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Editorial

Importance of Research in Physical Therapy Rehabilitation

Physical therapy/Physiotherapy is not a new profession, some sort of physical therapy practice even existed in Europe from 1500s-1700s[1].The physical therapy profession is also not part of the alternative medicine but it is part and parcel of the modern medical system which is developed by the father of western medicine Hippocrates. He used to utilize exercise and muscle re-education for a variety of orthopedic diseases and injuries [1].In the develop world physical therapy education is very advanced up to doctoral level but in some part of the glob it is still in the developing stages. The traditional practice of physical therapy without any nomenclature has been practiced in this part of the worldsince 1800s but the formal education program had been started in 1955 (School of physiotherapy, JPMC, Karachi)[2]. One of the frequently ask question is about the status of the profession, so physical therapy fulfill all the requirements of an autonomous profession including unique body of knowledge, service has to be beneficial for the community, code of ethics to follow in practice, accountability and autonomy and based on these characteristics world Health Organization (WHO) categories it as autonomous health profession[3].

With the passage of time many challengesdevelop and open new horizons for the professionals, same is true for the physical therapy profession started with a two years program after SSC later on converted to three years diploma and in 1961 university of Karachi affiliated the 1st professional degree in physical therapy BSc(physiotherapy) which is later on upgraded to a four year BS PT degree in 1999.The mature entry level professional degree in physical therapy Doctor of Physical Therapy (DPT)was introduced in Pakistan in 2008 and recognized by the higher education commission of Pakistan (HEC) in 2011.[4] The trend of higher education in the physical therapy profession also started in 2008.Many universities now offer specialized programs including; Orthopedic manual physical therapy (OMPT), Neuromuscular Physical Therapy (NMPT), Cardiovascular and Pulmonary Physical Therapy (CPPT) and Sports Physical Therapy(SPT)[5]. Most recently PhD program in physical therapy and rehabilitation sciencesalso has been launched by few universities which will be helpful to produce quality research and promote evidence based practice in Pakistan.

It is very important for a health professional to be aware of the current trends in the profession and also to be capable to face new challenges in the health care system. This objective can be achieved through advanced degree programs,short skilled course and fellowships in the relevant profession but it is not possible for every professional to go for higher education or fellowships but they can easily enhanced their competencies through continuous professional development courses (CPDs). The CPDs concept in Pakistan was 1st introduced formally in 2009 by Riphah International University and since then offer workshops and seminars on various topics for rehabilitation professionals. CPDs is the prime responsibility of the professionals to keep their knowledge and skills current so that they can deliver the high quality of service that safeguards the public and meets the expectations of patients/clients and the requirements of their profession. Most of the time it is required by professional organizations or licensing authority who regulate the profession.

CPDs ensure the capabilities of the professionals and maintain and enhance the knowledge and skills to stay relevant and up to date. CPDs keep

the professionals aware of the changing trends and directions in the profession. CPDs helps the professionals continue to make a meaningful contribution to the profession and make the person become more effective in the workplace. It also helps in advancing career and move into the new positions where an individual can lead, manage, influence, coach and mentor other professionals. It is a good source of advancing the body of professional knowledge and adaptation of new technology in the profession. It also promote the evidence based practice and specialized practice in the profession, so CPD should be mandatory especially in the rehabilitation professions to make sure quality intervention and safety of the patients/clients.

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ORIGINAL ARTICLE

Effectiveness of non-invasive interventions in controlling drooling

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ABSTRACT

Background:

Excessive loss of saliva from mouth is commonly encountered in pediatric and adult population both by physical and speech therapists and other medical practitioners. Drooling is considered abnormal after 3 years of age. Salivation is caused by neurological, developmental and glandular dysfunction. Drooling greatly affects personal life, social interaction, hygiene of the person and makes them prone to different infections. It is managed using multiple approaches such as invasive and non-invasive. Currently there is insufficient evidence to support which non-invasive treatment approach is effective to deal patients with drooling.

Objective:

To identify the most effective non-invasiveintervention for drooling control in cerebral palsied children.

Methodology:

Interventional study design. Data was collected from Pakistan Society for the Rehabilitation of Disabled (PSRD) in 2 months before and after intervention on the cerebral palsied children. Purposive sampling technique was used to collect data from cerebral palsied children age 4-10 years using Thomas-Stonell & Greenberg scale for measuring frequency and severity of drooling. The data was analyzed using SPSS 17. In 5 children, oral motor therapy alone was intervened and in 5 children behavioral therapy and in 5 children combination of both therapies was applied. Therapy was given 4 days /week, each session of 30 minutes duration for 2 months.

Results:

The results of present study illustrate that oral motor therapy was more efficient than behavioral therapy to decrease the frequency of drooling in cerebral palsied (CP) children. Drooling caused skin irritation in 33.3% of children and slight embarrassment in 53.3% children.

Conclusion:

Oro motor therapy takes the lead in the management of sialorrhea then other non-invasive therapies. Drooling is major problem encountered by cerebral palsied children causing problems of skin and psychological issues side by side. In the initial stages, trial of non-invasive techniques should be given to manage sialorrhea as evident from the results that these therapeutic techniques are effective in decreasing the incidence of drooling.

Key words:

Drooling, cerebral palsy, oral-motor therapy, behavior therapy

INTRODUCTION

Cerebral palsy is disorder of posture and movement due to non-progressive damage to immature brain. Affected movement can be of any part of the body depending on the part of brain suffering from the damage. Muscles and other structures related to the oral region are not properly functional due to the neurological damage, causing saliva loss along with, accompanying sensory disturbances, cognitive issues, behavioral problems, communication lapse[1].

Loss of saliva is clinical manifestation of neurological or motor issues specifically relating

to muscles of lip, cheek, improper function of jaws. Ten percentof children with cerebral palsy have significant drooling problem, tointerfere with social and practical functions on daily basis[2]. It is considered abnormal when it is unintentional and frequent related to the child. It is normal till age of 3 years as during this time period, the oral structures are developing. In some cases loss of saliva continues beyond this age limit but the peer demands are enough to control this condition[3]. When it extends beyond 3 years of age, it is labeled as abnormality[4,5]. Drooling causes personal, social issues and/or psychological problems[6]. The cerebral palsied children feel uncomfortable due to this issue as they encounter other children of the same age group and even in special education institutes.

Many options are available for the management of drooling that is broadly divided into two categories i.e., invasive and non-invasiv[7]. Invasive therapies include taking medicines orally or injecting medicines through dermal route or taking the surgical option. Different medicines are in current practice such as Botulinum toxin (BoNT therapy)[7,8].Surgical treatment includes removal of salivary glands or re-routing the ducts(8).

Non-invasive treatment domains include oromotor therapy, behavioral cues usage and sometimes combination of both of these domains. Oromotor therapy encompasses use of neuro-developmental techniques (NDT) to augment the function of sensory and motor system[9]. Behavioral therapy is the application of positive and negative reinforcements for the development of erect head posture and lip closure[10]. The present study is designed to find out the most effective therapeutic technique out of these non-invasive management domains. As recently, evidence is not enough to support or reject the theme of current study.

MATERIALS & METHODS:

Purposive sampling technique was used to collect data from 15 cerebral palsied children age 4-10 years a well structured questionnaire including Thomas-Stonell & Greenberg scale for measuring frequency and severity of drooling, along with questions related to skin irritation, embarrassment level and some biodata details. The data was analyzed using SPSS 17. In 5 children, oral motor therapy alone was intervened through NDT and stroking techniques and in 5 children behavioral therapy through reinforcements and feedback procedures and in 5 children combination of both therapies was applied. Therapy was given 4 days /week, each session of 30 minutes duration for 2 months.

RESULTS:

15 cerebral palsied children were included in the study with mean age 6.53 years and standard deviation 1.506. There were 67% males and 33% females in our selected sample. According to the caretakers of the children, 20% of them were taking medicines for managing drooling, 53% were not relying on medical treatment and 28 % didn't know whether the child was on medication for this issue or not. Status of drooling frequency before therapeutic intervention was such that 40% of the children had continuous drooling complaint, 47% had frequent drooling and 14% had occasional drooling. After therapy, there were 7% children with constant drooling, 27% with frequent drooling, 47% with occasional drooling and 20% had no drooling.

Severity of sialorrhea before therapy was such that 7% had profuse drooling, 40% had severe, 40% had moderate and 13% had mild issue. After the intervention, there was no child with profuse drooling, 40% had mild complaint and 53% children were dry.

10 children had complaints of mild choking incidences, 1 had moderate incidence and 4 children had no such issue according to the current research findings.

Table # 1: frequencies of drooling before and after therapies in 3 treatment groups

Group 1: oral motor therapy, Group 2: behavior therapy, Group 3: combination therapy

Group	N	Mean	Std. Deviation	Std. Error Mean
Frequency of drooling before therapy in group 1	5	3.4000	.54772	.24495
Frequency of drooling after therapy in group 1	5	2.0000	.70711	.31623
Frequency of drooling before therapy in group 2	5	2.8000	.83666	.37417
Frequency of drooling after therapy in group 2	5	2.0000	1.00000	.44721
Frequency of drooling before therapy in group 3	5	3.6000	.54772	.24495
Frequency of drooling after therapy in group 3	5	3.6000	.54772	.24495

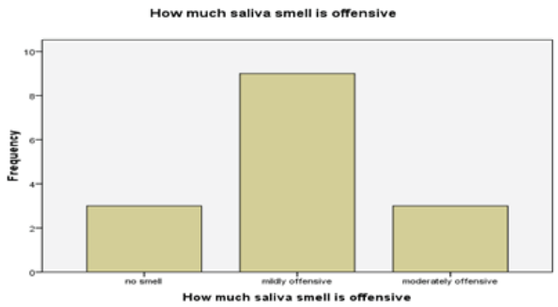
Table#2: severity of drooling before and after therapy in 3 treatment groups

Group 1: oral motor therapy, Group 2: behavior therapy, Group 3: combination therapy

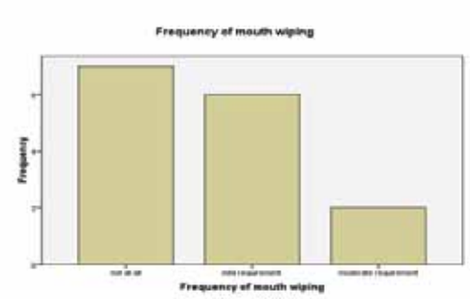
Group	N	Mean	Std. Deviation	Std. Error Mean
Severity of drooling before therapy in group 1	5	3.2000	.83666	.37417
Severity of drooling after therapy in group 1	5	1.6000	.54772	.24495
Severity of drooling before therapy in group 2	5	3.2000	.83666	.37417
Severity of drooling after therapy in group 2	5	1.2000	.44721	.20000
Severity of drooling before therapy in group 3	5	3.8000	.83666	.37417
Severity of drooling after therapy in group 3	5	1.8000	.83666	.37417

Figure #1 shows offensiveness from loss of saliva

Figure #1 shows offensiveness from loss of saliva



Figure# 2 shows the frequency of mouth wiping needs before therapy in drooling children



DISCUSSION:

The current study was designed to find out the most efficient treatment technique for the management of drooling in cerebral palsied children. In this study sample, excessive salivation from the mouth was caused by underdevelopment of oral structural control. For this purpose, first technique applied to 33.3 % children was oro-motor therapy, to improvise the muscle function, motor control of the oral structures and the flexibility of the muscles of the cheek and the lips. Also this therapy improves jaw control as evident by the results of a similar study was conducted by Bailey.The researcher also applied this technique and states that it is beneficial for the children with problematic oral structures. The research also states that therapy trial must be given earlier in the life so as to get better results[11].Similar study conducted by McCracken in mentally retarded children, reports that sensorimotor techniques (part of oromotor therapy) given to these children resulted in reduced drooling but she didn't made objective measurement of the drooling[12]. But the current researcher made record of change in drooling through Thomas stonnel and Greenberg scale, so the findings are more reliable. Similarlyanother study was done 1983, facilitation techniques and tactile stimulation procedures for the purpose of jaw closure[9].

Second approach that was used by the researcher to minimize the incidence of sialorrhea is behavioral therapy. Behavioral therapy includes the use of tactile cues for the development of behavior in cerebral palsied children. This technique is effective in children with better understanding powers and better IQ level, so that they can follow the cues given by the therapist. In the recent study this was applied in 33.4% of subjects, as was applied Garber(13). In that study only 16 therapy sessions were given (3 times /week), but the researcher gave therapy for total of 32 sessions (4 sessions /week for 2 months duration), each of 30 minutes duration. In another study Drabman along with his colleagues, monitored the effects of reinforcement technique[14].

Methods including overcorrection, presentation of rewards or the threat of punishment are effective techniques that come under the domain of behavioral therapy. The only requirement for the application of this technique is that the child understands the concept of cues and shows affiliation for certain things as mentioned in the study by Thomas Stonnel[15].

Though, oromotor therapy and behavioral therapy is a lengthy procedure but still its importance can't be negated and it is recommended that at least trial of non-invasive therapy should be given for 6- months before going for medication or surgery. Another positive point to use oromotor therapy is that cognitive and motivative part on behalf of patients is minimally required[15]. Behavioral therapy is bit demanding in term of IQ level of the patient but still its importance is superior enough to be used before invasive procedures[16].

CONCLUSION:

Oromotor therapy takes the lead in the management of sialorrhea then other non-invasive therapies. Drooling is major problem encountered by cerebral palsied children causing problems of skin and psychological issues side by side. In the initial stages, trial of non-invasive techniques should be given to manage sialorrhea as evident from the results that these therapeutic techniques are effective in decreasing the incidence of drooling. Large sample size study is required to generalize the results. Additional studies must be conducted to see whether these techniques are effective for long duration or the effect diminishes after few months or continuous treatment is required.

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ORIGINAL ARTICLE

Work Related Musculoskeletal Problems among Professionals of Physical Therapy in Hospitals of Lahore, a city of Punjab, Pakistan

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ABSTRACT

Background:

Physiotherapists have to use manual and handling skills while treating their patients. These skills are often physically demanding and put uneven stress on the body. Without proper posture during treatment session, they may prone to different musculoskeletal injuries.

Objectives:

Objective of this study was to find out work related musculoskeletal disorders in physiotherapists.

Methodology:

A cross sectional survey was conducted on 50 physiotherapists from different clinical setups of Lahore. Structured close ended questionnaire was used which had been validated by using Delphi Technique. Data were analyzed in SPSS 16.0.

Results:

Total 36(72%) females and 14(28%) males participated in this study. Most physical therapists 40(80%) in the survey work for normal working hours, only 6(12%) few had overtime or night shifts 4(8%). However, a large proportion of professionals had got musculoskeletal disorders and spine was found the most troubled area 20(40%) while other body joints neck 6 (12), knee 5(10%), hip 5(10%), shoulder 4(8%) are also involved. Results further revealed that 24(48%) had work related discomfort, 21(42%) had this discomfort most of the time and only 5(10%) were those who never feel any sort of discomfort.

Conclusion:

It is concluded that most of physical therapists are facing musculoskeletal disorders due to nature of their job and spine is the most vulnerable part to these sorts of problems. Implications of this survey are physiotherapists need ergonomic training and more frequent rest intervals in order to prevent these problems during their job.

Key Words:

Work Related Disorders, Occupational Disorders, Musculoskeletal Disorders, Physical Therapy Professionals.

INTRODUCTION

The musculoskeletal system comprises of more than 200 bones of different size and shape all linked together in chain. Other than bones and joints, brain, nerves and sense organs are also integral part of this system[1-3]. If we look in detail Motor Unit is the basic unit of this system. Motor unit consist of Anterior Horn Cell of spinal cord, nerve fiber which innervate the respective muscle fiber and conveys motor command to muscle resulting in movement[4].

Musculoskeletal disorders have been described as one of the main occupational problems among health care workers. Physical therapists belong to a health profession in which most part of diagnosis and treatment is carried out by physical involvement. They uses manual handling skills which may introduce stresses in different body parts. Musculoskeletal system of body directlycope with such stresses. Several epidemiological studies have shown that physical factors, such as manual handling, frequent bending and twisting, forceful movements and awkward working postures, are important

determinants of musculoskeletal disorders. Psychosocial factors, including high demands, low control and lack of social support can play an important role in increasing the risk of musculoskeletal disorders[5-7]. Work Related Musculoskeletal Disorders (WMSD's) are disorders which involve muscles, skeleton and other soft tissues as ligaments and tendons etc. WMSD's are mostly related to repetitive task or movement which has to be performed due to job nature. WMSD's are sometimes taken as repetitive strain injury. WMSD's are not limited to any one region as Upper Limb or Lower Limb they can occur in any region of body[8].

The literature searched about prevalence of work related musculoskeletal disorders among physical therapists, no study found in this context in Pakistan. PubMed and one directory Google Scholar was searched for this purpose. However, worldwide many cross sectional studies found showing the relevance of WMSDs among physical therapists[9, 10]. Literature of 26 peer-reviewed articles were found. Out of 25 studies, 21 were cross-sectional surveys while 4 studies were longitudinal with 2 of these were interventionalstudies[11]. In most of studies, Lumbar spine, upper back, neck, shoulders, wrists/hands and knees are reported to be most affected by such disorders[12, 13]. The objectives of the study were to find out the prevalence of work related musculoskeletal disorders in physical therapists in clinical setups of Lahore, a city of Punjab, Pakistan

MATERIAL (PERSONS) AND METHODS

This was a descriptive cross sectional survey. Data was collected through close ended questionnaire from government and private clinical setups in Lahore, a city of Punjab, Pakistan. The study was completed over duration of 3 months. Convenience sampling technique was used and sample of 50 physical therapists was collected. Participants were practicing physical therapists and physical therapists who are not doing clinical practice, were not included in final DATA. Data analyzed using Statistical package for social sciences (SPSS) 16.0.

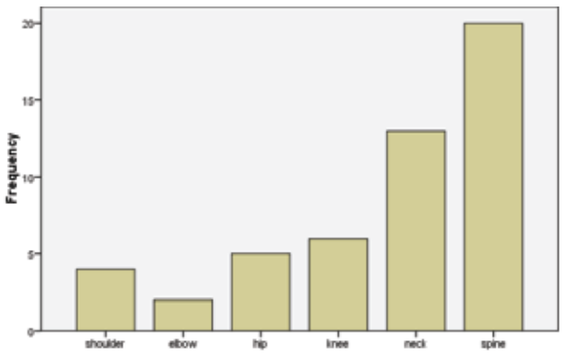
RESULTS

Results reflected that out of 50 respondents 37(74%) were in 20-29 years of range, 12 (24%) in 30-39 years of range and only 1 (2%) respondent was in 40-50 years of age range. Dominant gender were females 36(72%) while 14(28%) were males. Most of physical therapists 24(48%) found workingin 4-6 hours per day, 16(32%) were working 0-3 hours while 10(20%) physical therapists were working 7-9 hours per day.Only 5(10%) physical therapists were those who always taking rest, 33(66%) sometimes, 10(20%) rarely while 2(4%) physical therapists were who even never taking rest during duty hours.Physical therapists found suffering from musculoskeletal disorders. Results showed 24(48%) physical therapists at times,21(42%) were feeling work related discomfort most of the time while 5(10%) never felt work related discomforts. From perspectives of joint affected due to musculoskeletal disorders 20(40%) had spine involvement, 13(26%) had involved neck, 6(12%) knee, 5(10%) hip, 4(8%) shoulder and only 2(4%) had elbow joint involvement.Regarding factor causing musculoskeletal disorders, 21(42%) physical therapists perceived working inadequate rest periods,14(28%) work for prolong period,12(24%)nonco-operative atmosphere as causative factor and 3(6%) perceived inadequate infrastructure the factor. Due to WMSDs 3(6%) physical therapists were always thinking of changing profession, 8(16%) thinking the same at times, 6(12%) most of times, however, majority physical therapists 33(66%) never thought of changing of profession due to pain. Finally Analogue Pain Scale showed most of physical therapists 24(48%) had pain only 2 out of 10, 21(42%) 3/10 and only 5(10%) had pain 4/10. It was seen that out of 50 respondents, 43(86%) relieved their pain by physiotherapy, only 7(14%) were those who did not get benefited by physiotherapy.

DISCUSSION

Significant number of physical therapists showed WMSDs. In this study, there found significant prevalence of work related musculoskeletal problems among physical therapists but it was lower than the ratio and severity reported in most

of these studies[2, 5, 10]. The fact found in this study that most of physical therapists affected due to WMSDs are young, rightly according to the evidence found in other international studies addressing the same issue[5]. However, more ratio of female physical therapists than the males ones may also be the contributing factor as females are more prone injuries due to work physically demanding work [14]. Comparatively low ratio and severity of WMSDs may be the result of appropriate work hours i.e. 4-6. Very less number of physical therapists are found working more than 8 hours per day. In this study, the spine is the most affected body part in this study and it indicate less available ergonomic infra-structure perceived even themselves by physical therapists. However, the most of physical therapists pointed out less rest periods during the duty hours. Other body parts such as shoulder and elbow are found least affected. It may be indicator of less use of upper extremity due to less trend of manual physical therapy techniques and relaying most of time on therapeutic exercise techniques.



Analogue Pain Scale (VPS), however, clarify the situation that most of physical therapists do not suffer from extreme pain. The worst score reported on VPS is 4/10 but ratio experiencing it is minimum. The physical therapists who reported WMSDs, most of them experience mild pain i.e. 2/10.

CONCLUSIONS AND RECOMMENDATIONS

Overall this survey concluded that WMSDs are common in the profession of physical therapy due to nature of job, however, this study also revealed that intensity of such is less.

The recommendations from this study are three. First, ergonomic recommendations should be made to organizations so that they correct their infra-structure to make it convenient and biomechanics friendly. Second, there should be frequent clinician development trainings/ meetings to discuss alternative ways in treating patients with less bodily stresses. And in last, there should be another study with bigger sample size and in broad regional spectrum to set an evidence about WMSDs in Physical Therapists in all country.

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ORIGINAL ARTICLE

Effectiveness of Kinesiologic Taping Therapy In Drooling Management Among Children With Cerebral Palsy

Romana Pervez, Ayesha Kamal Butt, Noreen Tabassum

ABSTRACT

Background:

Drooling is a major issue among children suffering from cerebral palsy which can also affect the quality of life of the children and their parents.. There are different therapeutic interventions for drooling management. Kinesiologic taping therapy is one of them. The current study was conducted to make out the effectiveness of kinesiologic taping therapy among cerebral palsy children.

Objective:

The objective of study was to determine the effectiveness of kinesio taping as therapeutic intervention in CP children with drooling, to provide evidence based facts of therapy to decrease drooling and to increase the awareness of taping technique in management of drooling.

Methodology:

The experimental study was conducted at Armed Forces Institute of Rehabilitation Medicine (AFIRM) Rawalpindi. 30 CP children were selected with age between 2-6 years with moderate to severe drooling through convenient sampling technique. kinesiotape has been applied on each child for 45 minutes per session, 5 days per week for two months continuously. Data was collected through Thomas-Stonell and Greenberg drooling scale to measure frequency and severity of drooling and drooling impact scale on 1st day and finally on 8th week within the same group.

Results:

Data analysis done on SPSS vs. 20. Paired sample t-test was used for pre and post testing. The results of current study show that the kinesiotaping has a significant impact on drooling management. Data was computed and statistically analysed and compared by paired sample t test with significant value of 0.00.

Conclusion: The study indicated on the basis of results, that the kinesiologic taping has an important role for reducing drooling in cerebral palsy children and proved one of the safest treatment option for management of drooling in cerebral palsy children.

Keywords:

Cerebral palsy, Drooling, Drooling impact scale, Kinesiologic taping

INTRODUCTION:

Cerebral palsy (CP) is a static, non progressive disorder of the brain caused by brain injury during the prenatal, perinatal, and postnatal stages of birth. It is one of the common disorder which .is predominated by the inability to normally control motor functions, and potentially effects the overall development of a child by debilitating the child's abilities to explore, speak, learn, and independent mobility, and diagnosed before the age of 2 years Effective management of CP can improve the quality of life for the child and family.[1]

Cerebral palsy describes a group of permanent disorders of the development of movement and posture which causing activity limitation that are attributed to non progressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of CP are often accompanied by disturbance of sensation, perception, cognition, communication, behavior, drooling, by

epilepsy and by secondary musculoskeletal problems.[2]

Cerebral Palsy is a common disorder all over the world. The occurrence of CP is about 1.5 to 4 per 1000 living child births. This amounts to about 5,000 – 10,000 children born with CP every year in the US. Every year about 1,500 infants are diagnoses with this disorder. In about 70% of all cases of CP are found with other disorders, such as mental retardation. The overall prevalence of significant chronic drooling in childhood is put upto 0.6%. the commonist population group with severe and persisting difficulty is children with quadriplegic CP where the prevelence rate is as high as 30%-53%.[3]

Drooling is an unintentional loss of saliva from mouth which is normal in children from 18 year to 24 months of age. There are commonly two types of drooling i.e. anterior and posterior drooling. A large number of cerebral palsy children have drooling problem. Some other neuromuscular disorders or cognitive disorder also are known to cause drooling.[4]

Oral motor achievements are of as great importance as the mobility for social functioning, such as speech, the most appreciated capability. Adequate handling of saliva and food are important condition for oral integrity that supports social acceptance and integration. Impairment in basic functions such as sucking, swallowing, breathing, and coughing will frequently result in clinical problems of which drooling is an example.[5]

There are different treatments for mangement of drooling which include pharmacological treatment, speech language therapy (oral motor stimulation exercises) behavioral therapy , radiation therapy and surgery. Medicine are used to decrease symptoms, aticholinergic drugs are used to slow down saliva production. The anticholinergic drugs may cause side effects which include sedation, uniry retention, constipation, restlessness and blurred vission. Glycopyrrolate (anticholinergic drug) is mostly used drug for drooling.[6]

The management of drooling in CP children are conservative/alternative, specific oral motor exercise which include certain stimulation exercises of oral motor musculture, use of intra oral devices, pharmacological , and surgical intervention.Specific oral motor exercise programs include measures to improve oral facial tone, increases sensory awareness and develop voluntary control of movement. Oral facial facilitation techniques such as brushing, vibration, and manipulation are reported to have short term effects on facial tone.[7]

The kinesio taping (KT) technique was designed by Dr.Kenzo Kase. Dr. Kase has been probing for a sports taping technique to help out in the healing of the traumatized tissues. He establish that standard taping technique, such as athletic taping, and strapping provided muscle and joint support however they reduce ROM, did not support the fascia and inhibited the healing of the tissues. Dr. Kase developed kinesio taping method. Kinesio taping is key differetiator is its ability to aid in the lymphatic and muscle system. While supporting joints and muscle, since then Kinesio tape become one of the fastest growing sport treatment modalities in the world[8].

The kinesio tape have been used with children who present with decreased oral motor control using the following technique for TMJ stabilization, jaw stability to decrease drooling, and jaw stabilization for better lip closure. The Orbicularis oris is the major muscle responsible for lip closure. This is generally weakened muscle, due to over stretch from poor closure, head and neck position and poor alignment, and muscle imbalance. Children with varying diagnosis, including CP, developmental delay, and dysarthria have been taped using Orbicularis Oris taping technique.[8]

KT was designed to mimic the qualities of human skin. It has roughly the same thickness as the epidermis and can be stretched between 30%-40% of its resting length longitudinally. Kase et'al have proposed several benefits, depending on the amount of stretch applied to the tape during application. 1) provides a positional stimulus through the skin, 2) align the fascial tissues, 3) creates more space by lifting fascia and soft tissues above area of pain and inflammation ,4) it provides sensory stimulation to assist or limit motion and 5) to assist in removal of edema by directing exudates toward

a lymph duct . It is latex free and the adhesive is 100% acryclic and heat activated . The 100% cotton fibers allow for evaporation and quicker drying. This allows KT to be worn in the shower or pool without having to be reapplied. Lastly prescribed wear time for 1 application is longer, usually 3 to 4 days.[9] The objective of study was to determine the effectiveness of kinesio taping as therapeutic intervention in CP children with drooling, to provide evidence based facts of therapy to decrease drooling and to increase the awareness of taping technique in management of drooling.

MATERIALS AND METHODS:

The study was pretest posttest experimental study conducted in clinical setting (AFIRM). Sample size of the study was 30 cerebral palsy children including both male and female of 2 to 6 years of age, rating of ≥ 3 on Thomas-Stonells drooling scale (moderate to profuse drooling), child having head control and who can understand simple verbal commands included in the study. Data was collected through non probability convenient sampling technique. The study was carried out in 8 weeks. The tools used for data collection are general oral motor examination, Thomas-Stonell and Greenberg drooling scale and drooling impact scale.

Need and purpose of the study was explained to the parents of the children and an informed consent was taken from them to ensure confidentiality. A brief oral motor examination of the subjects was taken prior to the study. This process was carried out 5 days a week, in which CP children were attended by researcher and rest of 2 days parents were guided. They followed the same taping procedure. Thomas Stonells scale and Drooling impact scale was used as a pre and post assessment testing.

Paired Sample t-test was used to analyze the treatment effect. The test was applied through SPSS 20.

Each child was given 45 minutes. In the session orbicularis oris muscles was taped for 45 minutes.. All CP children treated through taping the orbicularis oris muscles at least 45 minutes per day. Post interventional assessment was carried out after eight weeks

Taping technique were pursued through following procedures. Taping Technique was, used 2 inches cut tapes according to orbicularis oris structure.The lengthen to fit around mouth when fully opened. The tape anchored at center of mouth above the upper lip. Tape was laid down on open mouth, with paper-off (10%) tension or pull. Tape ended at corners of upper lip. Tape not placed on lips, but just outside of lips, outlining mouth. A second piece of tape was anchored at center of the lower lip. Tape was surrounded around the mouth, following the orbicularis oris muscle. Ends of the tape overlapped slightly. Taping with this method has been shown to improve "pursing of lips and mouth closure. Children tired with the initial taping as it is worn for a maximum of 45 minutes, with time gradually increased.[3]

RESULTS:

The results of the statistical analysis, carried on the data set, are included here. The factors which are considered during the analysis are Age, Gender, Thomas-Stonell and Greenberg drooling scale[10] and drooling impact scale [6]. Statistical analysis compares the day 1 (week-0) scores of the children with their follow-up scores in week 8. IBM SPSS statistics V 20, statistical analysis software, is used to prepare the dataset and run the analysis. The results obtained manifest the difference and effectiveness of the treatment. The paired t- test was used two times to measure the mean difference of the before-after statistics in week-0 & week-8. .The results are found significant with p-value of 0.00.

Table 1: Pre Test Mean & Standard Deviation

(DSS, DFS & DIF)

	N	Mean	S.D
DSS	30	4.6667	0.4794
DFS	30	3.8000	0.4068
DIS	30	52.133	4.1417

The above mentioned table 4.3 shows the mean and standard deviation of drooling severity scale, drooling frequency scale and drooling impact scale when pre assessment done .The results of pre assessment shows significant difference. The pre test mean difference of DSS is 4.6667 and S.D is .0.4794. The pre test mean difference of DFS is 3.8000 and standard deviation of 0.4068 whereas the pre test mean difference of DIS is 52.133 and standard deviation is 4.

Table 2: shows Post Test Mean & Standard Deviation

(DSS, DFS & DIF)

	N	Mean	S.D
DSS	30	2.2000	0.7611
DFS	30	2.5333	0.7760
DIS	30	29.533	7.4590

The above table 4.3 shows the mean and standard deviation of drooling severity scale, drooling frequency scale and drooling impact scale when post assessment done .The results of post assessment shows significant difference. The post test mean difference of DSS is 2.2000 and S.D is .07611. The post mean difference of DFS is 2.5333 and standard deviation of 0.7760 whereas the post mean difference of DIS is 29.533 and standard deviation is 7.4590.

Table 3: Paired Sample t-test (Pre & Post Test)

		N	Mean	Mean dif.	S.D	p-value
DSS	Pre Test	30	4.6667	2.466	0.4794	0.00
	Post Test	30	2.2000		0.7611	
DFS	Pre Test	30	3.8000	1.266	0.4068	0.00
	Post Test	30	2.5333		0.7760	
DIS	Pre Test	30	52.133	22.60	4.1417	0.00
	Post Test	30	29.533		7.4590	

The results of the above table indicates paired sample t-tests. The results are found to be significant on p value 0.00. The mean difference in the DIS Score is 22.60 indicating the decrease in complaints. In case of DFS the mean difference is 1.266 reflects that the magnitude of severity has been decreased. Similarly, the mean difference in DSS which was 2.466, reflects the improvement. On above mentioned results we reject the null hypothesis and accept alternative hypothesis. So this showed that kinesio tapping is effective treatment option for the management of drooling children with cerebral palsy.

Discussion:

The aim of the present study was to determine the effectiveness of kinesio taping in cerebral palsy children to reduce drooling using Thomas-Stonell and Greenberg drooling scale[12] and drooling impact scale[6] on day 1 and 8th wk. The control of drooling is difficult as the problem is caused by complex interacting elements, especially for children with severe and multiple disabilities.

The most important findings of Sajjan Kumar in his study was that there was a significant difference in drooling frequency ,severity scores, jaw control and lip control scores after oro motor stimulation therapy in reduction of drooling. MOT conducted a study on 25 spastic CP children and focused on use of slow rhythmic tapping, firm pressure, stroking, tongue stretching and mobility and the combined effect in reducing drooling through facilitation jaw and lip control. He also used activities to strengthened the oral musculature which results in improvement in functional oral motor skills. The similar results were obtained in the present study where the participants were treated with kinesio taping therapy around the orbicularis oris muscles for 8 weeks. The significant results showed in both studies.[11]

The effectiveness of oro motor rehabilitation program in reducing drooling, the study was conducted on 12 children with varying of drooling problems and the results showed improvement in drooling, indicating that treatment oro motor therapy and behavioral therapy may be worth trying even in more severe cases with saliva control problems[12]

The Orbicularis oris taping technique is mentione by Trish Martin which founded that the orbicularis oris muscle is responsible for lip closure which is generally weakened due to over stretch from poor closure, poor alignment of head and neck. This technique was found compatible with present study where the same technique was incorporated and reported to be beneficial in

reduction of drooling which showed statistical significant result in DIS and TSGD scale with a 'p' value of 0.00 with a possible reason that the kinesio tape provides cutaneous feedback and facilitates the muscle hence there by improving the lip closure and showing reduction in drooling. [8]

According to Dr. Kenzo Kase, the tape and taping method corrects muscle function by strengthening weakened muscles, improves circulation of blood and lymph by eliminating tissue fluid or bleeding beneath the skin by moving the muscle, decreases pain through neurological suppression, repositions subluxated joints by relieving abnormal muscle tension, helping to return function of fascia and muscle and increases proprioception through increased stimulation to skin mechanoreceptors.[27]The results of the present study showed improvement in reduction of drooling with application of kinesio tape supporting the finding of Dr.kenzo Kase, stating that increased stimulation of skin mechanoreceptors might be the possible reason for improvement.[13]

The result of the present study is in support with a another study in which use of kinesio tape has shown statistical significant decrease in the parameters assessing the drooling in 42 CP children age ranging from 4 to 15 years and giving conclusion in the favour of the present study . The tape under the chin enhances swallowing and thereby help reduce drooling . The possible reason for this may be the sensori motor feedback provided under the chin the whole day.[13]

Kinesio taping therapy is recommended for clinical practice of drooling management in cerebral palsy children An experimental study done by Shukra Abhyaraj M, in his study he assessed the effectiveness of kinesio taping therapy in drooling management among spastic cerebral palsy children. In his study he included 40 cerebral palsy children, and divided them into two groups. He gave oro motor stimulation exercises to control group and taping therapy to experimental group. He founded that kinesio taping therapy gives significant results in drooling management. He concluded that kinesio taping is safe and effective method to control drooling and he recommended kinesio taping therapy for clinical practice. Hence this study justifies the present study's effectiveness.[14]

CONCLUSION:

The study indicated on the basis of results, that the kinesiologic taping has an important role for reducing drooling in cerebral palsy children. It was also concluded that it is safe and effective method for controlling drooling in the cerebral palsy children. It can also reduce the use of drooling control medicine. So it is suggested that kinesiologic tapping must be included for the management of drooling along with other drooling reducing protocols.

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ORIGINAL ARTICLE

The Knowledge, Attitudes, and Practices of Pakistani Postgraduate Physical Therapy Students Regarding Peer Mentorship

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ABSTRACT:

Background:

Peer mentorship is the way of teaching in which the senior one member teaches his/her experiences, skills and techniques to the junior member. The senior member is mentor and the junior one is mentee.(1) This is different from the other way of typical teaching styles because senior members have vast experience and juniors have fresh theoretical knowledge, which is exchanged through peer mentorship.

Objective:

To describe Pakistani post graduate physical therapy students' knowledge, attitudes, and practices regarding peer mentorship.

Methodology:

A quantitative cross-sectional survey was conducted. A questionnaire was given to students. Data was analyzed using descriptive statistics to describe the knowledge, attitudes, and practices of Pakistani postgraduate physical therapy students.

Results:

Most respondents (58%) did not have any experience in a peer mentorship relationship. A few respondents (14%) reported having received formal training. Respondents showed positive attitudes toward peer mentorship 84% agreed that including peer mentorship is important, and 75% agreed that it can help the transition from student to professional. Most respondents (48 %) did not participate in a peer mentorship relationship during this month.

Conclusion:

The response of students towards peer mentorship is positive but most of them had not enough knowledge about it. The research showed the importance of support from the university in this regard to overcome the hurdles in the way of peer mentorship. The results of this study gave a reason to support the peer mentorship for Pakistani post graduate students.

Key Words:

Mentors, Physical Therapy, Students.

INTRODUCTION:

In past there is a lot of changes occur in the field of physiotherapy, in which the major change is transformation of physiotherapist from the clinical side to academic side and the urge of employees to learn new skills through academic institutes. Another change is the up gradation of physiotherapy degree from the bachelor's to master's degree.[2] Mentoring is now becoming an important need these days, peer mentorship specially, now a days implemented in many institutions in which a senior colleague or class fellow help the junior one with his experience.[3] In this situation when a new physiotherapist which is in field just after completing his bachelor's degree may face many challenges in academic as well as in clinical field. Peer mentorship is very helpful to deal with these challenges and stress [4-6] Peer mentorship is very effective method for the new physiotherapists to facilitate their clinical approach and also help the development of physical therapy profession.[5-7]

This method of teaching is commonly used in universities and mostly adults prefer it[6]

Because it gives prompt response [8] this methodology supported by many theories as "social learning theory"(9), "concept of reflective practice"[10,11] and "situated learning and community of practice theory"[9,12]. These theories share the aspects of transfer the knowledge among each other, beliefs and understandings, share experiences and senior members work as role model.[11, 12] Peer mentorship is surprisingly become very famous among physiotherapist in which a new comer or "novice practitioner" have faith on the senior experienced person and use his peer's expertise and understanding in dealing with the patients. [9, 13] Peer mentorship has a goal of personal development and growth of the profession so the mentor guided the mentee towards goal through his own reflections.[14]

Peer mentorship may be formal or informal as in formal mentorship the institute help the mentor and facilitate him and mentorship has a specific syllabus, time, schedule, evaluation etc. while the informal peer mentorship is just depends upon the mutual understanding of mentor and mentee without a specific schedule.[15] it depends upon the need of mentee and the cooperation of mentor.[16-18]

Klasen and clutterbuck have many studies on the peer mentorship and suggested the effectiveness, need and the responsibility of mentor and mentee.[19] they said that the mentor must have a sufficient knowledge and skill to handle different type of mentees and mentee should really want to learn something and have urge to gain experience.[19, 20]. There is gap in literature. First there is very little research in this aspect which addresses the students. Most of the studies address the organizational physiotherapists. Most studies include nurses.[4, 8, 16, 21, 23]

Secondly the researches predominantly include the clinicians and peer mentorships among student with student which is in other sense fellows academic help.[1, 8, 22, 24, 25]. Another feature is that many studies evaluate the behavioral and psychosocial expectations of clinicians rather than the academic understanding.[21-26]

Allen and colleagues said that peer mentorship is successful teaching methodology and is a large input towards literature.[26]

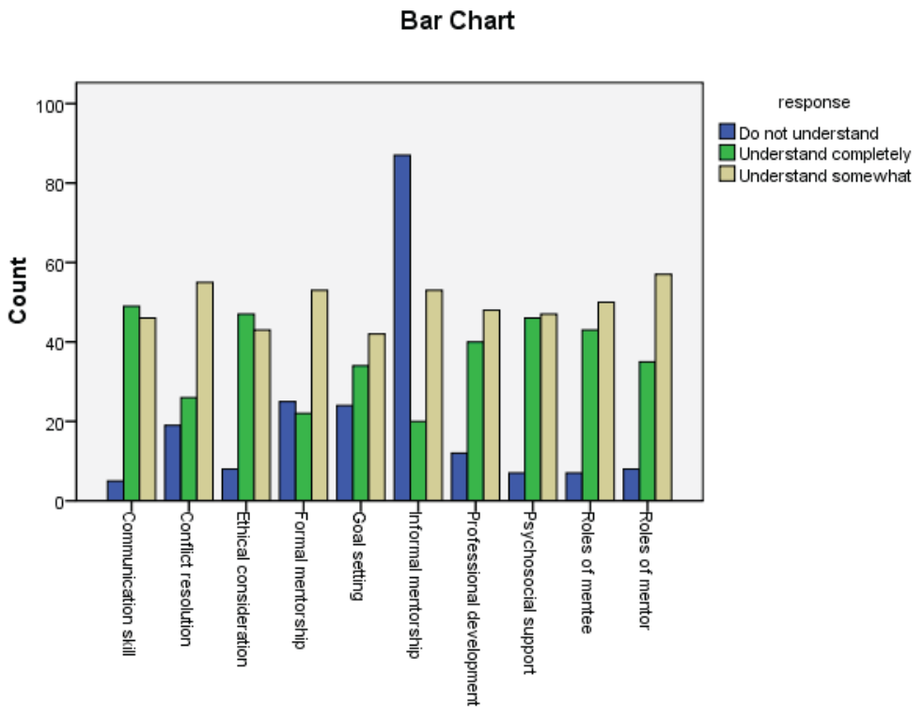
Another aspect of the fame of peer mentorship is the continuously evolving physiotherapy profession that is the reason to learn throughout the life to have good results in their field. This thing made the peer mentorship necessary for the success in field[27]. Novice practitioner find it fruitful to become a good professionals.[2]

Peer mentorship at university level is unstudied in Pakistan. The hurdles in the application of peer mentorship are also unstudied in Pakistan.

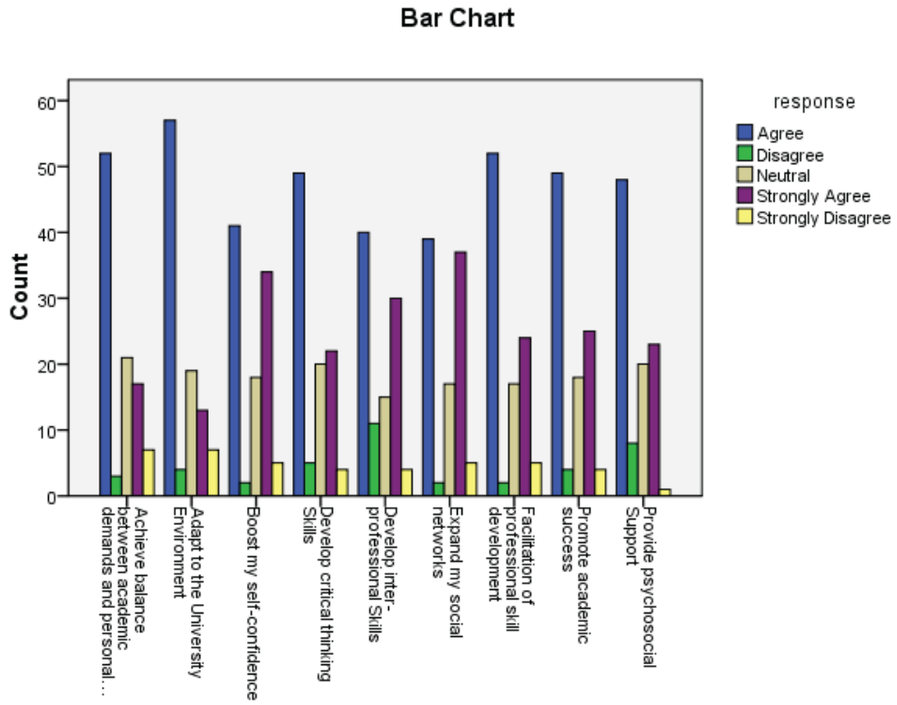
Material and Methods:

This is quantitative cross-sectional survey study.The target population for this study consisted of PP-DPT students enrolled in a 2-year of Post Professional Doctor of Physical Therapy programe at a Pakistani university. The objective was to describe Pakistani post graduate physical therapy students' knowledge, attitudes, and practices regarding peer mentorship. A self formed questionnaire was distributed among the participants and also send through e-mail to collect the data. Data was collected from Riphah International University Lahore Campus, Riphah International University Islamabad Campus, ISRA University, Khyber Medical University, University of Health Sciences Lahore, King Edward Medical University Lahore, and DOW Medical University. For the analysis of data SPSS v.16 used and data is presented in form of charts and appropriate graphs as well as standard deviation and mean is also used.

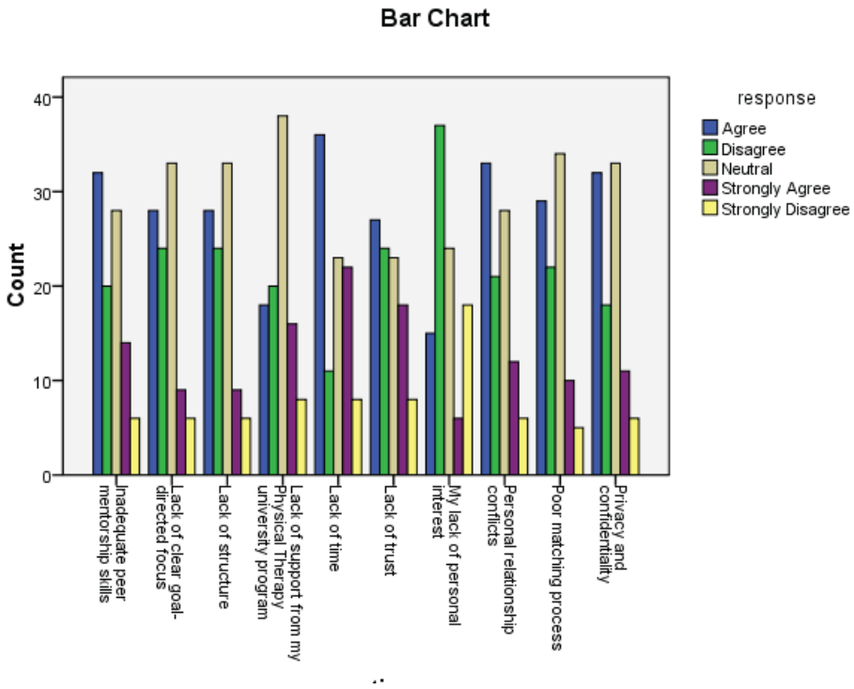
RESULTS:



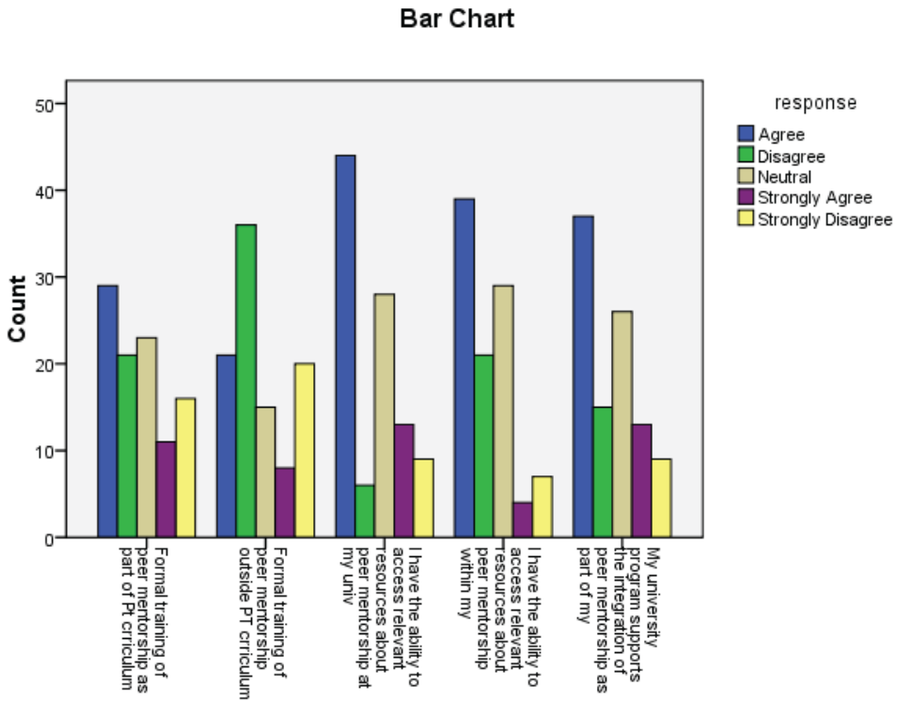
Self-reported Understanding of Terms Associated with Peer Mentorship



Self-reported attitudes toward peer mentorship



Perceived barriers to peer mentorship



Self-Reported Perceptions of Knowledge Items Regarding Peer Mentorship

DISCUSSION:

Knowledge, attitude and practice are different factors. Knowledge is to know about something , attitude is the understanding towards it and practice is the action [28, 29]. These factors are very important in field of physiotherapy to do evidence based practice[30, 31] but unfortunately these factors are not discussed in researches in Pakistan. This study describes the all aspects including behavioral and psychosocial aspects of physiotherapists. The study shows the lack of understanding about the terms mentor and mentee etc. other fields such as nurses and occupational therapists have enough knowledge about these terms because they need and use peer mentorship in their practice.[1]

There is no significance study in Pakistan which includes the post graduate students and their understanding towards peer mentorship. This study not only tells about the future interests of the physiotherapist but also the views of implementation of peer mentorship. Some institutes help to do peer mentorship but majority of the organizations not facilitate this type of methodology.

This study also showed the importance and willingness of students to have this mentorship. This study also revealed this fact that students really want to take part in peer mentorship and some of the participants also doing it already.

This study also shows the results about the implementation of peer mentorship as a part of curriculum in universities and finds it very helpful in their success. Researchers find it key to have success in the field.[32] a study of occupational therapy students showed the results that peer mentorship is very effective tool to excel in professional field.[1] students can teach one another more effectively as they know each other's problems and also can cope up with each other mind level. This help in finding the solution of their problem.[33] A participant commented on one question that peer mentorship is helpful in making a clinical decision by less apprehension as the senior one can guide him to avoid that methods which can cause pain.

Previous study said that the success of mentorship depends upon the interest of participants and the time [33] but this study shows that the institutional help is also very important to implement it. Peer mentorship can be successful if a specific goal is there to achieve, interest and determination of both mentee and mentor and organizational help is present.[34]

CONCLUSIONS:

Peer mentorship is necessary and very effective to excel in the field of physiotherapy. Study showed the interest of participants in peer mentorship.

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ORIGINAL ARTICLE

Dysphagia; Awareness & Knowledge of Medical Practitioners and Understanding of Role of SLP in its Assessment & Management

Sana Amjad Kayani, Ayesha Kamal Butt

ABSTRACT

Background:

Dysphagia is a disorder of swallowing and/or feeding. It is associated with malnutrition, dehydration, pulmonary pneumonia and increased mortality. Timely assessment and management of dysphagia carried out by speech and language pathologist is necessary. SLPs evaluates and treats patients with dysphagia by using dysphagia therapy, postural changes, swallowing maneuvers and recommends texture modified dysphagia diet.

Objective:

The aim of the present study was to explore the level of awareness medical practitioner have regarding dysphagia and speech and language pathologist's role in dysphagia.

Methodology:

A non experimental, descriptive survey was conducted for the purpose of this research. Information was gathered by mean of a self designed questionnaire. The data was collected from Railway Hospital, Fauji Foundation Hospital and Pakistan Institute of Medical Sciences (PIMS) by using purposive convenient sampling technique. The sample of the study consisted of 52 medical practitioners (27 males and 25 females) working in different hospitals, in which speech and language services were available and speech and language pathologists were accessible fulltime.

Results:

The data analysis was carried out with SPSS version 17.0 for windows. The score obtained by the participants was 46.4%. The result shows that medical practitioners do not have adequate knowledge regarding the assessment and management of patients who suffer from eating and drinking difficulties.

Conclusion: On the basis of the present research, it was concluded that medical practitioners lack in their knowledge and understanding of basic dysphagia assessment and management practices. Their lack of awareness of SLP role results in decrease SLP referrals.

Key Words:

Dysphagia, Speech and Language Pathologist, Medical Practitioners, Swallowing Disorder

INTRODUCTION

The present study explores the level of awareness and knowledge medical practitioners have regarding dysphagia. General medical practitioners do not have adequate knowledge regarding dysphagia assessment and management. "Medical practitioners and caregivers lack the expertise to assess and manage the feeding difficulties"[1]. Dysphagia screening, evaluation and management come under the domain of speech and language pathologists. The speech and language pathologist should be the primary professional involved in both the assessment and management of swallowing disorder [2]. Speech and language pathologist provides services in hospitals but medical practitioners usually do not refer patients with dysphagia to the speech and language pathologist. "The limited number of referral to speech and language pathologists implies that caregivers are not always aware of the physiological and anatomical disorder that

causes the swallowing difficulties [1]. Dysphagia can be life threatening, hence, it is important for appropriate treatment and management to take place.

Dysphagia is usually defined as "a difficulty in swallowing or in the process of transporting food and liquid from the oral cavity to the stomach" [3]. Dysphagia results in difficulty in eating and swallowing, watering of the eyes, choking and coughing during meals, sensation of food lodged in the throat etc.

There are two types of dysphagia, oropharyngeal and esophageal dysphagia, which are usually the result of either structural or motility disorders.

Swallowing disorder has a wide range of underlying causes; such as stroke, Parkinson's disease, Huntington's disease, Alzheimer's disease, and other neurological problems. Trauma-induced head injuries and cancers of the throat and mouth are also common causes [4]. Dysphagia is not always the result of disease or injury; swallowing difficulties can also occur in otherwise healthy elderly people simply as a result of the aging process.

Dysphagia has many adverse affects on the life of patients with dysphagia. If dysphagia is misdiagnosed or goes untreated, this may lead to the death of dysphagic patients. Dysphagia may cause upper respiratory infections, dehydration, malnutrition etc. "Serious complications commonly occur in individuals with dysphagia including malnutrition, weight loss, dehydration, aspiration pneumonia and death"[5].

A speech and language pathologist usually performs the clinical evaluation for dysphagia. The evaluation typically includes a bedside assessment of oral-motor functioning and signs and symptoms of dysphagia. An occupational therapist (OT) and physiotherapist (PT) who are qualified may perform the clinical evaluation along with the speech language pathologist.

Speech and language pathologist have knowledge and skills in assessment and management of dysphagia. They recommended compensatory techniques used to manage dysphagia [6]. Therefore, physician in different hospitals refer patients of swallowing disorders to speech and language pathologists for detail assessment and treatment. Postural changes are recommended for various types of dysphagic patients. "A speech and language pathologist would therefore have to first identify the physiological and anatomical disorder in the swallow and then determine the posture that will facilitate the best swallow"[1].

Therefore this research was carried out to highlight the role of speech and language pathologists for dysphagia assessment and management. According to ASHA [7], 2004 speech and language pathologist (SLP) usually performs the clinical evaluation.

The purpose of conducting this research was, no research has been carried out in Pakistan to know the level of awareness medical practitioner do have regarding evaluation and management of patients with dysphagia. There is also lack of knowledge regarding the speech and language pathologist/therapist role in dysphagia assessment and treatment. Previous researches proved that SLPs plays a central role in evaluation and management of dysphagia. The present research will draw attention towards the role of SLPs in dysphagia and also investigate the level of awareness and knowledge regarding dysphagia.

MATERIALS and METHODS

A non experimental, descriptive survey design was selected for the purpose of this research. Research was conducted in 3 government and non-government hospitals of Rawalpindi and Islamabad. These hospitals were selected due to their availability of in house SLP services. Purposive convenient sampling technique was used to collect the data. The sample was consisted of 52 qualified medical practitioners. The inclusion criteria of the current study were any medical practitioners who are working in different hospitals, in which speech and language pathologists provide fulltime services.

The protocol of study consists of demographic sheet and a self- report questionnaire. Demographic information was collected through demographic data sheet which was developed by the researcher according to the required information and need of research. It provided information in terms of name, age, qualification and years of working.The questionnaire was

developed by the researcher to measure the level of awareness and knowledge regarding dysphagia. The questionnaire is consisted of 15 self-report items. Each correct answer scored "1" and incorrect answer scored "0". The scores are ranging from low score of "0" to high score of "15". The questionnaire is keyed in such a way that the higher the score, the higher the level of awareness medical practitioner has regarding dysphagia.

RESULTS

The study investigated the awareness and understanding medical practitioners have regarding dysphagia. The present study also revealed the level of awareness medical practitioners has regarding the role of SLP in dysphagia. The data collected was descriptively analyzed, tables and graphs were used to summarized and display the frequency distribution.

Table 1:
Frequencies (f) and percentage values (%) for the demographic variables (N=52

Variables	Categories	Frequencies	Percentage
Gender	Male Female	27 25	51.9% 48.1%
Age	20-30 31-40 41-50 51-60	34 12 1 5	65.4% 23.1% 1.9% 9.6%

Table shows that majority of the participants (51.9 %) are male and (48.1 %) are female. Majority of the participants (65.4 %) falls in the age range of 20-30 years. Majority (65.4%) have working experience of ranging from 0-4 years.

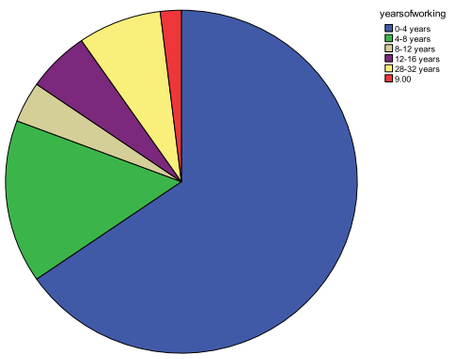

Figure no.1 shows years of working of medical practitioners.

Table 2:
Frequencies (f) and percentage values (%) for the total score of the participants (N=52)

Score	Frequency	Percentage
3.00	3	5.8%
4.00	7	13.5%
5.00	3	5.8%
6.00	4	7.7%
7.00	6	11.5%
8.00	19	36.5%
9.00	8	15.4%
10.00	2	3.8%

Total score: 780 (15*52=780), Cutoff score: 390, Score obtained: 362

Table shows that 36.5% of the participants scored 8 points. The total score achieved by the participants is 362 (46.4%). The score obtained by the participants is less than the cutoff score; this shows that the participants do not have adequate knowledge regarding it.

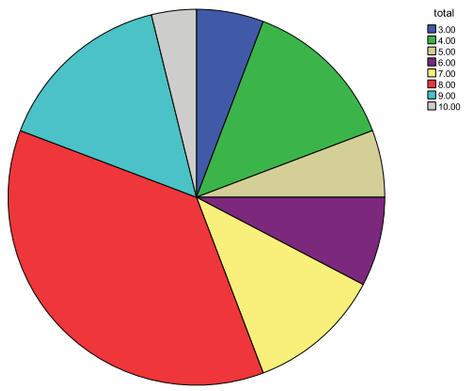

Figure no.2 shows the total score of the participants.

DISCUSSION

Demographic information was taken in terms of age, gender and years of working. Table no.1 shows the frequency and percentage for the demographic variables. It demonstrates that

majority (51.9%) of the participants are male (see table no.1). There are 27 males and 25 females medical practitioner who took part in the present research. The majority of the participants fall in the age range of 20-30 years and majority of the participants have working experience of 0-4 years (see figure no.1).

The frequency and percentage of total points scored by the participants is illustrated by table no.2. The table indicates that the majority (36.5 %) of the participants scored 8 points (see figure no. 2). The overall score obtained by the participants is less. There are 15 questions in the questionnaire and 52 participants, the total score is 780. The cutoff score is 390 that is (50%). If participants score 50% or above, then they have awareness regarding dysphagia, score less than 50% shows lack of awareness. The result shows that the total score obtained by the participants is 362 (46.4%), which is less than the cutoff score. This shows that the participants are unaware and do not have adequate knowledge regarding dysphagia. They also lack knowledge regarding the role of speech and language pathologists in dysphagia. "The medical practitioners have limited interactions with speech and language pathologists and they are unaware of the role of SLPs in management of dysphagia" [1].

The finding of the present research indicate that the medical practitioners with less working experience have more knowledge as compare to those who have more working experience. Table no.3 shows that the majority of medical practitioners scored 8 points who have working experience of up to 4 years. Medical practitioners at the early career point with limited experience shows better result. This may aim to increased evidence that new medical practitioners use internet and they got new information from it. The medical practitioners having working experience of more than 4 years do not have adequate knowledge regarding dysphagia and role of SLP in dysphagia. This may be as the MS Speech & Language pathology started in 2010 and is a relatively new profession in Pakistan. "SLP is still a relatively new discipline and there remains a considerable need to create awareness regarding the role of speech and language pathologists in dysphagia" [1]. There is possibility that older medical practitioners did not have dysphagia management in their curriculum, that's why they are unaware of the dysphagia assessment, and management and role of speech and language pathologists in dysphagia. The trends in the dysphagia assessment and management have changed substantially for the last few years [1]. The result shows that knowledge and understanding of dysphagia is not dependent on the working experience of the medical practitioners.

The present study reveals that medical practitioners do not have knowledge regarding which health professional deals with dysphagia. Majority of the participants (94.2%) replied, ENT (Ear Nose Throat) specialists deal with dysphagia. They are unaware of the fact that assessment, management and treatment of patients with dysphagia comes under the domain of speech and language pathologists. According to ASHA the practice of speech and language pathologists includes providing services for patients with dysphagia. Evaluation and treatment of swallowing disorders is included in the scope of practice for speech and language pathologist [6]. "Speech and language therapists (SLT's) are the only professionals qualified to diagnose, assess and provide a programme of care to address the communication and swallowing need" (RCSLT 2007) [8]. "Patients with dysphagia must refer to the SLP for more extensive assessment and evaluation"[9].

SLPs have extensive experience in providing dysphagia services. When problems with dysphagia are identified, an early referral to a speech and language therapist is helpful [3]. The result shows that majority of the medical practitioners do not refer patients with swallowing disorder to the speech and language pathologist, although fulltime speech and language services are available in their work setting. The role of medical practitioners is to refer the individuals with swallowing difficulties to the speech and language pathologist[1]. If the patients with dysphagia are not referred to speech and language pathologists, they may go undiagnosed and untreated; it may leads to several health problems due to dehydration and malnutrition [10].

CONCLUSION: The study concludes that medical practitioners do not have adequate knowledge and understanding regarding dysphagia assessment and treatment. Medical practitioners, who are working in different hospitals, are unaware of the role of the speech and language pathologist in assessment and management of dysphagia. Medical practitioners do not refer patients with dysphagia to the speech and language pathologist although speech and language pathologists are providing fulltime services in their hospital.

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ORIGINAL ARTICLE

Effectiveness of swallow maneuvers and thermal stimulation in management of dysphagic patients using National dysphagia diet levels

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ABSTRACT

Background:

Trouble in swallowing food is defined as dysphagia. There are many factors that predispose the person to swallowing issues such as neurological, muscular, anatomical, and psychological. This study is being conducted to see the effectiveness of the two therapeutic techniques: thermal stimulation and swallow maneuver. Through the finding of best therapeutic technique, therapist will be able to give better intervention to patients.

Objectives:

To explore the better treatment options among thermal stimulation and swallow maneuvers for therapy of the dysphagic patient.

Material and Methods:

A Longitudinal experimental study design is used to find out the better treatment option among thermal stimulation and swallow maneuvers for therapy of the dysphagic patient. For this purpose convenient sample technique is used. Two groups A and B are made having 4 patients in each group. Group A received thermal stimulation and B group had swallowing maneuvers as a treatment option. Outcomes are measured through the national dysphagia diet levels. Thermal stimulation is given for 4-5 sec in one session/day and maneuvers are performed 5-10 times in a session twice a day and patient is re-evaluated after 10 consecutive sessions. Data is collected from different tertiary care units (Combined Military Hospital and Fatima Memorial Hospital) and evaluated on SPSS 16.

Results: Group A received thermal stimulation and B group had swallowing maneuvers as a treatment option. Among the two treatment options more positive results are seen through thermal stimulation. As four out of four patients showed progress through thermal stimulation from level 1 to level 3 on national dysphagia levels.

Key words:

Swallow maneuvers, dysphagia, thermal stimulation, dysphagia management

INTRODUCTION

Trouble in swallowing food, semi -solid, solid, liquid, or any of themis defined as dysphagia. There are many factors that predispose the person to swallowing issues such as neurological, muscular, anatomical and psychological.[1]There are several behaviors that include (systematically or occur randomly) the oro-pharyngeal swallow mechanism. Characteristics of bolus (i.e. volume, viscosity) and voluntary control are responsible for the systematic changes.[2]

Swallowing is a complex process which requires voluntary and involuntary coordination of more than 40 pairs of muscles and several cranial nerves. The initial phase of normal swallow is termed the oral preparatory phase, characterized by lip closure, rotation and lateral movement of tongue and anterior bulging of soft palate to prevent premature spillage into the pharynx. Next is the oral phase, in which tongue is positioned midline and process the bolus against the hard palate. As the bolus touches the anterior tonsillar pillar, soft palate and oropharynx it triggers the pharyngeal phase. Bolus is then propelled through upper esophageal sphincter by the

pulling of larynx, beginning the esophageal phase. In esophagus peristaltic movement propels the food to the stomach. The lower esophageal sphincter (LES) then retroactively closes to stoprevisit of the bolus into esophagus.[3]

Oral, pharyngeal and esophageal are physiological phases of swallowingthat can present symptoms of dysphagia. Common symptoms comprise of generalized feeding difficulty i.e. Poor competence, failure to thrive, and food refusal. Specific symptoms include tongue thrust, oxygen desaturation , choking, and cough.[4]

Factors like neurological, muscular, anatomical or physiological are most of the time responsible for predisposing a person to swallowing difficulty. Swallowing is a life saving process and misdiagnosis or swallowing difficulty not diagnosed can cause serious health hazardous consequences like aspiration pneumonia, malnutrition or even can lead to death. Well informed health care workersin collaboration with an interdisciplinary teammate are able to evaluate and diagnose individuals who are at risk for dysphagia, and amend the complications of dysphagia toimprovetreatment outcomes from beginning to end focused management (1)Age related neuromuscular dysfunction slows the muscle movements. This is shown in the swallowing process. Ingested bolus in the oral cavity may not be properly retained before the beginning of pharyngeal swallowing or beginning of pharyngeal swallowing may be hindered, which often causes silent aspiration. The mortality of aspiration pneumonia is quite high in the elderly[5]

The assessment and management of the dysphagia is a separate and a very complex field of practice and it requires long term care. But unfortunately deficiency of evidence base, the effectiveness of treatment is not recognized and many professionals without proper training are not familiar with proper and effective intervention.[6] a complete feeding history is required to recognize the possibility of dysphagia. The muscle tone and posture in head, neck and body are all examined and dysfunction is identified. Examination of oral cavity structures, reflexes, tongue movement and symmetry are all included in case of identification of neurological abnormalities. Gastro esophageal reflex or abnormalities in respiration can be identified during history or examination.Videofluroscopy, endoscopy and ultra-somgraphy are most commonly used for the investigation of dysphagia. [4] But gold standard consideration for oral-pharyngeal dysphagia is video fluoroscopy. [7]

Management of dysphagia is a multidisciplinary task that includes neurological, respiratory and gastrointestinal intervention.The areas that need attention for the proper management are six in number, they are management of posture and positioning, dexterity in food adaptation and feeding apparatus, oral-motor exercises, swallowing therapies, nutrition maintenance and intervention of co-morbidities.[4]

To make timing better for beginning the swallowing process some techniques are used e.g. thermal-tactile stimulation and bolus handling. Moreover, manipulation of bolus includes the making bolus chilled, sour, and large in volume or making it chewable. Application of pressure on tongue during giving food through spoon is also a helpful technique for initiating movement for fruitful swallow. Supra- glottic swallow, super supra –glottic swallow, effortful swallow and Mendelson maneuvers are four different swallowing techniques planned to alter the impaired function of the physiological stage of the pharyngeal swallow. Swallowingmaneuvers showed during videofluoroscopy shows abigger stretch in hyoid bone displacement. [8]

Material and methods: this is a study conducted on consecutive outpatient from age 55 to 65years with the mean of 61 years with swallowing difficulties due to of variety of reasons. Patients were enrolled in tertiary care units (Combined Military Hospital and Fatima Memorial Hospital). Out of eight patients seven were with stroke while only one was with a degenerative disease. Only those patients were integrated in the research with predetermined criteria of difficulty to swallow, able to perform the exercises and were conscious enough to carry out the instruction given to them for their dysphagia management. Out of eight patientsthe etiology for dysphagia was stroke [4] hemorrhagic stroke, [3] ischemic stroke) and only one patient had Parkinson's

disease. Two groups A and B were made having 4 patients in each group. Group 'A' received thermal stimulation and Group 'B' had swallow maneuvers as a treatment option. Outcomes were measured through the national dysphagia diet levels. Thermal stimulation was given for 4-5 sec in one session/day and maneuvers were performed 5-10 times in a session twice a day and the patient was re-evaluated after 10 consecutive sessions.

For measuring the outcome National Dysphagia Diet (NDD) were used. The idea of National Dysphagia Diet came into existence in early 90's to overcome the dispute amongst the healthcare givers, patients themselves and their caregivers.In those days a study told that there are about 40 different terminologies being used to describe solids and 18 terminologies for liquid consistency. That provoked the idea of forming National Dysphagia Levels. Speech and language pathologist (SLP) have a large range of tools available to see the patient's ability to chew and then swallow without risk.

All the levels of diet are summarized in four levels: level 1 (dysphagia pureed), level 2 (dysphagia mechanically altered), level 3(dysphagia advanced) and level 4 (regular diet). At level 1: diet consists of pureed, well mixed and consistent foods (moderate to severe dysphagia), at level 2: all foods in level 1 plus food that are soggy, malleable textured, and easily shaped bolus (mild to moderate dysphagia), at level 3: it comprisesof textures except very hard, sticky or crunchy (mild dysphagia) and at level 4: all foods allowed. The Longitudinal experimental study design is used to find out the better treatment option among thermal stimulation and swallow maneuvers for therapy of the dysphagic patient. For this purpose convenient sample technique is used. Data is collected from different tertiary care units and analyzed on SPSS 16.

Results:

Table 1: Distribution of sample with respect to gender and age. N (No. of patient) =8

Gender	**Male**	**Female**
No.	**5**	**3**
Mean age (years)	**58.8**	**63.3**

Table 2: comparison of pre-treatment and post-treatment levels with respect to treatment option.

Treatment option	Pre-treatment level	Post-treatment level
"Group A" (Thermal stimulation)	Level 1	Level3
	Level1	Level3
	Level2	Level3
	Level1	Level3
"Group B" (Swallow maneuvers)	Level1	Level3
	Level1	Level2
	Level1	Level2
	Level1	Level3

Pretreatment levels were recorded for every patient before giving any treatment seven out of eight patient were at the level 1 (pureed dysphagia) and only one was on level 2 (dysphagia mechanically altered).

Group 'A' received thermal stimulation and Group 'B' had swallow maneuvers as a treatment option. Among the two treatment options more positive results are seen through thermal stimulation. As all the patient exposed to thermal stimulation for 10 consecutive session reached from level 1 (dysphagia pureed) to level 3 (dysphagia advanced) on NDD. While with swallow maneuvers 2 out of four could achieve the level 3 from level 1.

Discussion

Results of a study conducted in 2009 showed that the effortful swallow maneuver by using biofeedback appears to be a therapeutic source in the rehabilitation of oropharyngeal dysphagia in the patients of Parkinson's disease.(9)Another study carried in 2012 concluded that 55% of patients showed escape from risk of aspiration through the chin down posture, among them 40% were with pre swallow aspiration and 60% were with aspiration while swallowing. These percentages were similar for both stroke and traumatic brain injury (TBI).Silent aspiration was seen in 51% patients out of them 48% patients didn't show any improvement with chin down

posture. With cervical flexion 50% of patients with acquired brain injury showed escape from aspiration. And remaining 48% still showed aspiration even with maneuvers. Many videofluoroscopic evaluations are used to assess the inadequacy of the maneuvers. [10] Same thing is also detected in this study which tells that swallow maneuvers as a treatment option are not always helpful.There is evidence that pharyngeal squeeze maneuver is aneffectivesubstitute measure of pharyngeal motor integrity.[11]

In Japan ice massage is in tremendous use as a treatment to initiate the swallow process, even in daily basis swallow training. To check the proficiency of ice massage to initiate swallow reflex a cross study was conducted, 24 patients with the etiologies of stroke and CVA (cerebrovascular accident) were included in study and ice massages were given and results showed a remarkable shortening in time for initiation of swallowing reflex, even triggering of swallowing was seen in patient with no massage. The results told that immediate triggering of swallow reflex is seen through ice massage.[12] In our study icing massage also have a significant result in triggering the swallowing reflex and management of dysphagia. Study done for tactile and thermal oral stimulation effect on the cortical representation of swallowing in 2009 showed a remarkable augmentation in activation of both sides of cortex (bilateral cortical activation) in normal swallowing activity after oropharyngeal stimulation.[13] Many treatment options are approved proficient by researches including posture modification, longer pre-swallow sensory put in, controlled swallow maneuvers and exercises.[14]

No significant results were seen for the soft touch with a metal elbow; warm up to body temperature for stimulation, however, remarkable increase in swallowing reflex was brought by cold stimulation as compared to artificial stimulation. These results show that there is presence of thermo-sensitive receptors on faucal pillars that are stimulated by cold touch.[15] similar results are proved by our study. Department of Geriatric Medicine and Neurology, Malmo University Hospital and Sweden did a survey, including thirty eight patients with stroke with the age range of 53- 89 years. Only those patients were included who showed difficulty in swallowing on oral or pharyngeal in videofluoroscopic barium swallowing examination. Oral motor exercises, different swallowing maneuvers, posture and diet modification were included in intervention. Pre-treatment and post-treatment records for plasma protein levels, body composition, videofluoroscopic barium swallowing examination and an analogical scale were taken. Post-treatment recordshowed improvement in oral-motor functioning and pharyngeal functioning after treatment. Swallowing functioning as well as nutritional parameters were improved after swallowing therapy.(16)

Conclusion and Recommendation:

In this study two treatment options 1: thermal stimulation and 2: swallow maneuvers are compared to discover and explore the most beneficial and usefultreatment technique. According to this study, thermal stimulation is found to be more effective treatment strategy. Further researches are necessary for better conclusions. Due to limitation of short time period, less resources and small no. of sample size, results of this study can't be generalized; therefore, this study should be conducted on a large scale. Furthermore,the therapy session time should also be increased to see the efficacy and efficiency of the treatment and the outcomes of the therapy by combining both the treatment techniques.

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ORIGINAL ARTICLE

Awareness of Dentists Regarding Role of Physiotherapy in Managing Temporomandibular Joint Dysfunction

Dr Fariha Shah 1, Syeda Nida Hassan2, Dr. Farrukh Mumtaz Rana3, Noreen Zia4

ABSTRACT

Background:

Temporomandibular joint disorder (TMD) is a complex disorder usually characterized by pain, crepitus and reduced movement. It may be due to various causes i.e. unbalanced activity, muscular spasm, or overuse of the jaw muscles,

Objective:

The aim of our study is to find the awareness level of physiotherapy among dentists regarding its role in TMD.

Methodology:

A Descriptive case series was conducted in FMH (Dentistry department) and different private dental clinics in Shadman Lahore. A convenient base sample of 100 respondents has been collected in 1 month.

Results:

In our study 65% dentist did not consider physiotherapy as a treatment option for TMD, while 27% considered that it may be a treatment option and only 8% considered it as a treatment option. Association of dentists' awareness level of physiotherapy as a treatment for TMD found to be significantly low p=0.0001 in our study. Treatment choice of most dentists was using a combination of medications and precautions (64%) while only 7% of dentist referred patients with TMD for physiotherapy. According to our study, most common complaints of patients to dentists were pain during eating and yawing (52%) followed by Crepitus/Clicking (30.0%) as the second most common complaint. According to our study results, 40% dentists prescribed muscle relaxants and rest as a most effective treatments for TMD.

Conclusion:

TMD is a problem requiring multiple remedies for symptoms relief. Medications alone are unable to give satisfactory results in relieving all the symptoms of TMJ dysfunction. Physiotherapy is an effective mean of symptoms' relief yet awareness level is found to be significantly low in dentists regarding its effectiveness.

Key Words:

Temporomandibular joint, Dentist, Physiotherapy

INTRODUCTION:

Temporomandibular joint disorder (TMD) is a complex disorder usually characterized by pain, crepitus and reduced movement.It may be due to various causes i.e.unbalanced activity, muscular spasm, or overuse of the jaw muscles,etc. It ultimately leads to difficulty in mouth activities [1]. Macfarlane TV et al in one survey of adults in the United Kingdom found the prevalence of orofacial pain to be 26 percent out of which only 6 percent reported discomfort in the Temporomandibular joint (TMJ)[2]. TMDprevalence could not be exclusively related to sustained mouth opening attained during dental procedures. Tomas Magnusson et al's prospective study's results showed that orthodontic treatment did not run a higher risk of developing TMD later in life[3]. Bora Bagis et al in a cross sectional study found a higher prevalence of TMD in females. They also found significant effects of age (p=0.006) and missing teeth (p=0.003) along the prevalence of TMD[4].

TMD symptoms vary according to the severity of the problem. Goran Agerberg et al in their study on the prevalence of symptoms of TMD found that joint clicking is the commonest symptom or clinical finding in TMD[5]. Whereas,Virginia Tuerling et al in a cross sectional survey found that muscle tenderness was positive in 80.9% of patients [6].Johansson et alet al did a cross sectional survey (n= 8,888) in 2002 and found that in TMD, chewing difficulty was present in 61%, joint sounds were present in 28.5% while difficulty in jaw opening was present in 19.4% [7].

Treatment of TMD is mainly based upon severity of symptoms. Treatment may include rest, life style modifications (eating soft foods etc.), analgesics, muscles relaxants; application of ice packs, physiotherapy and etc. In rare cases surgery is needed.Physiotherapy plays a major role in the treatment of TMD but there is little published material supporting its efficacy.Margaret L McNeely et al in a systematic review found that there were significant improvements in oral opening with physiotherapy(i.e. muscular awareness relaxation therapy, biofeedback training, and low-level laser therapy treatment)in patients with TMD [8]. Sherma et al did a cross sectional study to see the awareness of physiotherapy regarding musculoskeletal disorders.Theyfound that self-awareness and benefits of regular exercises was significantly low among them[9].The aim of our study is to find the awareness level of dentists regarding the role of physiotherapy in managing TMD.

Methodology:

In this descriptive cross sectional survey close ended questionnaire was circulated among dentists from Lahore either working in clinical set-ups, academic institutions or both. Inclusion criteria containedprofessionals havingminimum of one year experience. Dental students, house officers and students doing internships were excluded from this study. Maximum time provided for returning the questionnaire was 1-2 weeks. A convenience based sample of 100 respondents was collected in the period ofone month. The data was analyzed through the SPSS version 16.0.

Results:

Treatment choice of most dentists was using a combination of medications and precautions (64%) while only 7% of dentist referred patients with TMD for physiotherapy(Table – 1& Fig – 1).

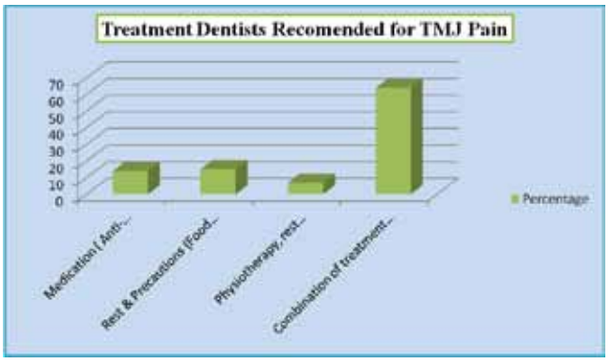

Fig -1:-Treatment Dentists Recommend for TMJ Pain

According to our study, most common complaints of patients to dentistswere pain during eating and yawing (52%) followed by Crepitus/Clicking (30.0%) as the second most common complaint (Table -2 & Fig – 2).

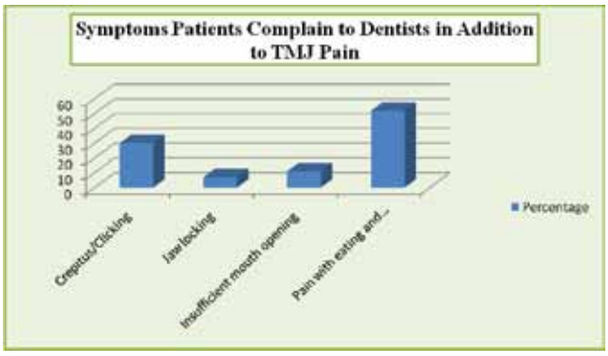

Fig -2:- Symptoms Patients Complain to Dentists in Addition to TMJ Pain.

According to 40% dentists muscle relaxants and rest were most effective treatments forTMD(Table - 3 & Fig – 3).

Fig -3:- Dentists' Perception of Effective Treatment for TMD.

In our study 65% dentist did not consider physiotherapy as a treatment option for TMD,while 27% considered that it may be a

treatment option and only 8% considered it as a treatment option. Association of dentists' awareness level of physiotherapy as a treatment for TMD found to be significantly low p=0.0001 in our study(Table -4 & Fig -4).

Sr.	Dentists' awareness of Physiotherapy	Frequency	Percentage	Valid Percentage	Cumulative Percentage	P value
1.	Yes	8	8.0	8.0	8.0	
2.	No	65	65.0	65.0	73.0	
3.	May be	27	27.0	27.0	100.0	
	Total	100	100.0	100.0	100.0	
						P=0.0001

Table -4:- Dentists' Awareness of Physiotherapy as Treatment for TMD

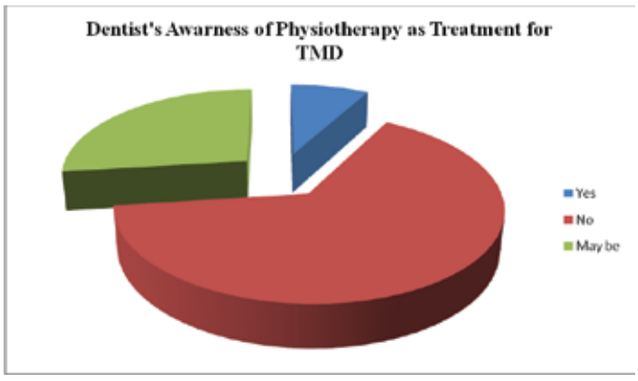

Fig -4:- Dentists' Awareness of Physiotherapy as Treatment for TMD

Discussions:

Mainstays of dentists recommended treatment for TMJ syndrome areNSAIDs and benzodiazepines. Patients eventually may require tricyclics, opioids, muscle relaxants, or steroid (intra-articular) therapy for protracted pain syndromes.Physiotherapy is very effective in TMD but its awareness level is very low which remains to be the main hurdle in patient referral towards Physiotherapy.

According to our study's results, treatment choice of most dentists was consistentof a combination of remediesincluding medications and precautions (64%) while only 7% of dentist referred TMJ patients for Physiotherapy.

S. M. Gordon DDS et al in his study found that naproxen was better for TMD pain as compared to other NASIDs. On the bases of this he concluded that NASIDs may be useful for short-term goals (i.e. pain relief) (10).Luo Liang et al in RCTcompared therapeutic effects of acupuncture plus ultra sound therapy and oral administration of western medicine on temporomandibular disorders (TMD). They found significant improvement ($p<0.05$) in experimental group (US+ Acupuncture) (11). List et al did a systematic review of RCTs to assess the pain-relieving effect and safety of pharmacologic interventions in the treatment of chronic temporomandibular disorders (TMD). They found that use of analgesics in TMJ pain was not supported by evidence (12). Jeans C Turp et al in a systematic review found that multimodal management is more effective in TMD (13).

On the basis these researches, analgesics alone are not effective in treating TMJ pain although it is the most frequently prescribed treatment option among dentists'.

According to our study, most common complaints of patients to dentistswere pain during eating and yawing (52%) followed by Crepitus/Clicking (30.0%) as the second most common complaint.My results were consistent with Johansson et alcross sectional survey of (n= 8,888) in 2002 where they found that in TMD chewing difficulty was present in 61% cases, joint sounds was present in 28.5% cases and difficulty in jaw opening was present in 19.4% cases [7]. Pain during eating and yawing could be indirectly linked with occlusal muscle tightness. Virginia Tuerling et al's cross sectional survey found that muscle was positive in 80.9% of patients having TMD (14).Our study's results were close to this study while the difference may be due to the sample size variation of both studies.

According to our study results, 40% dentists prescribed muscle relaxants and rest as a most effective treatments forTMD. Many researches had proven the efficacy of this finding i.e. Hermen et al in a RCT compare the relative effectiveness of a benzodiazepine (clonazepam), a muscle relaxant (cyclobenzaprine), and a placebo for the treatment of jaw pain. They found that Muscle relaxant (cyclobenzaprine) was statistically superior to either placebo or clonazepam when added to self-care and education for the management of jaw pain [15].

In our study 65% dentist did not consider physiotherapy as a treatment option for TMD, while 27% considered that it may be a treatment option and only 8% considered it as a treatment option. Association of dentists' awareness level of physiotherapy as a treatment for TMD found to be significantly low p=0.0001 in our study. Sherma et al did a cross sectional study to see the awareness of Physiotherapy regarding musculoskeletal disorders among Dentists'. Theyfound that self-awareness and benefits of regular exercises was significantly low among them [8].

Conclusion:

TMD is a problem requiring multiple remedies for symptoms relief. Medications alone are unable to give satisfactory results in relieving all the symptoms of TMJ dysfunction.Physiotherapy is an effective mean of symptoms' relief yet awareness level is found to be significantly low in dentists regarding its effectiveness.

Recommendations:

Further studies with increased sample size in different cities are required to see the physiotherapy treatment's effectiveness' awareness level and factors responsible for the lack of awareness level among dentists.

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ORIGINAL ARTICLE

The impact of DPT degree on the physical therapy profession (survey)

ABSTRACT:

The purpose of the study was to find out the impact of DPT degree on physical therapy profession. The main focus was to find out if the tendency towards the profession is because of the DPT. There is enormous growth in the profession in terms of many universities/institutes now offer the DPT degree program and significant number of students have been enrolled in the program. The physical therapy history in the country starts from 1955 but up to 2008 it was not a profession of choice. It became a favorite profession since the introduction of the new entry level degree with the Dr.Title.

Study design:

Cross sectional survey.

Method: A survey has been conducted through a self-structured questionnaire from the fall-2013 newly enrolled DPT students from various institutes of Rawalpindi/Islamabad and Lahore. Only 222 completed questionnaires were included in the study and data was analyzed on SPSS.

Results:

64.4% of the student selected the profession by choice and 35.6% enrolled in the program by chance.52.3% participants joined the profession because of DPT degree and 47.7 enrolled because of the profession itself.97.3% are satisfied with the profession and 2.9% showed dissatisfaction.81.1% are satisfied with the physical therapy scope of practice in Pakistan and 18.9% showed dissatisfaction.

Conclusion and Recommendations: It is evident from the literature review, the studies have been conducted in USA where the DPT degree was introduced that the impact on the profession in all aspects was significant including respect, level of knowledge, skills, autonomy, trust and confidence of the patients/clients [5].It was proved in this study too that the DPT degree has significant influence on the profession in Pakistan in terms of acceptance in the community, prestige,autonomy and level of education .In the near future hundreds students of physical therapy profession will be graduating from all over the country's institutes. It is evident from the current statistics that we have a dire need for physical therapy and other rehabilitation professionals but the serious challenge for them will be not enough job opportunities due to lake of awareness in the community as well as among the health officials of the country. So it is highly recommended that the Govt. officials should create opportunities at the basic health unit (BHU) level up to the district and divisional hospitals so the general public has access to these very important health care professionals.

Key words:

DPT, Physical therapy and Impact of DPT

INTRODUCTION:

The Physical Therapy in Pakistan: Evolution of;

Physical Therapy evolution in different parts of the glob has enormous similarity, like in other countries, the history of physical therapy practice is very old in Pakistan but under no proper nomenclature. The ancient traditional manual techniques including various types of exercises were used and proved to be the very effective means of healing in different musculoskeletal and

neuromuscular conditions. In the rural area of the country, it was observed that people used to hang from a branch of tree to take the advantage of the traction for acute back ache, or asking a kid to perform a tandem walk on the back of a person from down to upward and cross arm and leg extension. These were some of the techniques utilized for acute low back pain.

As no profession can be perfect in the beginning, Physical Therapy passed through different stages. The growing needs of the people and the emerging challenges of each era played significant role in the growth of Physical Therapy. Keeping in view this situation we urge that the formal training program in physiotherapy was first observed during the sickness of the 3rd Governor General of Pakistan Ghulam Muhammad in 1955 while he was suffering from stroke (CVA)[1]He was advised to be cared by a physiotherapist for stork rehabilitation. Since no qualified physiotherapist was available up to 1955 in Pakistan, therefore the services of a known qualified physiotherapist was hired from abroad.

The First School of Physiotherapy: The first school of Physiotherapy was established in 1956 by the Federal Government, Ministry of Health & Social Welfare with the assistance of World Health Organization (WHO) at Jinnah Postgraduate Medical Center premises, the school offered a 2 years Diploma course with the minimum entrance requirement of Secondary School Certificate (science group).During the four years period needs of the society for qualified physiotherapists enormously increased and also it was realized that the curriculum should also be upgraded to full fill the specific needs of the society. In 1961, the 2 years program was upgraded to a three years Diploma. Initially the role of physiotherapist was limited to wars and polio victims but later on the scope of practice expended and the demand for the qualified physical therapists increased tremendously nationally and internationally.

First Degree Program in Physical Therapy:

The universal objective of any health professional program is to provide quality care to the public so they could live healthy and productive life. It is a famous saying in the physical therapy community that physiotherapy does not add years to life but life to years. To achieve this objective, obviously required a high level of training which is not possible without the help of the universities, where they can produce graduates for the specific job need to be done, so university of Karachi Pakistan was the first university to affiliate the first professional degree, three years program (BSc, PT) in physical therapy in 1963 and pertinent changes were added & made in the syllabus according to the needs. As graduates physiotherapist came into practice in the country it was necessary to have changes in the scope of practice of Physical Therapy too. It is evident that with the passage of time many challenges comes and new horizons open for the development and improvement.

Three years degree program (BSc PT) to Four Years BS PT degree program

The physical therapy professionals in the country struggles continuously to promote the profession according to international standards so they can get equivalence abroad and also provide better services for their fellow citizens. In 1999 the university of Karachi officials were convinced to upgrade the physical therapy curriculum to four years BSPT degree program. The decision was a great achievement for the physical therapy professionals and it also had a good impact on the practice of physical therapy.

A paradigm shift:

During the last decade along with the growth of educational standard, the scope of practice was expended too. The concept of specialized care in physical therapy was introduced but up to 2010 was not properly established. Since 2005, the direct access and autonomy of the profession has been the core issues for the physical therapists in the country .The existing curriculum of BSPT was reviewed by senior professionals including few foreign qualified physical therapists. They realized that a curriculum is needed which could prepare graduates for autonomous practice in Physical Therapy. The recommendations were forwarded to the Higher Education Commotion of Pakistan (HEC).The National Curriculum

Revision Committee (NCRS) was formulated by HEC,comprises of 11 members from all over the country. It was a great achievement in the history of physical therapy to have a unified curriculum throughout the country. The various other issues of the nomenclature of DPT and the use of the Dr.title with DPT and autonomous practice were addressed by the committee and consensus was made for the support of the autonomous practice and the use of the Dr. Tilt with clarity.

The First Doctor of Physical Therapy (DPT) and Post-Professional Doctor of Physical Therapy Degree programs:

In 2007 Riphah International University Islamabad offered the five years DPT program after higher secondary school (12 years of schooling) and post professional 2 years program for practicing Physical Therapists after 16 years of schooling and the Higher Education Commission of Pakistan awarded Equivalency of Master/M.Phil to the (PP DPT) program [3]. The first specialized degree program Master of Science in Orthopedic Manual Physical Therapy (MS, OMPT) research based was also offered by Riphah in 2012.The Continuous Professional Development Courses and Certification in various specialized areas was also introduced by Riphah in 2012 for the first time in Pakistan.[3]

The image of the physical therapists is better perceived in the community with the higher qualification. The admiration for their services was also increased and people now consider them as clinician of their choice and have direct access to them. Now in the Country physical therapists are Doctor of Physical Therapy have the ability to diagnose and treat movement dysfunctions due to injuries or diseases. The period from 2007 to 2012 considered to be the golden age in terms of professional development. A mature entry level professional degree was introduced and recognized by the Higher Education Commission of Pakistan and profession got autonomous status in the country. All the members of the National Curriculum Revision Committee (NCRC) and Higher Education Commission of Pakistan (HEC) curriculum division played significant role for uplifting the profession and will always be appreciated in the history of Physical Therapy.

Results:

1.64.4% of the student selected the profession by choice and 35.6% enrolled in the program by chance.Thepercentages from various institutes are as follows:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	By choice	143	64.4	**64.4**	64.4
	By Chance	79	35.6	**35.6**	100.0
	Total	222	100.0	100.0	

2. 52.3% participants joined the profession because of DPT degree and 47.7 enrolled because of the profession itself:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	because of DPT	116	52.3	**52.3**	52.3
	because of profession itself	106	47.7	**47.7**	100.0
	Total	222	100.0	100.0	

3.97.3% are satisfied with the profession and 2.9% showed dissatisfaction:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	62	27.9	27.9	27.9
	SOmewhat satisfied	118	53.2	53.2	81.1
	Not satisfied	42	18.9	18.9	100.0
	Total	222	100.0	100.0	

4.81.1% is satisfied with the physical therapy scope of practice in Pakistan and 18.9% showed dissatisfaction:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	62	27.9	27.9	27.9
	SOmewhat satisfied	118	53.2	53.2	81.1
	Not satisfied	42	18.9	18.9	100.0
	Total	222	100.0	100.0	

Discussion:

In the developing countries educational qualification are valued by the society based on the job opportunities and pay scale, so in the health sciences medical and dental graduates have more job opportunities and also have high pay scale. The trend is not developed yet, that students choose the degree program because of the profession but due to the financial outcome .All other health professionals have less job opportunities and also have low pay scale. The same is true for the profession of physical therapy. In most of the developing countries it is not even considered to be an autonomous profession. In many countries the education level is also not at the university level or they have no proper service structure for the graduates. In Pakistan the physical therapy entry level degree program has been upgraded to 5 years university education after 12 years of schooling and endorsed by the Higher Education Commission (HEC) of Pakistan in 2011[4].The title of the degree has been accepted as Doctor of Physical Therapy (DPT).The profession now considered to be an autonomous profession and graduates of the DPT are allowed to be practitioner of choice. The change in the curriculum and the level of education also influenced the scope of practice. The results of the study proved that because of the DPT degree the profession became the popular profession in the country. It is now 3rd choice of the university students. Before 1999 only two public sector universities offer the degree program with minimaltuition fee because students were not willing to pay high tuition fee. They were not sure about the job opportunities and recognition in the society. After 2008 the acceptance in the society has been increased significantly, that's why many private sector universities now offer the DPT program with high tuition fee and students are willing to pay[3]. Currently it is a booming profession in Pakistan. From 2008 to 2013, 42 institutes now offer the DPT programs. The earth quick of 2005 was the devastating disaster in Pakistan which realized the community here the importance of rehabilitation professionals. Many jobs were created in the public as well as private sector hospitals and rehabilitation centers. The scope of practice has been defined but the regulatory authority still does not exist in the country. The results of this study proved that because of the DPT degree the acceptance, prestige and level of education has been increased significantly in Pakistan.

Conclusion:

Few studies have been conducted to evaluate the impact of DPT degree from different aspects of the physical therapy profession and found that

the Clinical doctorate had added valued to the profession in all aspects and also approved by this study in a different culture and community. DPT is now the 3rd choice of the majority pre-medical students after completing their college education (12 years of schooling).The endorsement of the higher education commission (HEC) also added value to this degree program which is now considered to be formal professional education at the higher level at the university. It is a great change in terms of education level and also will have positive impact on the scope of practice.

Recommendations:

Currently 42 recognized DPT institutes in Pakistan enroll 100 students/year so very soon there will be a huge number of DPT graduates available but due to lake of service structure and the absence of regulatory body not enough job opportunities are available in the country, so it is highly recommended that jobs for these graduates should be created at the basic health unite (BHU)to district and divisional hospitals so the public will have access to these important health care professionals. The vacancies should be created on the basis of number of patients as one full time therapist can treat 10 to 15 patients.

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Letters should normally not exceed 400 words, with not more than 5 references and be signed by all the authors-maximum 3 are allowed. Preference is given to those that take up points made in contributions published recently in the journal. Letters may be published with a response from the author of the article being discussed. Discussions beyond the initial letter and response will not be entertained for publication. Letters to the editor may be sent for peer review if they report a scientific data. Editorials are written by invitation.

FIGURES AND PHOTOGRAPHS

Photographs, X-rays, CT scans, MRI and photomicro-graphs should be sent in digital format with a minimum resolution of 3.2 mega pixels in JPEG compression. Photographs must be sharply focused. Most photographs taken with a mobile phone camera do not fulfill the necessary requirements and, therefore, not acceptable for printing. The background of photographs must be neutral and preferably white. The photographs submitted must be those originally taken as such by a camera without manipulating them digitally. The hard copy of the photographs if sent must be unmounted, glossy prints, 5" x 7" (12.7 x 17.3 centimeters) in size. They may be in black and white or in color. Negatives, transparencies, and X-ray films should not be submitted. Numerical number of the figure and the name of the article should be written on the back of each figure/photograph. Scanned photographs must have 300 or more dpi resolution. The author must identify the top of the figure. These figures and photographs must be cited in the text in consecutive order. Legends for photomicrographs should indicate the magnification, internal scale and the method of staining. Photographs of published articles will not be returned. If photographs of patients are used, either they should not be identifiable or the photographs should be accompanied by written permission to use them.

Tables and Illustrations.

Legends to illustrations should be typed on the same sheet. Tables should be simple, and should supplement rather than duplicate information in the text; tables repeating information will be omitted. Each table should have a title and be typed in double space without horizontal and vertical lines on an 8-1/2" x 11" (21.5 x 28.0 centimeters) paper. Tables should be numbered consecutively with Roman numerals in the order they are mentioned in the text. Page number should be in the upper right corner. If abbreviations are used, they should be explained in footnotes. When Graphs, scatter grams, or histograms are submitted, the numerical data on which they are based should be supplied. All graphs should be made with MS Excel and other Windows/Macintosh compatible software such as SAS and be sent as a separate Excel file, even if merged in the manuscript.

S.I. UNITS

System International (S.I) Unit measurement should be used. Imperial measurement units like inches, feet etc are not acceptable.

REFRENCES

References should be numbered in the order in which they are cited in the text. At the end of the article, the full list of references should give the names and initials of all authors (if there are more than six, only the first six should be given followed by et al). The authors' names are followed by the title of the article; title of the journal, abbreviated according to the style of the Index Medicus (see "List of Journals Indexed,"

printed yearly in the January issue of Index Medicus); year, volume and page number. Reference to books should give the names of editors, place of publication, publisher, year and page numbers. The author must verify the references against the original documents before submitting the article. The Editorial Board may ask authors to submit either soft or hard copy (full length) of all the articles cited in the reference part of the manuscript.

ABSTRACT

Abstract of an original article should be in structured format with the following subheadings:

i. Objective. ii. Design. iii. Place & duration of study. iv. Patients & Methods. v. Results. vi. Conclusion. Four elements should be addressed: why was the study started, what was done, what was found, and what did it mean? Why was the study started is the objective. What was done constitutes the methodology and should include patients or other participants, interventions, and outcome measures. What were found is the results, and what did it mean constitutes the conclusion. Label each section clearly with the appropriate subheadings. Background is not needed in an abstract. The total word count of abstract should be about 250 words. A minimum of 3 Key words as per MeSH (Medical Subject Headings) should be written at the end of abstract. A non structured abstract should be written as case specific statement for case reports with a minimum of three key.

INTRODUCTION

This section should include the purpose of the article after giving brief literature review strictly related to objective of the study. The rationale for the study or observation should be summarized. Only strictly pertinent references should be cited and the subject should not be extensively reviewed. It is preferable not to cite more than 10 references in this segment. Pertinent use of reference to augment support from literature is warranted which means, not more than 2 to 3 references be used for an observation. Data, methodology or conclusion from the work being reported should not be presented in this section. It should end with a statement of the study objective.

METHODS

Study design and sampling methods should be mentioned. Obsolete terms such as retrospective studies should not be used. The selection of the observational or experimental subjects (patients or experimental animals, including controls) should be described clearly. The methods and the apparatus used should be identified (with the manufacturer's name and address in parentheses), and procedures be described in sufficient detail to allow other workers to reproduce the results. References to established methods should be given, including statistical methods. References and brief descriptions for methods that have been published but are not well-known should be provided; only new or substantially modified methods should be described in detail, giving reasons for using them, and evaluating their limitations. All drugs and chemicals used should be identified precisely, including generic name (s), dose(s), and route(s) of administration.

For statistical analysis, the specific test used should be named, preferably with reference for an uncommon test. Exact p-values and 95% confidence interval (CI) limits must be mentioned instead of only stating greater or less than level of significance. All percentages must be accompanied with actual numbers. SPSS output sheet must be attached with manuscript to clarify results (p-values).

RESULTS

These should be presented in a logical sequence in the text, tables, and illustrations. All the data in the tables or illustrations should not be repeated in the text; only important observations should be emphasized or summarized with due statement of demographic details. No opinion should be given in this part of the text.

DISCUSSION

This section should include author's comment on the results, supported with contemporary references, including arguments and analysis of identical work done by other workers. Study limitations should also be mentioned. A summary is not required. JRCRS does not publish any

acknowledgement to the work done. Any conflict of interest, however, must be mentioned at the end of discussion in a separate heading.

CONCLUSION

Conclusion should be provided under separate heading and highlight new aspects arising from the study. It should be in accordance with the objectives. No recommendations are needed under this heading.

AUTHORSHIP

As stated in the Uniform Requirements, credit for authorship requires substantial contributions to (a) the conception and design or analysis and interpretation of the data, (b) the drafting of the article or critical revision for important intellectual content, critical appraisal of findings with literature search and actual write up of manuscript, and c) final approval of the version to be published. Each author must sign a statement attesting that he or she fulfills the authorship criteria of the Uniform Requirements.

JRCRS strongly discourages gift authorship. Mere supervision, collection of data, statistical analysis and language correction do not grant authorship rights. Ideally all authors should belong to same department of an institute, except for multi-centre and multi-specialty studies.

The Journal discourages submission of more than one article dealing with related aspects of the same study

RIPHAH COLLEGE OF REHABILITATION SCIENCES

Faculty of Health and Medical Sciences Riphah International University Islamabad

The Riphah College of rehabilitation sciences (RCRS) was established in 2007 under the Faculty of Health and Medical Sciences (FHMS) of Riphah International University with the aim to produce graduates of Physical Therapy and Rehabilitation professions in Pakistan according to international standards. The pioneer institute in the entry level Doctor of physical therapy program (DPT) and Post professional Doctor of Physical therapy program (P¬¬¬P-DPT) in Pakistan (Equivalence of 18 years of schooling/M. Phil as per HEC criteria). The specialized programs and continuing professional development courses in physical therapy have been introduced in the country.

Vision

To be a leading rehabilitation sciences institute according to international standards dedicated for value based professional education with academic excellence globally.

Scope & Job Prospects

The graduates can join the ever growing health & medical sciences profession in following ways;

- Government & Private sector hospitals
- Rehabilitation centers & Private clinics
- UN, NGOs & social sector
- Sports physical therapists
- Physical training & fitness clubs
- Teaching, research and development
- Policy making, curriculum development & regulatory bodies.

Programs Offered

Doctor of Physical Therapy Available Seats

The first professional degree in physical therapy endorsed by the Higher Education Commission of Pakistan(HEC) comprises of 5 years (10 semesters), equivalent 17 years of schooling. The degree program will produce physical therapy professionals who will be Doctors of Physical Therapy and will be competent to diagnose and treat movement dysfunctions due to injuries or diseases by using all physical means including; manual therapy techniques, exercise therapy, electrotherapy and preventative and corrective measures.

Available Seats

50 per semester

Duration

5 years

Eligibility Criteria

Minimum 60% marks in intermediate (FSc/A-Levels) with pre-medical subjects, from a recognized board/university/institute. Degree holders from foreign institutes should submit the equivalence certificate from Inter Board Committee of Chairmen (IBCC).

Intake

Spring & Fall (Twice a year)

Class Timings

8:00 am to 4:00 pm (Four days a week)

8:00 am to 12:00 pm (Friday)

Admission Criteria

- Candidates are required to take the entry test & interview.
- Test score of centrally held entrance test by federal or provincial governments,

such as UHS test is acceptable.

- NTS-NAT is acceptable but not mandatory for admission in DPT.
- F.Sc 70%
- Test 30%

Interview

The students finally selected will be interviewed for personality and aptitude for the Physical Therapy education/profession.

Post Professional Doctor of Physical Therapy

This is a postgraduate degree (equivalent to 18 years of schooling / M.Phil according to HEC criteria), a higher level qualification after a four years BS.PT degree program, offering more intense clinical training and preparing graduates for higher-level work and better career outcomes. Graduates will possess the most current knowledge in the field of physical therapy. The Post Professional Doctor of Physical therapy is a clinical degree clearly distinguished from the academic research-based degree Doctor of Philosophy (PhD).

Available Seats: 20 per semester

Duration: 2 years

Class Timings: (weekend classes)

8:00 am to 4:00 pm

Eligibility Criteria

Four-year Bachelors of Science in Physical therapy (BS PT) or equivalent qualification from any HEC recognized university minimum unadjusted 50% marks.

Admission Criteria

- Candidates are required to take the entry test and interview.
- A valid NTS-GAT General score of 50% is required.
- BS PT 50%
- Test 30%
- Interview 20%

Intake

Spring & Fall (Twice a year)

Master of Science in Speech Language Pathology / Therapy (MS-SLP/T)

The aim of Speech-Language Pathology program is to produce graduates in the country of a master level who will be competent to identify, assess, evaluate, manage, treat, educate and help to prevent language, speech, voice, fluency, cognitive, and other related communication disorders and swallowing problems. This degree program will cover communication disorders due to neurological disorders, hearing impairment, language learning disabilities, cerebral palsy, developmental delay, autism, cleft palate, brain injuries, feeding and swallowing difficulties.

Available Seats: 20 per semester

Duration: 2 years

Eligibility Criteria

16 years of education with minimum 50% marks or 2.5/4.0 CGPA in the following fields

from a recognized institution:

BS/M.Sc Behavioral Sciences

BS/M.Sc (Health & Medical Sciences)

BS/MA/M.Sc Social & management sciences

Specialized Degree Programs

- Master of Science in Orthopedic Manual Physical Therapy (MS-OMPT)
- Master of Science in Sports Physical Therapy (MS-SPT)
- Master of Science in Neuro Muscular Physical Therapy (MS-NMPT)
- Master of Science in Cardiopulmonary Physical Therapy (MS-CPPT)

Available Seats: 20 per semester

Duration: 2 years

Eligibility Criteria

- Four-year Bachelor of Science in Physical therapy (B.S, PT)/DPT (5 years) or

equivalent qualification from any HEC recognized university minimum unadjusted 50% marks.

- Transcripts from all professional and post professional degree programs. Completion of an academic institution application.
- GAT-Graduate Admission Test by NTS with at least 50 % score

Scope & Job prospects

The graduates can join the ever growing health & medical sciences profession in following ways;

- Government & Private sector hospitals
- Rehabilitation centers & Private Clinics
- UN, NGOs & Social sector
- Sports Physical Therapists
- Physical Training & Fitness clubs
- Teaching, Research and Development
- Policy Making, Curriculum development &
- Regulatory bodies

Offered at

- Al-Mizan IIMCT Campus
- Lahore Campus

Rawalpindi Campus:

Al-Mizan IIMCT Complex, Old Supreme Court Building, 274-Peshawar Road, Rawalpindi Cantt.

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