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THE EFFECT OF MANUAL THERAPY INTERVENTIONS ON SUBJECTIVE COMPLAINTS OF VERTIGO PATIENTS

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Abstract

Central vertigo is a symptom caused by diseases originating from the central nervous system, both at the center of integration (cerebellum and brain stem). The dangers of central vertigo include increasing the risk of accidents while driving, causing falls due to loss of balance, disturbing hearing, interfering with daily activities, becoming a stroke or other problems in the brain. This physiotherapy treatment for the treatment of central vertigo uses manual therapy techniques, with the aim of freeing up the vertebral artery intratreatment. This study aims to determine whether there is an influence of manual therapeutic intervention techniques on subjective complaints of central vertigo. Observational research type, research design in this study is A-B-A design which has 3 phases. Research Samples amounted to 13 respondents. The sampling technique used was purposive sampling. central vertigo measuring instrument using Vertigo Symptom Scale-Short Form (VSS-SF). Analysis of the data in this study is a description of the picture obtained from graph analysis and the rating scale observation process based on measurement of behavior. Based on the results of interventions with myofascial release, traction and oscillation in 13 respondents, the average VSS-FS score before being given an intervention was 21.23 and after being given an intervention the average VSS-FS score was 2.08, so this therapy was effective in reducing entrapment neck due to vertigo with the results of the VSS-FS score decreased significantly by 19.15. The conclusion of this study is that there is an effect of manual therapy with the Myofascial release, traction and oscillation techniques which are very effective in healing central vertigo.

Keywords: *Central vertigo, manual therapy*



Introduction

In an increasingly advanced era, people are required to work hard to fulfill their needs, without realizing that they pay less attention to their health. From the physical aspect ranging from workload, lack of rest, a noisy, dusty, dirty physical work environment to a less ergonomic work and rest/sleep position, coupled with the influence on psychological aspects, ranging from anxiety, boredom, fatigue, a stressful work environment. not in harmony with the mood. If this condition is sustainable and prolonged, it can lead to a decrease in a person's physical and spiritual health (Kumono, 2011).

The conditions mentioned above can cause one of the symptoms that can cause dizziness, discomfort and spinning which is called central vertigo. This can occur due to a decrease in the supply of nutrients and oxygen to the vertebral arteries due to spasm of the oblique capitis muscle or due to hypomobile joints in the cervical spine.

In 2012 in Indonesia the incidence of vertigo was very high, around 50% of those aged 40-50 years (Joesoef, 2012). He further said that vertigo is the number three complaint that patients who come to general practice complain about, after headaches and strokes.

The danger of vertigo will depend on the underlying disease. However, when an attack occurs, a number of things can endanger the sufferer, including: increasing the risk of an accident while driving, causing a fall due to loss of balance, disturbing hearing, interfering with daily activities, becoming a stroke or other problems in the brain.

As for the healing of central vertigo, it can be done by means of medical treatment, non-medical treatment and education. One of the non-medical treatments is physiotherapy. Here physiotherapy plays a role when central vertigo is due to entrapment of the vertebral arteries. While the physiotherapy treatment for the treatment of central vertigo uses manual therapy techniques, with the aim of freeing the vertebral artery intratmen.

The manual therapy technique used is myofascial release, for the muscles and manipulation techniques for the joints. The hope is that by releasing the pressure/clamping of the vertebral arteries, it can facilitate circulation and entry of blood to the brain stem, so that the intake of nutrients and oxygen in the brain can be fulfilled and complaints of central vertigo can be resolved (Sidharta, 2009).

Based on this background the authors are interested in researching the management of physiotherapy in the treatment of central vertigo by using manual therapy, especially with myofascial release and manipulation therapy at the residence of Mr. Kumono physiotherapy. By using a direct history of subjective complaints from patients with central vertigo.



Methods

This study uses the type of observational research, which is a method used in conditions or situations that are created in such a way that the symptoms or behavior to be sought or observed will arise (Notoatmodjo, 2010). The research design in this study is the A-B-A design which has 3 phases. The A-B-A design is one of the developments of the basic A-B design, the A-B-A design shows a causal relationship between the dependent variable and the independent variable (Sunanto et al, 2006). This study was conducted in practice at physiotherapy Kumono Muntilan. This study was conducted in November 2019. The population in this study were all patients at Physiotherapy Kumono Muntilan who suffered from central vertigo who came in the period November 2019. The sample of this study amounted to 13 respondents. The sampling technique in this study used a purposive sampling technique. The measuring instrument used to determine the level of central vertigo is the Vertigo Symptom Scale-Short Form (VSS-SF). Analysis of the data in this study is a description of the picture obtained from graphic analysis and the rating scale observation process based on behavioral measurements.

Results

Patient	Score VSS-SF	
	Pretest	Posttest
Ny. SAL	30	5
Tn. MKN	36	3
NY. N	30	3
Nn. N	24	9
Tn. ARK	25	0
Tn. AP	17	0
Ny. I	8	1
Ny. UH	14	0
Tn. H	24	1
Tn. UB	19	1
Tn D	12	0
TN. PS	18	2
Ny. SL	19	2
Mean Skor VSS-SF	21.23	2.08

Table 1. Observation Data with Vertigo Symptom Scale-Short Form (VSS-SF)

Information:

No vertigo = 0-15

Mild vertigo = 16-30

Moderate vertigo = 31-45

Severe vertigo = 46-60

Case Presentation

Based on table 1, it is known that of the 13 patients suffering from vertigo, the average respondent experienced a decrease in entrapment due to vertigo, from which the VSS-FS score of



21.23 decreased to 2.08. So that this therapy is effective for reducing neck entrapment due to vertigo with the result that the VSS-FS score decreased significantly by 19.15.

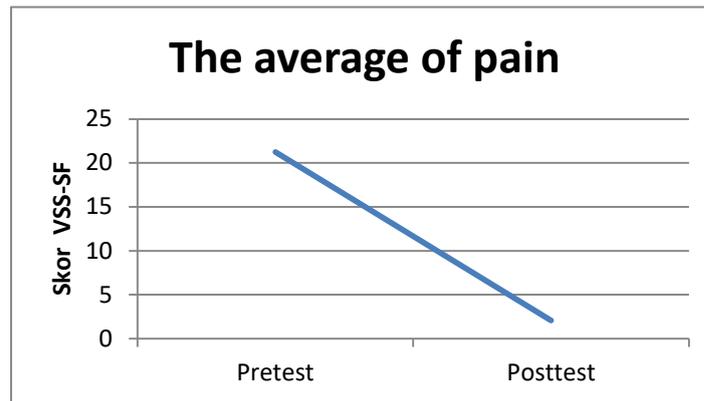


Figure 1. Graph of Average Decrease in Vertigo complaints

In Figure 1 it is known that the results of the patient's average decrease in entrapment scores before and after being given manual therapy intervention, before being given the intervention the Vertigo Symptom Scale-Short Form (VSS-SF) average score was 21.23 after being given the intervention the score decreased to 2.08.

Discussion

Based on the results of the study, it was found that patients with vertigo complaints who came to the research area had varied ages. The age of the respondents was teenagers (14-26 years), young age (27-52) and old age (53-65 years). The majority of respondents are in the age range of 27-52 years or a young age of 8 (61.54%). In contrast to the findings by Rendra and Pinzon (2018), which were conducted on outpatients at Bethesda Hospital Yogyakarta, 44 (58.65%). This is because this study conducted by Rendra and Pinzon was carried out with a longer duration compared to this study, namely during January to June 2019. Vertigo does not know age, it is evident that patients have varying ages.

Based on the results of the study, it was found that the comparison between male and female patients was almost the same, namely female patients 7 (53.85%) and male respondents 6 (46.15%). The study is in line with research conducted by Fraix (2010) that there are more female patients with vertigo in the United States than male patients with a ratio of 10 female patients (62.5%) and 6 male patients (37.5%). However, this is different from the research conducted by Putri (2014), which was conducted at RSUD dr. Moewardi conducted for 3 months. It was found



that 31 (60%) male respondents and 19 female respondents (40%). This difference can occur due to the limitations of researchers who only conduct research with a very short time limit and only conduct research in one place while the research conducted by Putri (2014) conducted research for 3 months.

Based on the results of the study from table 1 and graphs 1 to graph 4.14), it was found that before being given intervention with manual techniques of myofascial release, traction and oscillation therapy 2 times, the data obtained that before therapy the lowest VSS-SF score was 8 and the highest score was 36. After the intervention, the lowest VSS-SF score was 0 and the highest score was 9. Thus there was a change in pain score (pain reduction) after the administration of myofascial release, traction and oscillation therapy manual techniques or interventions to cure vertigo. Based on Figure 4.14 shows that the observations of 13 respondents who suffered from vertigo who underwent manual therapy therapy with myofascial release, traction and oscillation techniques experienced significant changes. Patients who came with complaints of unbearable vertigo, after being given intervention with manual therapy techniques, these patients experienced significant changes, namely the average patient no longer experienced vertigo. This is because the result of the combination of the three interventions is able to stretch the joints and relax the muscles in the vertebral artery area and improve blood circulation to the brain.

These results are in line with research conducted by Fraix (2010), that the manipulation technique of therapy with myofascial release is effective for the treatment of vertigo and functional disorders associated with it. Likewise, according to the results of the study by Young and Chen (2003) with the results that traction manipulation, extension, neck rotation therapy is effective for vertigo by compressing the vertebral arteries, which leads to a reduction in the circulation of the vertebral arteries. This is also in line with Neto et al (2013) stating that manipulation with traction techniques is effective for vertigo, with maximum results increasing after the first 7 days after being given therapy. Manual therapy is carried out with the aim of making changes to muscle tension.

Myofascial release technique is a manual therapy technique with safe hands which is performed to reduce and manipulate muscle limitation or somatic dysfunction. This therapy focuses on the treatment of muscle and soft tissue fascia, the goal is to restore the quality of fluid in the fascia tissue, muscle and joint function. Myofascial release therapy is done to reduce the limitation of motion caused by muscle strength and pain (Whisler, 2012).

Cervical traction technique is a method of physiotherapy treatment by pulling the vertebral column in the cervical region. This intervention will cause a shift from the nucleus to the ventral



thereby reducing the pressure on the posterior longitudinal ligament so that pain will be reduced. The effect of this intervention can reduce discomfort due to contracture muscles by stretching the muscles so that it will reduce spasm by Golgi tendon activity and will increase the length of the muscles so that the muscles become more relaxed. This intervention can also widen the intervertebral foramen as well as to correct the position of the neck so that the pressure on the nerve roots is reduced and there is an increase in ROM (Sugiyono & Lestari, 2009).

The oscillation technique is a manual therapy technique by pressing the movement between the bones by stretching the fingers on the side of the neck / back to reduce pain when pressing (Maitland's at el, 2007). Because this oscillation technique is done with pressing movements, so the patient's position must be conditioned to relax so that the therapist can work more effectively.

Based on the results above, it can be concluded that manual therapy techniques with Myofascial release, traction and oscillation techniques are very effective in reducing entrapment. Because the manual technique of therapy is a technique that is performed using passive movements, by stretching the muscles directly manually on the individual in the large muscles: fixation of origin and insertion of transfersal stretch of the middle muscle. Manual therapy techniques are used for muscles and manipulation techniques for joints so that they are free from entrapment of the vertebral arteries so that blood circulation to the brain becomes smooth and the intake of nutrients and oxygen in the brain can be fulfilled and complaints so that entrapment due to vertigo can be resolved.

Conclusion

Based on the results of the study, it was concluded that manual therapy with Myofascial release, traction and oscillation techniques was very effective in healing central vertigo.

Acknowledgments

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