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"TO FIND OUT EFFECT OF GOLDFISH EXERCISE IN TOBACCO CHEWING PERSON FOR TEMPOROMANDIBULAR JOINT DYSFUNCTION:AN INTERVENTIONAL STUDY"

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ABSTRACT:

TITLE: "To find out effect of goldfish exercise in tobacco chewing person for temporomandibular joint dysfunction: an interventional study"

OBJECTIVE: To find out the effect of goldfish exercise on pain in tobacco chewers. To find out the effect of goldfish exercise to increase ROM in tobacco chewers. To find out the effect of goldfish exercise on mouth opening in tobacco chewers.

MATERIAL AND METHODOLOGY: Total 60 participant were selected after screening with inclusion and exclusion criteria. To collect data, the researchers used a standardized, temporomandibular joint disability index, VAS and mouth opening measurement. The questionnaire was distributed among the tobacco chewers, and they were asked to fill it out honestly and without any external influence. Once the data was collected, it was analysed using statistical methods to determine find out effect of goldfish exercise in tobacco chewing person for the temporomandibular joint dysfunction. The findings of the study were provided important insights of the effect of goldfish exercise in tobacco chewing person for temporomandibular joint dysfunction.

RESULTS: Data were analyzing SPSS version 25.0. result of study showed that significant improvement shows is group A. pre &post significant difference (<0.05) P value between group A and B. Conclusion: After analyzing the data which were collected from in and around Amreli. It was found that maximum number of tobacco chewing person suffering from TMD dysfunction, VAS, MOUTH OPENING. This study shown that in, the group-A given the goldfish exercise technique was better and effective then group-B(control group).

KEY WORDS: Goldfish exercise, Mouth opening, pain, Temporomandibular dysfunction, tobacco chewer

INTRODUCTION:

The temporomandibular joint (TMJ) are located just anterior to the external auditory meatus. The TMJ is a synovial, condylar, modified ovoid, and hinge type joint with fibrocartilaginous surfaces rather than hyaline cartilage and an articular disc. Gliding, translation, or sliding movements occurs in the upper cavity of the temporomandibular joint, whereas rotation or hinge movement occurs in the lower cavity. The capsule of the temporomandibular joint is thin and loose. In the resting position, the is slightly open, lips are together, and the teeth are not in contact but slightly apart. In the closed packed position, the teeth are tightly clenched, and the head of the condyles are in the posterior aspect of the

joint. Centric occlusion is the relation of the jaw and teeth when there is maximum contact of the teeth, and it is the position assumed by the jaw in the swallowing. The position in which the teeth are fully integrated is called the median occlusal position. The temporomandibular joints are two of the most frequently used joints in the body, but probably receive the least attention. It has been shown that temporomandibular disorders affect 10% to 15% of adults. Without these joints, one would be severely hindered when talking, eating, yawning, kissing, or sucking. Temporomandibular disorders consist of several complex of multifactorial ailments involving many interrelating factors, including psychosocial issues. Oral lesions (herpes zoster, herpes simplex, oral ulcer), muscle overuse (clenching, bruxism), trauma, systemic lupus erythematosus, rheumatoid arthritis, headaches, and cancer pain can mimic temporomandibular joint disorders. Three cardinal features of temporomandibular joint disorders are orofacial pain, restricted jaw motion, and joint noise.(1)

The diagnosis of the temporomandibular joint dysfunction will be interpreted by the noise is assessed by the sound heard in stethoscope. A grafting sound indicates perforation of disk or arthritic changes. Limited opening suddenly resolved after click indicates disk displacement with reduction. Reducted ROM without clicking may be suggestive of disk displacement without reduction. The signs and symptoms of TMD disorders are pain and tenderness around jaw, Pain in one or both of the TMJs, pain in and around ear, difficulty in chewing or pain while chewing, locking of joint. Making it difficult to open or close the mouth, headache, neck pain, mental depression. The areas where pain of TMJ can radiate are temporalis, masseter, trapezius, sternoclenomastoid. (2) Goldfish Exercise was developed by Japanese Health Care Practitioner-SEIGO NISHI.

This exercise was an outcome of inspiration on the concept of elegant swimming motion of the Goldfish. When this concept was put into practice, the Japanese realized its benefits at many levels. This newly found way of exercising became known in Japan as “KINGYO UNDO” or “GOLDFISH EXERCISE”. The pain assessment in systematically is essential for correct diagnosis. This pain is a subjective part for both patient and health care professionals. So, require a valid and reliable tool for measurement of pain. VAS is widely used as a measure of pain intensity in globally. It has been shown that VAS is valid, reliable and interval scale. VAS has high test-retest reliability and repeatability. VAS is used in epidemiological and clinical research to measure the intensity or frequency of a variety of clinical symptoms. In randomized controlled trials, clinical trials VAS is frequently used to determine the effectiveness of treatment as an outcome measure.

Recently, there are different type of scale are used for assessing pain but without any valid (accurate) and reliable (reproducible) instruments it is very difficult to find real effect of treatment. The intensity of pain is a quantitative estimation and the most commonly used pain scales are the Visual Analogue Scale (VAS), the Numerical Rating Scale (NRS) the Verbal Rating Scale (VRS). (3) The mouth opening is an important indication of the functionality of the temporomandibular joint. A limitation in the degree of opening can be symptom of TMJ dysfunction. It is usually defined as the distance between the incisor crests when the mouth is open maximum, or as the interincisal distance plus the overbite. The mouth opening is usually measured simply by asking the patient to their mouth open as wide as possible and measuring the distance between the edges of the frontal incisors with a ruler or calliper, and in some cases, the overlapping of the incisors is added.

All these methods have in common that the measurements is usually taken manually and are dependent on the experience of the professional taking them.(4) Temporomandibular joint disability index assesses pain and routine functional skills requiring oral functions. It has 10 sections of pain and disability during various activity. The patient was asked to circle the number which describes his problem best. Total scores out of 40 was calculated and converted into percentage. (5)

Methodology:

The samples were be selected from the population on the of inclusion and exclusion criteria. Prior to the study, all patients were explained about the procedure, written informed consent was taken. Pre-participation evaluation form consisted of the demographic data of the patient that includes age, chief complain, history, previous surgery, pain assessment, range of motion. 60 patients having TMJ dysfunction was randomly taken from the in and around Amreli. They were randomly divides into two groups and they not know about group allocation. Group1: received goldfish exercise. Group2: control group. For 2 weeks duration, 5 times/week & No. of patients in each group = 30. The patients were requested to continue normal activities and avoid other forms of treatment for 2 weeks apart from routine physician treatment. Visual Analogue Scale (VAS), Mouth Opening (MO) and Temporomandibular Joint (TMJ) Disability Index were taken Pre and Post treatment.

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Fig.1 goldfish exercise

Result:

Data were analysing SPSS version 25.0. with using pair and unpaired t test. result of study showed that significant improvement <0.05 P value shows is group A. pre &post significant difference (<0.05) P value between group A and B.

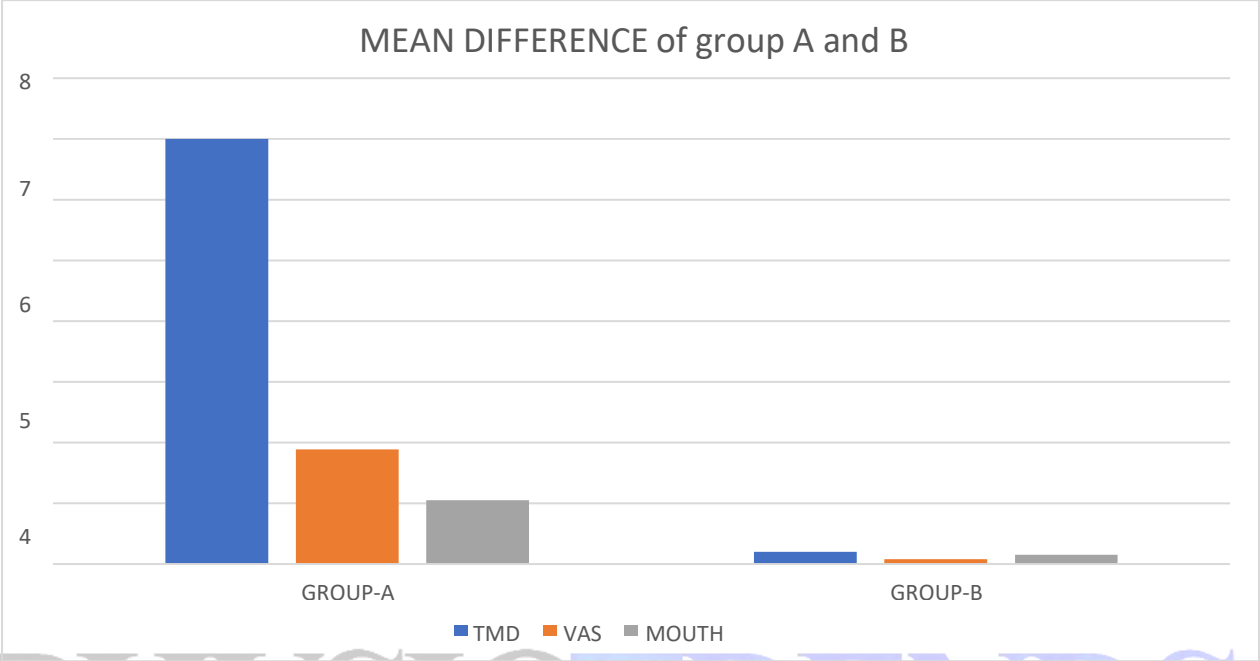
Table 1: - Describes the improvement in the TMD dys0function in the group A:

	Mean ± SD				
	pre	Post	T	P	Result
TMD	11.6±6.7	4.6±3.2	9.17	0.00	Significant
VAS	6.5±0.9	4.61±1.1	9.06	0.00	Significant
MOUTH OPENING	2.25±0.5	3.3±0.5	-7.79	0.00	significant

Table 2:- Describes the improvement in the TMD dysfunction in the group B:

	Mean± SD				
	PRE	POST	T	P	Result
TMD	11.1±6.15	10.9±5.9	1.98	0.06	Not-significant
VAS	6.12±1.1	6.2±1.01	-4.38	0.05	Not-significant

MOUTH OPENING	3.05±0.4	2.9±0.4	2.63	0.13	Not-significant



graph 1, mean difference of group A & B

Discussion:

The aim of the study to find out the effect of goldfish exercise in tobacco chewing person for temporomandibular joint dysfunction. The study utilized a interventional design, and data were collected in and around Amreli. the study included 60 tobacco chewing person. And divided into two groups. Group A recived goldfish exercise and group B was control group. The result of the study revealed significant differences exists between two groups they received the goldfish exercise and control group. Hence, the alternate hypothesis stating that there is significant differences between goldfish exercise and control group on tobacco chewing person can be accepted and the null hypothesis can be rejected. Subjects who recived goldfish exercise showed improvement with the outcome measure. Subjects who are in control group didn't showed improvement with the outcome measure. But on comparing both the group. Group A seems more effective. The outcome measure will be used are used are VAS scale, TMJ disability index and increase in mouth opening. While the control group showed no statistical reduction on pain, TMJ disability index, mouth opening measurement. Goldfish exercise works on the principle of pulsatile motion of goldfish in water & thereby imitating the same motion for health benefits. It can be thought of stretching the fibrous bands, reducing TMJ stiffness & resulting in improvement in mouth opening. It would be beneficial to use this technique on daily basis and as far there are no contraindications of this exercise because it`s done with in pain limits& further progression depends on the mouth opening of the patient. Goldfish exercise can be given to the patients having jaw problems and even taught for home exercise program. However, there was a significant result was noticed in the Group A i.e. goldfish exercise, when t-test is performed to find out the effect.

Conclusion:

After collecting and analyzing the data which collected from in and around Amreli. It was found that maximum number of tobacco chewing person suffering from temporomandibular joint dysfunction. This study shown that in, the group A

given the goldfish exercise technique was better and effective in temporomandibular joint dysfunction then group B (control group)

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