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OCCUPATIONAL THERAPY INTERVENTION FOR MUSCULOSKELETAL DISORDERS AMONG ARCHITECTS

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Abstract

The study, titled "Musculoskeletal disorders among architects," focuses on a common problem faced by architects due to the physically demanding nature of their profession. Occupational therapy plays a significant role in addressing these challenges by promoting health and well-being through meaningful activities. The purpose of this quasi-experimental study was to identify architects with musculoskeletal pain and provide them with occupational therapy intervention. A total of 30 architects with pain in their neck, shoulder, and lower back were given a four-week intervention. Pre- and post-tests were conducted using the Neck disability index, Shoulder pain and disability index, and Oswestry low back pain disability questionnaire. The study concluded that the occupational therapy intervention protocol was effective in reducing musculoskeletal pain among architects.

Keywords: Musculoskeletal disorders, Occupational therapy, Architects, Intervention, Pain, Disability

1. INTRODUCTION

Musculoskeletal disorders (MSDs) are injuries or disorders that affect the muscles, nerves, tendons, joints, cartilage, and spinal discs. They are a common problem that affects people of all ages and occupations. The National Research Council (NRC) defines these conditions as those affecting the limbs and trunk that may be caused by physical work activities. These disorders, particularly in the back, lower limbs, upper limbs, and neck, can be very costly if not addressed properly. They often result from a combination of physical factors such as repetition, force, and awkward postures, as well as other workplace factors.

Architecture is defined as both the act of planning, designing, and building, and its end result. The demands of the profession have become increasingly complex over time. Architects must spend many hours each day using a computer, which involves prolonged static postures and neck bending and flexing, straining the wrist, back, and cervical regions. They may also spend three to four hours a week visiting construction sites, which can involve standing in the sun, climbing stairs, and walking on uneven ground.

Common causes of musculoskeletal pain in architects include:

- Prolonged sitting: Long hours spent sitting at a computer can strain the neck, shoulders, and back.
- Repetitive activities: Repetitive movements like typing or drawing can cause strain on muscles and joints.
- Poor posture: This can put a strain on the spine and other parts of the body.
- Heavy lifting: Architects may be required to lift heavy objects, which can put pressure on the back and shoulders.

According to a study in the Indian Journal of Physiotherapy and Occupational Therapy, 80% of architects suffer from musculoskeletal pain, with the neck, lower back, and shoulders being the most commonly affected areas. The purpose of this study is to develop an occupational therapy intervention program for architects with musculoskeletal pain.

2. NEED FOR THE STUDY

Musculoskeletal pain in architects can limit their ability to participate in work and daily activities. This pain affects a person's quality of life and reduces their efficiency. Therefore, this study is needed to find an effective therapy intervention to increase work performance and quality of life for architects.

3.INTERVENTION SCHEDULE AND STATISTICAL ANALYSIS

PROCEDURE

WEEK 1
SESSION-1
Client Education
Side to side bends
Side to side turns
Shoulder pendulum
Cross arm stretch
Lying on stomach
Lying on pillow

SESSION-2
Side to side bends
Side to side turns
Shoulder pendulum
Cross arm stretch
Lying on stomach
Lying on pillow

SESSION-3
Side to side bends
Side to side turns
Shoulder pendulum
Shoulder pendulum
Cross arm stretch
Lying on stomach
Lying on pillow

WEEK2
SESSION-1
Client Education
Chin tucks
Levator scapulae stretch
Shoulder shrugs
Shoulder swings
Standing flexion
Standing extension
SESSION-2
Chin tucks
Levator scapulae stretch
Shoulder shrugs
Shoulder swings
Standing flexion
Standing extension
SESSION-3
Chin tucks
Levator scapulae stretch
Shoulder shrugs
Shoulder swings
Standing flexion
Standing extension

WEEK 3 AND 4
SESSION-1
Client Education
Side to side bends
Side to side turns
Shoulder blade squeeze
Upper trapezius stretch

Prone on elbows
Abdominal curl ups
SESSION-2
Side to side bends
Side to side turns
Shoulder blade squeeze
Upper trapezius stretch
Prone on elbows
Abdominal curl ups

SESSION-3
Side to side bends
Side to side turns
Shoulder blade squeeze
Upper trapezius stretch
Prone on elbows
Abdominal curl ups

Patient Education:

- Energy Conservation Techniques
- Joint Protection Techniques
- Self Management And Work Simplification Techniques.

Table 1: DESCRIPTIVE STATISTICS ANALYSIS OF NECK DISABILITY INDEX, SHOULDER PAIN DISABILITY INDEX AND OSWESTERY LOW BACK PAIN:

Descriptive Statistics						
	N	Minimum	Maximum	Sum	Mean	Std. Deviation
NDI Pretest	30	2	4	82	2.73	.640
NDI Post test	30	2	3	69	2.30	.466
SPDI Pain Pretest	30	11	34	521	17.37	5.893
SPDI Pain Post test	30	5	26	367	12.23	6.135
SPDI Disability Pretest	30	10	29	577	19.23	5.519
SPDI Disability Post test	30	5	26	371	12.37	5.605
OLBP Pre test	30	2	4	82	2.73	.583
OLBP Post test	30	2	4	72	2.40	.563
Valid N (listwise)	30					

Figure1:

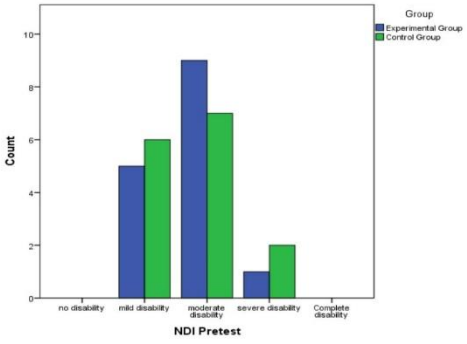

Figure 2:

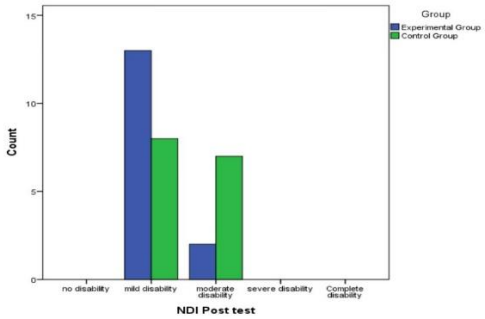

Figure1: NECK DISABILITY INDEX PRE-TEST EXPERIMENTAL GROUP AND CONTROL GROUP
Figure2: NECK DISABILITY INDEX POST-TEST
EXPERIMENTAL GROUP AND CONTROL GROUP

Table2: 2:

Paired Samples Test									
		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	SPDI Pain Pretest - SPDI Pain Post test	5.133	3.170	.579	3.950	6.317	8.869	29	.000
Pair 2	SPDI Disability Pretest - SPDI Disability Post test	6.867	4.377	.799	5.232	8.501	8.594	29	.000

Table 2: T-TEST COMPARING SHOULDER PAIN DISABILITYINDEX PRE-TEST AND POST TEST.

Figure 3: figure 4:

Figure3: OSWESTRY LOW BACK PAIN PRE-TEST OF EXPERIMENTAL GROUP AND CONTROL GROUP
Figure4: OSWESTRY LOW BACK PAIN POST-TEST OF EXPERIMENTAL GROUP AND CONTROL GROUP

Table3:

Correlations		NDI Pretest	NDI Post test	SPDI Pain Pretest	SPDI Pain Post test	SPDI Disability Pretest	SPDI Disability Post test	OLBP Pre test	OLBP Post test
NDI Pretest	Pearson Correlation	1	.625**	.438*	.412*	.419*	.355	.450*	.306
NDI Post test	Pearson Correlation	.625**	1	.335	.505**	.361	.498**	.558**	.578**
SPDI Pain Pretest	Pearson Correlation	.438*	.335	1	.862**	.641**	.558**	.270	.183
SPDI Pain Post test	Pearson Correlation	.412*	.505**	.862**	1	.648**	.756**	.509**	.491**
SPDI Disability Pretest	Pearson Correlation	.419*	.361	.641**	.648**	1	.691**	.481**	.291
SPDI Disability Post test	Pearson Correlation	.355	.498**	.558**	.756**	.691**	1	.759**	.738**
OLBP Pre test	Pearson Correlation	.450*	.558**	.270	.509**	.481**	.759**	1	.651**
OLBP Post test	Pearson Correlation	.306	.578**	.183	.491**	.291	.738**	.651**	1
	N	30	30	30	30	30	30	30	30
**. Correlation is significant at the 0.01 level (2-tailed).									
*. Correlation is significant at the 0.05 level (2-tailed).									

Table3: CORRELATIONS BETWEEN PRE-TEST AND POST-TEST OF NECK DISABILITY INDEX, SHOULDER PAIN DISABILITY

INDEX AND OSWESTRY LOW BACK PAIN

4.CONCLUSION

Architects are more likely to develop musculoskeletal disorders due to sitting for long periods of time, repetitive movements, forceful exertions, poor posture, unergonomic work environment, stress, age, gender, genetics, and medical conditions. This study is aimed to find the effectiveness of occupational therapy intervention [protocol] on architects with musculoskeletal disorders. The study sample consists of 30 architects and were divided in to experimental group and a control group.The experimental group showed significant improvement after giving the Occupational therapy intervention based on neck, shoulder and low back [protocol]. Hence this study provides evidence supporting the effect of Occupational therapy intervention on Musculoskeletal disorders.

5.LIMITATIONS AND RECOMMENDATION:

LIMITATIONS

- The present study was done with a small sample size.
- Duration of the study was short period of time.
- The study was performed only for architects.

RECOMMENDATIONS

- Study can be done on larger sample size.
- Study can be done for longer duration.
- Study can be done on different age group.
- Study can be done in randomized control trial.
- Study can be performed for other population.

DECLARATION: The authors have no conflict of interest.

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