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Effectiveness of Home Based Exercises on Neck Pain and Functional Limitation among Rural Population in Selected Villages Mohali, Punjab

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ABSTRACT

INTRODUCTION: Neck pain is the pain felt in the back of the neck- the upper spine area, just below the head. Neck pain can be caused by sudden trauma such as a fall, sports injury, car accident or by long term problem in the spine. Poor posture, obesity, smoking, repetitive lifting, office work, computer work and involvement in athletic activity are all risk factors for developing neck pain. People with neck pain can have difficulty performing activities.

AIM: The objectives of the study were assess pre interventional neck pain and function limitation of experimental and control group, assess post interventional neck pain and function limitation of experimental and control group.

MATERIAL AND METHODS: A experimental (pre-post control group design) was used to conduct study on 60 neck pain patients (30 experimental group 30 control group) fulfilling the inclusion criteria by using simple random sampling technique. The data was collected by using Sociodemographic profile, clinical profile, standardized Wong Baker Face pain assessment scale, modified Northwick Park neck pain questionnaire.

RESULTS: The results showed that pre interventional moderate neck pain (63.33%) and sever functional limitation (60%) in experimental group and in control group moderate neck pain (73.33%) and moderate functional limitation (56.67%). In post interventional (60%) samples were mild pain and moderate functional limitation (73.33%) and in control group moderate neck pain (73.33%) and moderate functional limitation (56.67%).

CONCLUSION: Study concluded that home based exercises

Was effective for neck pain and functional limitation among rural population in selected villages Mohali, Punjab

KEYWORDS: *Effectiveness of home based exercise, neck pain and functional limitation, rural population*

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INTRODUCTION

Neck pain is the pain felt in the back of the neck- the upper spine area, just below the head. When certain nerves are affected, the pain can extend beyond the back of the neck to areas such as the upper back, shoulder, and arms. It is estimated that the neck pain affect approximately 30% of the US population each year. Neck pain can be caused by sudden trauma such as a fall, sports injury, car accident or by long term problem in the spine. Neck pain most frequently affects adults aged 30 to 50 years. Some studies indicate that women are more likely to suffer neck pain than men. Poor posture, obesity, smoking, repetitive lifting, office work, computer work and involvement in athletic activity are all risk factors for developing neck pain. People with neck pain can have difficulty performing activities.[1]

The causes for musculoskeletal disorders, including neck pain are multi-factorial. Self-reported physical exposure such as sedentary positions in prolonged periods, repetitive work, cervical spine inflexion for prolonged time, working in awkward positions, inadequate keyboard and Mouse position, no chair armrest, upper extremity postures have been shown to be risk factors for neck pain. Self-reported psychosocial work exposures such as job strain, low co-worker support, decreased job security and overall stress at work have also been shown to be risk factors for neck pain. Individual factors such as age, gender, education and non-work-related factors also contribute to the explanation of the prevalence of neck pain.[2]

The Bone and Joint decade task force on neck pain and the Global Spine Care Initiative classify neck pain into four grades using a best evidence synthesis. Grade I – neck pain with no signs of major pathology and no or little interference with daily activities; Grade II – neck pain with no signs of major pathology, but interference with daily activities; Grade III – neck pain with neurologic signs of nerve compression; Grade IV – neck pain with signs of major pathology. The Numeric Pain Rating Scale and the Visual Analogue Scale are commonly used to measure pain.[3]

Neck pain is the fourth leading cause of disability with an annual prevalence rate exceeding 30%. Most episode of neck pain will resolve with or without treatment. But nearly 50% of individuals will continue to experience some degree of pain or frequent occurrences. Few clinical trials have evaluated treatments for neck pain. Exercise is best treatment appears to be beneficial in patients with neck pain[4]

Neck pain seems to be more prominent in the general population than previously known. A recent review showed that neck pain is common in the adult population; in the majority of studies included in the review, the annual prevalence was between 20% and 50%. In another large review, the annual prevalence of neck pain among workers varied considerably across countries, from 27.1% in Norway and 33.7% in the UK, to 47.8% in Quebec, Canada .[5]

Exercise is one of the most frequently used modalities in the rehabilitation of subjects with neck pain to gain muscle strength, endurance, and flexibility in order to restore injured tissues, and to sustain normal life activities. Exercise programs for managing neck pain differ with regard to duration, Training frequency, intensity, and mode of exercise. Previous studies have shown that isometric exercises and strength training can have positive effects on neck pain.[6]

OBJECTIVES OF THE STUDY

1. To assess pre interventional neck pain and function limitation of experimental and control group.
2. To assess post interventional neck pain and function limitation of experimental and control group.

MATERIALS AND METHODS

Research Approach and design: A quantitative research approach and experimental (pre post control group design).

Sample and sampling technique: Simple random sampling technique was employed to select the sample of the study. Sample size was 60 (30 in experimental group and 30 in control group).

Selection and development of research tool:

Part-I: Socio demographic data: This part consider of 8 items related the socio-demographic background of the study.

Part-II: Standardized Wong Baker Face Pain Assessment Scale: To assess level of neck pain. It was 4 points (No pain=0, mild pain=1 to 3, moderate pain=4 to 6, Severe pain=7 to 10).

Part-III: Modified Northwick park neck pain questionnaire (Neck disability index): this part consider 10 items with 4 options. The each category the maximum score is 3 and minimum score is 0.

ETHICAL CONSIDERATIONS

Ethical approval was obtained from institute ethic committee of SPHE College of Nursing Gharuan, Mohali. Informed written consent was taken from the subjects. Confidentiality of the data was maintained.

RESULTS:

Table No: 1 Frequency and percentage distribution of Socio-demographic Variables among Experimental group

N=60

S. N.	Socio-demographic Variables	Categorization	Experimental Group (n=30)		Control Group (n=30)	
			Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	Age in years	20-30	8	26.67	6	20.00
		30-40	8	26.67	6	20.00
		40-50	8	26.67	10	33.33
		> 50	6	20.00	8	26.67
2	Gender	Male	17	56.67	19	63.33
		Female	13	43.33	11	36.67
3	Marital status	Single	10	33.33	12	40.00
		Married	20	66.67	13	43.33
		Widow/Widower	0	0.00	5	16.67
		Divorced/Separated	0	0.00	0	0.00
4	Educational status	Secondary	12	40.00	10	33.33
		Senior Secondary	8	26.67	9	30.00
		Graduate	10	33.33	8	26.67
		Post graduate & above	0	0.00	3	10.00
5	Occupation	IT professional	10	33.33	7	23.33
		Teacher	7	23.33	9	30.00
		Farmer	7	23.33	6	20.00
		Laborer	6	20.00	8	26.67
		Any other	0	0.00	0	0.00
6	Dietary habit	Vegetarian	18	60.00	14	46.67
		Non vegetarian	12	40.00	9	30.00
		Eggetarian	0	0.00	7	23.33
7	Habits	Alcoholism	10	33.33	5	16.67
		Smoking	6	20.00	4	13.33
		Drugs	0	0.00	0	0.00
		None	14	46.67	21	70.00
8	Any accidental history	Yes	6	20.00	10	33.33
		No	24	80.00	20	66.67

Table 1: shows frequency, percentage distribution of socio- demographic characteristics of subjects with regards to Age in years, Gender, Marital status, Educational status, occupation, dietary habits, habits, and any accidental history.

OBJECTIVE 1: to assess the pre interventional neck pain and functional limitations of experimental and control group

Table No: 2 Percentage distribution of pre Assessment of pain scale

N=60

Criterion	Range of score	Experimental Group (n=30)		Control Group (n=30)	
		Frequency	percentage	Frequency	Percentage
No Pain	0	0	0.00	0	0.00
Mild Pain	1 to 3	0	0.00	0	0.00
Moderate pain	4 to 6	19	63.33	22	73.33
Sever pain	7 to10	11	36.67	8	26.67

Maximum score=10

Minimum score =0

TABLE No: 2 depict that in the experimental group majority 63.33% of the samples at moderate level of neck pain where as in the control group majority 73.33% of the sample had moderate level of neck pain. It was concluded that majority of rural population in control group and experimental group had moderate neck pain.

Table No: 3 Percentage distribution of pre intervention Northwick Park Neck Pain Assessment

N= 60

Criterion	Range of score	Experimental Group (n=30)		Control Group (n = 30)	
		Frequency	percentage	Frequency	Percentage
No functional limitation	0	0	0.00	0	0.00
Mild functional limitation	1 to 3	0	0.00	0	0.00
Moderate functional limitation	4 to 6	12	40.00	17	56.67
Sever functional limitation	7 to 10	18	60.00	13	43.33

Table No: 3 represents that in experimental group 18(60%) samples were with severe functional disability 12(40%) were with moderate functional disability and none of them were mild functional disability in pretest. In control group 17(56.67%) were having moderate functional disability and 13(43.33%) were having severe functional disability. Hence it was concluded that there was sever functional disability in pre test of Experimental group.

Objective 2: To assess post interventional neck pain and function limitation of experimental and control group

Table No: 4 Percentage distribution of post interventional assessment of pain scale

N=60

Criterion	Range of score	Experimental Group (n=30)		Control Group (n=30)	
		Frequency	Percentage	Frequency	Percentage
No Pain	0	0	0.00	0	0.00
Mild Pain	1 to 3	18	60.00	0	0.00
Moderate pain	4 to 6	12	40.00	22	73.33
Sever pain	7 to 10	0	0.00	8	26.67

Maximum score=10
Minimum score =0

Table No: 4 depict that in post test 18(60%) samples were with mild pain and 12(40%) were with moderate pain and none of them were severe pain after intervention. Where as in the control group 22(73.33%) were moderate pain and 8(26.67%) were severe pain. It was concluded that there was a good benefit of the exercise which decreased the pain level of experimental group and there was no change in the pain level of control group.

Table No: 5 Percentage distribution of Post test Northwick Park Neck Pain Assessment

N=60

Criterion	Range of score	Experimental Group (n=30)		Control Group (n=30)	
		Frequency	percentage	Frequency	Percentage
No functional limitation	0	0	0.00	0	0.00
Mild functional limitation	1 to 3	8	26.67	0	0.00
Moderate functional limitation	4 to 6	22	73.33	17	56.67
Sever functional limitation	7 to 10	0	0.00	13	43.33

Table No: 5 represents that in experimental group 22(73.33%) people were moderate functional limitation, 08(26.67%) with mild functional limitation and none of them were severe functional limitation in post test after intervention. In control group 17(56.67%) were moderate functional limitation and 13(43.33%) were severe functional limitation. Hence, it was concluded that no samples were left with sever functional disability and majority were with moderate functional limitation and a few percentage with mild functional limitation.

DISCUSSION

The findings of the study have been discussed with reference to the result obtained by the investigator. Present study was regarding neck pain to evaluate the effectiveness of home based exercises on neck pain and functional limitation among rural population in selected villages Mohali, Punjab. In the pre intervention we found that majority of people were there with the moderate pain in experimental group (63.33%), (60%) sample were with severe functional

limitation (40%) were with moderate functional limitation and control group (73.33%) have moderate level of neck pain (26.67%) were having sever neck pain and functional limitation (56.67%) moderate functional limitation and (43.33%) severe functional limitation. Also the people with severe pain were 36.67% and 60% sample were with severe limitation in experimental group and control group (26.67%) was having severe neck pain and (43.33%) were having severe functional limitation. There was no person with mild pain in the both groups.

Ms Justin jeya Amutha conducted experimental study of neck pain and functional limitation among office workers. There were 60 samples, 30 in experimental group and 30 in control group. The pre test majority of the sample in the experimental group (70%) in the control group (73.3%) moderate level functional limitation. In the post test there was improvement in functional ability in the experimental group where as in the control group majority (66.6%) of the sample continued to have moderate level of neck pain and functional ability.

Post intervention (60%) sample with mild pain and 40% with moderate pain and functional disability (73.33%) people were moderate functional disability and (26.67%) with mild functional disability in experimental group. In control group (73.33%) were moderate pain and (26.67%) were sever pain and functional disability (56.67%) were moderate functional disability and (43.33%) were sever functional disability. It was concluded there was good benefit of the exercise with the decreased pain level and functional limitation.

Pantea Bolandian (2015) questionnaire was administered among 46 dentists who complaint neck pain in the past six month. Subject was randomly divided into two groups. The first group received exercise therapy while the second group was given no exercise. Pain was measure with visual analogue scale. The t-test showed significant improvement of neck pain in the first group after the intervention ($p<0.05$). The results showed that exercise therapy could be effective for treatment of neck pain.

CONCLUSION

On the basis of findings of the study, it concluded that home based exercises Was effective for neck pain and functional limitation among rural population in selected villages Mohali, Punjab

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