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EDITORIAL

The National Health Status and Exercises

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The medal table of the Rio Olympics 2016 shows United States at the top[1] by securing 121 medals. United States was represented by 558 athletes. The majority of the top nations on the Olympic table are well developed countries which have optimum facilities for the exercises and physical activities. These countries have legislation in place which aim to promote and facilitate sports and exercises. Despite of the fact that Pakistan is the 5th populous country in the world, did not qualify for any medal in the last two decades and has poor image since 1947 in this arena. Unfortunately, Olympics games in Pakistan are merely considered as sporting events and source of entertainment, while health benefits as a pretext of national fitness are poorly understood.

The majority of events in Olympics games are based on the aerobic exercise abilities. The events include, but not limited to, various kinds of sports where endurance, speed, accuracy and general fitness are rewarded in the form of medals. The vast majority of the athletes train for several years before they could qualify for a place in the Olympic squad. Thousands of other disqualify during the screening for each particular sports through various kind of national competitions. And many hundreds of thousands other opt for amateur role and adapt to the sporting activity as pretext to keep themselves fit.

Pakistan squad in Olympic 2016 was composed of 7 athletes- 4 men and 3 women and had more officials than athletes.[1] The desperate situation of Pakistan participation in the Olympics, unfortunately reflects the poor fitness status of national health.

According to a national survey 1990-1994([2]) and the following reports, 33% of the population in Pakistan above the age 45 and 19% above the age 15 are suffering from hypertension. And around 25% of people over the age of 45 suffer from Diabetes. Over all prevalence of diabetes in urban and rural areas is estimated around 28.3% and 25.3%, respectively.[3] Currently Pakistan is ranked 6th worldwide in relation to the prevalence of diabetes and the figures are estimated to rise to 13 million patient in 2020, making Pakistan the 4th largest diabetic population worldwide. Around 350,000 people suffer from stroke every year. Heart diseases related deaths are estimated around 200,000 (30-40%) per years. Obesity is estimated 9% and 14% in men and women respectively in rural area of Pakistan. Urban areas have the prevalence of obesity of 22% in men and 37% in women for the obvious reasons. These statistics have reached to an epidemic level and needs emergency measures.

The major risk factors of the high blood pressure, diabetes, cardiac diseases and obesity are identified as sedentary lifestyle and physical inactivity.[4-6] The World Health Organization's estimates reveals 1.9 million deaths take place per year due to physical inactivity on a global level. In addition, 22% of heart related disease and 10-16% of breast cancers, colon cancer and diabetes are the results of the physical inactivity. WHO further estimates that inadequate physical activity in the developing countries range from 17 to 91% and 4-84% in the developing world.[7]

Conversely, regular exercises play an important role in the reduction of the risk of cardiovascular diseases, diabetes[8], osteoarthritis, respiratory illnesses and hospital stay after admissions.[9-11] Unfortunately, the population in Pakistan with respect to social status and lifestyle is

diverse and accurate statistics with respect to exercise social class cannot be estimated.

"Exercise is the best medicine" and is one of the basic needs of health and wellbeing. The health professionals are therefore urged to prescribe more and more exercises and educate their patients regarding the benefits of exercise. The government authorities should optimize facility for sports and exercises on each level and department. Non-government voluntary organization, electronic media and trusts need to launch campaigns to promote physical activity in order to educate the general population in relation to the greater health benefits of the exercises.

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ORIGINAL ARTICLE

Comparison of Effectiveness of Myofascial Trigger Point Release with Manual Therapy and Myofascial Release in Combination with Self-Stretching in Upper Cross Syndrome

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ABSTRACT

Background: Upper crossed syndrome is a common postural dysfunctional pattern that describes the dysfunctional tone of the musculature of shoulder girdle/cervicothoracic region of the body. In upper crossed syndrome cervical flexors and rhomboid and lower trapezius become weak and pectorals and upper trapezius/elevator and sub occipital become tight. Overuse and tightness of these muscles results in trigger point (hyperirritable points/knots) formation in the belly of the muscles.

Objective: To compare the effectiveness of myofascial trigger point release in upper crossed syndrome versus myofascial trigger point release in combination with self-stretching treatment.

Methodology: A total of 40 patients with upper crossed syndrome were selected for study on the basis of inclusion criteria, randomly allocated in to two groups i.e. A and B (each n=20). Group A was treated with myofascial trigger point release alone once a week and followed for 6 weeks, while group B was given the same treatment along with self-stretching home plan. Self-stretching includes (chest stretch in sitting for pectoralis major, upper trapezius stretch and sub occipital self-stretch include hold for 10-15 seconds and release of 5-10 seconds). The pain, disability and Cervical ROM were assessed before and after treatment through Numeric Pain Rating Scale (NPRS), Neck Disability Index (NDI) and Goniometry respectively. Data was analyzed on SPSS 20.

Results: The results showed that patients in Group B improved pain (mean NPRS from 5.40±0.50 to 2.50±0.52) and disability (mean NDI from 36.00±4.47 to 22.20±4.67) more than Group A with pain (mean NPRS from5.45±0.75 to 4.00±0.32) and disability (mean NDI from 31.25±6.85 to 23.20±7.40).Statistically significant results were found between the groups regarding NPRS, NDI and cervical ROM as p value was <0.05.

Conclusion: It is concluded that the myofascial trigger point release along with self-stretching is more effective as compared to myofascial trigger point manual release alone in upper crossed syndrome.

Introduction

Upper crossed syndrome and its associated neck pain is considered to be the fourth most frequent cause of disability with an annual 30% increase in the rate of prevalence. According to the report of Global Burden of Disease (GBD) 2010, neck pain is ranked 21st in terms of overall burden of diseases. The point prevalence of neck pain in the global report of GBD was 4.9% and is generally found higher in Scandinavian countries than rest of Europe and Asia.[1] Neck pain (NP) reported higher among females at the age of 35-49 years as compared to males. Study suggests that approximately 6-48% of adult's population have pain in one of these muscles.[2]

Trigger points are hyperirritable spots in a muscle. Myofascial overuse or stressed out due to trauma, the muscle develops adhesions which are known as "Trigger Points". These adhesions cause a restriction in work of muscle to perform well.[3] Trigger point causes muscular stiffness, tenderness and a decrease in range of motion. Almost everyone gets trigger point with no other complaint or issue.[4] Trigger points actually cause a break or a hurdle of blood supply problem to that area of muscle too.[5] Myofascial release is a hands-on technique includes stretching, compression, and sustained pressure into restricted areas of fascia in the body to eliminate pain and restore motion. Myofascial therapy goal is to stretch and loosen the fascia and to restore the motion. It is also being referred to trigger point myofascial release.[6] Once trigger points are released the muscle needs to be moved to its full length. Many patients feel pain-free during the 1st treatment. Soreness may be present after 2 to 3 days of treatment, but the restoration of muscle length takes time.[7] The purpose of this study was to compare the effectiveness of myofascial trigger point release in upper crossed syndrome versus myofascial trigger point release in combination with self-stretching treatment.

Methodology

The ethical review committee of Riphah College of Rehabilitation Sciences Islamabad approved to conduct this study. This Randomized Controlled Trial was conducted in Islam Teaching Hospital, Sialkot, Islam Central Hospital, Sialkot, and Bilal Hospital Sialkot, Pakistan from January 2016- June 2016.The inclusion criteria were Patients of both genders with upper crossed syndrome along with trigger points between the ages of 20-40 years. The data was collected through a self-structured Performa. A total 40 patients were selected in which 18 males and 22 females were fulfilling the inclusion criteria. Patients were randomly divided into the group (A and B) 20 patients in each group. Sample size was collected from previous study and calculated by using openEpitool[13] with 95% confidence interval.

Both the groups A and B were treated with myofascial trigger point release technique which included 1 session per week and followed by 6 weeks of intervention. Patient position was prone and relaxed and a 30-50 second sustained deep pressures were applied to the trigger point in 5-7/10 pain tolerance level of the patient on every involved muscle of the upper cross syndrome. But only Group B patients were taught for self-stretching of the upper trapezius muscle, pectoralis muscle, and levator scapulae muscle. A hold of 10-15 second stretch was performed by the patient with 10 repetitions in each session.

To measure the effect of pain on patient's functional activities Neck Disability Index (NDI) was used. It composed of ten items i-e pain, self-care, carrying, reading, headache, concentration, work, driving, sleep, and leisure. NDI has high level of reliability and validity (Crobach's alpha score was 0.89) as it is quicker to answer and easier to score[14]. Intensity of pain was measured by Numeric Pain Rating Scale (NPRS) a highly reliable tool (Crobach's alpha=0.88)[15]. NPRS scale showed 0 for no pain and 10 for extreme pain while Goniometer was used to measure ROM of the neck as its reliability was 0.98[16]. SPSS version 20 was used for data analysis. Paired and independent t-test were used to compare the mean differences within and between groups.

Results

During the trial, patients were selected randomly and it was found that about 15 (37.5%) patients that is the maximum number of patients were between the ages of 30-35. This also shows the prevalence of disease among this age group. (Figure.1)

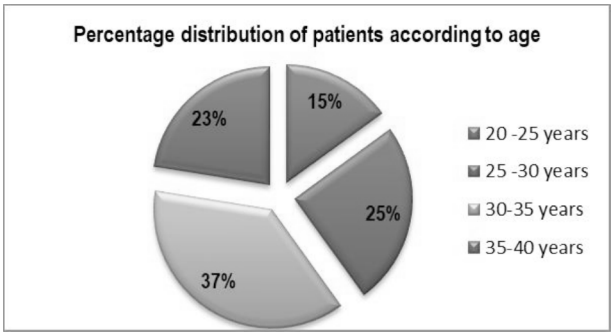

Figure 1: Age distribution of the participants

Within the group analysis (Table I) showed significant results but when comparing both the groups, Group B showed significant improvement in pain, disability and cervical ROM as compared to Group A. (Table II)

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Table I: Shows within the Group Comparison

Study Variables	Groups	Pre- treatment Mean± SD	Post-treatment Mean± SD	Mean Difference	*P* value
NPRS	A	5.45±0.75	4.00±0.32	1.45	0.005
	B	5.40±0.50	2.50±0.52	2.9	0.001
Flexion	A	23.25±4.65	30.75±4.06	7.5	0.005
	B	22.75±4.43	34.75±4.12	12	0.001
Extension	A	29.50±3.94	34.25±3.72	4.75	0.005
	B	26.00±4.47	37.20±4.72	11.2	0.001
Right Side Bending	A	20.00±4.12	26.30±3.58	6.3	0.005
	B	20.00±3.97	30.00±4.55	10	0.001
Left Side Bending	A	19.50±3.35	23.00±3.47	3.5	0.005
	B	21.00±3.83	27.25±5.25	6.25	0.001
Left Rotation	A	40.50±5.35	52.50±6.58	12	0.005
	B	36.75±5.19	54.50±6.86	14	0.001
Right Rotation	A	40.00±4.86	52.00±8.29	12	0.005
	B	38.25±5.19	55.75±7.99	17.5	0.001
NDI	A	31.25±6.85	23.20±7.40	8.05	0.005
	B	36.00±4.472	22.20±4.67	13.8	0.001

Table II: Shows across the Group Comparison

Study Variables	Group	Pre- treatment Mean± SD	Post-treatment Mean± SD	Mean Difference	P value
NPRS	A	5.45±0.75	4.00±0.32	1.45	0.001
	B	5.40±0.50	2.50±0.52	2.9	
NDI	A	31.25±6.85	23.20±7.40	8.05	0.001
	B	36.00±4.47	22.20±4.67	13.8	
Flexion	A	23.25±4.65	30.75±4.06	7.5	0.001
	B	22.75±4.43	34.75±4.12	12	
Extension	A	29.50±3.94	34.25±3.72	4.75	0.001
	B	26.00±4.47	37.20±4.72	11.2	
Right side bending	A	20.00±4.12	26.30±3.58	6.3	0.001
	B	20.00±3.97	30.00±4.55	10	
Left side bending	A	19.50±3.35	23.00±3.47	3.5	0.001
	B	21.00±3.83	27.25±5.25	6.25	
Right side Rotation	A	40.00±4.86	52.00±8.29	12	0.001
	B	38.25±5.19	55.75±7.99	17.5	
Left Side Rotation	A	40.50±5.35	52.50±6.58	12	0.001
	B	36.75±5.19	54.50±6.86	14	

Discussion

The purpose of the study was to see the results of supposed protocol on treatment outcomes pain, disability and range of motion limitation. The main findings of this study showed that trigger point release along with self-stretching in upper crossed syndrome is more effective in treating patients with limited range of motion and pain as compared to the myofascial trigger point release alone in upper crossed syndrome. From the analysis of the current study it was found that the patients treated with myofascial trigger point release Group A improved pain but less than that of Group B in which self-stretching was done in combination with myofascial trigger point release on NDI scale i.e. (Pre = 31.25+6.85, Post = 23.20+7.40) and on NPRS scale i.e. (Pre = 5.45+0.75, Post = 4.00+0.32).

Anderson *et al.,* in 2005 worked on the integration of myofascial trigger point release and paradoxical relaxation training treatment of chronic pelvic pain in men. The study showed that the combined treatment for trigger point release is much more effective.[8] In 2013, Moraska *et al.,* worked and conducted a study on the effects of pressure trigger point release (ischemic compression) on blood flow and cellular metabolism at the myofascial trigger point. The study showed that lactate may be the more relevant for detection and treatment of

abnormalities in the myofascial trigger pint release.[9] In 2008, Blikstad conducted a placebo randomized controlled trial to find out the effect of myofascial band therapy and activator trigger point therapy on cervical lateral flexion by using cervical range of motion, numerical rating scale were used to determine neck pain, while cervical range of motion to find out the lateral flexion and pain pressure algometer were used for pressure threshold measurement. He found that the non-specific neck pain and upper trapezius points were better treated with trigger point therapy than myofascial band therapy.[10] Another study conducted by Adelaida Maria et al in 2011 and concluded that myofascial release is helpful in improving physical function in patients with fibromyalgia patients, but not effective in correction in posture correction.[11] In 2007 Jari et al conducted a study, in which he compared manual therapy with self-stretching and concluded that patients favor manual therapy because it was better option for decreasing stiffness and disability. But on the other hand it was found that regular self-stretching was more effective in reduction of pain and easy to perform this favors current study.[12]

Conclusion

It is concluded that the myofascial trigger point release along with self-stretching is an efficient method as compared to myofascial trigger point manual release alone in upper crossed syndrome.

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OPEN ACCESS

ORIGINAL ARTICLE

Comparison of Isometric Exercises and Stretching Versus Isometric Exercises and Stretching With Ergonomic Modifications in Patients with Mechanical Neck Pain

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[2]Planning of research, Manuscript writing, Interpretation

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ABSTRACT

Background: Mechanical neck pain is the most common musculoskeletal disorder of general population. Mechanical neck pain is also known as axial neck pain or nonspecific neck pain as it is non radiating pain and has an acute or sudden onset without known etiology.

Objective: To compare the effectiveness of isometric exercises and stretching versus isometric exercises and stretching with ergonomic modifications for mechanical neck pain.

Material and Methods: This is a randomized control trial, single blind study which consists of 30 subjects (n=30) of age 20-45 years, with 15 subjects (n=15) in experimental group (isometric exercises and stretching with ergonomic modifications were applied) and 15 subjects (n=15) in control group (isometric exercises and stretching were applied).Duration of study was 6 months. Pre and post treatment assessment was done. Interventions were applied with moderate intensity 3 times a week (10rep/ 3 set per day) for 4 weeks (12 sessions) in both groups. Questionnaire, visual analogue scale (VAS) for pain intensity and neck disability index (NDI) for functional disability was used as data collection tools. Sample size was calculated through epitool.

Results: Both VAS and NDI scores showed more improvement in experimental group (isometric neck exercises and stretching with ergonomic modifications) as compared to control group (isometric neck exercises and stretching). One way ANOVA was used for between group analysis and paired t-test was used for within group analysis. As P-value < 0.05 so we rejected null hypothesis, there is a significant difference between groups.

Conclusion: This study concluded that ergonomic modifications with isometric exercises and stretching result in improvement of posture, reduce muscle stress, increase muscle balance, increase range of motion as compared to isometric exercises and stretching.

Introduction

Mechanical neck pain is the most common musculoskeletal disorder of general population.[1] Mechanical neck pain is also known as axial neck pain or nonspecific neck pain as it is non radiating pain and has an acute or sudden onset without known etiology.[2] Mechanical neck pain is a generalized neck pain with symptoms which are increased by stoop postures, cervical muscles palpation and neck movement. [3] Mechanical neck pain is usually associated with headaches that radiate into skull base, temporal and per orbital areas. These headaches are called cervicogenic headache.[4]

Neck pain due to abnormal mechanics may leads to poor posture, increase muscle imbalance, muscle spasm, neck stiffness and decreased range of motion.[5] Leading cause of disability in general population is

mechanical neck pain with an annual prevalence of 30%.[6] Neck pain affects 15% of the general population annually.[7] Prevalence of activity limitation due to neck pain in adults is 16-75 %.[8] Prevalence of neck pain ranges from 6% to 22% and prevalence in elderly population is up to 38%.[7] Lifetime prevalence ranges from 14.2% to 71%.[3] Neck pain peaks at middle age and affects women more than men.[6] People with a working age group of 20-50yrs are most commonly affected. Possible risk factors are of a physical, psychosocial, cultural, societal or personal origin.[9] One reason of neck pain is people sedentary way of life which is connected with using a personal computer during daily activity. Work place and duration are not properly adapted to the personal physical conditions of the employees.[10] Risk factors include repetitive work, poor ergonomic work design, poor posture, Physical overload, Stress, Smoking, Poor psychological health.[11] Disturbance in oxidative metabolism and elevation of pain-generating substances in neck muscles, suggests impairment of muscle circulation locally and accumulation of waste products.

Stretching and isometric exercises with ergonomic modifications cause immediate and long term relief in mechanical neck pain. In electrotherapy low level laser (830 to 904 nm) causes immediate decrease in pain and increase in function in mechanical neck pain[12]. The goal of ergonomic modifications is to create environment suitable for the physical needs of patients and to guide patients to perform workplace exercises. Guide proper standing with neck and back straight.[13] Use a firm pillow support while sleeping. Guide yoga for improving neck posture. Ergonomic modifications lead to improved workplace conditions through participation, communication, and problem-solving, and has positive impact on health and exposure of workers.[14] Ergonomic modifications results in the enhancement of working posture and decline in incidence of musculoskeletal symptoms.[15] Kilroy, Niamh in 2000 determined that Ergonomics intervention resulted in an improvement in working posture and a decrease in musculoskeletal symptoms and body discomfort. Ergonomic guidelines, which include avoid slouch posture, sit upright,[16] Frequently used items should be within close reach, Alternate activities like drinking water, speaking on phone, speaking to a colleague, whole body stretch should be done, Avoid maintaining same position for long period.[17] Stretching and isometric exercises helps to improve flexibility, range of motion, blood circulation and muscle strength.

Methodology

This is an RCT randomized controlled trial, single blind study, duration of study was 6 months. Patients with age 20–45 years sub-acute or chronic cases (4 to 12 weeks), who had neck pain without radiculopathy and who had not taken any treatment for neck pain earlier and both males and females were included in the study. Patients who showed signs of serious pathology (e.g. malignancy, inflammatory disorder, infection), History of Cervical spine surgery in previous 12 months , History of fractures in cervical spine, Signs of cervical radiculopathy, Vascular Syndromes such as vertebrobasilar insufficiency, Bilateral upper limb symptoms, History of whiplash injury, Diminished or absent sensation to pinprick in upper limb were excluded from the study. Matching of experimental and control group was done. Participants were blinded.

Simple random sampling was done through tossing a coin. Questionnaire, visual analogue scale (VAS) for pain intensity and neck disability index (NDI) for functional disability was used as a data collection tool. A data of 30 patients from Allied health hospitals (Holy family hospital, Benazir Bhutto hospital and District headquarter hospital) was collected for this study. Sample was divided into two groups' experimental group and control group each containing 15 subjects.

Pre and post treatment assessment was done, pre assessment was done at zero week and post treatment was done at 4th week. Interventions were applied with moderate intensity 3 times a week (10rep/ 3 set per day) for 4 weeks (12 sessions) in both groups. To patients allocated to control group isometric exercises and stretching were applied and to patients allocated to experimental group isometric exercises and stretching with ergonomic modifications were applied.

Results

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Appropriate analysis skills with SPSS version 21 were applied. Efficacy of Interventions was analyzed through One-way ANOVA and paired t-test. Power 0.8, Level of significance= 5% or 0.05, P value 0.05, Confidence interval0.95. Sample size was calculated through epitool. Mean±SD of age was 2.13±1.40. Out of 30 subjects 5 were male and 25 were female, 16 subjects had age between 21-25 years, 3 had 26-30 years, 4 had 31-35, 5 had 36-40 years and 2 had age between 41-45 years, 15 subjects were students, 2 were office workers, 2 were computer user, 5 were teachers and 6 were housewives. 19 subjects were single and 11 were married. Critical

Table I: Shows comparison of pre and post treatment in control and experimental group.

NDI	Mean± standard deviation				F	P-value
	Control		Experimental			
	Pre-test	Post-test	Pre-test	Post-test		
	2.33±0.617	2.33±0.617	2.27±0.961	0.60±0.632	57.707	<0.001
VAS	6.80±1.568	3.33±0.900	6.53±1.187	1.90±1.100	14.561	0.001

NDI= Neck disability index, VAS= Visual analogue scale SD= Standard deviation, one way ANOVA, P-value<0.05; there is a significant difference between two groups.

Table II: **Shows comparison of pre and post treatment in control and experimental group**

Measure	Group	Mean± standard deviation		P-Value
		Pre-test	Post test	
NDI	Control	2.33±0.617	2.33±0.617	0.858
	Experimental	0.60±0.632	0.60±0.632	0.000
VAS		6.80±1.568	3.33±0.900	0.000
		6.53±1.187	1.93±1.100	0.000

NDI= Neck disability index, VAS= Visual analogue scale SD= Standard deviation, Paired t-test, P-value<0.05; there is a significant difference within groups, P-value>0.05; there is no significant difference within groups.

region: Reject H_o if F_{cal}> 2.05. One way ANOVA and paired t-test were performed to compare the treatment outcomes between groups and within groups.

Discussion

The findings from this study suggest that mechanical neck pain may be relieved by isometric exercises and stretchings with ergonomic modifications. This study shows the resemblance with some aspects of literature review. There was evidence of statistically significant effect of ergonomic modifications on mechanical neck pain as study conducted by Kilroy, Niamh in 2000 showed that ergonomics intervention resulted in an improvement in working posture and a decrease in musculoskeletal symptoms and body discomfort.[18] Jari Ylinen in 2003 determined that both isometric strength training and dynamic endurance training effectively decreased pain and disability[19] Hannu K, Pekka H, Jari Y in 2008 determined that strength training and stretching resulted in long term improvement in neck pain and disability.

The study conducted by Arpita Desai and Shruti M Shah in 2004 on a 100 computer professionals by using ergonomic intervention and intermittent exercises for neck in the work day concluded that educating computer operators the importance of ergonomics and work modification techniques and intermittent exercises protocol can reduce risk of cumulative trauma disorders[20].There was also evidence of statistically significant effect of strengthening exercises and stretchings on mechanical neck pain as study conducted by Kary TN, Gross A in 2005 (used 16 trials with multiple comparison, 6 studies compared stretching and strengthening exercises to control treatment showed that there is evidence that stretching and strengthening exercises have benefit on neck pain. Shikda AA, Al-Kindi in 2007 determined that 30 % of the computer users develop neck pain, due to ergonomic deficiencies in computer workstation and ergonomic interventions were effective to improve it. [21] Häkkinen in 2007 determined that both manual therapy and stretching were effective for reducing both spontaneous and strain-evoked pain in patients with chronic neck pain.[22] All the

studies discussed above showed the effect of active muscle training, isometric exercises, stretching and ergonomic modifications on chronic neck pain, cumulative trauma and in computer users none of the study studied the combined effect of isometric exercises and stretching with ergonomic modification in mechanical neck pain on both genders in 20-45 years of age that's why this study was conducted.

This study concluded that the statistically significant effect of Isometric neck exercises and stretching with ergonomic modifications on mechanical neck pains compared to isometric exercises and stretching as our calculated value was greater than table value(Fcal= 6.40 > 4.24) so I rejected null hypothesis. The patients in experimental group showed more improvement in range of motion, reduction in pain, better sleep, no headache and increased ability to do ADLs and IADLs without pain as compared to patients in control group.

One must question the mechanism by which isometric exercises and stretching's with ergonomic modification causes reduction in pain, improvement in range of motion and increased ability to do ADLs and IADLs. Disturbed oxidative metabolism and elevated levels of pain-generating substances in neck muscles, suggests impaired local muscle circulation and accumulation of waste products that causes neck pain. Isometric exercises and stretching cause removal of waste product from neck muscles by improving blood circulation that reduce muscle stiffness and spasm which causes pain relief and improves range of motion. Ergonomic modifications improve posture alignment of body that reduce stress, increase muscular balance and reduce muscle spasm. So combined effect of isometric exercises and stretching with ergonomic modifications showed more improvement in mechanical neck pain.

In control group subjects showed improvement but without ergonomic modification proper alignment of the body was not maintained that caused less decrease in mechanical stress on neck muscles and less increase in muscle balance So this study concluded that ergonomic modifications with isometric exercises and stretching result in improvement of posture, reduce muscle stress, increase muscle balance, increase range of motion as compared to isometric exercises and stretching.

Conclusion

It is concluded that isometric neck exercises and stretching with ergonomic modifications applied to experimental group were more effective than isometric exercises and stretching applied to control group for mechanical neck pain. As Mechanical neck pain is due to poor ergonomic work design, poor posture, stress which causes neck muscle spasm. Delayed diagnosis, improper management of mechanical neck pain will cause weakness of neck muscles, straightening of spine and headache so stretching, isometric exercises and ergonomic modifications should be used for management of mechanical neck pain. In future more research needs to be done on effectiveness of ergonomic modifications and workplace exercises with greater sample size, long duration and large resources.

Limitation of Study: Sample size was small. Duration of study was short. Limited resources were available. Study had not included subject below 20 and above 45. Study had not included subjects with cervical fracture, degeneration and radiculopathy.

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ORIGINAL ARTICLE

Effect of Dynamic Strength Training on Functional Independence of Female Rheumatoid Arthritis Patients

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Author`s Contribution

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A B S T R A C T

Background: Synovitis is a persistent feature of rheumatoid arthritis and results in joint swelling and limited ROM, persistent joint swelling results in stretched tendons, joint capsules, and ligaments. Which ultimately leads to instable joint, decrease in muscle strength and muscle mass.

Objective: The main objective of the study was to determine the effects of dynamic strength training on functional independence of female rheumatoid arthritis patients

Methodology: A single blinded randomized controlled intervention study was conducted at Combined Military Hospital Lahore. Fifty female patients between age 40–60 years who had Rheumatoid arthritis for at least six months were recruited for the study. A guided activity with comprehensively designed sessions along set frequency was given to both groups. Both pre-treatment and post treatment functional independence were measured after 12 weeks of intervention by Functional Status Index.

Results: Paired t-test was applied for analysis within the same group and independent T- test was applied to compare outcomes of both control and experimental group. There was significant difference in independent functional status after treatment in Group A. Pain and Disease activity was markedly reduced in Group A. Patients showed improvement in overall muscular strength.

Conclusion: Dynamic strength training is an effective mode of treatment in improving functional independence of female rheumatoid arthritis patients without stressing joints.

Introduction

Synovitis is a persistent feature of rheumatoid arthritis and results in joint swelling and limited ROM, persistent joint swelling results in stretched tendons, joint capsules, and ligaments. Which ultimately leads to instable joint, decrease in muscle strength and muscle mass. [1]

The pathological changes are not confined to joints. The affected tendons usually become softened and rupture, and aggravate existing deformity. Inflammatory nodules are formed in the soft tissue. Within months or years, depending on disease activity, joints are permanently damaged, and result in joint deformity, instability, or ankylosis. Further, effusion in joint restricts contraction of surrounding muscle groups, and the peak contractile force of the muscle will not be attained if a joint is misaligned. Further, the compromised joint and the tissues surrounding result in impaired loading response, energy insufficiency, pain and further limited physical activities.[2] The duration of disease, limited or complete physical inactivity, functional impairment, and itself, the inflammatory process, contributes loss in bone density in diseases like RA. Persistent use of corticosteroids enhances muscle atrophy and decreases bone mineral density. This vicious cycle that results in loss of muscle strength, bone mineral density, and limited functional capacity finally results in generalized fatigue and limited physical activity.[3]

The muscle strength loss and functional impairment with enhancing bone loss develops early in

the course of RA. Many clinical studies measuring the effects of dynamic strength training exercise programs on healthy subjects have been described. Some studies show that how these exercises lead to maintenance or improvement in muscle strength, while reporting positive results.[4] The earlier studies indicate that dynamic strength exercises work as a stimulus to high strain rates and peaked forces in dynamic movements. Although, Dynamic strength exercises are reported as a significant method of reducing pain, joint stiffness and functional independence in RA patients, there is definitely a need for an additional study to determine the functional independence and an improvement in daily activities after various types of exercise training programs in RA patients.[5]

Methodology

All patients presented to the outpatient clinic of the Department of Physical Therapy and Rehabilitation of Combined Military Hospital Lahore between April 2013 and October 2013.

Almost 52 patients of chronic rheumatoid arthritis were recruited in single blinded randomized controlled trail and two of participants withdrew the study. A written consent was taken. All the patients were initially assessed by physical therapist for musculoskeletal problems. 50 Patients were allocated in two groups through randomized systemic sampling technique. The pre and post intervention measurements were recorded after 12 weeks. Female patients between age 40-60 years on DMARDS treatment for six months, falling in C-II and C-III ACR criteria were included. [6] Dynamic strength regimen and controlled regimen consisted as followed; both groups were given combined regimen of exercise and modality treatment including Infrared Rays 10 minutes, TENS on affected muscle groups for 15 minutes gentle stretching and isometrics for hands and feet performed thrice a week for each 5-10 repetitions. The patients in the Dynamic exercise group were underwent following treatment, leg press, step ups, squats, forward and lateral lunges , side shuffles, hand squeezing with Physio ball and isokinetic exercise ring, Thera band hand exerciser, free weights and pulley system thrice a week for 12-week. [7]

Following scales were used to assess functional independence, pain and disease progression including FSI, DAS, VAS and MRC.[8] After baseline assessment patients were reassessed at 12weeks. Paired t-test was applied for analysis within the same group and independent T- test was applied to compare outcomes of both control and experimental group. The data was analyzed through SPSS version 16. The continuous variables were expressed as mean ± S.D. whereas the categorical variables were expressed in frequency tables and percentages. The histogram was used to measure the normality of quantitative data. Paired-test was applied to determine any association between variables. A p-value less than 0.05 were taken as significant. [7]

Results

Female rheumatoid arthritis patients subjected to dynamic strength training showed significant improvement in their independent functional status before treatment functional status index in both groups was statistically same. (Group-A=182.60± vs. Group-B=183.28±4.15) (P-value=0.522). After 12 weeks treatment mean functional status index in Group-A and in Group-B was 95.08±3.13 and 161.12±5.30 respectively. According to p-value mean functional status index was statistically different in both groups. i.e. (p-value=0.000)

Table I: Descriptive Statistics for Height, Weight & BMI of Patients

		Group-A				Group-B		
		25				25		
	Age	Height	Weight	BMI	Age	Height	Weight	BMI
Mean	49.92	5.14	64.28	26.39	53.68	5.26	68.16	27.26
SD	5.98	0.15	3.65	1.130	4.52	0.16	4.87	1.75
Min	40	5.00	58.00	25.00	45	5.00	58.00	23.40
Max	60	5.60	70.00	28.80	60	5.80	80.00	30.60

Group-A= Experimental Group
Group-B= Control Group

Functional status index was much lower in Group-A as compared to Group-B.

In Group-A mean age of patients was 49.92±5.98 years and in Group-B mean age of patients was 53.68±4.52 years respectively. Age range of patients in both groups was 40-60 years. Mean height, weight and body mass index of patients in Group-A was 5.14±0.15 meter, 64.28±3.65 Kg and 26.39±1.13 Kg/m2. In Group-B mean height, weight and body mass index was 5.26±0.16 meter, 68.16±4.87 Kg and 27.26±1.75 Kg/m2.

In Group-A, 7 patients had sudden and 18 patients had progressive onset of Rheumatoid Arthritis. While in Group-B 9 patients had sudden and 16 patients had progressive onset of Rheumatoid Arthritis. In Group-A 15 patients had family history Rheumatoid Arthritis while in Group-B 17 patients had family history of Rheumatoid Arthritis.

Among these 50 patients 13 patients (Group-A=7(28%), Group-B=6(24%)) RA factor was positive. Mean duration of morning stiffness reported by Group-A patients was 2.14±0.72 hours and in Group-B mean duration of morning stiffness was 1.82±0.59 hours respectively. In Group-A 6(24%) patients had subcutaneous nodules and in Group-B 5(20%) patients had subcutaneous nodules. Mean ESR level in Group-A patients was 41.28±17.34 and in Group-B mean ESR level was 32.60±13.70. In Group-A ESR range was 15-90 and in Group-B ESR range was 15-56.

Mean Anti CCP in Group-A patients was 1.84±0.37 and in Group-B Anti CCP level was 1.84±0.37. In both treatment group's range of Anti CCP was 1-2.

Disease activity score before treatment in Group-A and B was 4.60±0.82 and 4.69±0.78. Mean disease activity score was statistically same in both treatment groups before treatment. After 12 week treatment disease activity score was again assessed in both treatment groups. At this point mean disease activity score was less in Group-A as compared to Group-B. i.e. (Group- A=3.97±0.46 vs. Group-B=4.77±0.69). (P-value=0.000).

Before treatment means MRC grading was statistically same in both treatment groups. (Group-A=2.60±0.22 vs. Group-B=2.65±0.23, p-value=0.502) While after 12 weeks treatment mean MRC grading was high (showing improvement) in Group-A as compared to Group-B. (Group- A=3.56±0.26 vs. Group-B=2.92±0.14, p-value=0.00

Before treatment functional status index in both groups was statistically same. (Group- A=182.60± vs. Group-B=183.28±4.15) (P-value=0.522). After 12 weeks treatment mean functional status index in

Table II: Paired t-test for comparison of improvement within groups

Groups			Mean ± S.D	Paired differences Mean ± S.D	p-value
Group A	**NPRS**	**Pre-Treatment**	6.68 ± 1.02	1.53 1.02	0.001
		Post-Treatment	5.14 ± 1.34		
	DAS	**Pre-Treatment**	4.60± 0.82	0.63 0.71	0.001
		Post-Treatment	3.97± 0.46		
	MRC	**Pre-Treatment**	2.60 ± 0.22	-0.96 0.30	0.001
		Post-Treatment	3.60 ± 0.26		
	FSI	**Pre-Treatment**	182.6± 3.24	87.52 4.13	0.001
		Post-Treatment	95.08± 3.13		
GROUP B	**NPRS**	**Pre-Treatment**	6.66± 0.77	0.66 0.14	0.004
		Post-Treatment	5.99± 0.82		
	DAS	**Pre-Treatment**	4.69± 0.78	-0.08 0.42	0.338
		Post-Treatment	4.77 ±0.69		
	MRC	**Pre-Treatment**	2.65± 0.23	-0.27 0.21	0.034
		Post-Treatment	2.92 ±0.14		
	FSI	**Pre-Treatment**	183.2± 4.1	22.16 6.3	0.001
		Post-Treatment	161.1± 5.3		

Dynamic strength training shows significant results within Group A than Group B.

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Table III: Shows comparison between two groups. Independent t test was applied

	Group A (n=25) Mean ±S.D	Group B (n=25) Mean ± S.D	P-Value
FSI Pre Treatment	182.60±3.24	183.28±4.15	0.522
FSI Post Treatment 12 Weeks	95.08±3.13	121.12±3.19	0.001
DAS Pre Treatment	4.60±0.82	4.69±0.78	0.701
DAS Post Treatment 12 weeks	3.97±0.46	4.77±0.69	0.001
MRC Pre Treatment	2.60±0.22	2.65±0.23	0.502
MRC Post Treatment 12 weeks	3.56±0.26	2.92±0.14	0.001

Group-A and in Group-B was 95.08±3.13 and 161.12±5.30 respectively. According to p-value mean functional status index was statistically different in both groups. i.e. (p-value=0.000) Functional status index was much lower in Group-A as compared to Group-B.

Discussion

The purpose of the study was to analyze the effect of physical therapy training with and without dynamic strength training in 40-60 year female patients with rheumatoid arthritis. For this purpose 50 female patients were conducted to study .Systematic sampling (a type of random sampling) was used in which all odd ordered patients (1st, 3rd, 5th, 7th, etc.) was included in group I and all even ordered patients (2nd, 4th, 6th, 8th, etc.) were included in group II. Group I was subjected to experiment with dynamic strength training for 12 weeks. Before the start of session, All the subjects were assessed for their age, height, weight, BMI, DAS SCORE), duration of stiffness, onset, and intensity of pain VAS and demographic characteristics, functional status FSI, MRC muscle power . Body mass index of patients in Group-A was and 26.39±1.13 Kg/m^2. In Group-B body mass index was and 27.26±1.75Kg/m^2. In Group-A 15 patients had family history Rheumatoid Arthritis while in Group-B 17 patients had family history of Rheumatoid Arthritis. Among these 50 patients 13 patients (Group-A=7(28%), Group-B=6(24%)) RA factor was positive All of the patients were reassessed for, DAS SCORE), duration of stiffness, onset, and intensity of pain VAS , functional status FSI, MRC muscle power, after a 12 week exercise session.[9]

Our results revealed a significant decrease in functional status index [FSI] in experimental group compared to control group. Also DAS SCORE 28 showed a little more significant result in experimental group as we observed and recorded low disease activity after completion of 12 week exercise session.[10] Muscle power was assessed using MRS scale which was also much improved in experimental group.[11]

This study results apply on limited group of people affected with rheumatoid arthritis, as severely affected joints or grade 4 RA patients were not subjected to study.

Conclusion

Dynamic Strength Training is an effective mode of improving functional independence of female patients with RA without damaging joint or aggravating disease activity.

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ORIGINAL ARTICLE

Association of Stroke Disability with Physical Activity and Activities of Daily Life

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ABSTRACT

Background: Impairments mostly associated with stroke patients include functional reduction and motor impairments which is referred to as physical disability. However, there is limited evidence available from different countries about the exact incidence and prevalence of stroke. Also the severity with which stroke affects different functions of the body and etiology of death after stroke is not fully known.

Objectives: The main objective of the study was to determine frequency of stroke related disability and its association with various factors.

Material and methods: A cross sectional study was conducted from March to July, 2015 which recruited 168 diagnosed patients of stroke of either gender using non probability convenient sampling. Data was collected from 10 different hospitals of Rawalpindi and Islamabad using Modified Rankin Scale for disability, Rapid Assessment of Physical Activity (RAPA) to assess physical activity level, Barthel scale for activities of daily life and Fagerstrom Test for Nicotine Dependence (FTND) for smoking habits. After collection, data was analyzed using SPSS version 20.

Results: Out of a total of 168 stroke participants, 113 (66.5%) were males and 55 (32.4%) were females. 1.8% suffered from slight disability, 9.4% from moderate disability, 25.3% from moderately severe disability and 51.2% from severe disability. According to the results, a significant association of disability was found with physical activity and activities of daily life ($P<0.05$) whereas no association of disability was found with age and nicotine dependence with p-value = 0.08 and 0.46, respectively.

Conclusion: It is concluded that there is an association between disability and physical activity. Majority suffered severe disability and physical dependence in activities of daily living. Diabetes Mellitus, Hypertension and cardiac problems were more prevalent in most cases.

Introduction

Stroke is reported to be one of the major causes of morbidity and mortality and the third leading cause of death around the world.[1] Impairments mostly associated with stroke patients include functional reduction and motor impairments which is referred to as physical disability.[2] However, there is limited evidence available from different countries about the exact incidence and prevalence of stroke. Also the severity with which stroke affects different functions of the body and etiology of death after stroke is not fully known.[3] According to the studies among all types of stroke, 80% are ischemic while the remaining being hemorrhagic (including 15% intracerebral hemorrhage, 5% subarachnoid hemorrhage).[4] Stroke without an evident explanation or "cryptogenic" (of unknown cause) stroke constitutes about 30-40% of all the ischemic strokes.[5] However, in Asia regarding etiology, intracranial atherosclerotic stenosis and occluded small vasculature are two mostly used classifications of stroke.[6] Functional impairments that develop after stroke require serious attention as around 20% of people after stroke take

medical care for around 3 months in hospitals or other centres for rehabilitation and still around 15 to 30 percent remain functionally impaired for whole of life putting burden on the economy.[7]

Various risk factors have been identified regarding stroke, among which some of them are modifiable and others are non-modifiable. Modifiable risk factors include: hypertension, atrial fibrillation, smoking, cardiovascular diseases, sedentary life style, dyslipidemias, obesity, increase blood cholesterol, alcohol intake, poor dietary habits and to some extent diabetes. However age, gender, race, prior stroke are the factors that cannot be modified in any way.[8] Now some studies have also shown migraine as a risk factor of stroke.[9]

Risk factors should be properly identified, only then they can be prevented. By providing awareness about all the risk factors, stroke can be prevented in an effective way. The current study is conducted to find out the frequency of various risk factors among the patients of the stroke in order to noticeably decrease the incidence, recurrence, disability, and mortality of stroke. This will significantly decrease the burden of the disease from the society.

Methodology

A cross sectional study was carried out on community stroke survivals in Rawalpindi and Islamabad from March to July, 2015. 168 patients were included in the study by using non probability convenient sampling. Sample size was calculated through EpiTool using 95% confidence interval. Stroke patients of more than 18 years of age and either gender were included in the study after informed consent, while all other patients affected with related co-morbidities and critically ill patients that were unable to respond were excluded from the study. Data was collected by demographic details, Modified Rankin scale and Rapid Assessment of Physical Activity (RAPA) scale and Barthel Index while smoking habits of a patient were checked by Fagerstrom Test for Nicotine Dependence (FTND) scale. All the outcome measure tools were valid and reliable. (10, 11, 12) Data was analyzed by SPSS 20. The chi square test was applied to determine the association of stroke related disability with various factors.

Results

Results of the study showed that of all the affected patients, 113 (66.5%) were male and 55 (32.4%) were female. While 3.5% suffered from no symptoms, 7.6% despite having symptoms suffered from no significant disability. 1.8% suffered from slight disability, 9.4% from moderate disability, 25.3% from moderately severe disability and 51.2% from severe disability. 55.9% of patients suffered from ischemic stroke while the remaining 31.2% were diagnosed with hemorrhagic stroke. Mean age for onset of stroke was found to be 58.60 ± 15.28; According to the results, Middle Cerebral Artery (MCA) had the highest percentage (33.5%) whereas Transient Ischemic Attack had the least (1.2%). 33 (19.4%) patients suffered from Anterior Cerebral Artery (ACA) whereas only 3 patients (1.8%) were affected with both ACA and MCA. Among all hemiplegics around 36.5% have diabetes, 24.7% are those suffering from any cardiac problem and 78.2% have hypertension.

According to the results, a significant association of disability was found with physical activity and activities of daily life (p-value < 0.05). On the other hand, no significant association of disability was found with age and nicotine dependence (p-value > 0.05) (Table I)

Table I: Association of stroke related disability with age, physical activity, activities of daily life and nicotine dependence

Factors	Mean	Standard Deviation	P Value
Age	58.60	15.28	0.08
Disability	4.01	1.20	
Disability	4.01	1.30	<0.001
Physical activity	3.18	1.03	
Disability	4.01	1.40	<0.001
ADLs	30.82	31.96	
Disability	4.01	1.38	0.46
Nicotine dependence	1.33	2.84	

Discussion

A total of 168 patients was included in this study and were evaluated for disability. 1.8% suffered from slight disability, 9.4% from moderate disability, 25.3% from moderately severe disability and 51.2% from severe disability.

The study conducted by Sooyeon Kwon and colleges showed that cardiac problems was a major

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comorbidity which affected 31% of the particpant.[13] Results of our study revealed somewhat similar results with hypertension prevailing in 78.2% of the patients and cardiac problems among 24.7%. There is a significant decline in the trend of age of people suffering from stroke with 71.2 years of those reported in 1993 - 1994 to 69.2 years reported in 2005.There is also a noticeable increase in stroke in persons with age less than 55 in 2005 when compared to previous reports.[14] This is contrary to our study which shows no significant association with age. Other than age, the second most associated factor is physical activity. A study conducted by Chong Do Lee et al in 2003 reported that individuals who are highly active had 64% lower risk of stroke compared with those who are less active. Similarly, in this study also, a significant association of disability was found with physical activity.[15] Martins T. et all conducted a study in 2006 to evaluate post-stroke functional health status and quality of life and concluded that the most affected factors were physical functioning and the capacity to perform daily activities. This supports the result of our study which showed strong association between disability and activities of daily life.[16] RAPA scale revealed that majority of the patients did absolutely no exercise to increase physical fitness prior to the attack. A previously conducted study revealed that active individuals had a 20% lower risk and highly active individuals had a 27% lower risk of stroke incidence or mortality than the low-active individuals.[17] Our results are consistent with many previous studies which suggest that regular physical activity is related with decrease of cerebrovascular and cardiovascular events which may relate to enhance endothelium-dependent vasodilation. Physical activity not only decreases stroke risk, but also provides a prophylactic treatment strategy for increasing blood flow and reducing brain injury during cerebral ischemia.[18] Our study revealed slightly uneven gender distribution as there were slightly more males than women. Other studies showed similar results with higher prevalence of stroke in women than in men.[19] Diabetics are more likely to develop stroke and they suffer increased morbidity and mortality after stroke. It is a well-established independent risk factor for stroke and is associated with high mortality.[20] A major percentage of the patients in our study were also positive for diabetes mellitus. Numerous studies have proved that cigarette smoking continued to make a significant independent contribution to the risk of stroke generally and brain infarction specifically. A cohort study done in Japan showed high prevalence of both heart disease and stroke in smokers.[21] Similarly a study done on Chinese population showed positive relationship between stroke and smoking.[22] Another study reported positive relationship between smoking and stroke and stated that smokers are more liable to the development of stroke than nonsmokers and the risk increases about two to four times.[23] This study found no association of disability with nicotine intake. However, a study conducted in 2003 by Kjell Asplund et all concluded that regular male smokers have twice a chance of developing stroke.[24]

The study participants were not in equal proportion gender-wise because of which the association of gender could not be evaluated. Future studies with larger sample size and longitudinal designs should be conducted to ensure more generalizability.

Conclusion

Majority of patients suffered from severe disability. Ischemic type of stroke was found to be more common than hemorrhagic stroke. There was significant association of stroke related disability with physical activity and activities of daily life while no association of disability was found with age and nicotine dependence.

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ORIGINAL ARTICLE

Knowledge, Attitude and Practice Health Care Ethics among Speech Language Pathologists

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ABSTRACT

Background: Speech Language Pathology is guided by ethical principle as it is the tool for professional discipline. Healthcare ethics deal with moral code of conduct to patients in healthcare setting, taking in consideration of individuality, safety, welfare and self-respect of them.

Objective: To assess the knowledge, attitudes and practice of health care ethics among speech language pathologists.

Methodology: The cross-sectional study was done among Speech Language Pathologists at Riphah College of Rehabilitation Sciences, Lahore, within the duration of six months from 1st January 2017 to 30th June 2017 by using Convenient Sampling Technique. 104 Speech and language Pathologist (SLP) were included in the study. To conduct the research, a questionnaire was used which was developed by the literature review and expert's opinion.

Results: A total of 104 respondent speech language pathologists, were included in the study. The distribution of gender comprised of 37.5% (n=39) males and 62.5% (n=65) females with 72.1% age range from the 23-28 years' age group. 62% (n=65) speech language pathologists were unaware about the main contents of ethical knowledge. 42 %(n=44) speech language pathologists responded that knowledge of ethics is very important to their work and majority 35.58 %(n=37) got knowledge through lectures and seminars. 83.6% respondents were aware about the existence of no ethical committee at their institutions. As far as gender distribution was concerned 12% male and 27% female responded that knowledge of ethics is very important in work setting.

Conclusion: Overall results of the study showed gaps in knowledge but significant relationship towards attitude and practice of healthcare ethics in speech language pathologists and institutions. Effort should be made to increase the knowledge about the ethics in medical profession.

Introduction

Ethics is a discipline that deals with right and wrong conduct of human behavior.[1] The term ethics derived from the Greek word ethicos which is further derived from the word ethos meaning habit or custom. It is a set of moral values or principles that address whether intentions, goals or action are right and wrong. Ethics is the branch of Philosophy which includes defending, systematizing and recommending concepts of right and wrong conduct. It is the moral code of conduct in a civil society which runs the beliefs, rules and customs of that society.[2]

Dates back to the ancient times, ethics applied to medical practice by the Hippocrates, known as father of medicine. They proposed the Hippocratic Oath which include the codes of conduct and laws regulating the profession and it was updated from time to time. The

Hippocratic Oath had been taken by physicians upon entering the profession. In many countries, these codes have been included in the health professional's training curriculum and here has been seen a significant growth in the number of ethicists and ethical committees. But regardless of this, complaints against healthcare professionals appear to disseminate.[3]

Speech language pathology is a professional field, practiced by a clinician known as a speech-language pathologist (SLP) also called speech therapist or speech and language therapist who specializes in the evaluation and treatment of communication and swallowing disorders. A Speech Language Pathologist (SLP) is a highly-trained professional who evaluates, treats children and adults who have difficulty with speech and language.[4]

As ethics included in branch of science that deals with ideal human character or the science of moral liability. Ethics is a set of ideas and moralities that guide us in determining what behavior helps or harms to humans. Rules of ethics are specific and defined statements of minimal acceptable professional conduct that are applicable to all individuals. Ethics resolve questions of human goodness by defining concepts of right, wrong, justice, delinquency and misconduct. [5]

Naturally, self-knowledge is considered necessary for success. A person who is aware about the knowledge of ethics will act completely within his proficiencies and will not harm the patient while an unfamiliar person will run into difficulty. In Socrates point of view, if a person wishes to accomplish self-knowledge, he must become aware of every fact related to his existence then he will obviously do what is good, if he knows what is right. [6]

Health care ethics are necessary and essential in medical profession because this profession deals with providing services that impact on human life and health. If medical practitioners are not well handled these health care ethics in their practice can give negative impact on the patient 7 because to achieve the best possible quality of life, practice involves the clinical judgment in the establishment of good care to enable people to improve, maintain and receive health to get by with health problems.[8]

Significance of this study is to ensure the awareness about the ethical conduct and enhance the ethical practice in speech language pathology.

Methodology

The Cross Sectional study was done among Speech Language Pathologists at Riphah College of Rehabilitation Sciences, Lahore, within the duration of six months from 1 January 2017 to 30 June 2017 by using Convenient Sampling Technique. To conduct the research, a questionnaire was used which was developed by the literature review and experts opinion. The 104 sample size was calculated through online calculator by using 95% confidence level and 5% confidence interval on the basis of total population of 300 speech language pathologists working in Lahore. Both male and female speech languages pathologists working in government, private and semi-government clinical settings were included. Students studying speech language pathology and diploma holder therapists were excluded. Descriptive analysis was used for demographic information and chi-square was used for inferential analysis. Confidentiality and anonymity of the participants was maintained as no personal information was recorded on the questionnaire. The data was analyzed by SPSS-20. Endnote is used for the purpose of referencing citations.

Results

A total of 104 respondent speech language pathologists, working 48.1% (50) in government institution, 44.2% (n=46) in private institution and 7.7% (n=8) in semi-government institution, were included in the study. The gender distribution comprised of 37.5% (n=39) males and 62.5% (n=65) females.

The gender distribution comprised of 37.5% (n=39) males and 62.5% (n=65) females with 72.1% age range from the 23-28 years' age group. 62% (n=65) speech language pathologists were unaware about the main contents of ethical knowledge. Also, knowledge, Attitudes and Practice of Healthcare Ethics among Speech Language Pathologists was judged by various questions from the standardized questionnaire was used which was previously used for assessing the knowledge, attitudes and practice healthcare ethics among physiotherapists and medical students.

Table I: Awareness about the knowledge of Ethics

Knowledge	Frequency	Percent
Are you aware about the knowledge related to ethics?		
Yes	39	38
No	65	62
Total	104	100
Is there an ethical committee at your institution?		
Yes	16	15.5
No	87	83.7
Missing	1	1
Total	104	100

In this study 15% males and 27% females (total 42%) speech language pathologists responded that knowledge of ethics is extremely important, 20% males and 31% females (51%) responded to very important and 7% males responded that it is little important. Majority 35.58 %(n=37) got knowledge related to ethics through lectures and seminars while 62% participants reported about having no knowledge of ethics. In.83.6% respondents were aware about the existence of no ethical committee at their institutions.

Attitude and practice of heath care ethics is determined by questions that are related to attitude and practice. When participants were asked about the patient wishes that always adhere to then 29 SLP were strongly agree, 23 were agree, 5 were strongly disagree and 25 were disagree (Chi square value:5.81,p-value:0.06).About the question regarding abandoned of confidentiality than 44 participants were disagree and 16 were strongly disagree,15 were strongly agree and 8 were agree (Chi square:9.61, P-value:0.02).SLP are the health care professionals who should whatever is best for patient 27 SLP In the current study were strongly agree,31 were agree,5 were strongly disagree and 20 were disagree. (Chi squre: 8.82, P-value: 0.007). When questioned about the refusal of treatment of a patient who behave violently was asked to SLPs then only 9 SLPs were agree ,9 were strongly agree, 22 were strongly disagree and 49 were disagree with the statement (Chi squre:8.49, P-value :0.03)

Discussion

A total of 104 respondent speech language pathologists were included in the study. The Study showed that 62% practicing speech language pathologists were unaware about the knowledge of ethics. The findings of this study on knowledge, attitude and practice of healthcare ethics among speech language pathologists, working in different clinical settings revealed more female participants than male participants. Results in this study about the knowledge of ethics were very poor. Among the two genders the 39% of female and 23% male speech language pathologists were found to be have no knowledge about ethics. This finding is in line with the findings of Anup N.et.al study who identified the important gaps of ethical knowledge in his study (9).In current study, 42% of the respondents agreed that ethical knowledge is very important in the health care profession. Similar findings were found by Heriharan.et.al in which most of the respondents (doctors and nurses) agreed to the importance of ethical knowledge.[10] In present study, 83.7% speech language pathologists aware about the existence of no ethical committee at institutions. Results of a study conducted by Heriharan.et.al showed same results in which a large number of professionals unaware about the invisibility of ethics committee in hospital setting.[11]

Significant relationship was seen between attitude and institutions in this present study which is similar to Chopra M.et.al 2013 and Brogen SA in 2009 study who reported the close relationship between attitude, working place and age. To assess the knowledge, attitude and practice of healthcare ethics, the present study showed the significance relationship

Table II: Attitude and Practice of Health Care Ethics

Questions for determining the Attitude and Practice of Health Care Ethics	Responses	Type of Institution			Total	Chi square	p-value
		Government	Private	Semi-Government			
The patient's wishes must always adhere to	Strongly Agree	15	13	1	29	5.81	0.06
	Disagree	11	13	1	25		
	Not Sure	9	10	3	22		
	Agree	13	7	3	23		
	Strongly Disagree	2	3	0	5		
	Total	50	46	8	104		
Confidentiality is not important in modern care and should be abandoned	Strongly Agree	6	9	0	15	9.61	0.02
	Disagree	17	21	6	44		
	Not Sure	14	7	0	21		
	Agree	4	3	1	8		
	Strongly Disagree	9	6	1	16		
	Total	50	46	8	104		
The SLP should do what is best irrespective of the patients opinion	Strongly Agree	15	10	2	27	8.82	0.007
	Disagree	7	13	0	20		
	Not Sure	13	6	2	21		
	Agree	12	16	3	31		
	Strongly Disagree	3	1	1	5		
	Total	50	46	8	104		
SLPs should refuse to treat patients who behave violently	Strongly Agree	4	5	0	9	8.49	0.03
	Disagree	24	23	2	49		
	Not Sure	10	5	0	15		
	Agree	7	1	1	9		
	Strongly Disagree	5	12	5	22		
	Total	50	46	8	104		

between educational year, age and gender of participants and it is clearly showed the majority of speech language pathologists age in 23-28 years age group and these SLPs have not considerable knowledge of ethics although these years are active and youthful years of any individual's life and they can serve the patient in a better way if they have significance knowledge of ethics. Similar results was seen in a by Aliyu D.et.al study.

Patient's autonomy and confidentiality are the main components of healthcare ethics that have been practiced universally in all the code of ethics. The present study showed that 29 (27.8%) SLP were towards patient's wishes that must always be adhere to Almost similar results have been reported Suden.et.al and McGuire.et.al study opinion regarding adherence to patient's wishes. Results are observed that most of the participants thought that patient should be involved in decisions about their health and they had a positive attitude towards patient's autonomy.[12]

Confidentiality is a core issue of speech language pathologist and patient relationship. In this present study when participants were asked about the abandoned of confidentiality then 60(57.69%) participants were disagree with that, Similar result was seen a study by Humayun et.al and Tahira Q.A where 93% respondents considered confidentiality to be important.[13]

58(55.7%) SLP In the current study showed that SLP should do what is best irrespective of the patients opinion Similar results have been reported in a study in which majority of the respondents thought that health care professional must do, whatever is best for the patient irrespective of patient's opinion. Different result was observed in a study in which majority of the participants reported that consent is required only for surgical procedures.[14]

When questioned about the refusal of treatment of a patient who behave violently was asked to SLPs then only 18(17.3%) SLPs were agreed with that. Similar results have been reported in Tahira Q.A.et.al and Afzal et.al studies in which assisted suicide was not justified in any case and health care professional should take this account seriously while practicing.[15]

Conclusion

The findings of the study showed significance gaps in knowledge, attitude and practice of health care ethics among speech language pathologist. Speech language pathologists generally understand the importance of ethics but have poor knowledge of ethical contents. Regarding their practical application, they mostly follow the healthcare ethics in their practice which they have learnt from lectures and seminars. Most of the professionals have shown their great concern to consult on an ethical problem to ethics committee which is not present in their respective institute.

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ORIGINAL ARTICLE

Frequency of Lower Extremity Injuries in Soccer Players

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A B S T R A C T

Background: Soccer is considered to be the world's most popular sport, associated with high injury incidence compared with many other sports.

Objective: To evaluate the prevalence of common sport injuries in soccer players.

Methods: A cross sectional study was conducted on soccer players in 4-months of duration from July to Oct-2017.The convenient random sample was recruited at Punjab University, Lahore after permission to perform the study has been granted by the university authorities. Male soccer players, aged 20-30 years who were playing soccer minimum from the last 12 months were included in the study. All the sports other than soccer were excluded. The total sample of the study was 54. Sample size was calculated by using 90% confidence level and 7% margin of error. A self-structured questionnaire consisting of 16 items was used. Questions were developed after literature review and pilot survey involving peer review by 3 experts. Descriptive analysis of the data was done by using Statistical Package for Social Sciences (SPSS-17).

Results: The total sample of the study was 52. The study sample of this study reported highest prevalence rate of knee and hamstring injuries 41(78.8%) among soccer players whereas it was least for the groin injuries. Re injuries among soccer players were also common and it was reported maximum that is three times for ankle 18 (34.6%) followed by two times for knee 17(32.7%) and one time for hamstring 20(38.5%) and groin 17(32.7%).

Conclusion: The study found highest prevalence rate of knee and hamstring injuries whereas chances of groin injuries are least among soccer players.

Introduction

Soccer is considered to be the world's most popular sport, associated with high injury incidence compared with many other sports.[1] Two teams take part in this game with each having 11 players.[1] Duration of game is two 45 minute halves, with a 15-minute rest between halves.[1] Only goal keeper can touch ball .Soccer is an intermittent sport involves walking, jogging, sprinting and running. [1]

In US the rapidly progressing sports is Soccer. It is considered the worldwide sport for young generation participation. [2] The reason is because of its low-cost, and way of exercise. [2] It can be a source of developing good habits that contribute in physical fitness and also promotes development of coordination.[2] In professional soccer players about 28% injuries cause them to miss a game. Many injuries occur because of direct contact of players, ball or play grounds.

According to different researches soccer players have (75%) are sprain, strain and contusion injuries [3], lower extremity injuries [4]while knee and ankle are most

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susceptible joints being injured.[5] One study reported the classes of ankle injuries that over 65% being minor, 24% moderate, and 11% serious.[3] According to another study [6], a total of 286, 62.7% of the players were injured.[6] Most of the injuries were acute (68. 5%).[6] He observed that most of the injuries were of extremities (82.9%).[6] Knee injuries had the greatest consequences. Muscles and tendons were mostly injured in lower limbs (32.9%).[6] There were 81% of all injuries localized to the lower extremity especially the ankle and foot [7] Traumatic injuries are mostly contact injuries.

Soccer is sporting activity with relative high injury incidence compared with other sports.[8] Acute soccer injuries are concentrated in lower Extremities and can be can be due to unintentional heading, chronic sub dural hematoma due to soccer ball striking.[9] Heading the occurrence of mild injury, concussion and cognitive impairments may occur in soccer players.[10] Before 1980, use of leather balls which could result in significant impact forces.[11] Now advancement in technology have led to lighter balls which have less impact.[12] Most researchers reported that occurrence of injury does not depends on playing position. [13]

Mostly injuries occur in training[14] Hawkins and Fuller [15] reported that defenders had more risk of injury than other players.[15] They noticed that in second half number of injuries were significantly greater than first half.[16] Most common knee injury is ACL injury.[17] These injuries often result in effusion of joint, movement alteration, weakness of muscle, less participation among young athletes.[17] Another common injury found in the young sporting population is meniscal injuries.[18] ACL injuries often occur with meniscal tear .[18] Normally a groin strain injury occurs with muscle overstretch.[19] This is commonly called the strain.[19] Among soccer players groin pain is common because of kicking causing recurrent stress to abdominal muscles, adductor muscles and groin flexor.[19] Other source of groin pain can be stress fracture of femoral neck or pubic ramus, Avulsion fracture, Inguinal hernias and Acetabular labral tear.[19] According to one of the study, recurrence rate of hamstring was 8.3%.[19] Ankle sprain is ligament and soft tissue damage and is the most common site of injury among players.[19] The categories of sprained ankles, according to extent and severity of damage are first degree sprained ankle is mild to moderate pain, little damage to ligament.[19] Second degree sprained ankle includes pain and swelling which hinder walking, more damage to ligament.[19] Third degree sprain ankle includes swelling and dislocation of joint, complete rupture of ligament.[19]

Common symptoms of sports injuries are pain in movements, decrease mobility, back pain, leg/hip/thigh /knee/ankle pain, decrease in range of motion, reduce functional activity.[3] Severity of injuries depend on degree of contact.[3] The risk of injury is depends on factors such as injury incidence rate, condition of playing ground, nature of action, location of pitch, period of play.[7] Schmidt-olsens, studies on soccer injuries of youth [7].He noticed that during soccer tournament all injuries were evaluated, 5.2% of players were injured [7]. On the other hand, he also noticed that injuries of youth were mostly of non-severe character.[7] Goga IE et all conducted a retrospective study on severe soccer injuries in 2003 [20].He concluded that players of South Africa sustain very serious injuries.[20] Papakosta et all (2008) in a chart review of 8 years' duration of the players of soccer with maxillofacial injuries.[21] He took all male injured soccer players.[21] He concluded that 89.8% suffered maxillofacial fracture and with soft tissue injury were 10.2%.[21] Olsen L et all in 2004 addressed injuries prevention planning in soccer players[22] He concluded that, policy and research practice recommendation are used for synthesis.[22]

Invariably all the researches mentioned above mentioned the significance of soccer injuries among players. Current study will address the prevalence of recurrent injuries among Soccer players. Results of this study can add up to this body of knowledge.

Methodology

A cross sectional study was conducted on soccer players in four months of duration from July to October 2017.The convenient random sample was recruited at Punjab University, Lahore after permission to perform the study has been granted by the university authorities. Male soccer players, aged 20-30 years who were playing soccer minimum from the last 12 months were included in the study. All the sports other than soccer were excluded. The total sample of the study was 52. Sample size was calculated by using 90% confidence level and 7% margin of error. An informed consent of

study population was assured. Questionnaires were distributed and explained to the participants for providing purpose of study and to ensure that their participation in the study was not imposed.

A self-structured questionnaire consisting of 16 items was used as data collection instrument. Questions were developed after literature review and pilot survey involving peer review by 3 experts. All questions were assessed for relevance, simplicity, clarity and ambiguity on 4-point Likert scale. Questions with content validity index over 0.75 were retained and asked from the study population.

First part of the questionnaire was of demographic data. Second part of the questionnaire has total of 15 questions. All of the questions been close ended. 1st 2nd 3rd questions were about warm up, cool down and stretching routine.4th-7th questions were about previous history of sports injury, how many times injury occurred (1,2, 3, >3), time since most recent injury occurred (0-6, 6-12 >12 months) and for how long the player is playing (1-2, 2-3,> 3years). Questions 8-15 included any previous history of ankle, knee, hamstring and groin injury if yes, then how many times the injury occurred (1, 2, 3,>3).

Qualitative variables were expressed as frequencies and percentages. P-value $\leq$ 0.05 was taken as significant. Descriptive analysis of the data was done by using Statistical Package for Social Sciences (SPSS-17).

Results

The total sample of the study was 52. The participants with age range of 20-25 years were 18 (34.6%) and 25-30 years were 34(65.3%). Largely, the participants belonged to middle class 37(71.2%). Majority of the players were playing from last 2-3 years 23 (44.2%) followed by >3 years 16(30.8%) and 1-2 years 13(25%).The routine of warm up 43(82.7%), cool down 33(63.5%), stretching before 37 (71.2%) and after 40(76.9%) exercise to prevent the risk of injury was followed by majority of the players.

Previous sport injuries were found in 47(90.4%) of the players, in which 24(46.2%) has experienced an injury in the last 6 months.

The study sample of this study reported highest prevalence rate of knee and hamstring injuries 41(78.8%) among soccer players whereas it was least for the groin injuries. Detail of which is given in (figure 1). Re injuries among soccer players were also common and it was reported maximum that is three times for ankle 18 (34.6%) followed by two times for knee 17(32.7%) and one time for hamstring 20(38.5%) and groin 17(32.7%).

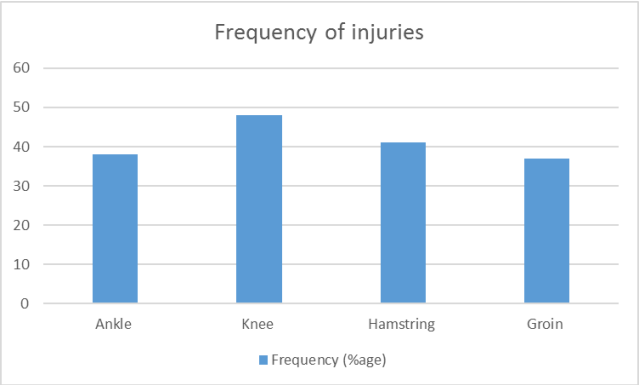

Figure 1. Shows the frequency of injuries of lower extremity among soccer players.

Discussion

According to this study highest percentage (90.4%) of lower extremity injuries found among soccer players. Swiss Organization "youth and sports", conducted a study revealed that soccer had highest incidence of injuries (66%) because of fatigue and imbalance of the muscles and body position.[23] When Schmidt Olsen studied on Soccer injuries, he reported 81% of all injuries localized in lower extremity because of overuse during training.[7] According to current study 41(78.8%) players had complained of knee injuries. The result of this study was supported by Suzue N et all (2014) that found 40% of knee injuries among soccer players because of foot joint distorsions of all degrees, overuse injuries (e.g. tendinitis) and were ruptures of the medial collateral ligament of the knee and one was a talofibular rupture that causes osteochondrosis.[24] Current study also reported highest prevalence of Hamstring Injury 41(78.8%) which is in concordance with Angelo Corazza (2013) studied on Soccer Players. It might be attributed to the fact that in professional athletes the higher prevalence of hamstrings and rectus femoris injuries are because it is the most involved compartment of thigh[25].Further the result of current study concluded

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that 38(73.1%) had complain of ankle injury. This might be due to in soccer players ankle sprain occurs because of poor landing cause chronic ankle instability. It can also be due to repetitive ankle injuries during training and competition.[26] In present study soccer athletes had 37(71.2%) groin injuries supported by a study that found that 13% of all soccer injuries are in the region of groin might be due to musculotendinous strain of the adductors.[27] The limitations of this study were unavailability of soccer clubs as this game is not common in Pakistan and we were unable to cover some factors such as Assessment of injuries and treatment.

Conclusion

The study found highest prevalence rate of knee and hamstring injuries whereas chances of groin injuries are least among soccer players. Future studies can be conducted on both genders, covering more sports club to get significant results in detail. The mechanism of sport related injuries and the major risk factors, assessment and examining the injury can be the part of further research studies. The Sample size should be increased to generalize results on larger population.

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ORIGINAL ARTICLE

Is mobile phone a source of hand discomfort for university students?

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Keywords

Hand discomfort, Smart phone, Young adults, Cornell Mobile phone hand discomfort questionnaire

Author`s Contribution

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ABSTRACT

Background: Mobile phones users are increasing with the technology advancement and it became one of the important assets of youngster's life. Every device is having its positive as well as negative effects. Due to more usage of these mobile phones, people are complaining of some musculoskeletal and neurological discomforts.

Purpose: The objective of the study was to determine the frequency and intensity of hand discomforts in university students, who were using smart phones and to identify which area of hand is more affected.

Method: A descriptive cross-sectional survey was conducted among young adults with sample size of 470, recruited through non-probability convenient sampling. It was done within the duration of 06 months (August to January 2017) from the medical universities of Islamabad. A standardized questionnaire (Cornell Mobile Phone Hand Discomfort Questionnaire), with a Kappa coefficient between 0.56-0.97 was used. Some self-structured questions were added in it. It was distributed among young adults (18-26 years) who were doing atleast 30sms/Whatsapp/email per day or browsing internet or playing games for more than 2 hours. While those students using desktop computer or laptop (typing) for more than 1hour, having any upper limb musculoskeletal deformity or neurological disorders were not included in the study. Data was analyzed using SPSS version 20.

Results: In the sample of 470, 369 (78.5%) was of females and 101 (21.5 %) of males with a mean age of 20.90 ± 1.94 years. The result reported that 68.4% participants were not having any type of hand discomfort after using smart phone. Mild hand discomfort was found in 28.36% participants, moderate in 2.56% while a very negligible percentage reported severe hand discomfort. This study further revealed that there is a significant association of frequency and duration of usage of mobile phone with hand discomfort.

Conclusion: It is concluded that mobile phone was not a source of hand discomfort for majority of the young adults. A moderate percentage of participants reported mild hand discomfort. However, the frequency and duration of mobile phone usage has a strong association with hand discomfort.

Introduction

Mobile phones are used worldwide. Its subscription has found to be increased during past decade and its use is increasing day by day especially among young adults.[1] The mobile devices are used to send or receive email, to send or receive messages, and to access the internet. A survey was conducted in USA that showed the smartphone is used 3 hours daily (excluding voice activities) by adult users in 2015,double of which they were using in 2012.[2] Mostly mobile phones are used for texting, having 74% users worldwide.[3]

Musculoskeletal discomfort of the upper limb and especially the thumb has been reported in mobile phone users because thumb is repetitively used while using mobile phone for communication and entertainment purpose such as gaming, media and internet access i.e. Whatsapp, Viber, Line in, BBM (blackberry messenger) and social networking applications like Facebook, Twitter and Skype.[4, 5] Excessive use of mobile phones could expose the thumbs and fingers to stresses beyond their normal function which may cause musculoskeletal disorders in the thumbs and the associated joints.[6] A study conducted in Hong Kong showed high prevalence of musculoskeletal symptoms found among university students as pain was found in more than one body sites.[7]

Methodology

This was a descriptive cross sectional study conducted on young adults aged 18-26 years studying in different medical universities of twin cities. The total participants included in this study were 470, calculated by rao-software calculator. The sample was collected through non-probability convenient sampling within six months of duration from August 2017 to January 2017. Young adults who were doing at least 30sms/whatsapp/email per day or browsing internet or playing games for more than 2 hours were included. While those young adults who were using laptop or desktop (typing) for more than 01 hour, having any upper limb musculoskeletal deformity or neurological disorders were excluded from the study. Prior to participation, informed consent (written) was taken from each participant. Anonymity and confidentiality of participant's data was maintained throughout the research.

Standard questionnaire Cornell Mobile Phone Hand Discomfort Questionnaire was used to collect the data which includes frequency, discomfort and interference. It is a valid and reliable questionnaire with a Kappa coefficient between 0.56-0.97, to mark the areas of discomfort in both hands.[11] It has 6 areas of hand labeled as A-F. Each area has 90 score. The young adults were also asked about frequency and duration of mobile phone usage daily. Chi-square was applied to find the association of frequency and duration of mobile phone usage with hand discomfort. Data was analyzed through SPSS version 20.

Results

In this study, the sample was 470. Total males and females were 101(21.5%) and 369(78.5%) respectively. The mean age of the participants was 20.90 ± 1.94 years. Among the students, 458(97.4%) were using smart phones and 12(2.60%) were having feature phones. Majority of the participants were using mobile phone often 213(45.3%) and 149(31.7%) were using it all the time. Among the participants 262(55.7%) were using their smart phones, for more than 4 hours daily.

Majority of the participants were not having any type of hand discomfort and those reported mild to severe type of discomfort is given in the (Figure 1)

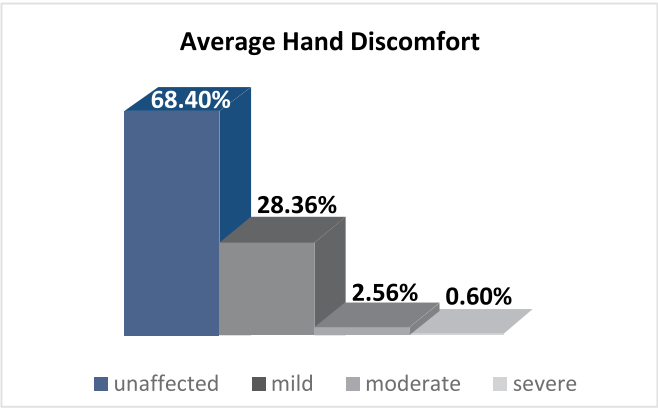

Figure 01: Average hand discomfort of hand.

Highest percentage of mild discomfort was found in Area C 178 (37.90%), and the lowest was found in Area D 108(23%). Further details about the all areas are show in the (Figure 2).

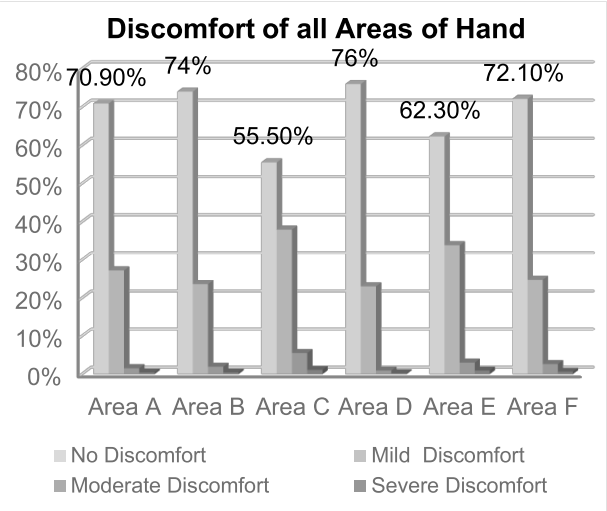

Figure 2. Percentages of discomfort in all areas of hand

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There was a significant association ($p<0.05$) between hand discomfort and duration of mobile phone usage. Also frequency of cell phone usage has a strong association ($p<0.05$) with hand discomfort.

Discussion

In this study majority participants (68.40%) were not having any type of hand discomfort due to mobile phone use. Mild hand discomfort was found in 28.36% participants, while very less percentage of participants reported hand discomfort of moderate to severe level. A study done in India found that 27.5% of participants were unaffected by hand pain while 44.5% of them were affected by mild hand pain. And moderate and severe hand pain was found out in less percentage. The difference may be due to number of hours of mobile phone usage among the students.[12]

The study conducted by Balakrishnan et al. reported that the largest duration spend on mobile phone for purpose of email, browsing etc. was for 14 hours. While in this study 55.7% of participants were spending more than 4 hours on mobile phone for the purpose of email, browsing etc. [12]

This study showed that frequency and duration of cell phone usage has a strong association with hand discomfort. The study done on AMU students also discovered that the duration and frequency of mobile phone usage and typing style also play a role in causing symptoms of upper limb pain. [12]

In this study, the highest percentage of population reported mild discomfort in Area C (thumb) 37.90%. It may be due to the repetitive movements of thumb during mobile phone use. The second highest percentage of discomfort is of Area E which is thenar region as 33.8%. A study conducted in Canada, Cornell musculoskeletal hand discomfort questionnaire was used. According to their results, the thenar area (Area E) and the area distal to the wrist (Area F) were the hand regions with the highest frequency of ache/pain and discomfort. The difference may be due to difference in the target population. Their population was 140 office workers who were computer users. [13]

In this study majority respondents were smartphone users (97.4%). Mild discomfort of hand was found in 28.36% of participants. In a previous study the prevalence of mobile phone usage was 70%. Prevalence of painful fingers was 4% in mobile while of tingling fingers was 2.6%. The marked difference in percentage may be due to reason that the data was recruited from a semi urban population where there was low usage of mobile phones as compared to the present study. [14]

This was a cross-sectional survey, carried out on a limited number of students. Further it should be done on larger level like the longitudinal studies. Also, the other body areas especially the neck and shoulder musculoskeletal symptoms should be explored after the prolong use of smart phones.

Conclusion

The study concluded that smart phones are not the source of hand discomfort for majority of the participants. A moderate percentage of participants reported mild hand discomfort. However, hand discomfort was found to be associated with increasing frequency and duration of usage of mobile phone.

It is recommended that awareness should be created among young adults about frequency and total usage of smart phone, as more frequent and more hours of usage can result in mild to serve discomfort in young adults.

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ORIGINAL ARTICLE

Frequency of Depression Among Parents of Children with Cerebral Palsy

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ABSTRACT

Background: Depression is the serious mental disorder that causes great effect on family members, specially the families of disabled children. CP is the most common disability of children. Depression is very frequent in parents of CP children because they are more attached and worried about their child's health.

Objective: The purpose of study is to determine the frequency and level of depression in parents of cerebral palsy children.

Materials and methods: A cross-sectional study was conducted on a sample of 148 parents of CP children. The data was collected from different hospitals of Rawalpindi and Islamabad from 26th January 2018 to 26th July 2018. Population was selected using non-probability convenient sampling. Parents with at least one child with CP were included whereas; parents with any diagnosed mental disorder were excluded along with those parents, who had a child with any other disorder than CP. Standard questionnaire beck depression inventory was used to assess depression in the parents. Data was analyzed using IBM SPSS 20.

Results: Out of 148 participants 133 (89.90%) were mothers and 15 (10.10%) were fathers. Mean age of the participants were 29.85 years. In total, 83 (56.1%) parents were clinically depressed. Moderate level of depression was the most frequent level of depression i.e. (38) 25% followed by other categories. Mothers had greater severity of depression than fathers; total of 38 (25.5%) mothers had moderate level of depression. Fathers did not cross the borderline clinical depression category; only 3(20%) fathers were in borderline clinical depression category.

Conclusion: The study concluded that most of the parents of children having cerebral palsy undergo moderate level of depression.

Introduction

As defined by the World Health Organization "Depression is a common mental disorder, characterized by persistent sadness and loss of interest in activities that you normally enjoy, accompanied by an inability to carry out daily activities, for at least two weeks ."

Depression is one of the most impending problem that the public health care systems are facing today and it effects almost all world's population children, adults and elders.[1, 2] 350 million people are effected due to depression yearly and it increases the mortality rate up to 70%.[1] This co morbid state of depression declines health much more than just depression alone or just a chronic disease without depression.[2]

Depression is also an early sign of many health conditions that influence physical disability.[2] The most common disability of children is cerebral palsy.[2] Cerebral palsy has a worldwide incidence of 2 to 2.5 cases per 1000 live births.[2] Cerebral palsy is caused by brain injury which can be either prenatal(e.g. brain malformations), perinatal(e.g. cord prolapse, obstruction in labor, ante

partum hemorrhage) and post-neonatal(e.g. infections and injuries).[2] When parents of children diagnosed with cerebral palsy come to know about different complications such as altered sleep, pain, limitations in rehabilitation programs, difficulty in performing activities of daily living (feeding, walking, using toilet, dressing up etc.[2, 3] They become hopeless ,shattered and socially isolated.[4] Inability to revert situations, feeling that all the dreams about a perfect and healthy child are broken and feelings of no freedom of life anymore also immensely impact the parents life.[5] Mothers are majorly effected because they spent most of the time with child, and they are more prone to emotional distress.[6] CP parents, most commonly mothers are not in a good mental health due to psychiatric problem of depression.[7] As a result they are unable to provide adequate care that their child deserves in order to attain his optimal functional goals. The anxiety, depression, poor quality of life and altered marital satisfaction is found in parents having an abnormal, particularly a CP child, as compared to the parents who have normal child.[8] The level of depression and other mental problems in parents are not constant and may increase with their child's developmental stages.[9, 10]

The purpose of our study was to determine the frequency and level of depression in parents of cerebral palsy children. If depression is left unconsidered in our society and hospital setups, it can affect the parents as well as CP child's care giving and treatment

Methodology

A cross-sectional study was conducted on a sample of 148 parents of CP children. The data was collected from different hospitals of Rawalpindi and Islamabad after approval from their head of departments. The study was completed in duration of 6 months i.e. from 26th January 2018 to 26th July 2018. Population was selected using non-probability convenient sampling. Parents with at least one child with CP were included in the study whereas; parents with any diagnosed mental disorder were excluded along with those parents, who had a child with any other disorder than CP.

Becks Depression Inventory, being the most valid instrument, was used to assess depression in the parents.[11] It is also the best self-grading scale used for assessing depression.[12] Beck Depression Inventory consists of total of twenty-one items. Every item carries 0-3 score on likert Scale. Score of 3 represents higher level of depression and 0 score indicate lower level of depression. Demographic information was added in the questionnaire.

Frequencies and percentages were calculated for qualitative variables and mean and standard deviation for quantitative variables. To find out the relation of depression with age of parents and socioeconomic status, Pearson correlation was applied. After a careful process of data collection, the data was analyzed using IBM SPSS 20.

Results

Total participants of the study were 148, out of which 133 (89.90%) were mothers and 15 (10.10%) were fathers. Mean age of the participants were 29.85 years. Majority of the parents belong to middle class 105 (70.9%) followed by lower class 33 (22.35%) and upper class 10 (6.8%).

In total, 83 (56.1%) parents were clinically depressed. Moderate level of depression was the most frequent level of depression i.e. (38) 25% followed by other categories. Detail of which is given in figure 1. Mothers had greater severity of depression than fathers; total of 38 (25.5%) mothers had moderate level of depression. Fathers did not cross the borderline clinical depression category; only 3(20%) fathers were in borderline clinical depression category.

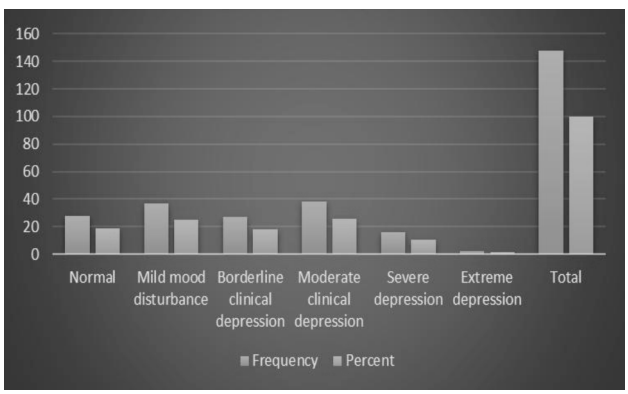

Figure 1. Categories of depression

There was a strong positive (r= 0.083) but statistically insignificant p=0.32 correlation between age of parents and depression. There was weak negative(r=-0.22) correlation between socioeconomic status and

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depression. The relationship was statistically insignificant p=0.79

Discussion

The result of our study reported that a high proportion of parents experience depression. This is mainly because of the increased mental and physical exertion on the parents of CP children.

According to the results of our study, the mean score of depression was 18.60; the result of our study is supported by comparative study by Sajedi et al in which mean depression score was 17.79. Both of these scores belong to borderline clinical depression. Further, in our study 1.4% mothers were severely depressed while in the study of Sajedi et all 3.4% mothers were severely depressed.[13] The high level of depression in mothers as compared to fathers reason because mothers are the sole caregivers of children in most of the cases,

The results of the study conducted by Basaran et all concluded that 58.0% of parents/ caregivers of CP children had mild to moderate depression, while our study showed 25.7% parents falling in moderate depression.[14] Hence moderate depression remains the most frequent level of depression in both the studies.[15]

Limitations:

- The main limitation of the study was that sample collection area was narrow. Therefore, it cannot be generalized to the whole population of Rawalpindi and Islamabad.
- Second major limitation was that the parents who participated in a consisted of mainly mothers not fathers
- Sample size was small.

Conclusion

The study concluded that most of the parents of children having CP undergo moderate level of depression. This shows us how much a CP child's health status affects his/her parent's mental health. Mothers being the sole caregivers in most of the cases have greater levels of depression as compared to fathers. Hence the parents must be referred for psychological counseling in order to prevent or treat their depression.

Recommendations:

- Every hospital and rehab institute should have their own psychologist.
- Psychological counseling must be thought out as an important adjunct of physical therapy sessions in all the institutes
- A thorough screening of parents of children with CP and all other disorders must be conducted.

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