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Editorial

Prosthetic & Orthotic Sciences – Level of Education and Scope of Practice in Pakistan

Prosthetic and Orthotic profession deals with amputees and physically disabled people by providing/fitting them with appropriate devices to enable them to perform their daily activities. Prostheses (also known as Artificial Limbs) are devices that resolve the function and physical appearance of a missing limb. Orthoses (also known as braces or supports) are external support devices that improve the function of an impaired part of the limbs and spine.

Splints and braces made of steel and wood were used during ancient times, but most of the work in this area was done during the 20th century. The most significant contributions to Prosthetic/Orthotic sciences were made, stimulated by the aftermath of the first and second world wars and the polio epidemics of the late 1940's and early 1950's. During early 1960's some universities in the West started research projects mainly in Prosthetics. During 1980's some new materials and techniques were introduced and in 1990's significant work was done to start education programs in a number of countries under the regulations of ISPO (International Society for Prosthetics and Orthotics) and local regulatory bodies.

Today Prosthetic & Orthotic profession has emerged in a different shape, where massive research is underway in developing new designs of sockets, new light weight and strong materials, modular (Hydraulic, Pneumatic, Computerized and Myoelectrics) joints and components. Without strong theoretical and practical background nobody can deal with these high tech. materials, components and techniques. Many countries have started university level courses at graduate and post graduate levels and developed national regulatory bodies. ISPO (International Society of Prosthetics & Orthotics) is an international organization that offers accreditation as per the international standards. They evaluate courses offered throughout the world and award accreditation in different categories like Category 1, 2 and 3.

In Pakistan Prosthetic & Orthotic education started in 1988 at PIPOS (Pakistan Institute Of Prosthetic & Orthotic Sciences) affiliated with KMU (Khyber Medical University). Apart from this three other universities are offering courses at BS level. So far none of these universities has acquired category 1 status of ISPO. At the same time none of these universities are offering post graduate courses, capacity building short courses, seminars, conferences and other CME activities.

Riphah International University has set new standards in other branches of Rehabilitation sciences like Physical Therapy, Speech Language Pathology and now intends to achieve and introduce higher standards in Prosthetics and Orthotics as well. The goal is to acquire category 1 status of ISPO at BS level and also start MS and higher programs in near future. Riphah Center of Excellence in Prosthetics & Orthotic Sciences (RCEPOS) that is going to be established in coming 3 years (3 phases) will lay down the foundation of highest standards in the country.

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ORIGINAL ARTICLE

Frequency of Intellectual Disability in Children with Speech Delay

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ABSTRACT:

Background

Language is the conceptual processing of communication and speech is the verbal means of producing language. Language includes receptive language and expressive language. Children are considered to have speech delay if their speech development is considerably below the norm for children of the same age. Intellectual Disability is considerably below average intellectual functioning with an onset before 18yrs of age, associated with significant impairment in adaptive functioning.

Objective

To find out the frequency of Intellectual Disability in children with speech delay.

Methodology

Portage Guide for Early Education (PGEE) was used to assess the patients with speech delay and associated cognitive impairment. Structured questionnaire was applied for the children between the ages of 1 to 6 years with speech delay. Sample of 50 patients was collected referred by Child and Family Psychiatry Department, Mayo Hospital, Lahore. Data was taken in direct interview with parents or caregivers in a formal sitting and analyzed using Statistical Package of Social Sciences (SPSS) software.

Results

Results showed that 68% Intellectual Disability in children with Speech Delay. Males were more affected than females.

Conclusion

Frequency of Intellectual Disability in speech delay is high; this can be minimized with regular consult to Speech and Language Pathologists, Psychologists, Pediatricians and Parental Education for well-being of their children.

Key Words: Speech Delay, Intellectual Disability, Portage Guide to Early Education.

INTRODUCTION:

Speech is the verbal mean of communication; while language is the conceptual processing of communication. It comprises of receptive and expressive language. Children are assumed to have speech delay if their speech development is considerably below standard age.[1]

Speech and language delay is a wide term that covers a variety of disorders in early childhood and is conventionally distributed into two types of delay: Primary and Secondary Delays. Primary Delay occurs when speech and language skills of children are delayed in contrast with other skills, typically when the cause is unknown. Secondary Delays occur where the speech and language skills are delayed to the same extent as other skills, frequently is result of known etiology.[2]Types of Primary Delays comprise Development Delays, Receptive and Expressive Language Disorders, whereas Secondary Delays are linked with other stipulation like Hearing impairment, Intellectual Disability, ASD and Selective Mutism etc.[3]Other than the maturational delay and bilingualism, speech delay might have secondary significance. Importance of timely detection and treatment is recommended for the betterment of the Social, Emotional and Cognitive Deficit of disability.[4]

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In clinical application, the term "intellectual" was preferred since it is widely used, and broadly acceptable. It is an umbrella term that contains cognitive functioning, adaptive behavior, and learning that is appropriate to age and meets the demands of daily life. [5]

According to WHO (World Health Organization) disorder of partial or detained mental development is Intellectual Disability, primarily categorized by the decline of main functions at every stage of development and that contribute intelligence on the whole such as Cognitive, Language, Motor, Socialization functions; thus the adjustment to the environment is always affected.[6]The cause of Intellectual disability can't be resolute in approximately 30-40 % of children with it, yet after widespread exploration. Known causes of intellectual disability consist of Trauma to the CNS, Intra-uterine Infections, Maternal Medications, Hypoxia, Meningitis or Encephalitis and Genetic Defects.[4]

Theorists such as Piaget, Skinner, and Chomsky have provided contexts to understand speech and language development. Piaget believed language was a component of a child's cognition and that children were active learners in their environments. Ingram summarized four types of infant speech production theories; Universal Theory, Articulatory Learning Theory, Maturational Theory, Refinement (vs. Attunement) Theory. No matter how much physical maturation proceeds, the infant won't effectively attain the capability to produce sounds of its own language without environmental input. [7]

Purpose of this study is to estimate the frequency of speech delay with respect to intellectual disability and to see its effect that influence children the most and lead to speech delay.

MATERIAL & METHODS:

This study used the casual comparative design to examine the relationship between the speech delay and associated intellectual disability in children referred for a psychiatric evaluation. Sample was collected from outpatient department of Child and Family Psychiatry, Mayo Hospital, Lahore.

Sample of 50 children was taken in direct interview to parents or caregivers in a formal sitting; history was taken. After taking consent, development using Portage Guide for Early Education (PGEE) portion for cognition was applied on each child; questions were asked from parents and performed by the child. All children from 1 - 6 years of age with speech delay were included and assessed for cognitive development using Portage Guide for Early Education (PGEE). Cognitive portion of PGEE is used in study to find the exact chronological age and lack in it. It measures the child's mental age relative to its chronological age.

Age difference is calculated to assess the exact delay in cognitive development and is divided into six classes according to each year (0-1 yr, 1-2 yr, 2-3yr, 3-4yrs, 4-5yrs and 5-6yrs), there are questions in each portion.14, 10, 16, 24, 22 and 22 questions in portion 1, 2, 3, 4, 5 and 6 respectively. If ten consecutive No's are obtained then test is stopped there and age for previous years is calculated.

No. of correct responses × 12/ No of total questions = age of respective year

After calculating the age for all respective years, all values are summed up.

PGEE age – chronological age = Lack in cognition

Data was analyzed using SPSS version 16. The choice of statistical test depended upon normality and sample size following study objective. P-value<0.05 was taken as significant.

OBSERVATIONS:

Distribution of study sample is shown in Table 1. Sample of 50 children was taken.

Table 1. Distribution of study sample

	Gender		Total
	Male	Female	
N	32	18	50

Table 2.Frequency distribution for Cognitive Impairment of children

		Frequency	Total
Cognitive Impairment	Yes	34	50
	No	16	
	Male	19	34
	Female	15	

RESULTS:

Results showed dominance of speech delay in males than females. Intellectual disability was also significant in children with speech delay and its frequency was more prevalent in males.

DISCUSSION:

Speech is a process of communicating with others and mechanism of Intellectual effort which builds the bases.[4] It is difficult to find out the prevalence of speech delay in children because of confusing terminologies, Variations in Diagnostic Criterion, insufficiency of valid and reliable Diagnostic Methods, unpredictability of unverified parental observations and troubles in Data retrieval and Sampling. Though, it can be said that Speech Delay is a common childhood problem which affects 3 to 10% of children. It is 3 to 4 times more frequent in males than females.[1] In this regard a study about speech disorders was conducted in Australia by McKinnon and McLeod, they took sample of 10425 students. According to their results high prevalence of speech delay was found in male more than female.[8] Similarly our results showed more occurrence of speech delay in males than females.

Insufficiency and flaw of any type causes Co-ordination Disorder, impedes the dynamic of systematic development and restructure it in detrimental way. Most common cause of Speech Delay is Intellectual disability which accounts more than 50% of cases. Relatively to other fields of development, Speech development is considerably more delayed in intellectually disabled children.[4] Pinborough, Satterfield and Miller conducted a study in determining the estimation of communication disorders in children with Intellectual Disability, Emotional or Behavioral Disorders and Autism and their impact. Findings confirm that Communication Disorders and co-existing intellectual wellbeing conditions are mainly of educational and health concerns. [9]Similar Findings were exhibited in our study result that is the frequency of Intellectual disability is more dominant in children with speech delay.

The growing risk factors are poor health conditions, improper parenting, inappropriate diet, which can affect the nervous system significantly of children during early years, and these can cause delay in early physical growth and more seriously can be connected with delays in speech and cognitive development.[10]

Since cognitive disability cannot be cured, the treatment purposes must emphasize on the normalization of behavior in accordance with society. Early Intervention is vital so we should be keeping in mind that first five years of life are the most important in achieving the therapeutic goals. [6] Speech-Therapy and Special Education both seem to be valuable for children with Delayed Speech, Specific-Language Impairment and Intellectual Disability.[11]

CONCLUSION:

After reviewing literature and observing the results of current study it is concluded that frequency of intellectual disability in children with speech delay is noticeable. So, in order to minimize for bidding consequences one should do regular consult to Speech and Language Pathologists, Psychologists and Pediatricians. However parental education is also very essential for the benefit of suspected children.

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ORIGINAL ARTICLE

Prevalence of Piriformis Syndrome in Working and Non Working Women with Low Back Pain -A Pilot Study

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ABSTRACT:

Background

Piriformis muscle syndrome is often over-looked in the clinical practice as its presentation resembles with other pathology (back, buttock, and leg). Due to its inconsistent objective findings, it is often considered as a diagnosis of exclusion. Familiarity with the prevalence will, therefore, increase its awareness about diagnosis.

Objective

The objective of this study was to determine the prevalence of piriformis syndrome in working and non-working women with low back pain

Methodology

This comparative cross sectional study was done by using non-probability purposive sampling on 88 low back female patients. They were, then, divided into working and non-working women groups. FAIR test and piriformis stretch were used to diagnose the piriformis muscle syndrome.

Results

On the basis of above mentioned diagnostic criteria, prevalence of piriformis syndrome was found in 76 (86.36%) women. Of which, 35 (80%) patients were in working group while 41 (93%) patients belong to non-working group. It is found that this syndrome is common in both working and non-working women. However, there is no significant difference found between two groups (p-value = 0.06) in term of prevalence.

Conclusion

Due to high prevalence of piriformis muscle syndrome among female patients with low back pain, clinicians must consider its possibility during differential diagnosis of low back pain. There is also a need to develop an awareness program of disability and treatment of the piriformis muscle syndrome among women.

Keywords: Piriformis muscle syndrome, Low back pain, FAIR test, Physical therapy

INTRODUCTION:

Low back pain is most common musculoskeletal problem.[1] The scope of disease and death rate for low back pain is high. Many people have complaint of low back pain, however, their pain is self-limiting and gets settled without any special treatment. But for others, back pain is periodic and chronic. It affects both their jobs and life both. Scarcely acute back pain is sign of serious medical problem, that includes infection, systemic problem or any other.[2]Factors that contribute for low back pain as risk factor are poor nutrition, low socio-economic status, stagnant lifestyle, prolonged single postures and history of LBP.[3]

One of the risk factor that can cause low back or buttock pain with radiation to lower extremity (sciatica) is Piriformis syndrome. When looking for differentials of sciatica pain, piriformis syndrome is the important factor to consider. And this factor has more importance if that female with sciatica also has dyspareunia. Pain location describe by patient is usually vague. They describe pain as in the hip, tailbone, buttock or groin, or radiating down back of leg (sciatica).[4] Piriformis syndrome is a neuromuscular disorder that takes place when sciatic nerve is pinched or inflamed by the piriformis muscle. This causes

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pain, altered sensation, lack of sensation in the buttocks all the way of sciatic nerve course from low back to thigh and down the leg.[5]

Main features of Piriformis syndrome (Figure below) are pain and instability. The anatomical area for pain is not accurately pointed out but still described on hip, lower leg, tail bone, buttock and groin region. Past history and physical examination are important in diagnosis of low back pain and piriformis syndrome.[6]

The piriformis muscle is three-cornered muscle, which is located below the gluteal muscles in buttock. It is very powerful muscle and important postural muscle in pelvis area. There are different routes of passing of sciatic nerve from piriformis muscle. In many people, sciatic nerve course is directly under the muscle while in 15% of people, sciatic nerve pierces through the muscle and this is the most important reason for radiating pain of piriformis. This is neurological compression.[7]In 1928, Yeoman point out the main cause of piriformis muscle is sciatica. He suggested that, as sciatic nerve and sacroiliac joints are located in nearby location, so fibrous connective tissue of piriformis muscle is reason for sciatica.[8]

This all discussion was earlier than Mixter and Barr's article. In 1934, they first told that radiating pain is due to the breakup of intervertebral disc.[9] Irrespective of advancement in procedures of electromyography studies and magnetic resonance imaging (MRI), piriformis still treated as rule out diagnosis and also people have very little understanding of this problem. A latest interview of physiatrists showed that, there is deficiency in agreement on statements. First whether diagnosis of piriformis syndrome is possible or if it is possible than how to make it.[10]

Other research showed that pervasiveness of piriformis syndrome in low back pain patients is 17.2%. Approximately all patients of piriformis syndrome reported relief from injection in piriformis muscle. But there is no relation documented for spine problems and piriformis syndrome.[11]

Piriformis syndrome ratio for female and male is 6:1. It may be because of biomechanical difference in females with a broader pelvis and large Qangle.[12]

Overuse problems that cause PS is due to the activities that involve sitting posture like in rowing and cycling because it demands the exhausting use of leg muscles. Running, cycling and other athletic activities that demand forward bending postures are especially responsible for piriformis syndrome, if these athletics do not do lateral stretch and strengthening exercises. Repeated bending forward activities if not balanced by lateral movements can result in weakness of abductors and tight adductors. This concludes that if abductors do not work properly, it puts stress on piriformis muscle.[13]

Piriformis muscle tightness can cause entrapment of both sciatic nerve and pudendal nerve.[14] Manifestation of piriformis syndrome is due to constriction of sciatic nerve. It is due to repetitive use and injury. During gait cycle (stance phase), there is internal rotation of hip that put stress on piriformis muscle. So this muscle is under pressure during stance phase. It is also said that piriformis muscle is more on risk of injury due to hypertrophy. Gait problems enhance it, as it causes excessive internal rotation of hip for example in leg length problems.[15]

Few patients also develop swelling, a visible hard mass of sausage shape in buttock due to piriformis muscle spasm. Shortened piriformis muscle also affects external rotation of hip. When patient of piriformis syndrome lies in supine position, the foot of affected extremity rotates externally, an important diagnosis for piriformis syndrome called positive piriformis sign. And when try to place back the foot in midline position, it causes pain.[16]

MATERIALS & METHODS:

It was a comparative cross sectional study. Data was taken from Pakistan Society for the Rehabilitation of the Disabled (PSRD) and Ittefaq hospital and was compiled at Riphah International University Lahore. Non-probability, purposive sampling was used. Sample was divided further into group A and B. In group A, working women with low back pain was taken. In group B, non- working women with low back pain was selected. All women with confirmed low back

pain of age range from 20-60 were included. While all patients with low back pain having history of trauma and spinal surgery or having other orthopedic disease like knee pain, disc pain, lumbago, sacroiliac pain were excluded. After clinical evaluation patients were diagnosed as piriformis syndrome using FAIR test (flexion, adduction, internal rotation) and piriformis stretch test. All collected data was entered in computer programme SPSS version 20 and analyzed through this software. Mann Whitney U test was used to compare quantitative data in working and non-working woman. Chi-square test was used to see any association between qualitative data, piriformis syndrome in working and non working women with low back pain. P-value < 0.05 was considered as significant.

RESULTS:

The mean weight (kg) of working women was 56.57±4.57 kg with minimum recorded weight of 50 kg and maximum recorded age of 70 kg. The mean weight (kg) of non-working women was 59.57±8.75 kg with minimum recorded weight of 48 kg and maximum recorded weight of 90 kg. The mean BMI of patients in non working group was 21.67±2.976 with minimum recorded BMI of 18 and maximum recorded BMI of 30. Baseline measurement of both groups is mentioned in table A and B. The statistical difference of mean BMI and height among the two groups was insignificant (p-values= 0.616, 0.694 respectively) whereas mean weight among the two groups was statistically significant (p-value= 0.04). On the basis of above mentioned diagnostic criteria, prevalence of piriformis syndrome was found in 76 (86.36%) women. Of which, 35 (80%) patients were in working group while 41 (93%) patients belong to non-working group. It is found that this syndrome is common in both working and non-working women. However, there is no significant difference found between two groups (p-value = 0.06) in term of prevalence.

Table -1: **Descriptive Statistics and comparison of Duration of marriage, Gravidity and Parity (n = 63)**

Study Group		Duration of marriage (Years)	Gravidity	Parity
Working (n=29)	Mean	18.45	--	--
	Mode	15	1	1
	Std. Deviation	13.566	--	--
	Minimum	1	1	1
	Maximum	40	7	6
Non-working (n=34)	Mean	14.29	--	--
	Mode	7	4	2
	Std. Deviation	9.612	--	--
	Minimum	3	0	0
	Maximum	35	8	6
p-value		0.161	0.064	0.410

Table -2: Descriptive Statistics and comparison of work and rest related parameters in both study groups

		Mean	Std. Deviation	Minimum	Maximum	p-value
Working Hours	**Working**	7.77	2.631	4	14	0.337
	Non-working	7.27	2.203	2	12	
	Total	7.52	2.426	2	14	
Standing Hours	**Working**	5.73	3.106	1	14	0.633
	Non-working	6.00	2.146	3	10	
	Total	5.86	2.657	1	14	
Sleeping Hours	**Working**	6.30	2.064	2	10	0.272
	Non-working	5.75	2.544	1	10	
	Total	6.02	2.319	1	10	
Sitting Hours	**Working**	4.75	1.966	2	10	0.563
	Non-working	4.48	2.416	2	13	
	Total	4.61	2.194	2	13	

Fig-1: Prevalence of Piriformis syndrome (using FAIR test)

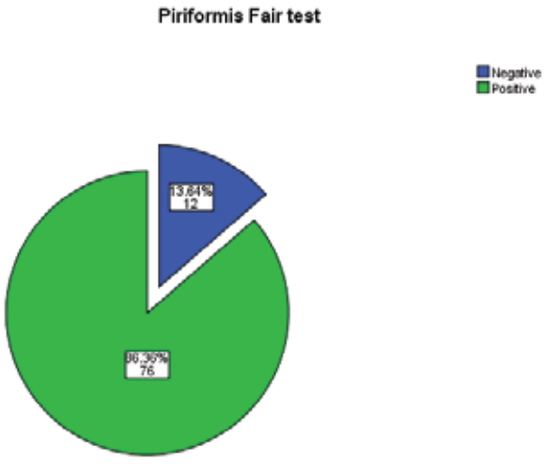
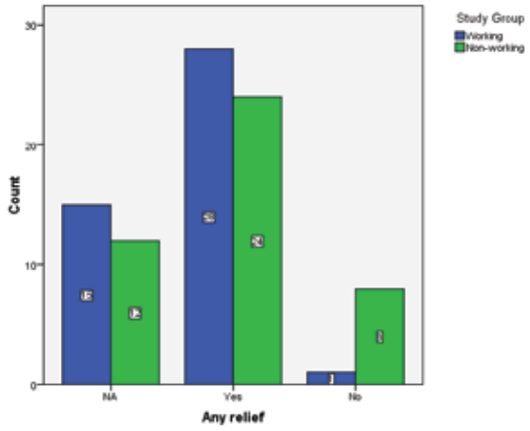


Fig-2 : Comparison of Pain relief using Physical therapy treatment in both study groups



p-value = 0.048

DISCUSSION:

Piriformis syndrome is a neurological condition with characteristic feature of pain from buttock to thigh area. This disorder is ignored by many specialists because of its similarity of features from hip pathology, sacroiliac joint disorder, radiating pain from lumbar area.[17] Our finding also suggests a high prevalence of this syndrome. However, proper diagnosis of piriformis syndrome depends on understanding of anatomy of sciatic nerve and piriformis muscle and their relationship in addition to applying reliable and valid diagnostic test. Many studies have discussed about anatomy, pathology, and diagnosis and treatment strategy for this syndrome.[18] Therefore, it is important to adopt an integrated approach. The integrated procedure to diagnose piriformis syndrome consists of its anatomical understanding, function of piriformis muscle, detailed evaluation of patient and also understanding of mechanism how piriformis muscle can compress sciatic nerve. Studies have discussed about the treatment options of piriformis syndrome, one option is to use just physical treatment and mobilization method, and the other is to combine first option with medicines to relieve pain and swelling of sciatic nerve and piriformis muscle.[10]

This study was planned to investigate the prevalence of piriformis syndrome in working and non-working women with low back pain. The prevalence of piriformis was higher in working patients compared to non-working women. However, this difference is not statistically significant. Another study showed the same results.[15] (Occurrence of piriformis syndrome in patients of low back pain documented about 6%-18%). Other study also highlights working women especially health care workers (nurses) suffering from piriformis syndrome. This recorded incidence correlate with the previous study.[19] Piriformis syndrome occurs most frequently during the fourth and fifth decades of life and affects individuals of all occupations and activity levels,[15] while this study showed that it is also prevalent in young female. These findings are not consistent with this study. However, a valid and reliable test was used to diagnose this syndrome. Therefore, these researchers are confident that the finding has some grounds.

Limitation of this study are convenience sampling was used. Moreover, data was collected only from two centers. Therefore, generalizability of this study should warrant caution. We only considered few baseline variables. Future research should consider all the possible confounders.

CONCLUSION:

Due to high prevalence of piriformis muscle syndrome among female patients with low back pain, clinicians must consider its possibility during differential diagnosis of low back pain. There is also a need to develop an awareness program of disability and treatment of the piriformis muscle syndrome among women. There is a need of research on this syndrome as there are many gaps in knowledge. This will help us to set up an optimal care for this population. Moreover, in future, there is a need to explore epidemiologic factors, risk factors, and optimal treatment for this syndrome. It is also essential to consider the length of time from symptom onset to initial presentation as this is still unknown. The proportion of patients presenting with low back pain who demonstrate symptoms and signs consistent with piriformis syndrome is also unknown and merits further consideration. This study was preliminary in nature. Therefore, a larger cross sectional study on nation level in order to explore the full impact of this syndrome is necessary.

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ORIGINAL ARTICLE
Level of Depression in Physically Disabled

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ABSTRACT:

Background

Depression is recognized as a serious public health concern in developing countries. A person having depression feels very low which hinders his activities of daily living. Present study has found that physical disability is a risk factor for the development of depression.

Objective

The purposes of this study were to describe confidence in people with physical disability and to suggest them occupational therapy, physical therapy with psychotherapy, so they can do activities of daily living independently.

Methodology

A cross-sectional survey with sample of 35 physically disabled people was conducted. The standard tool Beck Depression Inventory has been used and all required thorough research to ensure the inclusion of as many available assessments as possible, related to depression in physically disabled.

Results

Present study indicates that there are symptoms of depression in people with physical disability according to the disability symptoms may be mild, moderate or severe. Disabled persons were at substantially elevated risk for depressive symptoms and major depressive disorder. Figure 4.22 shows that out of 35 individuals 2.86% were of mild mood disturbance, 2.86% of borderline clinical depression, 42.86% were moderately depressed, 37.14% severely depressed and 14.29% were in extreme depression. Results clearly demonstrate that physical disability can leads to depression

Conclusion

It was concluded that physical disability leads to depression and a standardized self-report scale BDI may well be used effectively to screen those patients with physical disabilities, who may need psychological help .

Key words: Depression; physical Disability; Beck Depression Inventory

INTRODUCTION:

"Depression is a state of low mood and aversion to activity that can affect a person's thought, behavior, feelings and physical well-being".[1]Biological, psychological, and social factors all play a role in causing depression which leads to stressful life events. Depressed people may have some cognitive symptoms like poor concentration, forgetfulness and slowing of movements. Depression commonly exists with physical disorders like stroke and Parkinson's disease.[2]

A person having depression feels very low which hinders his activities of daily living. They may be pre-occupied with false thoughts, inappropriate guilt, hopelessness, hallucinations, delusions, with drawl from social situations and thoughts of death or suicide. [3]

"Disability is defined as a limitation in performing certain roles and tasks that society expects an individual to perform. Disability is the expression of the gap between a person's capabilities and the demands of environment the interaction of a person's limitations with social and environmental factors". [4]

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Many cross-sectional studies conducted show that a physically handicapped person must have depressive symptoms.[5] People with physical disabilities are mostly uncounted, unheard and unseen in the society. They face barriers in education, job placements and daily life which include stigmatization and the misunderstanding of the abilities affecting their freedom of movement in society. Moreover, job opportunities for person with physical disabilities are very limited so they face financial problems also which leads to depression.

Dr. Aaron T. Beck created a tool Beck Depression Inventory to measure the severity of depression in physically disabled. It is a questionnaire with 21 items which are related to symptoms of depression and can be applied on individual aged 13 and above.[6]

Ron, Harold and Denise in 1984 studied that physical disability disturbs a person's life style and effects mood and activity. They arranged a counseling program for physically disabled with depression, which shows positive results and all those participants were less anxious more social.[7]

Ronald and Samuel in 1988 studied on a large number of physically disabled persons in the community to evaluate the severity of depression. After a longitudinal analyses they demonstrated that physically disabled were suffering from high level of depression and it was in both men and women of all ages.[8]

Turner and Mclean in 1989 studied on 731 physically disabled adults to see the association between physical disability and depression. According to their study physically handicapped were at high risk of depression.[9]

This study will help to understand the formal assessment of depression among physically disabled and how it disturbs social life and all other activities. Moreover, it will help therapists to introduce better intervention plans to reduce the depressive symptoms.

MATERIAL & METHODS:

Before conducting the study, a thorough plan was made to collect the data. Sample size was 35. According to inclusion criteria all patients had a physical disability. The age range was between 18-25 years and all those who gave their consent and were ready to participate. Patients who were not fulfilling the above mentioned criteria were excluded. The data was collected from Pakistan Society for Rehabilitation of Disabled and the Rising Sun Institute observed within 3 months. Tool was a history taking questionnaire Beck Depression Inventory (BDI). The data was analyzed by SPSS (Statistical Package for the Social Sciences). The standard tool Beck Depression Inventory has been used and all required thorough research to ensure the inclusion of as many available assessments as possible, related to depression in physically disabled.

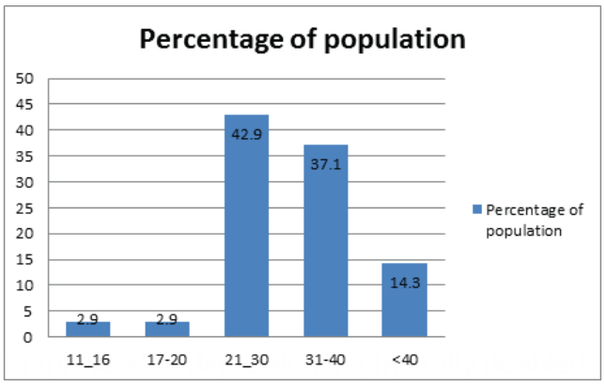
RESULTS:

Total 35 subjects with a permanent physical disability were evaluated for symptoms of depression. Beck Depression Inventory was used to score level of depression, after completing the questionnaire, the scores for each of the twenty _ one questions were added up, by counting the number to the right of each question marked. Out of 35 individuals 2.86% had mild mood disturbance, 2.86% had borderline clinical depression, 42.86% were moderately depressed, and 37.14% severely depressed and 14.29% were in extreme depression. Results clearly demonstrate that physical disability can lead to depression.

	Frequency	Percent
11-16	1	2.9
17-20	1	2.9
21-30	15	42.9
31-40	13	37.1
<40	5	14.3
Total	35	100.0

11-16 = mild mood disturbance
17-20 = borderline clinical depression
21-30 = moderately depressed
31-40 = severely depressed
<40= extreme depression
Table: Total Score of Level of Depression

2.9% = mild mood disturbance
2.9% = borderline clinical depression
42.9% = moderately depressed
37.14% = severely depressed
14.29% = extreme depression



DISCUSSION:

This study indicates the level of depression in people with physical disability.

The finding suggested that physical limitations act as strong precipitating factor to develop depressive symptoms.

In China a door to door survey was conducted to evaluate the depressive disorders among the patients of stroke. Their study supported the fact that a failure in performing daily activities leads to depression in stroke survivors and similar results found in this study.[10]

In 2010 Arupendra and Subrata conducted a study on male adults with lower limb amputation they found that depression is associated with low socio-economic conditions, attitude of society towards disability and other health conditions. They used BDI to compare the severity of depression with physical disability and socio-economic status. According to their research physical disability is not the cause of depression but poor financial status and dependency on others leads to major depressive symptoms. However in our study physical disability itself is the cause of depression. [11]

In China a cohort study was conducted to examine the effects of depression on physical disability in adults. They found that adults with physical disabilities, which hinder their basic and instrumental activities of daily living were highly depressed which resulted in more functional limitations. It is very important to prevent and eliminate depressive symptoms so they can improve their quality of life.

B.M. Draper conducted a controlled study to find the effectiveness of drug therapy, psychological and physical rehabilitation in physically ill persons who were suffering from depression. According to his research, drug therapy through antidepressants, psychotherapy, social support and community mobility were found very effective for psychologically and physically disabled persons. [13]

In our society physical and behavioral disorders are highly stigmatized. It has multiple effects on the life of an individual. It needs to be studied more to improve the management of depression in physically handicapped, otherwise it can seriously effects the quality of life of an individual.

CONCLUSION:

It was concluded that physical disability leads to depression and a standardized self-report scales such as the BDI may well be used effectively to screen those patients with physical disabilities, who may need psychological help. The purpose was to describe confidence in people with physical disability and to suggest them the occupational therapy, physical therapy with psychotherapy so they can be an active members of the society. While limited by the sample size, the results of this study support the need to further explore depression, risk, and other psychological symptoms in patients with permanent physical disability, so better interventional programs can be made to make them independent, and to exclude negative feelings from their personality. There must be a set up for physically handicapped to prevent the disability and co-morbid conditions. Plans should be made to develop an early detection of disability, multi-professional assessment tools, diagnostic system to provide them medical and psychological rehabilitation services.

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ORIGINAL ARTICLE

Development of a checklist for the assessment of Pragmatic Language Impairment

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ABSTRACT:

Background: Pragmatic Language Impairment is a language disorder characterized by unimpaired structural aspects but marked deficits in the use of language.

Objective:

The objective of the study was to develop a checklist for the assessment of Pragmatic Language Impairment (PLI).

Methodology:

This study was conducted, in a time period of 3 months. A sample of 27 patients was studied with an age range of 5–16 years. Data was collected from the outpatient department of The Children's Hospital, Mayo Hospital and Sheikh Zaid Hospital Lahore. The frequency of non-verbal, verbal and social communication behavior was calculated by using SPSS (Statistical Package for the Social Sciences).

Results:

The Checklist was applied on 27 individuals. Results found that children with PLI show deficit in all three categories, with marked deficit shown by 15 children (58%) in understanding conversational cues and 10 children (37 %) in understanding change in tone of voice. In the category of verbal communication 18 (66%) children used inappropriate initiation, lack of coherence 19 (67%), insufficient information 16 (59%), lack of context based conversation 22 (81%), problem in understanding figurative language 26 (96%) and absence of presupposition was in 24 (88%) of these children. In social communication section of the checklist 23 out of 27 (85%) exhibited deficit in expressing feelings and 24 (88%) children never used or understood humor.

Conclusion:

The checklist identified symptoms of pragmatic language impairment and can be used to screen children with PLI.

Keywords: Speech Therapy, Assessment, Pragmatic Language Impairment, Autism

INTRODUCTION:

The pragmatic language impairment previously called semantic pragmatic disorder was first introduced by Rapin and Allen in 1983 as a language disorder characterized by fluent and syntactically complex expressive language but marked deficit in understanding discourse and inappropriate use of language[1, 2] This disorder specifically affects the language areas of content and use despite the presence of average to superior levels of form (grammar, speech). Pragmatic language impairment in a severe form considerably overlaps autism spectrum disorder with initially delayed language development which is later accompanied by jargon, echolalia and auditory inattention. When these children get older they have superficially complex language with usually clear articulation but have difficulty in comprehension of language demonstrated as literal interpretations and by using language inappropriately in conversation.[1, 3] In addition, children with pragmatic language impairment who do not have autism have also been described a number of times in the literature [4][5]. Despite of frequent researches and diagnostic use of this term, PLI was not included in DSM IV or in ICD-10, its diagnostic

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classification was much disputed since the term is being used, there are few researchers who take it as a language disorder and purpose that the pragmatic difficulties are considered to be a second consequence of SLI i.e. Specific Language Impairment [6, 7] and there are others who disagree with the relationship between SLI and PLI but [8, 9]somehow PLI comes under both social and language disorders making it a social communication disorder as introduced by DSM-V. This new category is defined as an impairment of pragmatics which is diagnosed on the basis of difficulty in the social uses of verbal and nonverbal communication in naturalistic contexts that affects the development of social relationships and discourse comprehension. This impairment cannot be explained by low abilities in the domains of word structure and grammar (syntax) as well as general cognitive ability. This term is intended to give a new diagnostic home to children with significant social and communication difficulties who do not exhibit the repetitive behaviors of ASD or those previously classified with DSM-IV as PDD-NOS.[9] There are no traditional language assessment instruments available in Pakistan to measure pragmatic dysfunctions accurately. Internationally Test of Pragmatic Language (TOPL) and Children communication checklist [10] is used for the evaluation of pragmatic language. These tools are not available in Pakistan, so the children were either not diagnosed at all or were diagnosed according to the features described by Rapin and Allen i.e. difficulties in comprehension of connected discourse, verboseness, word finding deficits as evidenced by circumlocutions, semantic paraphasias and lack of semantic specificity, stereotyped conversational responses, literal interpretations, responses to one or two words, difficulty inturn taking and maintaining a topic in discourse[10]Children with deficits in semantics and pragmatics can have impairments in higher level language skills which includes following rules of social language (debating/disagreeing, conflict resolution, generating multiple solutions), conversational skills (initiation, topic maintenance, turn taking, etc.) and presupposition or perspective talking (including the thoughts, ideas or feelings of the listener into conversations). In the area of academics, children with these deficits mentioned above will struggle in tasks that require explanations of social characteristics, similarities and differences, cause and affect vs. correlation, as well as comprehension and use of idioms and figurative language. In addition, they have difficulties in problem solving including sequencing and predicting. Hence all of these areas should be keenly assessed by a speech and language pathologist to identify strengths and weaknesses in the social communication domain.

METHOD:

This observational study was conducted over a period of three months at the department of developmental pediatrics CH & ICH Lahore and the speech therapy departments of Mayo hospital and Sheikh Zaid Hospital Lahore. A checklist which screened the symptoms of Pragmatic language impairment was used for each individual. The checklist was divided into three sections: non verbal communication, verbal communication and social communication. Each section has a set of questions based on the features of PLI. The checklist was administered on a total number of 27 children with an age range of 5-16 years with the help of their parents. The frequency of non-verbal, verbal and social communication behavior was calculated by using SPSS (Statistical Package for the Social Sciences)

RESULTS:

Table 4.1: Frequency of Nonverbal Communication Behaviors of Children with Semantic Pragmatic Disorder.

Nonverbal Communication	Never	Sometimes	Consistently
Eye Contact	2	5	20
Conversational Cues	15	10	2
Physical space	5	10	12
Tone of Voice	10	17	0
Understands Facial Expressions	4	20	3

Table 4.2: Frequency of Social communication behaviors of children with Pragmatic Language Impairment.

Social Communication	Never	Sometimes	Consistently
Greets	3	14	10
Asks For Help	11	15	1
Asks for Permission	22	5	0
Feelings	23	3	1
Friendship	17	9	1
Humor	24	3	0
Affection	17	9	1

Table 4.3: Frequency of verbal communication behaviors of children with Pragmatic Language Impairment

Verbal Communication	Never	Sometimes	Consistently
Appropriate Initiation	18	9	0
Coherence	19	6	2
Repeats when Misunderstands	9	17	1
Gives Sufficient Information	16	11	0
Context	22	5	0
Asks to Repeat	13	13	1
Figurative Language	26	1	0
Relevant Answers	7	18	2
Stereotyped Conversations	1	9	17
Joins Conversation	16	10	1
Conversational Repair	23	4	0
Shifts Topic	25	2	0
Closes Topic	24	3	0
Paraphasia	16	6	5
Circumlocutions	8	13	6
Neologism	19	3	5
Narration	16	10	1
Presupposition	24	2	1

DISCUSSION:

The main purpose of the present study was to design a checklist for screening children with Pragmatic Language Impairment. A checklist of conversational behaviors designed to measure semantic and pragmatic aspects of language was used on the children with features of Pragmatic Language Impairment coming to the Developmental Pediatrics Department of Children Hospital and the Institute of Child Health Lahore, the speech therapy department of Sheikh Zaid Hospital and Mayo Hospital Lahore. The checklist was divided into three categories; non-verbal communication, verbal communication and social communication behaviors and each area was assessed on three scales; 'never' for those who do not show the response at all, 'sometimes' for those who were reported by their parents to have shown frequent or occasional response and 'consistently' for those individuals who constantly exhibited the response. Non-verbal communication included eye contact, understanding conversational cues, maintaining appropriate physical space, understanding and using appropriate tone of voice and facial expressions in the process of communication. The study results found that children with Pragmatic language impairment mostly showed consistent eye contact with poor understanding of facial expressions and tone of voice. The same was found in a comparative study conducted by Bishop et al., (2000)[8] in England, children with PLI were compared with a group of children with specific language impairment (SLI) and the comparison of the results showed that PLI group was less responsive on verbal and non-verbal cues as compared to SLI group and those who struggled in nonverbal responses also had relatively higher level of inappropriate pragmatic responses. The present study results show a deficit in conversational skills with inappropriate initiations, lack of coherence, not giving sufficient information to the listener to comprehend, lack of context based conversations, difficulty initiating, shifting and closing a topic while similar results were found by previous researches conducted by Barron-Cohen, (1988) at Oxford University, England and by Tager-Flusberg, (1996) at University of Massachusetts, Boston.[11][12] Taking turns and maintaining conversational cues were also assessed in the present study and poor performance was observed in this category. Similar results were found in another study by Botting (2003) at the Manchester University, United Kingdom. According to the results speakers with Pragmatic Language Impairment appear to have difficulty taking turns appropriately when they are engaged in a conversation, topic maintenance and topic development were also found to be problematic areas.[13] Bishop (1989) theorized in his study at Manchester University that speakers with PLI may fail to develop the topic by adding new, relevant information. Instead, they may keep repeating previously mentioned topics or fail to link their words to prior ones. In addition, sudden and irrelevant topic shifts may occur. Figurative language is the use of idioms and sarcasm in normal conversations and present study results showed children with PLI have marked deficit in this area.[14] Happe, (1993) also noted frequent Difficulties with figurative language and found that children with Pragmatic language impairment have literal interpretations of language[15] Ketelaars, (2009) in his study at Netherlands also observed that Children with PLI showed higher numbers of paraphasia, nonrelated errors, and omissions and circumlocutions and the present study also detected circumlocutions, paraphasia, and neologism in verbal communication behaviors of these children.[13]

CONCLUSION:

Although PLI is categorized as a disorder of the use of language but there seems to be a large overlap in symptoms with autism spectrum disorders. In addition, The diagnostic and statistical manual of mental disorders, fifth edition (DSM- 5) now introduced a new diagnostic term, the Social Communication Disorder for children with Pragmatic Language Impairment and who do not have stereotyped restricted behaviors or interests. Despite the addition of a new term there are no valid assessment tools in Pakistan. A checklist has been designed in the present study according to the features of PLI and frequencies of all symptoms were analyzed. Study results found deficit in all

three categories, i.e.; Nonverbal, Verbal and Social Communication Behaviors. As early social and language problems often have pervasive effects, early detection of these problems through screening is of critical importance and this checklist can be used to screen children with Pragmatic Language Impairment. Further research is required to develop formal reliable and valid assessment tools for PLI more recently called the Social Communication Disorder.

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ORIGINAL ARTICLE

Role of Pysical Therapy in Relieving Sacroiliac Joint Pain During Third Trimester of Pregnancy

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ABSTRACT:

Background:

As pregnant women move into their third trimester of pregnancy, mechanical changes can cause pelvic girdle pain. Increasing recent evidence suggest that using stabilizing exercises to reduce this pain is safe and effective. The aim of this study was to see the effectiveness of stabilizing exercises to reduce sacroiliac joint pain during third trimester.

Objective:

To relieve sacroiliac joint pain during third trimester of pregnancy in a quasi-experimental study of 39 pregnant women by giving physical therapy treatment like muscle stabilizing exercises, myofascial release and modifying activities of daily living.

Method:

39 pregnant women in Gynecology department of Jinnah Hospital, Lahore who fulfilled the criteria were included in the study. Pain intensity was rated on (0-10) numeric rating scale NRS.

Results:

p>.05. Treatment was not much effective. Women with previous pregnancies were having more pain in sacroiliac joint. Socioeconomic status was a risk factor in pain. Women with low socioeconomic status were more diagnosed with sacroiliac joint pain than middle socioeconomic status.

Conclusion:

Physical therapy treatment given for pregnancy related sacroiliac joint pain was not effective. May be because of not following treatment plan due to illiteracy. In order to obtain more knowledge about pregnancy related pelvic girdle pain and its treatment, it is necessary to perform a comprehensive study in which all features of the patients can be studied.

Key words:

Pelvic girdle pain, pregnancy, physical therapy exercises.

INTRODUCTION:

Physical therapy is a health care profession mainly concerned with the rectification of impairments and disabilities, promotion of functional ability and quality of life through physical intervention. Physiotherapists work with patients to help them to overcome movement disorders that may be congenital, acquired or may be due to some life changing events.

During pregnancy woman faces a lot of changes related to muscles, ligaments and joints that affects the whole body. Physiotherapist can help in managing these changes by giving expert care and advice during pregnancy, child birth and beyond.

Pregnancy results in usual but gradual weight gain and major postural changes especially during third trimester which causes altered center of gravity, lumbar lordosis, altered spinal curves, pain in low back and pelvis that includes pain in sacroiliac joint and symphisis pubis. Effects of hormonal influences results from 6 weeks gestation and can result in joint and ligament laxity that is normal in most pregnant women but in some can result in joint dysfunction and pain. Many female hormones are released that allow

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the connective tissues in the body to relax. This relaxation is necessary so that during delivery, the female pelvis can stretch enough to allow birth.

One hormone, relaxin, is believed to be cause and increase extensibility of all ligaments noted especially in pelvic girdle that may cause sacroiliac joint dysfunction. Relaxing in pregnancy is secreted by the corpus luteum, the placenta, and part of the decidual lining of the uterus. Relaxin levels are found to be more than 10-fold higher than nonpregnant levels. Moreover, altered walking pattern associated with pregnancy can cause significant mechanical strain on the sacroiliac joints, which may result in SIJ inflammation, giving a deep ache in the posterior pelvis.[1]

Sacroiliac joint pain is experienced between the posterior iliac crests & gluteal folds, particularly in the vicinity of the sacroiliac joint.

All joints in pregnancy are vulnerable to injury due to decreased protection by ligaments. So all pregnant women should be aware of the fact that this increased joint laxity and alteration in body weight will alter body mechanics. Incorrect techniques while lifting, poor posture and incorrect positioning will all tend to increase discomfort.

Pregnant women with sacroiliac joint pain may feel dull unilateral low back pain below L5, pain between the posterior iliac crests & gluteal folds, particularly in the vicinity of the sacroiliac joint, mild to moderate ache around the dimple or posterior superior iliac spine region. Pain may become worse and sharp while doing activities such as standing up from a seated position or lifting the knee towards the chest during stair climbing, resting on one leg, getting in and out of a low chair, rolling over and twisting in bed and lifting. Pain is typically on one side, but the pain can occasionally be bilateral, referred pain from sacroiliac joint down to the buttocks, groin and back of thigh. And pain improves when lying down.

The first-line treatment of pregnancy-related sacroiliac joint dysfunction is physiotherapy & exercises that focuses on core stability of the trunk and pelvic girdle. That includes motor training of transverse abdominus and multifidus muscles. Relaxation and breathing techniques and Myofascial release or massage to relax muscles that are tighten due to pain. Postural reeducation to minimize shift in center of gravity. Modification of activities is also required like heavy weight lifting, bending, twisting, high velocity ballistic movements, unilateral weight bearing activities, stair climbing are avoided.[2-4]

METHODS:

Quasi experimental study was conducted. Non probability purposive sampling technique was used. The study was conducted at the Gynecology Department of Jinnah Hospital Lahore.

39 Women who were included in the study were 25-35 years of age, in third trimester of pregnancy suffering from SI joint pain and did not have any other complications, were given physical therapy treatment for 3 weeks: muscle stabilizing exercises, heating packs, massage and advice for daily life movement.

All those women who had some medical complications or were unwilling to participate or had pain above L5 were not included in the study.

Diagnostic tests to identify sacroiliac joint pain were ASLR active straight leg raising, sacral compression test (side lying), distraction test and self-reported pain.

Oral and written information about treatment plan was given. Pain intensity was rated on 0–10 pain intensity numeric rating scale (NRS)

RESULTS:

Ranks

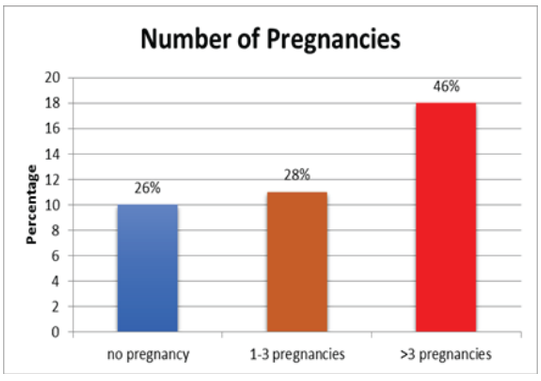
		N	Mean Rank	Sum of Ranks
pa - pb	Negative Ranks	23[a]	15.48	356.00
	Positive Ranks	10[b]	20.50	205.00
	Ties	6[c]		
	Total	39		

a. pa <pb
b. pa >pb
c. pa = pb

Test Statistics[a]	
	pa - pb
Z	-1.411[b]
Asymp. Sig. (2-tailed)	.158
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

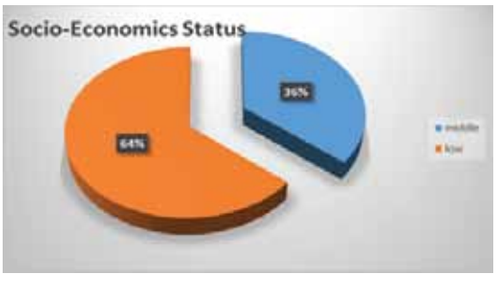
Applying Wilcoxon signed rank testing SPSS (v.22) p>.05. treatment was not much effective. Women with previous pregnancies were having more pain in sacroiliac joint.

		Frequency	Percent
Valid	non pregnant	10	25.6
	1-3 pregnancies	11	28.2
	>3 pregnancies	18	46.2
	Total	39	100.0



Socioeconomic status was a risk factor in pain. Women with low socioeconomic status were diagnosed with more sacroiliac joint pain than middle socioeconomic status.

		Frequency	Percent
Valid	low	14	35.9
	middle	25	64.1
	Total	39	100.0



DISCUSSIONS:

Pregnancy results in lot of biomedical, biopsychosocial and biomechanical changes, all of them results in number of musculoskeletal problems [5]. The prevalence of SI joint pain is more in musculoskeletal symptoms i.e ranges from 24% to 50% [6,7]. Here one must highlight that no doubt its pregnancy related pain but it persists postpartum depending on factors i.e efficacy of treatment, location and intensity of pain [8]. Brynhildsen J. et al. found that in one out of five pregnant ladies this pain intensity is directly dependent on the number of pregnancies [9].

Current quasi-experimental study was conducted to see the efficacy of physiotherapy during third trimester of pregnancy. However, treatment was not much effective although number of risk factors influencing efficacy of treatment were seen i.e multiparous females experienced more pain in sacroiliac joint comparative to nulliparous females, socioeconomic status, illiteracy level and pretreatment pain level. One thing which requires future research work is RCTs etc. for effective evidences was that women with low socioeconomic status were more diagnosed with sacroiliac joint pain than middle socioeconomic status. Therefore one could say patient education, socioeconomic status and level of illiteracy ultimately effecting effective follow-up of exercises.

Vleeming A. et al recommended few guidelines regarding the physiotherapy treatment of Pelvic girdle pain in pregnant ladies. Treatment option recommended by these authors were patient education along with the home exercises [10]. Hence giving a little support to my study that above given factors effect the outcome of treatment.

There are lot of evidences supporting role of physiotherapy in improving SI pain after delivery e.g Ferreira CWS et al in a systematic review found that physiotherapy is effective in improving pelvic pain once pregnancy is ended. Here recommendations says still lot of RCTs need to be done to see physiotherapy efficacy both in pre and post natal care [11]. This topic needs lot of research work and effective evidences.

Mahovic D. et al in a case study found NASIDs and physiotherapy combination is effective in the treatment of SI pain during pregnancy [12]. On the bases of case study, efficacy of any treatment is still questionable, so more research work is needed. One is not saying physiotherapy is not an effective treatment but its efficacy needs strong evidence i.e Stuge B. et al in a systematic review said as a result of heterogeneity and variation in qualities of studies no strong evidence supports physiotherapy in improvement and prevention of SI pain. [13]

In a nut shell, lot of evidence and effective researches are required to see efficacy of physiotherapy treatment in reducing sacroiliac joint pain in pregnancy.

CONCLUSION:

Physical therapy treatment given for pregnancy related sacroiliac joint pain was not effective. SIJ pain was more common in women of low socioeconomic status may be because of strenuous work. Women with previous pregnancies experienced more pain in sacroiliac joint. In order to obtain more knowledge about pregnancy related pelvic girdle pain, it is necessary to perform a comprehensive study in which all features of the patients can be studied.

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ORIGINAL ARTICLE

Speech Intelligibility in Hearing Aid users with and without auditory training

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ABSTRACT:

Background:

Intelligibility of speech refers to the accuracy with which a normal listener can understand a spoken word or phrase. Speech is often disrupted in congenital hearing loss but with assistive devices and therapeutic approaches, some children with hearing impaired can develop intelligible speech.

Objective:

The objective of the study was to compare the speech intelligibility in digital hearing aid users with and without auditory training.

Methodology:

The research was analytical comparative cross sectional in nature. The study looked at 4 to 6 year old 20 children with severe to profound hearing impairment by using digital hearing aids in both ears. One group of 10 children received speech therapy with auditory training and the other group of 10 children received speech therapy without auditory training (lip reading) for at least two years. The speech sample of both groups was taken through connected speech. The sample was audio recorded. Inter rater validity was used and intelligibility was marked employing a 5 point rating scale.

Results:

The results with Auditory Training on conversation obtained a mean score (3.5) and standard deviation was (0.85). With lip reading the mean score was (2.3) and standard deviation was (0.42).

Conclusion:

On the basis of the present research, it is concluded that auditory training improves speech intelligibility with hearing aids in severe to profound hearing loss.

Key words:

Speech, Intelligibility of speech, auditory training, lip reading, hearing impairment.

INTRODUCTION:

Verbal expression of our thoughts, ideas, emotions and feelings is called speech. During this process our four systems respiration, phonation, resonance and articulation work together. Dysfunction to any of these systems results in poor fluency or unintelligibility of speech[1]. Thus speech intelligibility is the precise perception of a normal listener to understand a spoken word or phrase [2]. However for obtaining information regarding the world, hearing and vision are essential elements. Hearing impairment effects the normal development of speech due to limited or lack of auditory feedback. It diminishes the ability to hear faint sounds and often complain difficulty in understanding speech in noise. Speech is a multi-dimensional, though useful and learnable method for children who are deaf [3].

Hearing aids and cochlear implantation are devices which make speech audible at a comfortable level and provide as many acoustic cues as possible without over-amplifying any sounds, especially loud sounds [4]. Researchers have highlighted hearing aids as electronic devices which increase the incoming sound signals to make it audible and improve speech understanding of an individual [5]. A study described that the children who received hearing

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aid (cochlear implant) before age of 10 years demonstrated the highest speech intelligibility as compared to the subjects who did not receive their device until after 10 years of age [6]. Speech is more intelligible when it is automatically and fluently produced by a hearing aid user with auditory training of linguistic and nonlinguistic sounds. The child could use amplified hearing to recognize sounds. Learning of speech skills by children with hearing aid may be classified into: Articulation, Voice and Prosody. Articulation is principal aspect of speech fluency and clarity but nasality, voice and prosody lead to more balanced intelligibility [7].

Auditory training is used for development of speech in hearing impaired children. It is an important part of the speech therapy addressed to the hearing impaired children and must start as soon as possible [8]. A study showed that auditory performance and development of speech intelligibility was significantly improved in congenitally deaf children who had cochlear implantation before 4 years of age [9]. Lip reading compensate for loss of hearing at every stage of deafness but conversational speech emerged slowly after using cochlear implants or hearing aid for at least 5 years, 33–45% were fully intelligible [10].

In the assessment of speech intelligibility, the five point speech intelligibility rating scale is used to measures the speech intelligibility of children with hearing impairment using hearing aids or cochlear implants. It describes several degrees of speech intelligibility from unintelligible speech to intelligible speech that is understandable to all listeners [11]. Speech material which is used for analysis is another parameter and it is represented in the form of spontaneous speech vs. read speech [12]. The assessment of speech intelligibility is also affected by the type of listener judge, roughly, experienced vs. inexperienced because there is often a connection between the type of material and the type of listeners involved in the protocol [13]. Hearing aid has been used to evaluate outcomes of intervention for children with hearing impairments. This is the length of time that the child has been receiving amplification and outcomes are seen after two years of implantation or hearing aid fitting[14].

The present study aims to assess speech intelligibility with and without auditory training in hearing aid users in Pakistan. Study also provides evidence for the importance of amplification and method of training in speech development for speech intelligibility and serves as a bench mark to refine comparisons of speech intelligibility by auditory training and lip reading in hearing aid users. Such comparisons will continue to strengthen the knowledge base to make clinical decisions regarding pediatric hearing aid users for speech intelligibility.

MATERIALS & METHODS:

The study was analytical and comparative / cross sectional. School going 20 children, of age group 4-6 years having severe to profound prelingual bilateral sensory neural hearing impairment by using bilateral digital hearing aids with 2 years speech therapy on lip reading and auditory training basis had been included in the present study. 10 children for auditory training and 10 for lip reading were selected. Purposive non probability sampling technique was used to select the sample because the number of children using audition for oral communication with digital hearing aids was very limited. The obtained sample had severe to profound hearing impaired children, with digital hearing aids with and without auditory training, in their respective settings of Lahore. Two judges experienced speech therapist and child's mother rated the speech samples on 5 point rating scale. Pilot study was conducted prior on 5 children to verify the administration of the five point speech intelligibility rating scale.

Demographic information was collected through demographic data sheet.

After taking consent the speech intelligibility rating scale was used to assess the intelligibility of subjects. It describes several degrees of speech intelligibility from unintelligible speech to intelligible speech that is understandable to all listeners. The scores range from low score of "1" to high score of "5". The scale is keyed in such a way that the higher the score, the higher the level of speech intelligibility.

RESULTS:

Table 01: Mean values and S.D of auditory training and lip reading on conversation

	Mean	N	S.D	Std. error mean
Auditory training	3.5	10	.85	.27
lip reading	2.3	10	.42	.13

The table No 1 shows that the mean score of speech intelligibility with Auditory training (3.5) is greater than the mean score of speech intelligibility with lip reading (2.3). Whereas Auditory Training S.D is (.85) and lip reading S.D is (.42).

Table 02: Difference between auditory training and lip reading on conversation

	Mean	S.D	t	df	P
Conversation with AT and LR.	1.2	1.00	3.77	9	.004

The table No 2 indicates that there is a significant difference (.004) between speech intelligibility of lip reading and auditory training on conversation.

Table 03: Mean values and S.D of auditory training between therapist and mother

	Mean	N	S.D	Std. error
Conversation therapist	3.2	10	.91	.29
Conversation mother	3.8	10	.91	.29

The mean value of speech intelligibility on conversation with therapist is (3.2) and mother is (3.8). The values of standard errors and standard deviation are equal on conversation with therapist and conversation with mother.

Table 04: Difference between therapist and mother on conversation with auditory training

	Mean	S.D	t	df	P
Therapist and Mother	-6000	.699	-2.71	9	.02

The results of the table 04 reveals highly significant difference between therapist and mother on conversation with auditory training ($t=-2.71$) and ($p<0.02$).

Table 05: Mean values and S.D of lip reading between therapist and mother

	Mean	N	S.D	Std. Error
Therapist	1.9	10	.57	.18
Mother	2.7	10	.67	.21

The table No.5 shows the mean values of therapist and mother are (1.9) and (2.7) respectively. The standard deviations are (.57) and (.67).

Table 06: Difference between therapist and mother on conversation with lip reading

	Mean	S.D	t	df	P
Conversation lip reading therapist and mother	-80	.92	-2.8	9	.022

The results of the table 06 reveals that there is a significant difference between therapist and mother on conversation with lip reading ($t=-2.8$) and ($p<0.022$).

DISCUSSION:

Previous studies have pointed out the positive impact of auditory training with cochlear implantation for speech intelligibility [15] but the comparison of speech intelligibility with hearing aid users with and without auditory training (lip reading) had limited mention in the literature. Many studies focused on use of digital hearing aids and their effects with auditory training on over all speech intelligibility.

Significant difference existed in speech intelligibility of both groups, and hypothesis was accepted. This study showed the mean score of

speech intelligibility with auditory training (3.5) was greater than the mean score of speech intelligibility with lip reading (2.3). Whereas auditory training SD was (.85) and lip reading SD was (.42). There was a significant difference (.004) between speech intelligibility of lip reading and auditory training on conversation. A study was conducted with 68 pre lingual profoundly hearing-impaired children with either hearing aids or cochlear implants on speech intelligibility and concluded that significant differences in performance of that children who were educated in oral programs as compared to educated in total communication settings [15]. Another study was conducted on 227 profoundly deaf adults for the measurement of speech intelligibility. The results indicated that auditory and speech production skills were well developed in those children who were using spoken language intensively with consistent hearing aid use, early amplification and good parental support [16]. Similar results were found in this study. Degree of hearing loss, amplification as well as use of residual hearing is very important for the production of intelligible speech. It is investigated that the children with severe degree hearing loss showed 91% speech intelligibility and with profound degree hearing loss 76% speech intelligibility[17].

A research explained that a normal child's speech by 2 years is 50% understandable on reading / picture description and conversation because child's speech production level by 2 years is 2 words [18]. Another study showed that age, duration of amplification and therapy affect the level of speech production and comprehension of primary school child. [19].

Speech intelligibility depends upon listening skills of deaf children. Prelingually deaf children showed significant improvement in auditory performance and speech intelligibility. After cochlear implantation, the difference between the speech intelligibility rating increased significantly each year for 3 years ($p<0.05$) [20]. Eight severe-to-profoundly hearing-impaired children with sensory hearing aids were examined by speech intelligibility. Three types of speech materials were used: words in sentences, isolated words, and syllable contrasts. Results showed significant difference in speech intelligibility between isolated words and sentences. Their mean scores were higher on isolated words [21].

A study was conducted on hearing impaired adults and children and results were revealed by experienced and inexperienced listeners to measure the speech intelligibility. Results indicated that the experienced listeners understood more; 40% of speech intelligibility was for adults and 27% for the children and this difference was statistically significant [22]. In another study a sample of spontaneous speech of twenty four children with sever to profound hearing loss was recorded. The intelligibility of each child was assessed by two judged. Six point rating scale was used. Results obtained from experienced and inexperienced listeners. Experienced listeners understood speech 31% and inexperienced only 19% [23].

It is described that auditory training assist hearing aid and cochlear implant users to improve their listening skills. However "it did take a sincere commitment by the user: five days a week, for at least thirty minutes per session, for a minimum of a month for minimum three years". Researchers reviewed all the studies they could find that might have been remotely be as related to auditory training. The best results were obtained with the more intensive programs (longer duration and more sessions per week) [24].

CONCLUSION:

The study concluded that a significant difference and strong correlation is found between speech therapy with auditory training and lip reading in the speech intelligibility of hearing aid users. It is concluded that hearing impaired children trained through audition with hearing aids have improved speech production skills compared to lip reading.

A large number of variables possibly influenced the results of present study and sample size was small and taken from a limited population, so the generalization of the results to all children with hearing impairment with auditory training and lip reading for speech intelligibility is not possible.

In future studies with larger number of participants with various variables should be

employed for more authentic and comprehensive results for expanded generalization.

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ORIGINAL ARTICLE

Development of an Action Picture Information Test (APIT)

Sadaf Afreen*, Ayesha Kamal Butt, Arshad Nawaz Malik

ABSTRACT

Background:

The present study aims to develop a tool for assessing Urdu language, information based skills among 3 to 6 years children using action pictures. It highlights the need for norm based standardized assessments that are both culturally and linguistically appropriate. Internationally, speech and language pathologists typically include standardized tests as a part of their ongoing assessment which then forms the basis for therapeutic input as well. These standardized assessment instruments that are available to clinicians cannot always be directly translated due to their lack of appropriateness for children from different cultural and linguistic backgrounds. This implies that test norms derived in this manner are appropriate for use only with demographic groups that were included in the normative samples from the same culture and language. There are no such tests available in Pakistan, designed for the Urdu speaking population; therefore, a need arose to develop such an assessment.

Objective:

The aim of the study was to establish Urdu norms for the assessment of information provided by children 3 to 6 years using action pictures, and to develop a tool for assessing Urdu language, information based skills among 3 to 6 years.

Methodology:

Ten culturally appropriate questions and pictures were selected and administered on 200 children between 3-6 years from government and private schools through purposive sampling. The sample included equal number of participants from each gender.

Results:

The results indicate that there were significant differences among all the three demographic factors including age, gender and school sectors and the study objectives were confirmed. The present study assessed the significant relationship between understanding and information providing in Urdu language using culturally and linguistically appropriate action pictures and questions.

Conclusion and recommendations:

It is concluded that the current study successfully developed a norm based standardized assessment for Pakistani children 3 to 6 years which is culturally and linguistically appropriate.

Key words:

Speech pathologist, Language, Information, Urdu, Culture.

INTRODUCTION

Language acquisition is a natural phenomenon that requires no conscious effort and is mostly acquired with no formal teaching.[1] It is argued that all human beings acquire language, but there are many different languages in the world, and it seems that any human being is capable of learning any of these as a native language with equal ease. Researches proved that no child fails to learn a native language, and it is learned largely before the age of five. There are two major factors involved in language acquisition: firstly an innate human potential for the acquisition of a language, secondly a linguistic environment.[2]

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Several studies have proved that language is one of many analytic activities which all depend on cognitive development. Language acquisition is seen as having certain cognitive prerequisites or co-requisites. That is, the child will not develop linguistic forms before acquiring the cognitive bases for those forms.[1] For young children, the language of the home is the language they have used since birth, the language they use to make and establish meaningful communicative relationships, and the language they use to begin to construct their knowledge and test their learning.[2]

From ancient times a central concern of theorists of language has been the question whether language is predominantly a matter of nature or of nurture.[4] The earliest theory about language development assumed that children acquire language through imitation. While research has shown that children who imitate the actions of those around them during their first year of life are generally those who also learn to talk more quickly, there is also evidence that imitation alone cannot explain how children become talkers. Skinner, the Behaviorist theorist, suggested that children learn language through reinforcement.[5]

Being able to speak and express is first of all of very important for any individual but being able to express their feelings in the language which they know and speak become very easy for the person to express him/her self. The word 'Urdu ' is derived from Turkish word ' Ordu ' meaning ' Army Camp ' or 'Lashkar ' . Later on the invasion of Delhi by Muslims engrafted many Persian elements, which resulted in the creation of a new hybrid language called Urdu.[6]

Words that are frequently used in speech to children tend to match the children's cognitive predilections. Children go through different stages in acquiring their first language. Children's speech consists of a range of words which include nouns, verbs, determiners and other grammatical elements. By exploring the grammatical composition of child language in terms of word classes, the study shows that the frequency patterns for word classes in child language differ from those of maternal language.[7]

MATERIAL AND METHODS:

The study aims to investigate the following objectives

1. To establish Urdu norms for information provided by 3 to 6 years old children using action pictures.

2. To develop a tool for assessing information skills in Urdu among 3 to 6 years old children using action pictures.

Sample of 200 participants was collected from four private and four government schools from Gujar Khan, Rawalpindi and Islamabad city of Pakistan. All typically developing children from 3 to 6 years in private and government schools included in sample while Children below 3 years and above 6 years are excluded. Children with cognitive difficulties or any syndromes were also excluded.

The child was shown a picture followed by asking a question related to the picture. The response was documented and audio recorded. They were informed that they can leave anytime during the study and consent was verbally sought. Researcher ensured the participants that their responses would be kept confidential and would be used only for research purpose.

Questions and picture were selected after the pilot study, while scoring for each question established after the whole data been conducted (200 sample) for the most culturally and linguistically appropriate answer. For example if a child made response in few words which expresses the idea completely, full credit is given for total information score which is 6 score. But if any extra words used which is not appropriate or not representing anything related to the picture then no score given to the child and marked as 0 score. The data has been conducted through purposive convenient sampling. The present study will be the contributing factor in the assessment process for the entire speech language pathologist. It will assist therapist in assessing the level of a child with expressive language difficulties

RESULTS

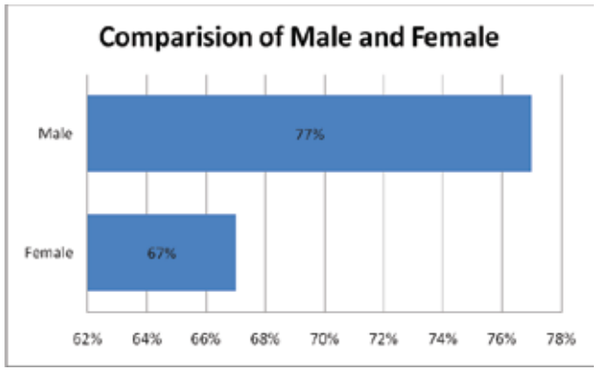
The results have been computed using mean,

standard deviation, variance, range frequencies and percentages and middle age ranges including information scores, sentences score and comparison of all three demographic groups age, gender and school sectors of selected sample and explanation through different bar chart and pie charts.

Age	Mean	Middle half of Range	Standard deviation
3 0-11	13	10-16	8.57
4 0-11	16	13-19	12.70
5 0-11	17	14-20	11.21

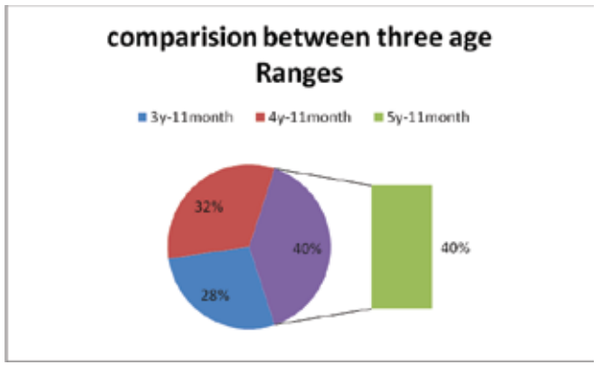
Table shows mean and middle half range values of all the three ages from 3 to 6 year's children.

Table 3:



The above mentioned results show that males scored 77% while female scored 67% which means that males scored higher than females and responded well to all action picture questions.

Table 2:



Results show that children of age 5 years-11month got the highest ratio in scoring high (40%) while 4years-11month children were the second best scorer (32%) and 3years-11month age children were the least scorer (28%) among all groups.

DISCUSSION:

The current study aimed to explore and apply a systematic, quantitative approach to develop norms for assessing information provided by children 3-6 years of age in Urdu language. For clinicians working in different setups conducting a valid and reliable assessment of children's language, clinicians need to have a good understanding of typical language development and cultural and linguistic factors that affect language development. It stresses the importance of developing a test in Urdu language by paying attention to the cultural knowledge and understanding in terms of national language. Data analysis provides insight regarding information provided by this age range. Gender differences, age differences and school sector differences have also been examined separately. Measures of internal consistency were computed for all the items for determining their properties by descriptive frequencies and cross tabulation of all the ten items and demographic factors.

In the present study, a total of 200 typically developing children participated. In the current study 10 actions pictures were used which was culturally and linguistically appropriate which is a significant figure for keeping Childs attention and keeping them motivated. This norm bases assessment is developed in the light of Renfrew Action Picture test which is a standardized assessment test of spoken language that can be scored for both information and grammatical part and evaluated in terms of information given and the grammatical structures used. It also looks at information part that provides good evidence and background to current research.[8]

A study which has great link with the current study has been conducted on the acuqision of the syntax and morphology of the English spoken in Singapore to check whether culturally and linguistically appropriate materials elicited a better sample of children's expressive language abilities, the Renfrew Action Picture Test was modified to make it more culturally and

linguistically appropriate for preschool Chinese Singaporean children. Children by age 4 to 5 years assessed by using three assessment, the original RAPT, its line drawn version (LRAPT) and the modified form of assessment which is Singapore English Action Picture Test (SEAPT), The results showed that the SEAPT elicited more representative samples of expressive vocabulary and grammar in English than the original RAPT and LRAPT.[9]

Code switching was widely observed for example sarak /road (see table no.1). In the current study all items were used according to culture and keeping in mind Urdu words. However, children frequently used English alternatives for Urdu words. During the study focus group of children showed different responses to (mixing language/switching code) because of their environmental factors such as home and school set up. Code switching is basically the way people mix languages and speech patterns is an apt metaphor for the way race, ethnicity and culture intersect in our lives.[10]

The total high scorer are 77% in male and 67 % in female. Overall the percentage of all the items was above 50% which shows that children responded very well to all the questions. Preschool children level of understanding and information in their own native language help them to express their understanding in more appropriate way, see table no. 14 for information scores. Language reveals that how people think and how they view the world. In short, language both defines and reflects the particular attitudes and values of a people.

CONCLUSION:

It can be concluded that current study provided a norm based standardized assessment for the Pakistani children 3 to 6 years which is culturally and linguistically diverse.The results indicated that there were significant differences among all the three demographic factors. Results showed that most of the children have high score in all the items. The study provided that information and understanding is better assessed when it's according to child's own culture and language.

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ORIGINAL ARTICLE

Knowledge of Dysphagia, It's Screening Among Nurses and awareness of Role of Speech and Language Pathologist In Dysphagia

Raffa Mubeen*, Ayesha Kamal Butt

ABSTRACT:

Background:

Dysphagia is a common complication with many structural, neurological and psychological problems. In hospital settings, in most cases nurses are the first health care professionals to come in contact with such patients. Knowledge of swallowing difficulties and the signs and symptoms is crucial for nurses working in such settings. A lack of knowledge of dysphagia signs and symptoms can result in detrimental consequences and this can be fatal for the patient.

objective:

The objective of the present study is to establish the knowledge of dysphagia and its screening among nurses and their awareness regarding role of speech and language pathologists in diagnoses and management of dysphagia in different hospitals of Rawalpindi and Lahore.

Method:

A non-experimental, descriptive survey design was selected for this research. Purposive convenient sampling technique was used. Eighty nurses were selected from four hospitals of Rawalpindi and Lahore. Nurses working in medical wards, neurological wards and ICU for two years were included in the study. A self-constructed 5 point Likert questionnaire was used as a research tool. The questionnaire consisted of 15 items.

Results:

The results were analyzed using SPSS (Statistical Package for the Social Sciences). Findings indicate lack of knowledge of nurses regarding dysphagia.

Conclusion:

It is concluded that nurses lack knowledge of dysphagia and its screening. Additionally they don't have awareness of role speech and language pathologist in diagnosis and management of dysphagia.

Key Words:

Dysphagia, swallowing difficulties, nurses

INTRODUCTION:

Dysphagia is a common symptom of many medical conditions. Increased ratio of complaints associated with dysphagia necessitates timely screening and management of dysphagia. Speech and language pathologist (SLP) is a part of multidisciplinary team and plays vital role in early identification, assessment, diagnosis and management of dysphagia. Speech and language pathologists' role is essential for better care and improved quality of life of the patient. Speech and language pathologist will not only assess the patient but will also fabricate a management plan to improve hydration and nutrition of patient with dysphagia.

The exact prevalence of oropharyngeal dysphagia is unknown, however, incidence of dysphagia is growing rapidly. Approximately ten million American are assessed with swallowing difficulties every year. Stroke is the most common cause of dysphagia [(1).] It is estimated that 22% of adults over 50 years of age, 61% of adults admitted to an acute trauma center, 50 to 75% of stroke patients and 60 to 70 percent of patients

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who undergo radiation therapy for head and neck cancer and 20-40% of patients with neurological diseases as Parkinson's Disease have dysphagia.[2,3]

The speech and language pathologist (SLP) is the primary professional involved in assessment and management of individuals with swallowing disorders. The duties of speech and language pathologists include evaluation of swallowing, instrumental assessment of swallowing function in collaboration with medical specialist, identification of problem related to swallowing, measurements of these problems and referral to other professionals if required. The SLPs are trained in dysphagia and manage & treat patients along with documenting progress of patients and their plan for discharge. In addition, family/carer guidance and educating other professionals regarding the needs of the individuals with swallowing disorders is also under the scope of speech-language pathologist [4, 5].

A research review on nurses' implication after stroke suggests that dysphagia is a common complication of stroke which infers need for increased understanding of post stroke dysphagia among nurses. Most of the time, food and medication are given to the patient in presence of nurses. They are more likely to observe dysphagia signs and symptoms. Nurses should be aware of factors such as positioning during eating or drinking, coughing or choking after eating or drinking, complaints of a feeling of obstruction, frequent throat clearing, unexplained temperature spikes, food avoidance, heartburn, change in respiration pattern after swallowing, and prolonged meal times. Knowledge of dysphagia enables nurses to identify the problem in time, refer the patient for diagnosis and intervention and follow the treatment plan accordingly.[6] A study was conducted to assess the accuracy of screening by trained nurses. The study suggested that nurses can carry out the initial screening only if they are trained. They can then refer the patient to the speech and language pathologist for further evaluation [7].

Nurses are more likely to miss or delay dysphagia referral to SLP due to lack of knowledge. Patient care is also affected by failure to follow management plan. In healthcare settings team approach is preferred while dealing with swallowing difficulties. Nurses are important unit of a team and their abilities do contribute maximum. However, untrained nurses will hinder team efficiency. An interdisciplinary approach and quick training of nurses to screen swallowing difficulties is recommended to handle dysphagia after an audit study in six hospitals. Trained nurses can screen the patient for presence/absence of swallowing difficulties and refer patient to SLPs. A training program will improve the quality of services provided by interdisciplinary team. [8]

BOX 1:INCLUSION CRITERIA:

- Nurses working in ICU, neurological and medical wards
- Nurses dealing with patients with swallowing difficulties
- Nurses with a minimum of 2 years' experience of work in above stated areas

METHODOLOGY:

The purpose of this research study was to analyze the knowledge and understanding of dysphagia among nurses in four hospitals of Rawalpindi and Islamabad. A non-experimental, descriptive survey design was selected for the purpose of this research. Purposive convenient sampling technique was used. Nurses were selected on the basis of inclusion criteria explained in Box 1. The total sample size was eighty nurses out of which 71 were female and 9 were male. Measures used in the study were demographic data sheet and a self-developed questionnaire. Questionnaire was a likert type scale and consisted of 15 items. Out of these 15 items, eleven items measured knowledge of dysphagia and its screening. Other 4 items were intended to check awareness of nurses regarding role of speech and language pathologist in dysphagia. Nurses were briefed about the questionnaire and were assured that the confidentiality of their identity will be maintained while processing the results. On basis of the collected data, a thorough analysis was conducted to establish the knowledge / awareness of nurses regarding Dysphagia and

role of SLP.

RESULTS:

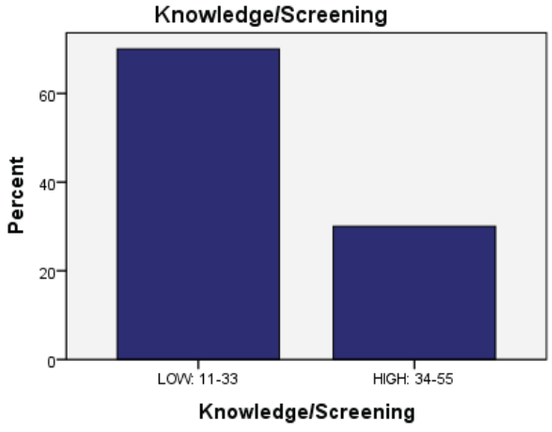
Of 80 nurses, 71 (88.8%) were female and 9 (11.2%) male. The professional experience of 73 (91.2%) nurses was 2 to 8 years and 7 (8.8%) nurses had experience of 9 to 15 years. The table 1 shows the frequencies and percentages of the scores obtained in dysphagia questionnaire. According to 50% cut off score, total scores were divided into lower and higher score ranges. Out of 80, 61 (76.2%) participants scored between score range of 15 to 45 and 19 (23.8%) nurses scored between score range of 46-75. It shows that nurses lack knowledge regarding dysphagia.

Table

		Frequency	Percent
Valid	15-45	61	76.2
	46-75	19	23.8
	Total	80	100.0

Figure 1 shows lack of knowledge of nurses regarding dysphagia and its screening as 56 (70%) participants scored in lower range and 24 (30%) participats scored in higher range on items of knowledge/screening of dysphagia.

Figure 1



Percentages of score of items on role of SLP in dysphagia in figure 2 shows that there are more participants in lower score range. Out of 80 participants, 57.5% (46) fall in lower score range and 42.5% (34) fall in higher score range.

Figure 2

DISCUSSION:

Dysphagia is an extremely serious medical problem in which patients' life is under severe threat. Initial identification is recommended in dysphagia to prevent complications. Nurses can play an important role in identification of dysphagia if they have clear knowledge/training about the condition. Results of this study indicated that nurses do not have adequate knowledge of dysphagia, its screening and role of speech and language pathologist. Sample of this study consisted of nurses who are working in ICU, medical wards and neurological wards. It is more common to see patients with swallowing difficulties in these wards. Nurses need to observe sign and symptoms of at risk patients to identify dysphagia. Understanding and knowledge of dysphagia is a prerequisite when working in settings where influx of dysphagia patient is high. Results of this research are endorsed by a study carried out to check knowledge of certified nurses regarding dysphagia which also concluded lack of knowledge among nurses [9].

Lower score on knowledge/screening items in the present study indicated that nurses are handling dysphagia without correct knowledge of the condition. These results highlighted the fact that there are a number of patients who are at risk of developing complications due to poor knowledge of dysphagia and its screening among nurses. A study on predicators of aspiration

pneumonia indicated that dysphagia, if not identified timely, might result in aspiration pneumonia [10]. Nurses have an important role in reducing adverse outcomes associated with dysphagia if they do dysphagia screening in critical time. Proper screening of a patient is important to observe the signs of swallowing difficulties and will not replace the detailed assessment by SLP.

This study indicated that nurses lack knowledge about role of speech and language pathologist which is an obstacle in creation of an ideal interdisciplinary team. A study on prevalence, assessment and management of dysphagia emphasized the need for nurses to work in collaboration with speech and language pathologist [11].

CONCLUSION:

This research, which focused on the nursing staff manifest lack of knowledge regarding dysphagia, which would then hamper the subsequent phases of screening of patients according to their symptoms and proper management. It is thus concluded that nurses lack knowledge of dysphagia and its screening, as well as they don't have awareness of role speech and language pathologist in dysphagia.

LIMITATIONS:

Limitation to the present study is small sample size of the study. The sample was collected from only four hospitals of two cities of Pakistan.

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ORIGINAL ARTICLE

Association of physical activity with GD (gestational diabetes mellitus)

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ABSTRACT:

Background:

Gestational Diabetes Mellitus is a medical problem that develops during pregnancy and results in various maternal and neonatal complications. There is no single evident cause of maternal hyperglycemia. Patient with GDM present with different risk factors. Prevalance of GDM is increasing in Pakistan so we wanted to study the actual risk factors of it. Being a physical therapist we wanted to assess the association of GDM with physical activities, reduce obesity and prevent GDM

Objective:

The main objective of the study was to find out the effects of sedentary and active life style in gestational women with GDM in order to determine the association of physical activities with GDM

Methodology:

It was a cross sectional survey done in Pakistan Railway Hospital from November 2013 to January 2014 on 81 Gestational women who were in their second or third trimester between the age of 18 to 40 years having GDM. Data was collected through structured questionnaire i.e. Modified Kaiser Physical Activity Survey Form and analyzed using SPSS.

Results:

42(51%) Patients with GDM reported to do routine cleaning, dusting, laundry, vacuuming or changing linens on daily basis that is more than once a week. 36 (44%) women do the physical activity of caring a child or children less than 2 years of age more than 20 hrs a week. 66 (81%) women with GDM never did heavy outdoor work. 66 (81%) never do grocery shopping or pushing a shopping cart. 43 (51%) women with GDM reported that they never do proper walk of 15 min at a time while 28 (35%) do it once a month. It shows that these patients don't do proper walk on daily basis. Only 5 (6%) women walk from 30 to 45 min daily to or from work

Conclusion:

From the results it is concluded that women do routine physical activity but develop GDM. While they don't do proper and planned walk not even for at least 15 min in a routine which is considered to be a risk factor for developing GDM

key words:

Gestational diabetes, Maternal hyperglycemia, physical activity, walk

INTRODUCTION:

When women have high blood glucose level during pregnancy, and they are not diabetic before pregnancy, are said to have gestational diabetes mellitus. Due to various fetoplacental hormones during pregnancy like progesterone, cortisol etc. insulin resistance increases in body [1] The pancreas normally compensate by increasing insulin secretion, but when it fails to do so, or when insulin secretion decreases due to a beta-cell function impairment then GDM develops [1,2]. Gestational diabetes starts when the body is not able to make and use all the insulin it needs for pregnancy. Glucose cannot leave the blood and be changed to energy without enough insulin. Glucose builds up in the blood to high levels. This is called hyperglycemia. [3]

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There are usually no symptoms of GDM. So it is recommended to have glucose screening test in between 24 to 28 weeks of pregnancy. A gestational woman is at high risk if she is obese that is BMI more than 30 or have strong family history of diabetes or have diabetes in previous pregnancy.

In most cases, gestational diabetes develops in the third trimester that is after 28 weeks which usually disappears after the baby is born. However, women who develop gestational diabetes are more likely to develop type 2 diabetes later in life.

According to latest research new diagnostic criteria for GDM based on the 2 h 75 g OGTT: a fasting glucose ≥ 5.1 mmol/L (92 mg/dl), or a one hour result of ≥ 10.0 mmol/L (180 mg/dl), or a two hour result of ≥ 8.5 mmol/L (153 mg/dl). [3][4]

It is becoming important that rising levels of obesity worldwide have caused an increase in the numbers of obese women who become pregnant, and who develop GDM. Pregnancy complicated by obesity is characterized by higher adverse maternal and fetal outcome rates, especially in GDM patients.

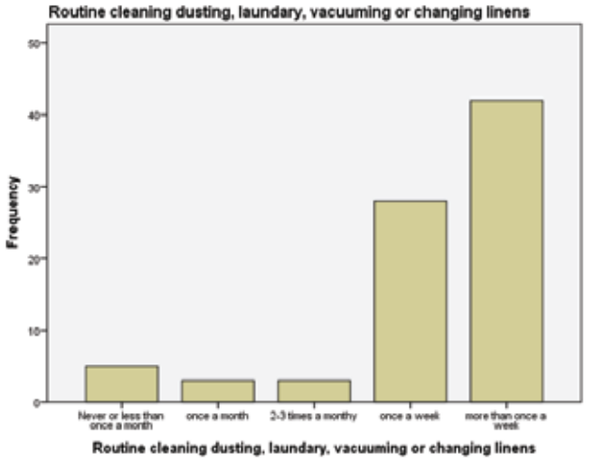
It is also known that physical activity reduces glucose and insulin resistance in diabetic patients that's why helping them to control their weight, so it may be useful in combination with other treatment methods in GDM women. Hence we conducted this study to find out the life style of GDM patients whether they are physically active or not.

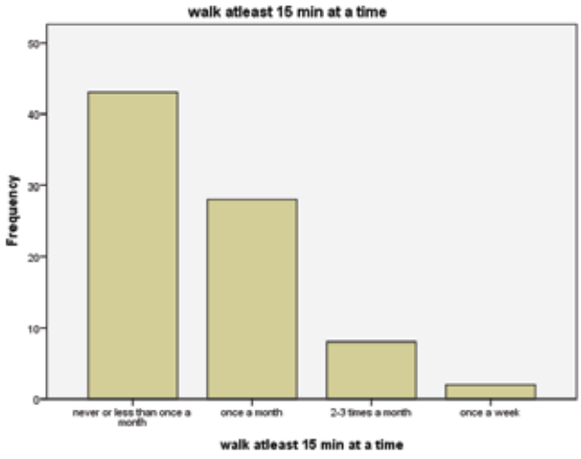
MATERIALS & METHODS:

Cross sectional survey has been conducted in Pakistan Railway Hospital Rawalpindi in duration of 2 months. Convenience sampling technique was used on population of 81 on the basis of inclusion and exclusion criteria i.e inclusion of Gestational women in second or third trimester between the age of 18 to 40 years having GDM and exclusion of those not having GDM.

RESULTS

It is found that GDM is more common in patients between the age of 26 and 30 years. 40 (49.4%) gestational women pointed out that they do major cleaning or shampooing carpets, washing walls or windows once a month while only 5 (6.2%) do such activity once a week. From this it is concluded that patients who developed GDM do not do such home activities causing lots of body exertion and fatigue. 42 (51.9%) Patients with GDM reported to do routine cleaning, dusting, laundry, vacuuming or changing linens on daily basis that is more than once a week. 28 (34.6%) do routine cleaning once a week while only 3 (3.7%) do it once a month. It is concluded that patients with GDM do their routine cleaning at home almost daily. 43 (53.1%) women with GDM reported that they never do proper walk of 15 min at a time while 28 (34.6%) do it once a month. Only 5 out of 81 (6.2%) women walk from 30 to 45 min daily to or from work. It shows that majority of these patients don't do proper walk on daily basis.





The actual risk factors and causes of GDM need to be emphasized so that means of preventing and treating it get determined. A study published in the March 2010 issue of Obstetrics & Gynecology found an association between excessive weight gain during pregnancy – particularly in the first trimester – and the risk of gestational diabetes [5.6]. Researchers found the risk highest in women who were overweight to begin with and in nonwhite women. In Pakistan there is a great tendency of weight gain during pregnancy due to improper diet and myths of taking lots of rest, which eventually results in reduction of physical work and exercise which we think is the reason for developing GDM. We conducted this survey to evaluate the relation of mothers' physical activities with their gestational diabetes and found that they have active life style in terms of routine house hold activities like cleaning laundary and taking care of children but when they were asked about proper walk got negative response that only 6 % walk 30 to 45 min daily while 28% walk 15 min once a month.

The ADA (American Diabetic Association) suggests that women without medical or obstetric contraindications should be encouraged to start or continue a program of moderate exercise as part of their treatment for GDM.[7][8]

The Fourth IWC statement on GDM says that, "a planned physical activity of 30 min/day is recommended."[9][10] However, when exercise was studied in terms of its capacity to reduce plasma glucose and delay or prevent the need for insulin therapy, the results were inconclusive.

The Cochrane study concluded that there is insufficient evidence to either recommend or advise against enrolling GDM patients in exercise programs, although several epidemiological studies have shown a link between physical activity and a lower risk of GDM. [11]

Women who participated in any recreational physical activity during the first 20 weeks of pregnancy, as compared with inactive women, experienced a 48% reduction in risk of GDM (odds ratio [OR] = 0.52; 95% confidence interval [CI] 0.33-0.80). [12]

The major objective of our study was to find the association of physical activity with GDM in GDM population. We got the data supporting its association but needs to be more specific in house wives and working women. Secondly more research should be done to determine actual walk pattern required to maintain glucose level stable in mothers.

CONCLUSION:

From the results it is concluded that women do physical activity at home like caring of children, dusting, laundary is least associated with developing GDM as they do such activities sufficiently but still get GDM. While they don't do proper and planned walk not even for atleast 15 min in a routine which is considered to be a risk factor for developing GDM.

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The material submitted for publication may be in the form of an Original research (Randomized controlled trial - RCT, Metaanalysis of RCT, Quasi experimental study, Case Control study, Cohort study, Observational Study with statistical support etc), a Review Article, Commentary, a Case Report, Recent Advances, New techniques, Debates, Current Practices, Clinical Practice Article, Short Article, KAP (Knowledge, Attitudes, Practices) study, An Audit Report, Evidence Based Report, Short Communication or a Letter to the Editor. Ideas and Innovations can be reported as changes made by the authors to an existing technique or development of a new technique or instrument. A mere description of a technique without any practical experience or innovation will be considered as an update and not an original article. Any study ending four years prior to date of submission is judged by Editorial Board for its suitability as many changes take place over the period of time, subject to area of the study. Studies more than four years old are not entertained.

Original articles should normally report original research of relevance to rehabilitation sciences. The original paper should be of about 2000-2500 words excluding abstract and references. It should contain a structured abstract of about 250 words. Three to 10 keywords should be given for an original article as per MeSH (Medical Subject Headings). There should be no more than three tables or illustrations. The data should be supported with 20 to 25 references, which should include local as well as international references and should be from last 5 years.

Clinical Practice Article is a category under which all simple observational case series are entertained. The length of such article should be around 1500 - 1600 words with 15 - 20 references. The rest of the format should be that of an original article. KAP studies, Audit reports, Current Practices, Survey reports and Short Articles are also written on the format of Clinical Practice Article. Evidence based reports must have at least 10 cases and word count of 1000-1200 words with 10 - 12 references and not more than 2 tables or illustrations. It should contain a non-structured abstract of about 150 words. Short communications should be of about 1000 words, having a nonstructured abstract of about 150 words with one table or illustration and not more than five references. Clinical case

reports must be of academic and educational value and provide relevance of the disease being reported as unusual. Brief or negative research findings may appear in this section. The word count of case report should be 1200-1500 words with a minimum of 3 key words and non-structured abstract.

Review article should consist of critical overview/analysis of some relatively narrow topic providing background and the recent development with the reference of original literature. It should incorporate author's original work on the same subject. The length of the review article should be of 2500 to 3000 words with minimum of 40 and maximum of 60 references. It should have non-structured abstract of 150 words with minimum 3 key words.

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. Background ii. Objectives iii. Methodolgy iv. Results v. Conclusions vi. Key Words. 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.

MATERIALS AND 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 (PP-DPT) in Pakistan (Equivalence of 18 years of schooling/M. Phil as per HEC criteria). The college currently offering MS Programs in Orthopedic Manual Physical Therapy, Neuromuscular Physical Therapy, cardiovascular and Pulmonary Physical Therapy, Sports Physical Therapy and Speech language Pathology, along with PhD programs in Physical Therapy and Speech Language Pathology.

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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