisol levels were associated with higher dependency outcomes, length of stay, depression, delirium, and death (Amalia, 2024). Serum cortisol was higher in ischaemic stroke patients who died from week 1 to week 24 compared to ischaemic stroke patients whose cortisol was normal (Saini et al., 2023). Measured on the first day after hospitalisation, cortisol levels are predictive of the severity of a stroke 90 days and a year later (Bath et al., 2022). Stroke patients with elevated cortisol levels are associated with higher dependency outcomes, length of hospital stay, depression, delirium, and mortality (Wang et al., 2024).

The Spiritual Emotional Freedom Technique is a method that might successfully reduce cortisol levels. SEFT is a supplementary mind-body therapy that includes relaxation techniques. By tapping on particular meridians within the body, this approach combines spiritual elements with the body's energy systems. SEFT therapy works on the principle that less is more, the same as acupuncture and acupressure (Fadli et al., 2020). SEFT stimulates manually at acupuncture points that make the muscles feel relaxed; this relaxing effect will spread stimulation to the hypothalamus so that the soul and the body's organs feel tranquillity and comfort.

This situation will suppress the sympathetic nervous system, resulting in the production of the hormones epinephrine and norepinephrine gradually decreasing, which has the opportunity to control the hormone cortisol (Firmansyah et al., 2021). The short intervention capabilities of SEFT make it beneficial since they enable practitioners to evaluate behavioral changes quickly. In addition to its therapeutic uses, SEFT is simple to use and accessible to people with severe anxiety disorders. This method is intended to improve behavioral reactions, emotional stability, and mental health (Krisnawardhani, 2021).

SEFT therapy has proven to be effective in helping people deal with and overcome stress brought on by outside pressures. In addition, SEFT therapy can reduce the risk of physical health disorders such as blocked blood vessels and heart problems and has a positive psychological impact in preventing the onset of mental illness or disorders (Fadli et al., 2020). SEFT can free the flow of energy in the body and free

feelings from various negative conditions (Kurnianingsih, 2021). Non-compliance with medical rehabilitation programs for stroke patients due to anxiety, as evidenced by increased cortisol, is a problem greater in stroke sufferers (Nelsone et al., 2023; Amalia, 2024).

Based on research results Yoo (2022), ischaemic stroke patients who do not comply with rehabilitation will increase the risk of recurrent strokes and even death (Yoo et al., 2022). Lowering cortisol levels and reducing anxiety require interventions such as SEFT therapy. Researchers are therefore eager to find out how the spiritual emotional freedom technique affects the decrease of cortisol hormone levels in ischaemic stroke patients.

MATERIALS AND METHOD

SEFT affects cortisol levels in patients who have had an ischaemic stroke, according to a statistically significant ($p < 0.05$) p-value of zero. This study used a quasi-experimental design with a control group and a pre-test and post-test framework. At the outpatient department of RSUD Dr. Moewardi Surakarta, 71 ischaemic stroke patients participated in the study. A successive sampling strategy was used to gather the data, and the Slovin formula was used to calculate the sample size. This resulted in 60 participants, 30 of whom were in the experimental group and 30 of whom were in the control group. Over the course of three months, participants in the intervention group underwent 12 sessions of SEFT therapy, which was given by researchers once a week.

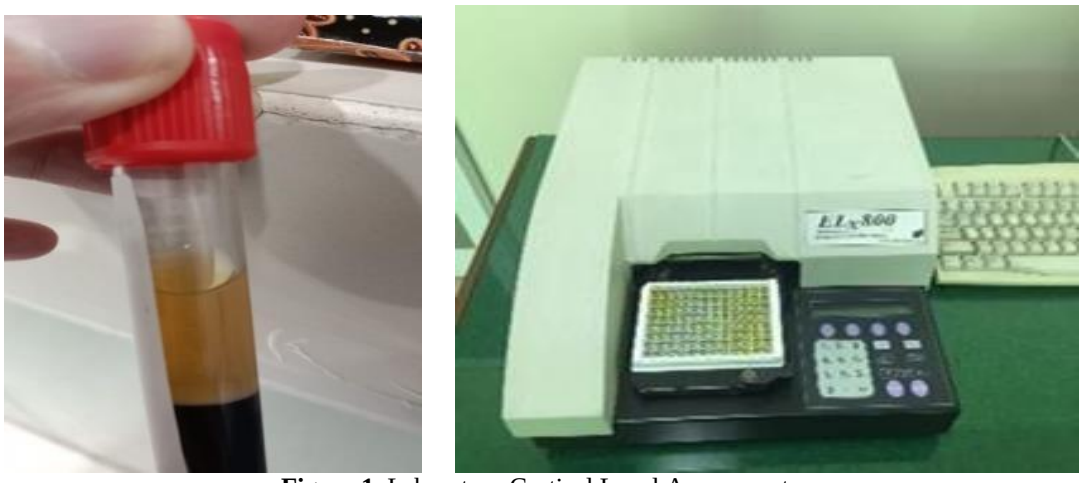

Figure 1. Laboratory Cortisol Level Assessment

In this study, nurses from RSUD Dr. Moewardi Surakarta took venous blood samples. Laboratory staff from Diponegoro University's Faculty of Medicine in Semarang performed the cortisol level analysis. After the researcher explained the study, its methods, and other pertinent information to the participants, the respondents signed a consent form, and the research officially began. To determine their cortisol levels, participants in the control and intervention groups completed an initial evaluation.

While the control group received regular spiritual treatment from the nurses, the experimental group received SEFT. All individuals in both groups had their post-test cortisol levels assessed at the end of the session. The researchers gathered information about the respondents' attributes. Meanwhile, to fulfil the research requirements, an

ethics clearance letter must be obtained from the Ethics Committee of Dr. Moewardi Surakarta Hospital with permit number 1.012/VII/HREC/2022.

RESULTS

The frequency distribution of respondent characteristics involved 60 ischemic stroke patients consisting of 30 intervention groups and 30 control groups.

Table 1. Frequency distribution table of individual characteristics

Qualities	Category	Group			
		Intervention (n=30)		Control (n=30)	
		(n)	(%)	(n)	(%)
Age	21-40 years old	5	83,3	1	16,7
	41-60 years old	25	46,3	29	53,7
Gender	Female	12	54,5	10	45,5
	Male	18	47,4	20	52,6
Education	Primary school	7	50	7	50
	Middle School	6	35,3	11	64,7
	The Upper Secondary School	14	63,6	8	36,4
	Diploma	2	100	0	0
	Bachelor	1	20	4	80
Family Support	Low	0	0	2	100
	High	30	51,7	28	48,3

Based on the information in Table 1, a sizable percentage of the intervention group's respondents—25 people, or 46.3% of the total—were between the ages of 41 and 60. Likewise, the control group, which consisted of 29 people, or 53.7% of the total, likewise showed a majority in this age bracket. According to the distribution of respondents by gender, there were 18 male respondents (47.4%) in the intervention group and 20 male respondents (52.6%) in the control group.

In terms of educational background, the majority of the participants in the intervention group—14, or 63.6%—were high school students, while the majority of the participants in the control group—11, or 64.7%—were junior high school students. Additionally, the most typical family support. According to the pre-test cortisol data, the homogeneity evaluation using Levene's test produced a value of 0.010 with a significance level of 0.921. This finding implies that there is uniformity in the data from the two groups. Since the value is more than 0.05, we can conclude that the two groups have statistically equal mean values, making the comparison between them significant.

The significant value of 0.000 from the Kolmogorov-Smirnov test for normality, on the other hand, showed that the post-test cortisol values did not follow a normal distribution. Thus, for the comparative study, the Mann-Whitney test was used.

Table 2. Mann Whitney Test (N=30)

Variable	N	Mean	Median	SD	Min	Max	U	p-value
Pre Cortisol (Intervention)	30	119,63	113,50	54,165	42	265		0,934

Variable	N	Mean	Median	SD	Min	Max	U	p-value
Pre Cortisol (control)	30	120,83	112,50	57,032	43	242		
Post Cortisol (Intervention)	30	99,23	100,50	43,540	51	239	313,000	0,043
Post Cortisol (control)	30	127,70	110,00	63,918	30	263		

According to Table 2, the intervention group's mean pre-cortisol level was 119.63 (SD=54.165), higher than their post-cortisol level of 99.23 (SD=43.540). The control group, on the other hand, had a lower average pre-cortisol level of 120.83 (SD=57.032) than their post-cortisol level of 127.70 (SD=63.918). These results imply that the intervention group's cortisol levels may drop as a result of using the spiritual emotional liberation technique. There were no discernible variations between the intervention and control groups' pre-cortisol levels, as indicated by a 0.934 ($p > 0.05$) result. However after the intervention, there was a statistically significant difference in post-cortisol levels between the two groups, with a significance value of 0.043 ($p < 0.05$).

DISCUSSION

Characteristics of Respondents

This research also found that the majority were 41-60 years old. This is the same as Masriana's (2021) research, which states that older respondents are aged >35 years, remembering that as they get older, their memory ability and motivation for healthy behaviour will also decrease (Masriana et al., 2021). Cortisol levels are higher in older adults compared to younger adults. Higher cortisol levels are associated with poorer cognitive memory outcomes, resulting in negative emotional reactions (Gutchess et al., 2020).

According to researchers, having lower cortisol levels is adaptive for memory as we age. Older people are more susceptible to stress and adaptation because along with ageing, allostatic efficiency decreases, which can ultimately compromise homeostasis and produce an abnormal response. Older patients are more sensitive to increased glucocorticoid content related to the response to stress, which is accompanied by increased cortisol in response to ACTH in older than young patients (Sunarno, 2019).

Based on gender, the majority of this study is male. The level of stress in male workers is higher than in women through indicators of cortisol hormone levels (Sumardiyono, 2020). Male patients experiencing stress show increased hypothalamic-pituitary-adrenal activity and upregulation of mineralocorticoid receptor expression in depression, while female patients show hypothalamic-pituitary-adrenal activity and lower mineralocorticoid receptor expression (Teo et al., 2023).

However, this is contrary to the research results of Wilujeng, (2023) that there are differences in responses between men and women when facing stress (Wilujeng et al., 2023). Stress causes the release of the hormone cortisol, which in turn causes feelings of fear and anxiety, according to the female brain's negative alert reaction to stress. Meanwhile, men are better able to cope with and enjoy stress and competition and even think that stress can provide positive encouragement. It can be said that when women are under pressure or have conflict, they will experience stress more easily.

Patients typically have very high levels of education, particularly at the high school level. This remark is consistent with the research findings of Sri Enawati et al.

(2022), which show that most respondents have completed high school. A high level of education in the patient will form an adaptive pattern in dealing with anxiety because the coping pattern in Dealing with something is better. The thought process is also influenced by the patient's level of education (Sri Enawati et al., 2022).

An individual's educational attainment will also have an effect on his knowledge. Higher education will increase knowledge in dealing with anxiety and can reduce cortisol (Anggraeni & Saudia, 2021). Lower education is associated with chronic excessive exposure to cortisol (Oymaagaclıo & Ates, 2019). The general level of education is able to change thought patterns, behaviour, and decision-making. Sufficient education will make it easier to identify stressors that originate from within oneself or from outside oneself.

The majority of family support characteristics in this study were in the high category. Social support from the family helps patients systematically maintain one's strength by providing emotional support and adaptation to face stress and threats to their health. The availability of social support is correlated with anxiety, so social support can help satisfy social interactions and protect against mood changes due to negative life events (Yu et al., 2020). Positive family support with attention, affection, and active communication can make patients feel comfortable, thereby reducing anxiety, depression, and cortisol levels (Sungkono et al., 2020; Suwardiman, 2023).

The effect of spiritual emotional liberation practices on ischaemic stroke patients' cortisol-lowering levels

The study's conclusions showed that spiritual emotional liberation practices had a significant effect on reducing cortisol levels in ischaemic stroke patients. Cortisol is a hormone released as a response from the body during times of fear or stress, which is part of the fight-or-flight mechanism. According to Yuliadi, (2022) cortisol is a glucocorticoid hormone that is synthesised in the fasciculata zone of the adrenal cortex, which is used as a parameter when an individual is experiencing stress or anxiety (Yuliadi, 2022).

The worry or anxiety experienced by an individual will stimulate the amygdala, which then responds via the sympathetic nerve by releasing catecholamine hormones, epinephrine, and norepinephrine. When released, this hormone will cause an increase in pulse frequency and respiratory rate, blood pressure, vasoconstriction of arterioles, accelerated sweat secretion, and pupil dilation. By sending a signal to the hypothalamus, the pain will activate the HPA Axis and cause the production of Corticotropin-Releasing Hormone (CRH).

The anterior pituitary gland produces adrenocorticotropic hormone (ACTH) in response to the production of this hormone, which in turn triggers the adrenal cortex to release cortisol. About 15 minutes after the discomfort begins, this process takes place, resulting in increased systemic cortisol levels that may last for many hours (Xie et al., 2023). The research results of Agarwal & Iqbaal, (2020) found that the concentration of cortisol levels has a positive correlation with the level of anxiety; the higher the individual's anxiety level, the higher the cortisol level, and vice versa (Agarwal & Iqbaal, 2020).

Excessive and prolonged cortisol levels can worsen depressive symptoms, cause changes in the central nervous system, and have negative psychological effects (Dziurkowska & Wesolowski, 2021). To reduce the chance of elevated cortisol levels and anxiety recurrence, it is crucial to regularly carry out both independent and

collaborative therapies. Prior to the intervention, the intervention group's average cortisol level was 119.63; after the intervention, it dropped to an average of 99.23, showing a significant decrease in cortisol levels.

On the other hand, the control group's average cortisol level was 120.83 prior to the standard spiritual intervention and increased to 127.70 following the session, indicating a significant rise in cortisol levels in this group. Providing SEFT intervention as anxiety management therapy by providing comfort. SEFT connects oneself with God through an attitude of gratitude and surrender to accept the pain sincerely and patiently; this will create a feeling of calm, which reduces cortisol (Abdullah et al., 2024; Isehunwa et al., 2021).

Prior to the SEFT intervention, the intervention group's average cortisol level was 119.63; after the intervention, it dropped to an average of 99.23, showing a significant decrease in cortisol levels. On the other hand, the control group's average cortisol level was 120.83 prior to the standard spiritual intervention and increased to 127.70 following the session, indicating a significant rise in cortisol levels in this group. Meanwhile, the control group with standard spiritual therapy carried out by nurses did not give rise to patient responses regarding acceptance of the disease because the patients were not sincere and still had doubts about the treatment they were undergoing (Çay, 2017).

SEFT, also known as energy medicine, is a therapeutic approach that combines spiritual treatment with the body's energy system to address emotional and physical issues. This is accomplished by lightly touching particular body points (Asmawati et al., 2020). By increasing the transmission of neurotransmitter signals, acupoint stimulation or light tapping reduces the control of the hypothalamic-pituitary-adrenal (HPA) axis.

Heart rate, blood pressure, and muscle tension all decrease as a result of this reduction, which also lowers the synthesis of stress hormones like cortisol (Priyanto et al., 2021). By acknowledging, accepting, and thanking Allah for the benefits we have received, SEFT helps strengthen feelings of thankfulness. This illustrates a person who can discover purpose in their life. A life filled with gratitude can lead to happiness (Ghufron & Abdul, 2023).

Through a spiritual approach, the SEFT intervention helps patients accept and let go of their current health conditions, creating a calm environment that triggers a relaxation response. According to Rahmadania, (2021) this relaxation response is characterised by a decrease in blood pressure, a decrease in heart rate (which results in a slower pulse), a decrease in respiration rate (which causes breathing to become slower and more rhythmic), and a decrease in oxygen demand in the cardiac muscle (Rahmadania & Zoahira, 2021). This occurrence also took place, accompanied by decreased cortisol after SEFT therapy (Örün et al., 2021).

CONCLUSION

The conclusion of this research is that the use the spiritual emotional emancipation approach was used as an intervention. Significantly reduced cortisol levels in ischaemic stroke patients. The findings suggest that hospitals, especially those serving outpatients, can effectively apply the spiritual emotional liberation technique to improve the psychological treatment of ischaemic stroke patients.

Future researchers need further research on identifying other factors that dominantly influence cortisol and, furthermore, the need for a multi-religious approach in efforts to develop spiritual-based interventions.

ACKNOWLEDGEMENT

Researchers would like to thank Diponegoro University's Faculty of Medicine in Semarang, which offers a doctoral program in medical and health sciences. Researchers would like to thank RSUD. Dr. Moewardi Surakarta for providing the research location and infrastructure needed during the research. The researcher also would like to thank Kusuma Husada University, Surakarta, which has provided financial support and moral support to the researcher in completing the research.

REFERENCES

Abdullah, M. W., Mandala, A. D., Kapitan, M., & Sani, S. (2024). Overview Of SEFT Therapy (Spiritual Emotional Freedom Technique) On Reducing Anxiety Of III Trimester Pregnant Women At Oesapa Health Center. *Jurnal Eduhealth*, *15*(02), 1575–1583. https://doi.org/10.54209/eduhealth.v15i02

Agarwal, A., & Iqbaal, H. (2020). Serum-Cortisol Levels In Severity Of Stroke. *International Journal of Medical and Biomedical Studies*, *4*(2), 202–205. https://doi.org/https://doi.org/10.32553/ijmbs.v4i2.970

Amalia, L. (2024). The Relationship of Cortisol Levels and Sleep Quality in Acute Ischemic Stroke Patients : A Literature Review. *Jurnal Neuroanestesi Indonesia*, *13*(1), 46–52. https://doi.org/https://doi.org/10.24244/jni.v13i1.533

Anggraeni, N. P. D. A., & Saudia, B. E. P. (2021). Gambaran Tingkat Kecemasan dan Kadar Hormon Kortisol Ibu Nifas. *Jurnal Bidan Cerdas*, *3*(2), 55–63. https://doi.org/10.33860/jbc.v3i2.420

Asmawati, Ikhlasia, M., & Panduragan, S. L. (2020). The Effect of Spiritual Emotional Freedom Technique (SEFT) Therapy On The Anxiety Of NAPZA (Narcotics, Psychotropic, And Other Addictive Substances) Residents. *Enfermeria Clinica*, *30*(5), 206–208. https://doi.org/10.1016/j.enfcli.2019.11.055

Bakkarang, S., Saleh, A., Syamsuddin, S., Erika, K. A., Nursalam, Bukhari, A., Arafat, R., Lisal, S. T., & Firmansyah. (2024). The Effect Of Virtual Reality Spiritual Emotional Freedom Technique (Vr-seft) Therapy On Anxiety And Cortisol in Drug Patients In Makassar Class I State Detention Center. *Multidisciplinary Science Journal*, *6*(5). https://doi.org/10.31893/multiscience.2024078

Bath, P. M., Song, L., Silva, G. S., Mistry, E., Petersen, N., Tsivgoulis, G., Mazighi, M., Bang, O. Y., & Sandset, E. C. (2022). Blood Pressure Management for Ischemic Stroke in the First 24 Hours. *Stroke*, *53*(4), 1074–1084. https://doi.org/10.1161/STROKEAHA.121.036143

Çay, M. (2017). The Effect of Cortisol Level Increasing Due to Stress in Healthy Young Individuals on Dynamic and Static Balance Scores. *Northern Clinics of Istanbul*, *5*(4), 295–301. https://doi.org/10.14744/nci.2017.42103

Dr. K. Ilanchetchenni, Chandru, D. J., Kumar, D. S. S., & Nishanthi, D. G. (2024). Serum Cortisol Levels In Assessing Severity Of Acute Stroke – A Cross Sectional

Study In Chengalpet Medical College & Hospital. *Journal of Population Therapeutics & Clinical Pharmacology*, *31*(02), 2377–2383. https://doi.org/10.53555/jptcp.v31i2.4627

Dziurkowska, E., & Wesolowski, M. (2021). Cortisol as a biomarker of mental disorder severity. *Journal of Clinical Medicine*, *10*, 1–17. https://doi.org/10.3390/jcm10215204

Fadli, R. P., Putri, Y. E., Amalianita, B., Zola, N., & Ifdil, I. (2020). Treatment For Anxiety Using Spiritual Emotional Freedom Technique. *Journal of Counseling and Educational Technology*, *3*(1), 41–46. https://doi.org/https://doi.org/10.32698/01151

Firmansyah, D., Gultom, S., Marisi Dame, A., Suherlan, H., Ernawati, D., Surya Manurung, S., & Rahim Kamil, A. (2021). Spiritual Emotional Freedom Technique with Quality of life and Depression in HIV/AIDS Patients: Systematic Review. *Journal Of Nursing Practice*, *4*(2), 130–142. https://doi.org/https://doi.org/10.30994/jnp.v4i2.144

Ghufron, M., & Abdul Haris Fitri Anto. (2023). Islamic Therapy and Spiritual Emotional Freedom Technique (SEFT) Interventions in Reducing Post-Traumatic Stress Disorder (PTSD) for Survivors of Mount Semeru Eruption. *INFERENSI: Jurnal Penelitian Sosial Keagamaan*, *17*(2), 207–232. https://doi.org/10.18326/infsl3.v17i2.207-232

Gutchess, A., Alves, A. N., Paige, L. E., Rohleder, N., & Wolf, J. M. (2020). Age Differences In The Relationship Between Cortisol And Emotional Memory. *Psychol Aging*, 1–22. https://doi.org/doi: 10.1037/pag0000367

Isehunwa, O. O., Warner, E. T., Spiegelman, D., Huang, T., Tworoger, S. S., Kent, B. V., & Shields, A. E. (2021). Religion, spirituality and diurnal rhythms of salivary cortisol and dehydroepiandrosterone in postmenopausal women. *Comprehensive Psychoneuroendocrinology*, *7*, 1–11. https://doi.org/10.1016/j.cpnec.2021.100064

Jambi, L., Hamad, A., Salah, H., & Sulieman, A. (2024). Stroke and Disability: Incidence, Risk Factors, Management, and Impact. *Journal of Disability Research*, *3*(7), 1–7. https://doi.org/10.57197/jdr-2024-0094

Krisnawardhani, K. K., & Noviekayati, I. (2021). Terapi SEFT (Spiritual Emotional Freedom Technique) Untuk Meredakan Gangguan Cemas Menyeluruh Pada Subjek Dewasa. *Syntax Literate: Jurnal Ilmiah Indonesia*, *6*(5), 2251–2263. https://doi.org/https://doi.org/10.36418/syntax-literate.v6i5.1263

Mardiah Fajar Kurnianingsih, I. N., & Zahro, C. (2021). Spiritual Emotional Freedom Technique(SEFT)Berpengaruh Terhadap Kecemasan Dan Motivasi Sembuh Pasien Covid-19. *Jurnal Keperawatan*, *13*(3), 665–678. https://doi.org/https://doi.org/10.32583/keperawatan.v13i3.1685

Masriana, Muammar, & Yahya, M. (2021). Faktor-Faktor Yang Mempengaruhi Terjadinya Stroke Pada Pasien. *Journal of Nursing and Midwifery*, *3*(3), 55–66. https://doi.org/https://doi.org/28281837/sdl.ac.id

Mbiydzenyuy, N. E., & Qulu, L. (2024). Stress, Hypothalamic-Pituitary-Adrenal Axis, Hypothalamic-Pituitary- Gonadal Axis, And Aggression. *Metabolic Brain Disease*, *39*(1), 1613–1636. https://doi.org/https://doi.org/10.1007/s11011-024-01393-w

Nelsone, L., Rafsten, L., Abzhandadze, T., & Sunnerhagen, K. S. (2023). A Cohort Study On Anxiety And Perceived Recovery 3 And 12 Months After Mild To Moderate Stroke. *Frontiers in Neurology*, *14*, 1–9. https://doi.org/10.3389/fneur.2023.1273864

Örün, D., Karaca, S., & Arıkan, Ş. (2021). The Effect of Breathing Exercise on Stress Hormones. *Cyprus Journal of Medical Sciences*, *6*(1), 22–27. https://doi.org/10.4274/cjms.2021.2020.2390

Oymaagaclıo, K., & Ates, S. (2019). Identifying Factors Affecting Anxiety Levels in the Patients Planned for Cataract Surgery: A Crossectional Study. *International Journal of Caring Sciences*, *12*(2), 639–648. https://doi.org/10.2147/OPTH.S146135

Priyanto, W., Widyana, R., & Verasari, M. (2021). Spiritual Emotional Freedom Technique (SEFT) to Reduce the Diabetes Distress in People with Diabetes Mellitus. *Indigenous: Jurnal Ilmiah Psikologi*, *6*(2), 66–76. https://doi.org/http://dx.doi.org/10.23917/indigenous.v6i2.11945

Rahmadania, W. O., & Zoahira, W. O. A. (2021). Terapi Spritual Emotional Freedom Technique (SEFT) terhadap Tingkat Kecemasan pada Keluarga Pasien yang Kritis. *Jurnal Keperawatan Silampari*, *5*(1), 610–618. https://doi.org/10.31539/jks.v5i1.1872

Saini, G., Kaur, K., Bhatia, L., Kaur, R., Singh, J., & Singh, G. (2023). Single Serum Cortisol Value as a Prognostic Marker in Acute Ischemic Stroke. *Cureus*, *15*(6), 1–8. https://doi.org/10.7759/cureus.40887

Sri Enawati, Aan Istiana Erli, & Yuli Widyastuti. (2022). Hubungan Kecemasan Dengan Peningkatan Tekanan Darah Pada Pasien Pre Operasi Close Fraktur. *Jurnal Ilmu Kedokteran Dan Kesehatan Indonesia*, *2*(3), 87–95. https://doi.org/10.55606/jikki.v2i3.737

Sumardiyono. (2020). The Difference Blood Cortisol Level Between Male And Female On Workers Exposed By Continuous Noise. *Journal of Vocational Health Studies*, *3*, 120–125. https://doi.org/10.20473/jvhs.V3I3.2020.120

Sunarno. (2019). *Fisiologi Penuaan* (1st ed.). CV. Madina.

Sungkono, M. H., Nooryanto, M., & Arianti, D. E. (2020). Association of social support with Depression and Anxiety Stress Score (DASS) and salivary cortisol level in women post curettage due to first-trimester miscarriage. *The Journal of Obstetrics and Gynecology Science*, *1*(1), 18–22. https://doi.org/10.4103/jcrt.jcrt_530_22

Suwardiman, D. (2023). Peran Penting Keluarga Dalam Menjaga dan Merawat Individu yang Mengalami Gangguan Jiwa. *Faletehan Health Journal*, *10*(2), 216–221. https://doi.org/https://doi.org/10.33746/fhj.v10i02.564

Teo, C. H., Wong, A. C. H., Sivakumaran, R. N., Parhar, I., & Soga, T. (2023). Gender Differences in Cortisol and Cortisol Receptors in Depression: A Narrative Review. *International Journal of Molecular Sciences*, *24*(8), 1–13. https://doi.org/10.3390/ijms24087129

Wang, T., Li, X., Jia, Y., Zhang, Y., & Meng, D. (2024). Effects Of Cortisol On Cognitive And Emotional Disorders After Stroke: A Scoping Review. *Heliyon*, *10*(22), 1–10. https://doi.org/10.1016/j.heliyon.2024.e40278

Wilujeng, C. S., Habibie, I. Y., & Ventyaningsih, A. D. I. (2023). Hubungan Antara Jenis Kelamin dengan Kategori Stres Pada Remaja di SMP Brawijaya Smart School. *Smart Society Empowerment Journal*, *3*(1), 6–11. https://doi.org/10.20961/ssej.v3i1.69257

Xie, Z., Deng, Y., Xie, C., & Yao, Y. (2023). Changes Of Adrenocorticotropic Hormone Rhythm And Cortisol Circadian Rhythm In Patients With Depression Complicated With Anxiety And Their Effects On The Psychological State Of Patients. *Frontiers in Psychiatry*, *13*, 1–15. https://doi.org/10.3389/fpsyt.2022.1030811

Yoo, D. Y., Choi, J. K., Baek, C. Y., & Shin, J. Bin. (2022). Impact Of Intensive Rehabilitation On Long-Term Prognosis After Stroke: A Korean Nationwide Retrospective Cohort Study. *Medicine (United States)*, *101*(38), 1–6. https://doi.org/10.1097/MD.0000000000030827

Yu, M., Qiu, T., Liu, C., Cui, Q., & Wu, H. (2020). The Mediating Role of Perceived Social Support Between Anxiety Symptoms and Life Satisfaction in Pregnant Women : a Cross-Sectional Study. *Health and Quality of Life Outcomes*, *18*, 1–8. https://doi.org/10.1186/s12955-020-01479-w

Yuliadi, L. (2022). *Biomolekuler Psikoimmunologi* (1st ed.). Pustaka Karya.