

4TH REHAB AND ALLIED SYMPOSIA

14th - 16th May
2025

Empowering
Undergraduate Research



FACULTY OF REHABILITATION AND
ALLIED HEALTH SCIENCES ISLAMABAD

RIPHAH VISIONS

مُحَاسَبَةٌ
MUHASABAH
(Accountability)

إِتْقَان
ITQAN
(Pursuit of Excellence)

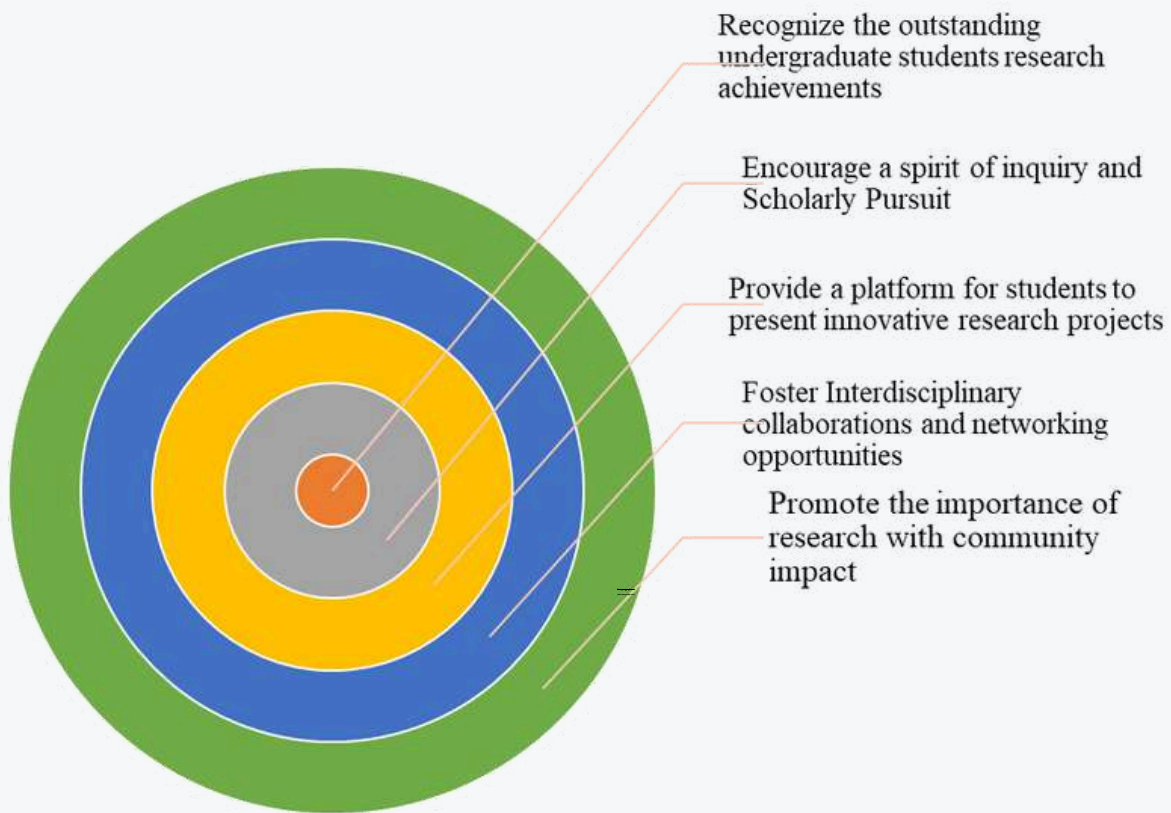
الْآخِرَةُ
AL-AKHIRAH
(Aakhirah Oriented
Decisions)

رَحْمَةٌ
RAHMAH
(Compassion)

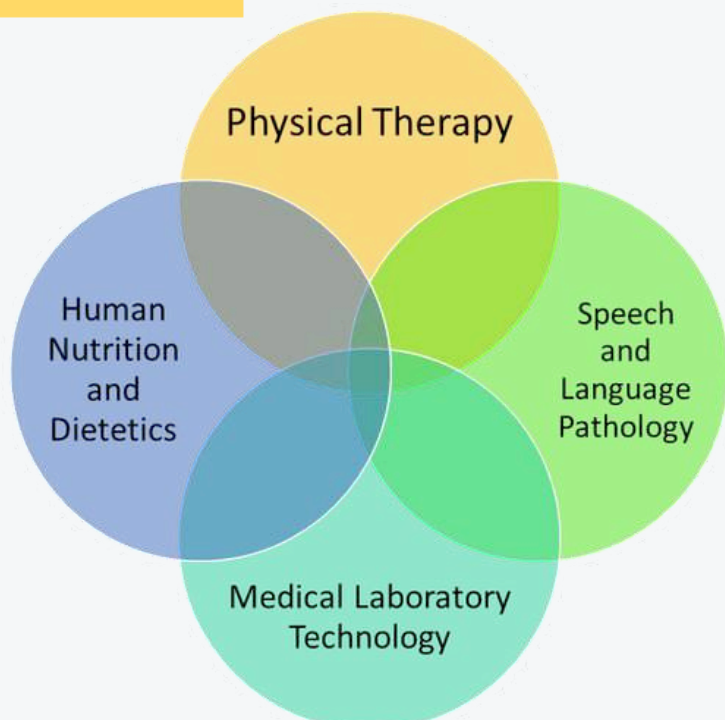
إِجْتِمَاعِيَّةٌ
IJTIMAIYYAH
(Team Work)

مُشَاوَرَةٌ
MUSHAWARAH
(Consultation & Harmony)

OBJECTIVES



RESEARCH THEMES



4TH REHAB & ALLIED SYMPOSIA

"EMPOWERING UNDERGRADUATE STUDENTS"



14Th - 16Th
MAY, 2025



OBJECTIVES:

- Recognize the outstanding undergrad students' research achievements
- Encourage a spirit of inquiry and scholarly pursuit
- Provide a platform for students to present innovative research projects
- Foster interdisciplinary collaborations and networking opportunities
- Promote the importance of research with community impact

RESEARCH THEMES:

- Physical Therapy
- Speech & Language Pathology
- Medical Laboratory Technology
- Human Nutrition & Dietetics

PROJECT AWARDS:

- Best Poster Presenter Award.
- Cash Prize and certificates for students.



Riphah International University Gulberg Green, Islamabad
Riphah International University Al-Mizan Campus, Rawalpindi

Jury of Scientific Committee



Dr. Sadaf Noveen

Dr. Sadaf Noveen is a dedicated and pioneering speech and language pathologist with extensive clinical and academic experience. She has completed her masters degree from Riphah International university and our Proud Alumni who is holding a PhD in Rehabilitation Sciences and currently serving as a head of department at National institute of Rehabilitation Medicine Islamabad. With a carrier spanning over three decades Dr. Sadaf has been instrumental in advancing the field of speech and language pathology in Pakistan.



Dr. Rabaab Zahra

Dr. Rabaab Zahra is a distinguished Professor, a renowned expert in the field of Microbiology. She holds a Ph.D. in Cell and Molecular Biology, serving as a Professor of Microbiology at Quaid-e-Azam University, Islamabad.. She plays a vital national role as the Chair of the Pakistan Society for Microbiology (PSM), Islamabad, and is the Country Lead for the BALANCE and BARNARDS projects—major international initiatives addressing antimicrobial resistance



Ms. Maimoona Waheed

Ms. Maimoona Waheed is joining us from Ibadat International University Islamabad with a strong academic and clinical experience. Her research focuses on functional food development, nutritional interventions and public health nutrition. She is committed to contribute for academic excellence and evidence based solutions for nutritional challenges.



Dr. Misbah Ghous

Dr. Misbah is an active researcher with 42 peer-reviewed publications, contributing significantly to the advancement of evidence-based physical therapy practices. Her work focuses on neuro-muscular rehabilitation, and integrative approaches to patient care



Dr. Fozia Batool

Dr Fauzia Batool, she holds DPT, PP-DPT from Riphah International University and currently pursuing her PhD, she is working as Assistant Professor in Department of Rehabilitation Sciences, Shifa Tameer-e-Millat University. She has 15+years of academic and clinical experience.

Next, we have with us Dr. Misbah Ghous; she is a distinguished physical therapy professional with over nine years of combined clinical and academic experience. She holds a Doctor of Physical Therapy (DPT), a Master of Science in Neuro-Musculoskeletal Physical Therapy (MSNMP), and a Postgraduate Diploma (PGD), and has further enhanced her expertise through various national and international certifications.

ORGANIZING TEAM

Chief Organizer

Prof. Dr. Huma Riaz

Faculty Organizers

- Dr. Kinza Anwar (DPT)
- Ms. Tehreem Ijaz (SLP)
- Dr. Sara Aabroo (DPT)
- Ms. Amaila Qaiser (MLT)
- Ms. Aiman Fatima (HND)

<div>4th Rehab & Allied Symposia</div> <div>Poster Competition 14th May 2025</div> <div>RIPHAH International University, Gulberg Green Campus</div>		
Program Layout Day 1		
Session Time	Title	Moderator
OPENING SESSION		
10:00 AM - 10:05 AM	Tilawat (Recitation)	Dr Abrish Habib
10:05 AM - 10:10 AM	National Anthem	
10:15 AM- 10:25 AM	Program briefing by Chief Organizer	
10:25 AM - 10:35 AM	Address by Prof Dr Qamar Mehmood	
10:35 AM - 10:45 AM	Welcome Note by Principal FRAHS	
10:45 AM - 11:00 AM	Shield Distribution to the Guests	
SCIENTIFIC SESSION -DPT		
Session Chair		Moderator
(Parallel) -Poster Presentations	Session I 9:00 – 11:40 AM	Prof. Dr Huma Riaz & Dr. Suman Sheraz
	Session II 9:00 – 11:40 AM	
	11:45-12:00 AM Best Poster DPT Winner Announcement	
12:15-1:00 PM Refreshment and Photographs		

<p align="center">4th Rehab & Allied Symposia</p> <p align="center">Poster Competition 15th May 2025</p> <p align="center">RIPHAH International University, Gulberg Green Campus</p>		
<p align="center">Program Layout Day 2</p>		
Session Time	Title	Moderator
<p align="center">CLOSING SESSION</p>		
12:00 PM - 12:05 PM	Tilawat (Recitation)	Ms. Tehreem Ijaz
12:05 PM - 12:10 PM	National Anthem	
12:15 PM- 12:25 PM	Program briefing by Chief Organizer	
12:25 PM-12:35 PM	Address by Chief Guest Prof. Dr. Anis	
12:35 PM - 12:45 PM	Winner Announcement by Prof Asghar Khan	
12:45 PM- 1:00 PM	Award Distribution ceremony <ul style="list-style-type: none"> • Winners/ cash prize/certificate • Jury members Shield • Chief Organizer shield • Organizers Certificates 	
1:30-2:00 PM	Refreshment and Photographs	
<p align="center">SCIENTIFIC SESSION</p>		
	Session Chair	Moderator
(Parallel) -Poster Presentations	Scientific Session SLP 10:00 AM – 11:45 AM	Dr. Sadaf Noveen Prof. Dr. Humaira Shamim Kiyndai
	Scientific Session MLT 10:00 – 11:45 AM	
Scientific Session HND 10:00-11:45 AM		Dr. Rabaab Zahra Dr. Aleena Ramzan Ms. Farwa Tariq Dr. Rakia Anam

DEPARTMENT OF PHYSICAL THERAPY

Section- A

Group 1

CORRELATION OF MUSCLE PERFORMANCE, FATIGUE AND QUALITY OF LIFE IN CHRONIC LIVER DISEASE PATIENTS

Background/Objective:

Chronic liver disease (CLD) is an emerging condition that affect millions of people globally and almost 50% of population in Pakistan. Chronic liver diseases not only have systemic complications but also cause musculoskeletal dysfunctions like fatigue, reduced muscle performance and QoL. This study explores the correlation of muscle performance and fatigue with quality of life in patients with chronic liver disease.

Methods:

A cross-sectional correlational study was conducted including 70 participants using non-probability convenience sampling. Data was collected from different hospitals of twin cities. Patients aged 20-60years with a confirmed diagnosis of CLD for at least 6 months or more were included, who were clinically stable and ambulatory. Patients with hepatic encephalopathy, decompensated liver disease, wrist surgery, or any psychiatric conditions were excluded. Muscle performance was assessed using hand-held dynamometer, 30 sec sit to stand test and time up and go test. Fatigue was measured by Fatigue Severity Scale (FSS) while QoL was evaluated using SF-12 questionnaire. Statistical analysis was done by using SPSS software version 25.

Results:

Multiple regression analysis showed statistically significant relationship between physical health with fatigue and muscle performance ($R = 0.67$, $p < 0.001$) indicating that muscle performance and fatigue cause about 45% variance in physical health component of QoL. Linear regression showed that mental health component of QoL is predominantly and negatively correlated with fatigue with a variance of 22% ($r = 0.47$, $p < 0.001$).

Conclusion:

These results highlight that muscle performance and fatigue positively impacts the physical health in CLD patients. While fatigue has a negative correlation with mental health component of quality of life.

Key Words: Fatigue, Life Quality, muscle strength, Dynamometer, liver disease, physical fitness

Group 2**MENSTRUAL HEALTH SEEKING BEHAVIORS AMONG ADOLESCENT FEMALES IN RURAL AND URBAN AREAS****Background:**

Menstrual health seeking behaviors are the actions and behaviors of an individual or female regarding menstrual health such as knowledge searching about menstruation, intentions of taking care of themselves, desire to maintain hygiene during menstrual cycle, feel ease in talking about issues regarding menstrual health and control over mood swings. Objectives of the study were to determine the menstrual health seeking behaviors and to compare the rural and urban findings of the adolescent females.

Methodology:

Data was collected from 384 participants from schools of rural and urban areas of Rawalpindi, Taxila and Fateh Jang. Non probability convenience sampling was used. Data was analyzed by using IBM SPSS. The questionnaire used was Menstrual Health Seeking Behaviour Questionnaire (MBSHQ-42).

Result:

Mean ages of participants and the mean age of menarche is 14.6 ± 1.4 and 12.1 ± 2.3 respectively. Majority of the participants fall in the moderate category in all factors of the questionnaire. Study revealed the significant rural-urban difference in perceived behavior control (0.010), subjective norms (0.000) and perceived parental control (0.033) in menstrual health seeking behaviors. Rural participants showed higher mean scores in all factors. No significant differences were found in attitude, behavioral intentions and menstrual health behaviors.

Conclusion:

Overall menstrual health seeking behaviors are relatively better in all three areas. Surprisingly, study found the significant rural-urban differences in perceived behavior control, subjective norms and perceived parental control with higher scores in rural areas.

Keywords:

Menstruation, Menstrual health, menstrual health seeking behaviors, menstrual beliefs, adolescent females, urban, rural

GROUP 3**FREQUENCY OF OBESITY AND IT'S ASSOCIATION WITH BLOOD PRESSURE AND RISK OF CARDIOVASCULAR DISEASE IN AIDDLE AGE ADULTS**

Background: Obesity is a major global health problem and a big contributor to diseases that aren't contagious. In middle-aged adults, there's a strong connection between being obese and developing metabolic and heart issues. Blood pressure complications is common in those with a higher BMI, which further raises their risk of heart diseases like heart attacks, strokes, and heart failure. As obesity becomes more widespread, it's essential to figure out how it relates to blood pressure and heart risk in this age group to develop good prevention and treatment plans.

Objective: This study aims to determine the frequency of obesity and cardiovascular disease (CVD) risk among middle-aged adults. It further seeks to examine the association between obesity and blood pressure

Methodology: This was a cross sectional study with a sample size of 1004 middle-aged adults (35–60 years), selected through convenience sampling in community settings across the twin cities. Data were collected using standard tools for measuring height, weight, blood pressure, and cardiovascular risk. BMI was calculated, and participants' blood pressure and CVD risk were assessed using validated questionnaire. Data was analyzed using SPSS version 24.

Results: Participants' average BMI of 26.16 and mean age of 41.05 years suggested a tendency toward overweight. 30% were obese. 56.4% had a moderate risk of CVD, and about 47.7% were overweight. Both systolic ($r = 0.4$, $p < 0.01$) and diastolic blood pressure ($r = 0.3$, $p < 0.01$), as well as CVD risk

($r = 0.2$, $p < 0.01$), were found to be significantly correlated with BMI. Lifestyle characteristics that were very common included stress (74%) and sedentary behavior (74%).

Conclusion: According to the study, middle-aged adults who are obese and overweight have a moderate cardiovascular risk are quite common. The significance of early screening and lifestyle changes is highlighted by the positive correlations found between blood pressure, BMI, and CVD risk. These results highlight the need for immediate community-based health programs to prevent cardiovascular problems in the future.

Keywords: Obesity, Blood pressure, cardiovascular risk.

GROUP 4

ASSOCIATION OF FOOT POSTURE AND EXTRINSIC MUSCLE STRENGTH WITH FUNCTIONAL ABILITY IN YOUNG ADULTS

Background/Objective

Prior research has primarily concentrated on intrinsic muscles, ignoring the possible significance of extrinsic muscles. Numerous research has been done on school-age children and the elderly population, with the exception of younger adults. This study will assist people in improving their foot posture, extrinsic muscle strength, and functional ability because existing research will concentrate on these factors and how they may impact younger adults' foot posture and their relationship to functional ability.

Methods

A cross sectional study included 385 participants, from January to July 2025 in the twin cities using non-probability convenience sampling was conducted. A total of 385 participants aged 18–30 years were selected based on inclusion and exclusion criteria. Data collection involved the Foot Posture Index (FPI-6), ankle dynamometer for muscle strength, and the Foot Function Index (FFI). Informed consent was obtained and ethical approval secured. Data were analyzed using SPSS v22, with Chi-square tests applied to assess associations between foot posture, muscle strength, and functional ability

Results

A total of 385 individuals were evaluated; their mean age was 23.19 ± 3.48 years, and 57.9% of them were men. According to dynamometer measurements, the left foot's plantarflexion strength was higher

than the right. Analysis of foot posture showed a tendency toward pronation in the left foot and supination in the right. Tests of functional strength showed great success rates, especially in single-leg balance (96.4%). With a mean overall Foot Function Index (FFI) score of 59.22 ± 7.10 , the condition of the feet was considered moderate. Correlation analyses revealed weak connections between calcaneal eversion and specific FFI subscales (stiffness and activity limitation), but no significant relationships between dorsiflexion strength, foot posture, or strength test performance and self-reported foot function.

Conclusion

The study found no significant linear correlation between foot strength or posture and self-reported foot function.

Foot Posture Index (FPI) and arch height showed no strong associations with FFI subcomponents.

Minor exceptions were noted with right-side calcaneal eversion, but not enough to indicate a consistent pattern.

These results suggest foot strength and posture alone may not fully explain perceived foot function.

A more comprehensive assessment approach is recommended for evaluating overall foot health and quality of life.

Keywords

Foot Posture, Foot Arch, foot strength

Group 5

PHYSICAL FITNESS LEVEL AND 24-HOUR MOVEMENT BEHAVIOURS AMONG THE FEMALE ADULTS

Background:

Physical fitness plays a crucial role in overall health, affecting both physical and mental performance. Moreover, there is a lack of literature on 24-hour movement behaviours among young adult females in Pakistan.

Objective:

To determine the levels of physical fitness and 24-hour movement behaviours in young adult females.

Method:

A cross-sectional survey was conducted at Riphah International University and Quaid-e-Azam University from September 2024 to March 2025. A total of 398 female participants, aged 18–30 years and free from chronic illnesses, were recruited through non-probability convenience sampling. Data were collected using the 24-Hour Movement Behaviour Questionnaire, a subjective physical activity questionnaire, and the Alpha Fitness Battery, which evaluated BMI, waist circumference, handgrip strength, core strength, balance, agility, flexibility, and cardiovascular fitness. Data analysis was performed using SPSS version 26.

Results:

Regarding 24-hour movement behaviour, participants spent an average of 1.15 ± 0.5 hours in physical activity, 8.7 ± 1.1 hours sleeping, and 13.6 ± 1.2 hours engaged in sedentary behaviours.

In terms of physical fitness, 62.3% of participants fell into the overweight category, and 49.3% were at moderate risk of cardiovascular disease. Additionally, 60.8% had moderately fit balance, 30.8% demonstrated poor agility, 45.5% had below-average grip strength, and 76.8% had moderately fit core strength. The majority of participants exhibited average flexibility in both upper and lower limbs.

Physical activity duration showed a positive correlation with grip strength ($r = 0.115$, $p = 0.022$) and jump-and-reach performance ($r = -0.114$, $p = 0.023$). Sleep duration was negatively correlated with one-leg stand performance ($r = -0.143$, $p = 0.004$), neck mobility ($r = -0.130$, $p = 0.009$), jump-and-reach performance ($r = -0.184$, $p < 0.001$), and grip strength ($r = -0.106$, $p = 0.035$). Furthermore, sedentary behaviour was negatively correlated with jump-and-reach performance ($r = -0.128$, $p = 0.010$) and grip strength ($r = -0.100$, $p = 0.046$).

Conclusion:

The findings indicate that sedentary behaviour dominates the daily routine of young adult females, followed by sleep and limited physical activity. Overall physical fitness were compromised in waist circumference, grip strength, core strength, balance, agility, and cardiovascular fitness. Sedentary lifestyle and prolonged sleep showed weak but significant negative associations with balance, flexibility, neck mobility and grip strength

Keywords: 24-hour movement behavior, female adults, Physical fitness, sedentary behavior, alpha battery

Group 6

Relationship of Orthostatic hypotension with cognitive impairment in middle-age population in twin cities.

Background: Middle-aged adults may experience orthostatic hypotension, having significant prevalence in middle-aged population. OH is characterized by a significant drop in blood pressure when transitioning from lying down to standing, caused by an insufficient compensatory response. This leads to reduced blood flow to the brain, and chronic hypo-perfusion has been linked to cognitive decline.

Objectives:

To determine the frequency of orthostatic hypotension in middle-aged population.

To determine the association with cognitive functions among middle-aged individuals.

Methodology: This correlational study was conducted on 194 middle-aged individuals from general localities and old-age homes of twin cities. Participants having age group of 40-65 of both genders with BMI below 30 and those volunteered were included, selected through non-probability convenience sampling. Individuals with a history of recent surgery, diagnosed neurological disorders, cardiovascular disease, liver conditions, or inflammatory diseases were excluded from the study. Cognitive function was measured using BCAT and MoCA; orthostatic hypotension was assessed via ASTT, OSBPT, and OHSQ.

Results: Out 194 participants the mean age was 53.5 ± 6.69 years, 88(45.4%) were female and 106(54.6%) were male, are involved in study. The results showed that ASTT, OSHQ and OSBPT are significant (<0.05) in BCAT model. Overall, ASTT showed mild, OSBPT showed moderate but not significant. OHSQ (2.0%) had a minimal effect with marginal significance ($p = 0.066$).

Conclusion: This study concluded that orthostatic hypotension is a prevalent condition among middle-aged adults and showed a weak inverse relationship with cognitive functions. These findings suggest that blood pressure regulation could impact cognitive health, underscoring the importance of early detection and management.

Keywords:

Attention, Blood Pressure, Cognitive Decline, Cognitive Impairment, Memory, Middle-Aged Population, Orthostatic Hypotension.

Group 7**ASTHMA CONTROL AND HEALTH RELATED QUALITY OF LIFE IN ADULT ASTHMATIC PATIENTS “****BACKGROUND:**

Asthma is a chronic respiratory disorder characterized by airway inflammation and airflow restriction, which cause symptoms such as shortness of breath, coughing, and chest tightness. Poor asthma control can have a major influence on health-related quality of life (HRQoL), limiting physical activity and rising psychological and emotional stress. Despite the increasing prevalence of asthma worldwide, there has been limited recent research into asthma control in twin cities and its influence on daily living, particularly in adult populations.

OBJECTIVES:

The objectives of this study were to evaluate the level of asthma control among twin city in asthma patients and to evaluate their health-related quality of life (HRQoL). Additionally, the study aimed to examine the relationship between physical activity levels, impact of medication adherence and other asthma control-related parameters that influencing asthma.

METHODOLOGY:

A descriptive cross-sectional analytical study was conducted on 400 adult asthma patients over a one-year period following research board approval. Non-probability convenience sampling was employed for participant selection. Participants were required to be over 20 years old, diagnosed with asthma for at least six months, and using at least one prescribed asthma medication. Exclusion criteria included patients with chronic respiratory diseases or significant comorbidities. Data were gathered using standardized tools: Asthma Quality of Life Questionnaire (AQLQ), International Physical Activity Questionnaire (IPAQ), Morisky Medication Adherence Scale (MMAS) and Asthma Control Test (ACT). The Chi-square test was used to analyze associations between asthma control, medication adherence, physical activity, and health-related quality of life

RESULTS:

Out of 400 participants, 78.8% had poorly controlled asthma, with most reporting low physical activity and high impairment in quality of life. Among those with poorly controlled asthma, 58.1% had low to moderate medication adherence. The only 6.2% had well-controlled asthma and showed a high level of medication adherence (92%). Poorly controlled asthma was associated with severe

impairment in quality of life. Chi-square tests showed significant associations between asthma control($P<0.05$) with medication adherence, physical activity, and quality of life.

CONCLUSION:

The study emphasizes the significance of asthma management and its direct impact on quality of life. This study highlights that addressing behavioral and lifestyle factors is essential for improving asthma outcomes. These findings suggest that improving physical activity and medication adherence may enhance asthma control and overall quality of life. Improving patient education in the future and conducting regular asthma control assessments may help to improve asthma management and quality of life in adults. The study also emphasizes the importance of additional research in this area to better understand asthma control and its broader implications.

Group 8

COMPARISON OF MUSCULOSKELETAL HEALTH AND FATIGUE AMONG PHYSICAL THERAPY FINAL YEAR UNDERGRADUATES AND POSTGRADUATES

Background/Objective

Musculoskeletal health describes as intact, efficient and optimal functioning of muscles, bones, joints, and surrounding connective tissue in a body. Fatigue is a state of lethargy, exhaustion, lack of energy and decreased capability for physical and mental activity. The main objective of this study was to find out the comparison between musculoskeletal health and fatigue among physical therapy final year undergraduates and postgraduates.

Methods

This study was a comparative cross-sectional study, conducted at Riphah International University (RIU), Foundation University (FUCP) Islamabad Campus, and Yusra Medical and Dental College. The study included physical therapy final year undergraduates and postgraduates with age of participants was between 20-35 years. Duration of study was one year after approval of research committee. Sample size of the study was 438 calculated through RAO software. The sampling technique was non-probability, convenience sampling. Musculoskeletal health questionnaire (MSK-HQ), and Multidimensional assessment of fatigue (MAF) scale was used as a screening tool in this study.

Results

The results showed that there was statistically significant difference in MSK-HQ scores between the 2 groups, $p < 0.001$. The mean value of 219 undergraduates is 273.54 as compared to 219 postgraduates 165.4 (table 04). While fatigue mean value of final year postgraduates was 177.03 and final year undergraduates was 261.97 (table 05).

Conclusion

The results concluded that final year postgraduates are linked with poorer musculoskeletal health and higher level of fatigue compared to the final year undergraduates.

Keywords

Physical therapy, Musculoskeletal pain, Fatigue, Range of motion

Group 9

FREQUENCY OF OVERPRONATION IN CRICKET PLAYERS AND ITS ASSOCIATION WITH LOWER LIMB INJURIES

Background:

The frequency of overpronation among cricket players, underscores the importance of addressing this biomechanical issue to mitigate the risk of lower limb injuries. Moreover, there is a lack of literature on overpronation in cricket players and its association with lower limb injuries.

Objective:

- To find out Frequency of over pronation in cricket players.
- To find out its association with lower limb injuries.

Method:

After obtaining approval for the synopsis from the Riphah Ethical Committee, permission was sought from the respective cricket academies and clubs. Informed consent was then obtained from all participants to ensure they understood the study's purpose, procedures, potential risks, and benefits. Demographic data, including age, gender, height, weight, were collected to characterize the participant group. Subsequently, the Navicular Drop Test (NDT) was performed. Participants were educated about the procedure, its significance, and potential outcomes. Data from the test were recorded. Following the NDT, participants completed a

checklist to provide feedback on their experience and understanding of the test. Data analysis was performed using SPSS version 26.

Results:

Overpronation assessment showed that 85.4% of participants had negative overpronation scores, with most in the 4–6 range (48.3%). Positive overpronation was present in 14.6%, mainly in the 10–12 score range (10.3%).

As indicated by the chi-square test results. Conditions such as hallux valgus, metatarsalgia, shin splints, patellofemoral pain syndrome, knee pain, and lumbopelvic hip complex issues show the strongest correlations, with P-values of 0.000, suggesting that individuals with overpronation are highly likely to develop these disorders. Overpronation was found to be significantly associated with multiple lower extremity conditions. Specifically, the p-values were as follows: plantar fasciitis ($p = 0.010$), tarsal tunnel syndrome ($p = 0.047$), hallux valgus ($p = 0.000$), metatarsalgia ($p = 0.000$), stress fracture ($p = 0.013$), posterior tibial tendon dysfunction ($p = 0.002$), shin splints ($p = 0.000$), anterior compartment syndrome ($p = 0.001$), patellofemoral pain syndrome ($p = 0.000$), knee pain ($p = 0.000$), and lumbopelvic hip complex disorders ($p = 0.000$).

Conclusion:

The frequency of overpronation amongst cricket players in Rawalpindi and Islamabad was found to be from a sample of 377 players. Most of the athletes reported using shoes with minimal arch support and improper fitting. The frequency and percentage of overpronation of the foot across different degrees were 5° (18.6%), 6° (18.3%), and 7° (15.6%). Degrees above 10° (11°, 12°, 13°, 14°, and 15°) were considered as overpronation. positive overpronation was identified in 55 participants (14.6%). Among these, 10.3% scored in the 10–12 range, while 4.2% were in the 13–15 range. Additionally, there was notable association between overpronation and increased incidence of lower limb injuries. Overpronation is significantly associated with several lower limb conditions, including tarsal tunnel syndrome, hallux valgus, metatarsalgia, stress fractures, posterior tibial tendon dysfunction, shin splints, anterior compartment syndrome, patellofemoral pain syndrome, knee pain, and lumbopelvic hip complex disorders. These results suggest that overpronation may be a contributing factor in the development of these musculoskeletal issues, particularly in the foot, ankle, and knee regions.

Keywords: Overpronation/ hyper pronation, cricket, lower limb injuries, Navicular drop test.

Group 10

RELATIONSHIP OF HAMSTRING TIGHTNESS WITH FOOT POSTURE AND AGILITY AMONG HEALTHY INDIVIDUALS

Background/Objective

Hamstring tightness causes compensatory movements in lower limb, affecting foot posture and ultimately agility. This study aims to determine the relationship of hamstring tightness with foot posture and agility among healthy individuals and to examine the influence of gender on these variables

Methods

A cross-sectional study was conducted on participants who met the inclusion criteria of being 18–30 years old, including both males and females, and having hamstring tightness.

Hamstring tightness was assessed using the Active Knee Extension (AKE) test, foot posture was evaluated using the Foot Posture Index (FPI-6), and agility was measured using the T-Test.

Results

This study included 386 healthy participants (52.1% females, 47.9% males). The average BMI was 21.77 ± 4.13 . The mean right active knee extension was $32.15 \pm 4.65^\circ$, and the left was $32.35 \pm 4.67^\circ$. A weak but statistically significant correlation was found between right hamstring tightness and right foot posture ($r = 0.10$, $p = 0.05$). However, no significant correlations were observed between hamstring tightness and agility or between foot posture and agility ($p > 0.05$). Correlation between hamstring tightness and gender showed that females demonstrated less hamstring tightness on the left side compared to males. A strong correlation was found between agility and gender, indicating that males performed significantly better in agility than females.

Conclusion

The study concluded that there is a weak yet significant relationship between hamstring tightness and foot posture specifically in the right leg, suggesting a possible biomechanical connection. Females showed less left sided hamstring tightness while males showed significantly better agility performance.

Keywords

Hamstring tightness, Foot posture, Agility, Healthy individuals, Biomechanics.

Group 11

IMPACT OF STRESS, FATIGUE, AND SLEEP QUALITY LEADING TO MUSCULOSKELETAL PAIN IN NURSES

Background: Stress, fatigue, and sleep disturbances have been known as common precursors of pain in healthcare professionals. Yet, few studies have evaluated the correlation of all these factors with musculoskeletal pain in nursing staff.

Methodology: This correlational study was conducted to determine the relationship between stress, fatigue, and sleep disturbance on musculoskeletal pain in nurses and to identify the frequent areas of concern. The data for the respective study were collected from the hospitals of the twin cities. Work-related stress was assessed using the Work Stress Questionnaire, fatigue using the Multidimensional Fatigue Inventory (MFI), sleep disturbance using the Sleep Quality Scale (SQS), and the Nordic Questionnaire for the assessment of musculoskeletal pain. A total of 747 nurses provided responses that were included in the study.

Results: The most frequent sites of pain reported in the last 12 months and the last 7 days were low back pain (41.9%) and neck pain (40%). For stress, it was found that a significantly strong positive correlation exists, whereas fatigue had a weak positive link to neck pain but a weak negative correlation with low back, possibly due to altered activity levels or reporting patterns. Unexpectedly, sleep disturbance was a bidirectional feedback loop and was negatively correlated with low back pain but strongly and significantly (negatively) associated with neck pain.

Conclusion: This study illustrates the relationship between stress, fatigue, and sleep quality with musculoskeletal pain among nurses. The hospital management should introduce comprehensive interventions for nursing staff, including ergonomic management, stress management, and better policies to improve their general well-being.

ABSTRACT (SECTION B)

Group 1:

FREQUENCY OF POST STROKE DEPRESSION AND ITS ASSOCIATION WITH REHABILITATION ADHERENCE AND THEIR QUALITY OF LIFE.

Background: Post-stroke depression (PSD) is a common consequence of a stroke and affects as many as 50% of survivors. PSD can complicate rehabilitation outcomes and affect quality of life. There is numerous biological, psychological, and social aspects contributing to PSD.

Objective: The aim of this study was to explore rates of PSD and the relationship between these depression symptoms, rehabilitation adherence, and quality of life in stroke survivors.

Methods: A cross-sectional study of 313 post-stroke patients (ages 45-65) was designed using convenience sampling. Patients with an ischemic or hemorrhagic stroke greater than six months prior and a mini mental state exam (MMSE) score between 18-23 were included. Depression was measured with the Beck Depression Inventory (BDI), rehabilitation adherence was measured using the General Rehabilitation Adherence Scale (GRAS), and quality of life was measured with the Stroke-Specific Quality of Life Scale (SSQoL).

Procedure: Ethical approval was granted by appropriate committee. Stroke patients were sampled via convenience sampling from hospitals in Rawalpindi, Islamabad, and Wah Cantt. The participants were screened according to inclusion criteria, with informed consent provided and confidentiality maintained throughout the study. There was no ethical harm.

Results: The 313 participants had a rate of 72.2% with some degree of depression, those with severe depression (11.9%) who reported good rehabilitation adherence. The BDI severity of depression was negatively correlated with rehabilitation adherence and SSQoL scores.

Conclusions: Rates of PSD among stroke survivors were found to be alarmingly high, with significant relationships shown regarding poor rehabilitation participation and lower quality of life. Interventions focused specifically on managing PSD will be necessary to improve stroke recovery outcomes.

Key words:

STROKE, DEPRESSION, REHABILITATION ADHERENCE, QUALITY OF LIFE.

Group 2:

COMPARISON OF RISK OF FALL IN STROKE PATIENTS WITH AND WITHOUT SCAPULAR DYSKINESIA

Background/Objective

Stroke is considered as a major cause of death and disability and changes the normal physiological process of the human body, leading to muscular imbalance which causes balance impairments. Scapular dyskinesia after stroke causes more balance deficit as compared to participants without scapular dyskinesia.

Methods

The comparative cross-sectional study design was used and took place from May 2024 to June 2025. Non-probability sampling technique was used in this study and data information was collected from 206 post-stroke patients of different hospitals. The study included both males and females of the age group from 45 to 65 years, with and without scapular dyskinesia with chronic stroke >12 weeks. A semi-structured questionnaire was used along with the Berg Balance Scale and Lateral Scapular Slide Test. Data was analyzed by using the Mann-Whitney U test from SPSS version 25.

Results

In this comparative cross-sectional study, the total participants were 206, the mean \pm SD of age was 57.4 ± 7.19 years (age range was 40-65), out of which (122) 59.2% were male stroke participants and (84) 40.8% were female stroke participants. The overall frequency percentage of ischemic stroke was 134 (65%) and 72 (35%) was with hemorrhagic stroke. Similarly, frequency of participant's site of stroke was calculated: 109 (52.9%) participants have stroke of right side while 97 (47.1%) participants have stroke of left side.

Out of 206 patients, 148 (71%) participants have no previous history of stroke, 24 (12%) participants have history of TIA while 33 (16%) participants have no history of stroke. The frequency of arterial involvement was calculated and out of 206 participants, 62 (30.1%) participants showed ACA involvement, 131 (63.6%) participants showed MCA involvement while 13 (6.3%) patients showed PCA involvement. Frequency of participant's family history of stroke was calculated and out of 206 participants, 119 (57.8%) participants have no family history of stroke while 87 (42.2%) participants have positive family history of stroke.

Berg Balance Scale (BBS) was used to assess static and dynamic balance of post-stroke patients, the frequency (%) of BBS: 51 (24.8%) participants were at low risk of fall, 62 (30.1%) were at medium risk of fall while 93 (45%) were at high risk of fall.

The comparison of the Berg Balance Scale (BSS) score between two groups based on the Lateral Scapular Slide Test (LSST) by employing the Mann-Whitney U test and it showed significant ($P < 0.001$).

Conclusion

Results showed that participants with scapular dyskinesia showed severe balance deficit compared to participants without scapular dyskinesia. Scapular Dyskinesia had significant

impact on balance which interferes with routine tasks, quality of life and overall functionality in the patients living with chronic stroke.

Keywords

Stroke, Scapular Dyskinesia, Ischemic, Hemorrhagic, Fall risk, Balance, Muscle Imbalance.

Group 3:

ASSOCIATION OF SUBOCCIPITAL MUSCLE TIGHTNESS AND TOE GRIP STRENGTH IN UNIVERSITY STUDENTS

Background

Muscles in the human body are linked through fascial chains creating structural continuity from toe to the suboccipital muscle with interconnected fascia, increased tension and reduced flexibility in one area of superficial backline will affect other regions. Sub occipital muscles are rectus capitis posterior major, rectus capitis posterior minor, obliquus capitis superior, obliquus capitis inferior muscle. Toe grip muscles include flexor pollicis brevis, flexor pollicis longus, lumbricals, flexor brevis, and flexor longus.

Objective

To determine the association of suboccipital muscle tightness and toe grip strength in university students.

Methods

A Cross-sectional study in which female participants of age group 18 – 26 with suboccipital tightness were included in study. Participants having neck pain (NPRS range from 3-5). The tools used for assessment are toe grip dynamometer for measuring grip strength, a goniometer to assess cervical ROM and a self-structured questionnaire is filled by the participants having suboccipital muscle tightness.

Results

377 participants with response rate of 100 percent were included with a mean age of 20.67 years (± 1.69) and mean body weight of 54.29 kg (± 10.39). Our study results show non-significant weak negative correlation between cervical ROM and toe grip strength in university students. Greater toe grip strength was decreased in 74.3% of participants. Lesser toe grip strength was decreased in 62.1%.

Conclusion

On the basis of result it is concluded that there may be a slight trend indicating that increased suboccipital tightness could be associated with decreased toe grip strength.

Key words: Superficial back line, suboccipital muscles, toe grip strength, toe grip dynamometer.

Group 4:

FREQUENCY OF OSTEITIS PUBIS AND ITS ASSOCIATED RISK FACTORS AMONG PREGNANT FEMALES

Background/Objective:

Osteitis pubis is a non-infectious inflammation of the pubic symphysis, often caused by repetitive stress or trauma. Although commonly seen in athletes and individuals undergoing pelvic surgeries, its prevalence among pregnant females experiencing increased stress on pelvic joint due to growing fetus and hormonal changes affecting the laxity of the joints is not well studied.

This study aimed to determine the frequency of osteitis pubis among pregnant women. It also explored associated risk factors such as ligamentous laxity, mechanical stress, and changes in physical activity that may contribute to inflammation of the pubic symphysis during pregnancy.

Methods:

A one-year cross-sectional study was conducted on 384 pregnant women aged 20–40 years, experiencing pelvic or groin pain. Participants were selected through non-probability convenience sampling from hospitals and clinics in the twin cities. Those with unrelated pelvic trauma, inflammatory conditions, or language barriers were excluded. Data were collected using a self-structured questionnaire and clinical tools, including the Pubic Spring Test and the Numeric Pain Rating Scale (NPRS). Reliability was established through a high Cronbach's alpha score, and data analysis was performed using SPSS version 27.

Results:

Among participants, 30.7% tested positive for osteitis pubis using the Pubic Spring Test. Most were aged 26–30 years (65.6%), multiparous, and in their second (35.2%) or third (33.6%) trimester. Although 55.5% reported no pubic pain, 24% experienced pain during specific activities. Physical inactivity was common (55.5%), and 42.4% had not received any treatment. Significant associations were found between osteitis pubis and factors such as number of pregnancies, pain severity, sleep disturbances, gait changes, and activity limitations.

Conclusion:

The frequency of osteitis pubis in pregnant women was less than 50%. It was more common in the later stages of pregnancy, particularly among multiparous women aged 26–30 years. Associated factors included physical inactivity, functional limitations, and discomfort during daily activities and sleep.

Group 5:

KNOWLEDGE, ATTITUDE AND PRACTICES AMONG ADOLESCENT FEMALES RELATED TO MENSTRUAL HYGIENE

Background:

In public health, menstrual hygiene is frequently disregarded, particularly in developing nations. This study investigated teenage girls' knowledge, attitudes, and behaviours (KAP) on menstrual hygiene in Abbottabad, Murree, and rural Kashmir.

Methods:

Using a structured questionnaire, 385 females between the ages of 13 and 19 participated in a cross-sectional study. SPSS v.20 was used to analyse the data.

Findings:

The majority of girls learnt about menstruation from their moms, and the average age was 15.4 years. Sixty percent thought bathing should be avoided during periods, while just forty-seven percent knew before menarche. 25.2% continued to use cloth, despite 63.6% using disposable pads. Access to sanitary items was impacted by both economical and cultural constraints

Conclusion:

There are major gaps in knowledge and safe menstrual practices. Awareness programs and affordable products are needed, with support from families, schools, and healthcare providers.

Keywords:

Menstrual hygiene, adolescent girls, knowledge, attitude, practice, Pakistan

Group 6:

FREQUENCY OF LATERAL EPICONDYLITIS AND ITS ASSOCIATED FACTORS AMONG CHEFS IN TWIN CITIES

Background: Lateral Epicondylitis (LE), commonly known as tennis elbow, is a prevalent musculoskeletal condition, particularly among individuals engaged in repetitive upper limb tasks. In the culinary profession, chefs are continuously exposed to repetitive and forceful movements, increasing the risk of developing LE. Contributing factors such as smoking, comorbidities, past injuries, and dominant hand overuse may influence its onset and severity.

Objective: To determine the frequency of Lateral Epicondylitis and identify its associated factors among chefs.

Methods: This analytical cross-sectional study was conducted across restaurants, cafés, and hostels in the twin cities. A total of 377 chefs were included in the study. Data were collected through a structured questionnaire in which participants self-reported symptoms and results of clinical tests (Cozen's and Mill's) to assess the presence of Lateral Epicondylitis and associated risk factors. The analysis was performed using SPSS version 27.

Results: Among 377 chefs, 100 (26.5%) were diagnosed with Lateral Epicondylitis based on clinical criteria. Of these, 81% had involvement of the dominant hand. Smoking history was present in 39% of LE cases, 27% reported previous upper limb injury, and 34% had comorbidities such as diabetes or hypertension. Pain during repetitive tasks was frequently reported.

Conclusion: This study concluded notable findings regarding the frequency of Lateral Epicondylitis (LE) among chefs across the twin cities. Several risk factors were frequently observed among LE patients, including smoking, comorbidities (e.g., hypertension and diabetes), and dominant hand use. In contrast, a lower frequency of BMI and sleep duration, previous upper limb injuries and participation in recreational activities appeared in diagnosed chefs with LE.

Keywords: Cumulative Trauma Disorders, Musculoskeletal Diseases, Risk Factors, Tennis Elbow, Workload

Group 7:

"CURRENT PRACTICES, PERCEIVED FACILITATORS AND BARRIERS FACED BY PHYSICAL THERAPISTS IN MANAGEMENT OF ANTEPARTUM AND POSTPARTUM CARE"

Background: Physical therapists play a crucial role in managing antepartum and postpartum care. Common approaches in physical therapy for antepartum and postpartum care focus on maintaining normal pregnancy, delivery, and postpartum recovery. This study seeks to determine the current practices of physiotherapists regarding antepartum and postpartum disorders, the most common interventions used by physical therapists, perceived barriers that hinder the effective care and perceived facilitators that enhance effective care.

Methods: A cross-sectional study was conducted in hospitals and clinics of Rawalpindi and Islamabad and data was collected from 280 female physiotherapists aged from 24 to 39. Participants must have at least DPT degree and actively participating in clinical setting for

minimum 2 years. While physio technicians and undergraduate trainees are excluded from the study. The data collection process involved the use of literature derived validated questionnaire. Section 1 of questionnaire comprised of demographics, section 2 comprised current practices, section 3 comprised of perceived barriers in routine and section 4 comprised of perceived facilitators encountered during management of antepartum & postpartum disorders. Data was analyzed using IBM SPSS Statistics Version 26.

Results: Among the 280 female physiotherapists who participated, the mean age was 28.7 ± 2.9 years. The working experience range 2 to 11 years, with a mean experience of 3.6 ± 1.7 years reported. Among these clinicians 62% physiotherapists had taken antepartum training courses and 56.4% had received postpartum training for management of these disorders after graduation. 81% physiotherapists use therapeutic/manual therapy as their intervention for management of reported antepartum and postpartum disorder. The most frequently reported issues related to these disorders included low back pain and pelvic pain. The major barrier reported by physiotherapist is unclear and ineffective referral pathway for managing these disorders with mean score of 17.9 ± 4.1 . In contrast, training courses and resource knowledge is identified as the most reported facilitator among clinicians with mean score of 40.73 ± 5.1 .

Conclusion: The study concludes that most physiotherapists actively use therapeutic interventions for management of antepartum & postpartum disorders. However, unclear and ineffective referral pathways and limited training opportunities create significant barriers, which highly impact patients' recovery. To eliminate this barrier, a proper framework for the referral pathway should be designed. Access to training or resources is a key facilitator for improving knowledge and skills, which plays a vital role in achieving better health outcomes. More efforts should be made to make these training programs and resources available to therapists.

Group 8:

ASSOCIATION OF FATIGUE AND KINESIOPHOBIA WITH FUNCTIONAL CAPACITY & QUALITY OF LIFE AMONG STROKE PATIENTS

Background:

Stroke is one of the major causes of mortality and morbidity around the world. In addition to physical impairments, stroke survivors often deal with other factors like fatigue and kinesiophobia, both of which can affect prognosis and quality of life. Despite their impact, these factors are often overlooked in rehabilitation programs.

Objective:

To determine the association of fatigue and kinesiophobia with functional capacity and quality of life in patients with stroke.

Methodology:

A cross-sectional study was conducted involving 156 stroke patients aged 40 to 65 years from hospitals and home settings in Rawalpindi and Islamabad. Standardized tools were used: Fatigue Severity Scale (FSS) was to examine fatigue levels, Tampa Scale for Kinesiophobia (TSK) was to evaluate kinesiophobia, 6-Minute Walk Test (6MWT) for functional capacity, and Stroke Impact Scale (SIS) was to evaluate quality of life. Data were analyzed using IBM SPSS statistics.

Results:

Out of 156 participants, 82.1% reported high fatigue and 30.1% had high levels of kinesiophobia. Fatigue was significantly correlated with decreased physical functioning ($r = -0.440$, $p = 0.000$) and social participation ($r = -0.343$, $p = 0.000$). Kinesiophobia was significantly associated with poor functional capacity ($p = 0.027$) and showed negative correlations with physical function, memory, and social participation domains of quality of life. A strong positive relationship was observed between kinesiophobia and fatigue ($p = 0.003$), showing that increased fear of movement was related with greater fatigue.

Conclusion:

In conclusion, fatigue was not found Highly associated with functional capacity, while it Was strongly correlated with reduced physical and Social domains of quality of life. Kinesiophobia was significantly associated with both functional Capacity and multiple SIS domains, and also Showed a strong association with fatigue.

Group 9:

FREQUENCY OF WRIST DISORDERS AND ASSOCIATED FACTORS AMONG BUTCHERS

Background: Wrist disorders (CTS, De Quervain's tenosynovitis and vascular issue) are common in butchers because of activities like repetitive task and forceful exertion due to which they are subject to various ergonomic and occupational risk factors.

Objective: Our study aims to find out the frequency of wrist disorders (CTS, De Quervain's tenosynovitis and vascular issue) and the associated factors of wrist disorders among butchers.

Methodology: A cross-sectional study was conducted in butcher shops of Rawalpindi, Islamabad, Jhelum, Shakargarh and Murree. Data was collected from 302 participants using self-structured questionnaires. Butchers working from last six months between age 20-55 years were included in the study and those with recent injury/fracture, autoimmune disease and metabolic disease were excluded. Diagnostic tests were conducted, Tinel and reverse Phalen's test was used to diagnose CTS, Finkelstein test for De Quervain's tenosynovitis and Allen's test to check vascularization. Data analysis was done on IBM SPSS version 26.

Result: CTS were positive in 7.6% participants and De Quervain's tenosynovitis was positive in 21.9% participants, while 21.5% showed vascular issue. De Quervain's tenosynovitis was significantly associated with cold environment (OR=6.90, $p<0.001$), vibration exposure (OR=3.43, $p<0.001$) and poor posture (OR=0.47, $p=0.008$). Vascular issue was also significantly associated with cold environment (OR=3.24, $p<0.01$), vibration exposure (OR=2.28, $P=0.01$ and uncomfortable tool position (OR=2.40, $p<0.001$). Carpal tunnel syndrome (CTS) was significantly associated with cold environments (OR=4.73, $p<0.01$), uncomfortable tool positions (OR=6.63, $p<0.01$), and protective glove use (OR=2.40, $p=0.04$).

Conclusion: In our study we find out that wrist disorders are common among butchers such as De Quervain's tenosynovitis and vascular issue. Our study predicted that Cold environment, vibration exposure and uncomfortable tool position are contributing factors to these disorders.

Keywords: wrist, carpal tunnel syndrome, de Quervain's disease, butchers

Group 10:

ASSOCIATION OF THUMB RADIAL ABDUCTION ANGLE WITH HANDGRIP STRENGTH, DEXTERITY AND CARPAL TUNNEL SYNDROME SUSCEPTIBILITY AMONG DENTISTS

Background/Objective

Thumb mobility, especially radial abduction, is crucial to hand function and can potentially impact occupational performance in high-risk occupations like dentistry. Dentists might be predisposed to musculoskeletal injury through protracted static postures and repeated use of the hands. The purpose of this research was to assess the relationship between thumb radial abduction angle and handgrip strength, hand dexterity, and vulnerability to carpal tunnel syndrome in practicing dentists.

Methods

Cross-sectional survey was carried out on 379 dentists of Rawalpindi and Islamabad through non-probability convenience sampling. Participants fulfilled inclusion criteria of having ≥ 2 years of clinical experience and ≥ 6 hours of practice per day. Thumb radial abduction angle was assessed with a goniometer, handgrip strength with a digital dynamometer, and dexterity with the Nine-Hole Peg Test. CTS susceptibility was evaluated with the Boston Carpal Tunnel Questionnaire, Phalen's test, and Durkan's compression test.

Results

Weak but statistically significant correlations were found between thumb radial abduction and handgrip strength ($p<0.05$), dexterity ($p<0.05$), and Boston CTS scores

($p=0.001$). Although correlation coefficients were small, greater radial abduction correlated with stronger grip strength, better dexterity, and less severe CTS symptoms.

Conclusion

Thumb radial abduction is a small but important predictor of hand function and CTS symptomatology in dentists. These results highlight the importance of using ergonomic interventions and early screening in dental workers to reduce the long-term neuromuscular impairments.

Keywords

Thumb radial abduction, handgrip strength, dexterity, carpal tunnel syndrome, dentists, occupational health.

Group 11:

FREQUENCY OF CARDIOVASCULAR KIDNEY METABOLIC SYNDROME STAGES AND ITS ASSOCIATED RISK FACTORS IN TWIN CITIES

Background/Objectives:

Cardiovascular-Kidney-Metabolic (CKM) Syndrome is an evident clinical concept in which cardiovascular disease (CVD), chronic kidney disease (CKD) and metabolic disorders (type 2 diabetes and obesity) are interrelated. The study aimed to describe the prevalence and stages of CKM syndrome in individuals residing in the twin cities of Pakistan and to assess risk factors contributing to CKM Syndrome. The study presents an assessment of the impact of hypertension (HTN), diabetes mellitus (DM), CKD, metabolic syndrome and obesity on the progression of disease across different CKM stages.

Methods:

The study used a cross-sectional design which involved 379 individuals. Data were collected on demographics, clinical history, and clinical measurements. CKM stage was assessed according to AHA criteria. Data were analysed with descriptive statistics and ordinal logistic regression to measure associations between risk factors and CKM stage.

Results:

CKM syndrome was mostly reported to be stage 2 CKM syndrome, where 50.4% of the sample were in stage 2, 19.5% were in stage 1, and 17.4% were in stage 4. Risk factors significantly associated with CKM stage were CKD ($p=0.000$, estimate=1.149), HTN ($p=0.000$, estimate=1.258), and DM ($p=0.003$, estimate=0.828). About 67% of participants were females, and the combined obesity prevalence (Obese I and II) was 55.9%. High waist circumference was seen in 80.2% of the sample, which suggests a substantial metabolic risk burden.

Conclusion:

The results highlight a high proportion of mid to advanced CKM stages in the local population, especially Stage 2, emphasizing the importance of focused early screening and intervention approaches. CKD, HTN, and DM were found to be the most robust predictors of CKM progression, advocating for integrated, multidisciplinary care models to not only address the increasing syndromic burden but potentially identify a CKM care and treatment standard.

Keywords:

CKM syndrome, cardiovascular disease, chronic kidney disease, diabetes mellitus, metabolic syndrome, hypertension, obesity

Group 12:

EXPERIENCED BARRIERS AND FACILITATORS TO ENGAGEMENT IN POST STROKE REHABILITATION

Background:

Stroke is a major health issue in Pakistan, and rehabilitation is crucial for recovery. As a low-to-middle-income country, patients here face more challenges. These challenges include physical limitations, limited access to care, and cultural barriers. Our objective is to explore barriers and facilitators in post stroke rehabilitation. By understanding the challenges and facilitators of recovery, we can better support stroke survivors in Pakistan and enhance their quality of life.

Methods:

14 post-stroke patients (either ischaemic or hemorrhagic) who had undergone six months of rehabilitation were chosen for our qualitative study using purposive sampling after receiving ethical approval. The patients were recruited from NIRM and Railway General Hospital. Self-structured interviews based on interview guide covering four major domains were used to gather data. (personal, psychosocial, community and rehabilitation). The interviews were conducted with informed consent, translated from Urdu to English after expert review, and then thematically analysed to generate themes, sub-themes, and codes.

Results:

Our study investigated the obstacles and facilitators that stroke survivors encounter in several aspects of their lives. Based on data from 14 stroke patients, whose mean age was 65, we discovered many people in the personal domain faced financial difficulties as a result of losing their jobs, but family support proved to be a powerful enabler. Patients had to rely on others for transportation in the community, and some of them expressed feelings of isolation since their social circle was reduced due to post stroke complications. In the psychosocial domain, family disputes were frequently caused by emotional instability, including anger and mood swings. Many also experienced short-term memory loss, difficulties focusing, and trouble with calculations. Geographical and cultural challenges were major when it comes to rehabilitation; patients in rural areas had to travel long distances since there were no facilities. 80% of participants expressed dissatisfaction with their care, citing a lack of doctors and inadequate attention due to senior doctors frequently assigning tasks to students. Lack of equipment even limited home-based care. These results demonstrate the critical need for stroke rehabilitation treatments that are more easily accessible, compassionate, and community-sensitive.

Conclusion:

From our study we conclude that Stroke survivors encounter personal, psychosocial and rehabilitation barriers, but benefit from family support and spirituality. Tailored & accessible strategies are vital for enhancing recovery & improving the quality of life.

Key words:

Stroke survivors, Barriers, Facilitators, Rehabilitation

Group 1

FREQUENCY OF OROPHARYNGEAL DYSPHAGIA IN GERIATRIC POPULATION

Background: Oropharyngeal dysphagia (OD) is a common yet underdiagnosed condition among the elderly, often leading to serious complications such as malnutrition, aspiration pneumonia, and reduced quality of life. In Pakistan, limited awareness and lack of routine screening further exacerbate its impact on geriatric health outcomes.

Objective: To determine the frequency of oropharyngeal dysphagia in the geriatric population residing in old age homes.

Method: A cross-sectional study was conducted among 165 elderly individuals aged 65 years and above, residing in old age homes and in Rawalpindi, Islamabad and Peshawar. Participants were included in the study after meeting the inclusion and exclusion criteria. Participants were screened using Montreal Cognitive Assessment for the screening of cognitive impairment (inclusion criteria) and after scoring above 26 they were included in the study. Water Swallow Test and Modified Mann Assessment of Swallowing Ability was used for dysphagia screening and data was analyzed using descriptive statistics via SPSS version 24.

Results: The study revealed a prevalence rate of **26.06%** for oropharyngeal dysphagia in the sample population, with a slightly higher incidence observed in males compared to females. The highest prevalence was noted among individuals aged 65–75 years. Additionally, comorbid conditions such as diabetes and hypertension were common among those identified with dysphagia.

Conclusion: The findings underscore a significant presence of oropharyngeal dysphagia in the elderly population, highlighting the urgent need for routine screening and early intervention. Increased awareness and specialized training for healthcare providers are essential to improve diagnosis, management, and overall quality of life for aging individuals in Pakistan.

Group 2:

AWARENESS AND ATTITUDE OF TEACHERS TOWARDS INCLUSION OF CHILDREN WITH COCHLEAR IMPLANT IN MAINSTREAM SCHOOLS

Background: This study investigates the awareness and attitudes of teachers towards the inclusion of children with cochlear implants in mainstream schools. Cochlear implants are medical devices designed to restore hearing, while inclusive education promotes equal access for all students.

Objective: To determine the awareness and attitudes of teachers regarding the inclusion of children with cochlear implants in mainstream educational settings.

Methodology: A cross-sectional survey on a sample of n=136 teachers was conducted in Rawalpindi and Islamabad from Feb 2025 till June 2025. Convenient sampling was used to recruit participants of both genders with at least six months of teaching experience, while school administrators and daycare centers were excluded from the study. A structured questionnaire was developed after a literature review. Content validity index was calculated after taking reviews from 5 experts. Piloting was done on 10 participants. Internal consistency and test retest reliability was calculated with gap of two weeks. The questionnaire was distributed among mainstream school teachers via face to face approach. After collecting data, descriptive analysis was done by using SPSS version 22.

Results: The findings indicated that 82.6% of teachers were aware of how CIs function, with 76.1% opposing the placement of CI users in special schools. Additionally, 80.4% reported difficulties managing CI users in noisy environments, leading to syllabus delays. The tool development yielded an ICC value of 0.976 and a content validity index (CVI) of 0.74. Demographic results revealed a diverse teaching background among participants. Overall, the research highlights the necessity for improved training and resources to facilitate effective inclusion.

Conclusion: The study emphasizes the importance of enhancing teacher training programs and providing necessary resources to support the inclusion of children with cochlear implants in mainstream classrooms.

Keywords: Cochlear Implants, Class room management, Inclusive Education, Teacher Awareness,

Group 3

USE OF BIOSAFETY PROTOCOLS IN CLINICAL PRACTICE AMONG SPEECH AND LANGUAGE PATHOLOGISTS

Background: Biosafety protocols are standardized set of policies and measures aimed to minimize the risk of getting exposure to infectious agents and intended at safeguarding the healthcare personnel as well as patients. Since SLPs works in diverse settings its necessary for them to use biosafety protocols in their practice. This survey focuses to evaluate the use of biosafety protocols among SLPs and to impart directions for future awareness programs centered on regular implementation and adherence to biosafety protocols.

Objective: To determine the use of bio safety protocols in clinical practice among Speech and Language Pathologists.

Methods: A cross-sectional survey was conducted from February 2025 till June 2025 in Rawalpindi, Islamabad, Karachi, Lahore and Peshawar. Data was collected by using convenient sampling technique with a total sample size $n=169$ from the speech pathologist who are having more than one year's clinical experience. This study was carried out in two phases. In the first phase, a self-developed questionnaire was created and content validity and reliability were assessed First phase involved the questionnaire development up till pilot testing and second phase involved the survey execution. Data was then analyzed descriptively by using SPSS version 25.

Results: The tool demonstrated good reliability, with an internal consistency score of $\alpha = 0.845$ and test-retest reliability was 0.91. The total sample size was $n=169$ out of which 13.6% males and 86.4% females. Results indicated that 71.6% SLPs maintain a clean and hygienic therapy environment, 73.5% SLPs wear PPE during therapy sessions, 81.0% of SLPs wash their hands before therapy sessions, while 90% do so after the sessions. 74% SLPs use alcohol-based sanitizer when soap and water are not readily available, 75.8% SLPs regularly review and update Biosafety practice with new guidelines. Results showed that majority of SLPs were using bio safety protocols.

Conclusion : The findings highlight that a majority of SLPs adhere to essential biosafety protocols during therapy. Overall, the study demonstrates strong compliance with hygiene practices and ongoing updates in line with current guidelines.

Keywords: Biosafety, Protocols, Infectious Agents, Risks, SLPs, Hand hygiene, Personal Protective Equipment (PPE), ASHA Guidelines, Biosafety Training, Hygiene Practices, Disinfection.

Group 4:

IDENTIFYING SPEECH DEVELOPMENT OF 3-7 TYPICALLY DEVELOPING CHILDREN IN URDU

Background: Speech sound development is the process through which children learn to produce and organize speech sounds. Between 3 and 5 years, children refine their pronunciation, though some sounds may still be challenging. By age 7, most children can produce all speech sounds clearly and accurately. Early screening helps detect these issues for timely intervention. The Urdu Articulation Screening Test (UAST) is a tool developed to assess speech sound production in Urdu-speaking children. This research aims to identify speech sound disorders in Urdu-speaking children by using the Urdu Articulation Screening Test (UAST). UAST is designed to quickly screen for articulation issues using culturally relevant language materials, making it a valuable tool for early identification and support.

Objective: To identify speech development of 3-7 years typically developing children in Urdu.

Methodology: This study employed a cross-sectional survey design to evaluate articulation in typically developing children using a standardized screening tool. A total of 384 children were included in the study through a convenient sampling technique. Data collection was carried out in various educational and childcare settings, including kindergartens, Montessori schools, and daycares located in Islamabad and Rawalpindi. The inclusion criteria consisted of both male and female children between the ages of 3 and 7 years who were Urdu-speaking. Children were excluded if they had been diagnosed with any speech or language disorders, had comorbid conditions, or exhibited hearing impairments. The Urdu Articulation Screening Test (UAST) was used as the primary tool to assess the articulation skills of the participants.

Results: Results show that out of 384 typical children, most of them produced sounds accurately according to their age, but between the age range of 3-6 yrs exhibited the highest

frequency of errors particularly with the final sound ت in word درخت. There are 10 children of age 3, 7 were boys and 3 were girls, 18 children of age 4 and 5, 9 were boys 9 were girls, 12 were boys and 6 were girls respectively, 14 children of age 6, 8 were boys and 6 were girls. Children who were 7 years old demonstrated difficulties with medial sound کھ in word پنکھا , total 8 children of age 7, out of which 6 were boys and 2 were girls. This result indicates that boys showed more speech sound errors than girls.

Discussion: Previous studies shows that Children's speech becomes more consistent between ages 3 and 7, with many sound errors being normal at ages 3–4. By ages 5–7, most children speak clearly with fewer mistakes. In current study, Speech sounds in both Urdu and English develop gradually, though Urdu sounds like /ق/, /خ/, and /ڙ/ typically appear earlier, around ages 3 to 5. Current study shows that Girls consistently show more accurate and stable speech than boys.

Conclusion: In conclusion, the study highlights a clear progression of speech development in children aged 3-7 years, with increasing consistency and accuracy as they age. Speech becomes highly consistent by ages 5-7 years.

Keywords: Urdu Articulation Screening Test, Speech Development.

DEPARTMENT OF MEDICAL LAB TECHNOLOGY

Group 1

ANTIBACTERIAL ACTIVITY OF ESSENTIAL OIL LOADED NANOCOMPOSITE

Background : Wound infections resulting from gram-positive and gram-negative bacteria, coupled with issues of antibiotic resistance, make it a crucial health concern. Essential oils and biologically synthesized Nano composite are receiving increasing attention for their potent antibacterial and therapeutic properties, offering promising natural and Nano technological alternatives to synthetic antibiotics .Essential oils contain bioactive compounds with broad-spectrum antimicrobial effects, while Nano composite enhance drug delivery, improve bioavailability and combat antibiotic resistance by targeting pathogens more effectively.

Objective: This study evaluated the antibacterial activity of Essential Oil loaded MgO/CuO Nanocomposite against gram-positive *Staphylococcus aureus* and gram-negative *Escherichia coli* isolated from wound infections.

Methods : Essential oil loaded MgO/CuO nanocomposite was prepared according to previously reported protocol .Antibacterial activity was evaluated using the well diffusion method on agar plates, and the minimum inhibitory concentration (MIC) was determined using broth dilution method. Data was analyzed using Graph Pad Prism.

Results: The solution demonstrated dose-dependent antibacterial activity, with *MRSA* exhibiting the largest zones of inhibition (15*17mm) at 100 µL concentration and largest zone of inhibition of *E coli* is (20*22mm) at 100 µL.

Conclusion: The study highlights the potent antibacterial activity of Essential oil loaded MgO/CuO nanocomposite against the Gram positive *Staphylococcus aureus* and Gram negative *E.coli*. These findings suggest their potential as effective, sustainable alternatives to conventional antibiotics in combating wound infections and addressing antibiotic resistance.

Keywords: Nanotechnology, MgO/CuO nanocomposite, wound infection, antibacterial activity, antibiotic resistance, gram-positive bacteria, *Staphylococcus aureus*, gram-negative bacteria, *Escherichia coli*

Group 2:

METABOLIC AND HORMONAL PROFILING OF WOMEN WITH POLYCYSTIC OVARIAN SYNDROME AMONG OBESE AND NON-OBESE WOMEN

Background: Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder affecting women of reproductive age, characterized by hormonal imbalances, ovulatory dysfunction, and polycystic ovarian morphology. Obesity is frequently associated with PCOS and can exacerbate its clinical and metabolic manifestations. However, PCOS also occurs in non-obese women, suggesting heterogeneity in its presentation. Understanding the hormonal and metabolic differences between obese and non-obese women with PCOS is crucial for personalized management and treatment strategies.

Objectives: To compare variations in metabolic and hormonal profile between obese and nonobese women with PCOS and to investigate the relationship between BMI and various hormonal and metabolic parameters in women with PCOS.

Methods: 50 obese women and 50 non-obese women in the reproductive age group were selected in the study. Measured body mass index (BMI) Anti-mullerian hormone (AMH), Follicle-stimulating hormone (FSH), Luteinizing Hormone (LH) and Metabolic Profile Cholesterol, Glucose, Insulin and Insulin Resistance (IR) in both obese and non-obese women. The comparison of age and BMI, all metabolic profile and hormonal profile was done by using t test and P value less than 0.05 was considered statistically significant. Serum FSH, LH and AMH levels were analyzed using radioimmunoassay (RIA) technique while Metabolic Profile was analyzed by using chemistry analyzer.

Results: This study showed statistically significant higher values of Anti-mullerian hormone (AMH) alongside lower values of Follicle-stimulating hormone (FSH), Luteinizing Hormone (LH) in obese women compared to the non-obese women of the same age group. Elevated levels of all metabolic parameters Cholesterol, Glucose, Insulin and Insulin Resistance (IR) in obese women compared to non-obese women were shown.

Conclusion: This study concludes that obese women exhibit higher all metabolic parameters, along with higher AMH levels, compared to non-obese women of same age group. These findings suggest that obesity has a detrimental effect on metabolic and hormonal profile and may impact reproductive health, emphasizing the importance of weight management for preserving fertility.

Keywords: Anti- Müllerian Hormone (AMH), Follicle-Stimulating Hormone (FSH), Luteinizing Hormone (LH), Body Mass Index (BMI).

Group 3

COMPARATIVE ANALYSIS OF GENE EXPRESSION PROFILES ACROSS BREAST CANCER STAGES USING NEXT GENERATION SEQUENCING DATA

Background: Breast Cancer remains the most prevalent cancer among women globally, with rising incidence rates particularly in countries like Pakistan. It is a multifactorial disease influenced by genetic, environmental, and lifestyle factors. Various subtypes exist based on molecular characteristics, including triple-negative, HER2-positive, luminal A, and luminal B. Diagnosis is typically confirmed through imaging, histological analysis, and tumor markers. Advances in genomic technologies, especially RNA Sequencing (RNA-Seq) and Next Generation Sequencing (NGS), have allowed researchers to explore the transcriptomic landscape of tumors. However, there is limited comparative research analyzing gene expression profiles across different stages of Breast Cancer. Understanding gene expression differences at each stage can help identify key biomarkers and therapeutic targets.

Objective:

- To check the expression pattern of different genes in different stages.
- To find out differential expression of genes in all stages of Breast Cancer.
- To perform network and Cytoscape analysis to find out hub genes.
- To identify the biomarkers of Breast Cancer

Methods: The study will be designed as a Retrospective and Comparative analysis. It will adopt an in-silico approach. For sample collection, feature count data will be gathered from the Gene Expression Omnibus (GEO) database. The anticipated duration of the study is approximately 8 to 9 months after receiving approval from the research board.

Results:

Identification of stage-specific DEGs.

Discovery of Hub genes involved in Breast Cancer progression.

Enriched biological processes and pathways related to tumor development.

Biomarkers that may serve as diagnostic or therapeutic targets.

Conclusion:

This study aims to bridge the research gap by providing a comparative transcriptomic analysis across Breast Cancer stages. The insights from this study could enhance understanding of tumor

heterogeneity, facilitate early detection, and guide precision medicine through biomarker discovery and gene network modeling.

Keywords:

Breast Cancer, Gene Expression, RNA Sequencing, Next Generation Sequencing, Differentially Expressed Genes, Biomarkers, Bioinformatics, Cytoscape, Network Analysis, Breast Cancer Staging, In Silico Study, Transcriptomics

Group 4**PREVALENCE AND ANTIBIOTIC SUSCEPTIBILITY OF MRSA AMONG PEDIATRICS AND YOUNG ADULT PATIENTS**

Background: Staphylococcus aureus is a gram positive bacteria, and its methicillin-resistant form (MRSA) is a serious concern due to its resistance to antibiotics. It causes various infections, including skin infections, pneumonia, and sepsis, affecting both children and adults differently.

Some strains of staph aureus are resistant to beta lactamase resistant penicillin's ,such as methicillin, by virtue of changes in the penicillin binding proteins (PBP) in their cell membrane.MRSA is prevalent in hospitals globally, and treatment depends on local resistance patterns and patient factors.

Objective: To determine the prevalence of MRSA infection in pediatric and young adults and to study the antibiotics susceptibility pattern among paediatric and young adult patients

Methods: The study design used for this research was cross sectional study. The sampling technique was convenience sampling. Samples were examined using microbiological techniques, including bacterial culture, Gram staining, biochemical tests and Kirby-Bauer disk method for antibiotic susceptibility testing. The study size include total 107 participants divided in 2 groups pediatric (0-12 years) and young adults (12-30 years),and study was conducted in Railway and Rawal General Hospital. Data analysis was done through SPSS software version 21.

Results: In our study prevalence rate of adult tested positive for MRSA 75% and 25% negative and in paed 91% positive and 9% negative. We also suggested that MRSA was more in paed in children near 1month. Our study show higher MRSA cases in females in both paed and adults. In paed MRSA is high in blood specimens and in adults it's high in pus specimens. MRSA isolates in both adults and pediatric patients showed 100% resistance to cefoxitin, confirming methicillin resistance. In adult's penicillin, 96% resistance, followed by erythromycin 80% and ciprofloxacin. In contrast, antibiotics such as Doxycycline (84%), Linezolid (76%), and Chloramphenicol (74%) show high sensitivity, making them more effective treatment options. In contrast, in paed antibiotics with high resistance rates included penicillin (97.6%), ciprofloxacin (84.6%), erythromycin (79.6%), and co-trimoxazole (80%), indicates that drugs are largely ineffective against MRSA in paed and adult population. On the other hand, the highest sensitivity was observed with linezolid (76%) and chloramphenicol (77%), suggesting these are most effective treatment options. Doxycycline also showed promising results with a sensitivity rate of 62%.

Conclusion: Our study show notable difference in Prevalence and Antibiotic susceptibility pattern of MRSA in both paediatric and young adult patients showing high prevalence of MRSA in paed near 1 month of age and effect females more than males. Pus is the major source of MRSA in adults while blood is in paed. The effectiveness of doxycycline is higher in adults than in children. Linezolid and chloramphenicol show sensitivity in both age groups. Both groups are ineffective with erythromycin and penicillin because of their great resistance.

Key words: Staphylococcus aureus, MRSA, Antibiotics susceptibility pattern, Multi drug resistance, Hospital acquired infection

Group 5

URINARY TRACT INFECTIONS AND ANEMIA IN PREGNANT WOMEN: A CORRELATION STUDY

Background: Anemia and urinary tract infections (UTIs) are prevalent complications during pregnancy, especially in low- and middle-income countries. Both conditions pose serious health risks to maternal and fetal outcomes and may be interrelated due to physiological and immunological changes during pregnancy. This study investigates the correlation between anemia and UTIs in pregnant women.

Objectives: The aim were to determine the prevalence of anemia and UTIs among pregnant women and assess the correlation between the two conditions.

Methods: A cross-sectional study was conducted at Railway General Hospital, Rawalpindi, over 8 months (March–June 2025). A total of 100 pregnant women aged 18–52 across all trimesters were included based on specific inclusion criteria. Midstream urine samples and venous blood samples were collected and analyzed for indicators of UTI and anemia, respectively. Urinalysis and hematological parameters including hemoglobin, MCH, and MCHC were evaluated. Data were analyzed using SPSS version 25.

Results: The majority of participants were in the third trimester (53.0%), with the highest age group representation between 28–32 years. Anemia was present in 75.0% of participants with hemoglobin levels between 7–9 g/dl. UTI indicators, particularly numerous pus cells, were observed in 61.0% of cases. However, statistical analysis showed no significant correlation between the number of pus cells and hemoglobin levels ($r = -0.115$, $p = 0.255$), MCH ($r = 0.008$, $p = 0.938$), or MCHC ($r = 0.004$, $p = 0.970$).

Conclusion: While anemia and UTIs are individually prevalent among pregnant women, this study found no statistically significant correlation between the two. These findings highlight the need for continued screening and management of both conditions independently to prevent adverse maternal and fetal outcomes.

Keywords: Anemia, Urinary Tract Infection, Pregnancy, Hemoglobin, MCH, MCHC, Maternal health

Group 6

PREVALENCE OF URINARY TRACT INFECTION AND MICROBIAL PROFILE OF DIABETIC AND NON-DIABETIC PATIENTS

Background: Urinary tract infection (UTI) is inflammation of the urinary tract due to abnormal colonization of pathogenic microorganisms. It is a broad term used to refer to infection of any part of the urinary tract: the kidneys, ureters, bladder and urethra. The urinary tract can be divided into the upper (kidneys and ureters) and the lower tract (bladder and urethra). UTI is one of the most prevalent and serious infections worldwide, with more than 150 million new cases reported each year. The incidence of UTIs increases as age advances and sexual activity starts. Women are more likely than men to get UTI because of their shorter urethral length, which makes it easier for bacteria and other microbes to ascend to the bladder and cause infection. Diabetic patients have a higher incidence of UTI than non-diabetic patients, with a higher severity UTI which can be a cause of complications, ranging from dysuria to organ damage and sometimes even death due to complicated UTI (pyelonephritis). Urinary tract infections (UTI), particularly upper-UTI, are primarily linked to diabetes mellitus (DM), this is because diabetes alters the regular host system which may contribute to the development of UTIs. According to existing data, UTIs are the most prevalent bacterial

infection in diabetic patients. A KSA study found that the overall prevalence of UTIs in diabetic patients was 25.3%, 7.2%, and 41.1% in males and females, respectively. Women are more susceptible to UTIs than men for reasons other than just their physical characteristics. UTIs in women are caused by several additional risk factors. These include genetic, age-specific, pregnancy-related, behavioral, vulnerability, and urine catheterization variables. The most frequent cause of UTIs among causative bacteria is *Escherichia coli*, which is also a prevalent illness in women and is easily spread by fecal flora. *E Coli*, *Proteus mirabilis*, *Aeruginosa*, *Streptococcus faecalis*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Mycobacterium tuberculosis*, *Actinomyces*, *Nocardia*, *Candida*, and others are the most frequent organisms that cause catheter-associated UTIs.

Objective : The main aim is to compare the frequency of Urinary tract infections (UTI) in diabetic and non-diabetic patients and to analyze the microbial profile of the pathogens responsible for UTI in diabetic and non-diabetic patients by using biochemical tests.

Methodology: A cross-sectional study was conducted at Railway General Hospital, Rawalpindi, over eight months. Patients of all age groups were included based on specific inclusion criteria. The inclusion criteria included individuals with confirmed urinary tract infections based on laboratory test (positive urine culture), Patients with documented diagnosis of diabetes (Type 1 or Type 2) for diabetic group, Patients with no history of diabetes, confirmed through medical records for non-diabetic group and patients of all age ranging from 1 to 90 years. Freshly voided, 10 to 15ml of midstream urine sample were collected from diabetic and non-diabetic patients. A CLED culture media was used for the confirmation of UTI. To identify gram positive and gram-negative bacteria gram staining was done and biochemical tests such as catalase, oxidase, and coagulase tests were performed.

Results: The total no. of sample collected was 211 out of which 114 participants were nondiabetic, and 97 participants were diabetic. The majority of the cases are between 20 to 80 years old frequently observed in patients of 50.32 years old. Our study showed that Urinary tract infection is more prevalent in female population as compared to male either they are diabetic or non-diabetic. In microbial profiles of diabetic patients many microorganisms were isolated. Among these microorganisms gram negative bacteria *Escherichia coli* and mixed growth are found to be more prevalent along with *Candida species*, *Enterococcus faecalis*, *Enterobacter spp*, *Klebsiella pneumonia*, *Pseudomonas aeruginosa*, *Proteus mirabilis*,

Staphylococcus saprophyticus. In the microbial profile of non-diabetic patients many microorganisms were isolated among these microorganisms gram negative bacteria *Escherichia coli* and mixed growth are found to be more prevalent along with *Candida species* , *Acinetobacter baumannii*, *Citrobacter freundii* , *Enterococcus faecalis* , *Klebsiella pneumoniae* , *MRSA* , *Pseudomonas aeruginosa*, *Proteus mirabilis* , *Staphylococcus aureus* , *Staphylococcus saprophyticus* and occasional cases of *Enterococcus spp.*

Conclusion: This study highlights a significant difference in the frequency and microbial profile of urinary tract infections between diabetic and non-diabetic patients. This study revealed that nondiabetic patients experienced a higher frequency of UTI compared to diabetic individuals, this can be due to risk factors like poor hygiene, higher sexual activity and frequent catheter use. Women are more prone to UTI this is due to their shorter urethra, which allows bacteria to reach the bladder more easily, hormonal changes and sexual activity also contribute to higher UTI in females.

Keywords: Urinary tract infections, Diabetes, Bacteriology, *E.coli*, Mixed growth.

Group 7

ASSESSMENT OF SERUM FOLLICLE-STIMULATING HORMONE AND LUTEINIZING HORMONE LEVELS IN WOMEN WITH ABNORMAL UTERINE BLEEDING

Background : Abnormal uterine bleeding is regarded as a serious and complicated issue. FSH and LH play significant role in the reproductive function of women. It is recognized universally that menstrual cycle may associate with clinical changes in hormonal function. Both abnormalities in FSH and LH may result in menstrual disturbances. The objective of this study was to study the demographic and hormonal variables (serum FSH and LH) in women with abnormal uterine bleeding.

Materials and method:

This hospital-based cross-sectional study was conducted in the Gynecology Departments of various clinics in Rawalpindi and Islamabad over a period of eight months, following approval from the research board. A total of 102 samples were analyzed during this time. Purposive sampling was used to select participants. Data were collected using a predesigned

questionnaire, ultrasound findings, and biochemical analysis of serum FSH and LH levels using the COBAS. Descriptive analysis was performed using SPSS version 25, through which frequencies and percentages were extracted.

Result:

The highest number of patients (24.5%) belonged to the 25–29 years age group, followed by minimum numbers of patients (5.9%) belonged to the 15–19 years age. The most frequently reported bleeding pattern was oligomenorrhea, followed by polymenorrhea, menorrhagia, and other menstrual irregularities. Hormonal analysis revealed that the majority of women had FSH and LH levels within normal reference ranges. However, a subset of patients exhibited hormonal disturbances. Elevated LH levels were observed particularly among women with oligomenorrhea and clinical features suggestive of polycystic ovarian syndrome (PCOS), whereas FSH levels were mostly normal, with a few borderline-high values seen in women closer to perimenopausal age.

Conclusion:

This study found that while most women with abnormal uterine bleeding (AUB) had normal FSH and LH levels, some showed hormonal imbalances, particularly elevated LH, suggesting conditions like PCOS. Oligomenorrhea was the most common pattern, especially in women aged 25–29. The results highlight the hormonal causes of AUB and the value of using the PALMCOEIN system for diagnosis.

Key Words: AUB, FSH, LH

Group 8

CORRELATION OF SERUM PROLACTIN, NEUTROPHIL TO LYMPHOCYTE RATIO AND PLATELET TO LYMPHOCYTE RATIO WITH GESTATIONAL DIABETES MELLITUS

Background: Prolactin is a key hormone during pregnancy, known for its role in glucose metabolism and insulin resistance. The insulin resistance in body lead to Gestational diabetes mellitus (GDM). Additionally, systemic inflammatory markers such as the neutrophil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio (PLR) have emerged as useful

indicators of metabolic and inflammatory disorders, including diabetes. This study explore the correlation between serum prolactin levels NLR and PLR with GDM.

Objectives: To correlate and compare serum prolactin levels and inflammatory markers (NLR/PLR) with GDM and control group.

Methods: A cross-sectional study was conducted at Benazir Bhutto Hospital, Rawalpindi. The pregnant women with GDM and healthy control group are included in our study. The sampling technique was stratified sampling. Sample size include (n= 180) participant divided into 2 groups GDM with (n=90) and control group (n=90). Serum prolactin, NLR, and PLR values were measured and compared. Data analysis was done through SPSS software version 21. The variable used in our study were continuous variable. Descriptive analysis was done and data was expressed as mean \pm SD or median (IQR). Independent t-test and Pearson correlation were used for comparison and correlation respectively.

Results: The comparison analysis shows serum prolactin levels in diabetic were significantly elevated ($596 \pm 63.7\text{ng/ml}$) comparing to healthy control (238.29 ± 27.3). The correlation analysis of serum prolactin with OGTT (1h) and (2h) show positive significant correlation with r value 0.80^{**} and 0.71^{**} respectively. The NLR and PLR shows no significant relation in our study. Our study show a contradictory correlation between NLR and PLR.

Conclusion: We report a strong correlation between serum prolactin and GDM in our study. These findings may support effective clinical management of GDM. Incorporating these markers into routine care may guide better interventions and enhance maternal and fetal outcomes.

Keywords: Gestational diabetes mellitus, inflammatory markers (NLR/PLR), Serum prolactin levels, OGTT.

DEPARTMENT OF HUMAN NUTRITION AND DIETETICS

Group 1

ROLE OF DIETARY CHOICES DURING ACADEMIC STRESS IN TRIGGERING WEIGHT FLUCTUATIONS IN UNIVERSITY STUDENTS

University students are a group that is highly susceptible to academic stress because of the pressure to perform well, meet deadlines, and navigate the challenges of transitioning into adulthood. Academic stress not only impacts mental well-being but can also lead to changes in eating patterns and physical activity levels. Making these lifestyle changes can result in temporary weight fluctuations, which, if prolonged, may increase the risk of developing chronic health conditions like obesity, metabolic syndrome, or disordered eating patterns. This research is supported by the necessity to comprehend how stress impacts these behavioral patterns among young adults in a university environment. By recognizing the connections between stress and alterations in eating habits and exercise patterns, the study offers valuable knowledge on how these factors jointly influence weight fluctuations. Employing validated tools such as the perceived stress scale (PSS) and food frequency questionnaire (FFQ) enhances the reliability of the data gathered. The results showed that there were statistically significant connections, indicating that academic stress can cause changes in eating habits and physical activity, which ultimately impact weight. This emphasizes the significance of taking proactive and integrated approaches to health interventions in academic settings. By implementing wellness programs, providing nutritional guidance, and offering mental health support, schools can improve student well-being and academic achievements.

Group 2

THE ROLE OF HYDRATION IN COGNITIVE FUNCTION AND ACADEMIC PERFORMANCE AMONG UNIVERSITY STUDENTS (FEMALE)

Water is an important component for life, playing a fundamental role in many physiological processes required to keep the body functioning properly. Hydration status is the balance of bodily fluids and electrolytes needed for normal bodily functions. This study studies the impact of proper hydration on cognitive abilities and academic performance of female university students. The study was conducted to analyze the effect of hydration levels on cognitive function of the brain, as well as on the academic performance of university students. Explored hydration habits and awareness among female university students. A study was conducted over a period of six months at Riphah International University, Gulberg Greens Campus, to study the influence of hydration on cognitive abilities along with the academic performance. The research study included 100 female college students, aged 18 to 21, chosen through a convenient sampling method. Data was gathered through online questionnaire and in-person. Participants provided informed consent prior to participating. Results from the data revealed that appropriate hydration had a good impact on mental and physical well-being, especially among female undergraduate students. According to the self-reported data by 100 female students showed 42% (well-hydrated), 38% (mildly-hydrated), 20% (moderately and severely dehydrated). Overall, the result concluded that 50% of the result answers was significant while 50% came out as non-significant. This research underscored the importance of proper hydration towards the physiological well-being and cognitive functioning. Encouraging proper hydration habits can result in enhanced concentration, learning ability, and overall academic performance.

Group 3

THE ROLE OF LIFESTYLE HABITS IN THE PREVALENCE OF PCOS AMONGST YOUNG UNIVERSITY STUDENTS

Polycystic Ovary Syndrome (PCOS) is a complex endocrine disorder that commonly affects women of reproductive age and is marked by irregular menstrual cycles, acne, weight gain and hormonal imbalance. The purpose of this study was to assess the relationship between lifestyle factors, including diet, physical activity, sleep and stress, to the prevalence and severity of PCOS among

female university students between the ages of 18 and 24 years. This was a cross-sectional study design and the data was collected through a structured questionnaire which was shared through Google Forms with 100 female participants at RIPHAH International University. Chi square analysis was used during the statistical analysis on SPSS and significance was set at $p < 0.05$ to establish significant causative relationship. The study found that poor lifestyle habits were significantly associated with increased PCOS symptoms among university students aged 18–24. Higher consumption of lean proteins, yogurt, and natural supplements was linked to reduced symptoms, while trends indicated that processed foods worsened outcomes. Regular physical activity, including low to moderate exercise and strength training, showed significant protective effects. Better sleep quality, particularly waking up feeling rested, and lower academic and general stress levels were also significantly associated with reduced symptom severity. These findings emphasize the need for multifaceted lifestyle interventions, particularly improving diet, promoting regular exercise, reducing stress, and maintaining better sleep hygiene, to manage and potentially reduce the prevalence of PCOS among young women and thus improving fertility and quality of life.

Group 4

IMPACT OF SOCIAL MEDIA ON CONSUMERS FOOD CHOICES

Social media provides a remarkable platform to instantly access information which shapes various lifestyle practices, including food and eating habits. Websites like TikTok, YouTube, and Instagram serve not only as a means of entertainment but as channels of promoting novel recipes and discussing health. For Young Adults, the availability of captivating food content as well as influencer promotions deeply affects their consumption patterns. The study followed a quantitative cross-sectional approach targeting young adults aged 18-22 who have access to social media and use it daily. Information was gathered through an online questionnaire shared over WhatsApp and other platforms. The questions in the survey were customized to capture the respondents' level of activity on social media, food choices, eating habits, and the role of social media influencers. Out of 125 respondents, data was analyzed using chi-square tests and descriptive statistics with the help of SPSS and MS Excel. Findings showed that Instagram and YouTube were the most popular platforms. The most engaging content was recipe videos and food pictures. Associations were noted between social media usage and craving food, eating late at night, diet preferences. However, not all behavior changes were related to social media usage which indicates the presence of personal and environmental constraints in the actual behavioral change attempts outside social media influenced diet intentions. Among other

sources, social media plays an active role in shaping food attitudes and behaviors among youths. It has both positive and negative impacts as on one hand it raises dietary awareness and promotes healthy eating but on the other it encourages mindless eating and creates unattainable standards. Clearly defined marketing approaches with the aid of proper nutritional education should be developed to lessen these negative impacts.

Group 5

ASSOCIATION OF DINNER QUALITY ON SLEEP QUALITY AND SLEEP DURATION AMONG UNIVERSITY STUDENTS

University students are specially documented to face multiple physical and mental health challenges. Their dietary choices evolve into eating pattern inconsistencies suited to meeting their academic obligations. This study attempts to analyze the influence of dinner composition and its timing on sleep quality among university students. The objective was to assess the relationship between dinner quality and duration with sleep quality and sleep duration among students.

The study employed a cross-sectional descriptive survey design and targeted students from Riphah International University, with a sample size of 200 students aged between 18 to 25 years. Data were captured via structured questionnaire on dinner quality, eating patterns, and sleep behavior. Statistical analysis was performed using SPSS, focusing on descriptive statistics, p-value sign testing, and other relevance checks.

Our Results showed that more nutritious dinner that included fruits, vegetables, and foods rich in tryptophan were linked to achieving better sleep quality ($p = 0.021$). On the other hand, carbohydrate and fat rich dinners, along with caffeinated and sugary snacks consumed shortly before bedtime, were associated with poor sleep outcomes ($p < 0.05$). Students reporting a 1–2 hour gap between dinner and sleep on average further enhanced their sleep duration reporting to 7–8 hours. Family cultural meal customs and regular family dinners also seem to positively affect decision making related to food and sleep efficiency.

We concluded that the quality and timing of meals have a profound impact on the sleep quality and duration of university students. The consumption of traditional home-cooked meals, early dinner times, and controlled portion sizes remarkably improves sleep outcomes. Educating young adults regarding healthy bedtime routines promotes better sleep hygiene and dietary behavior, highlighting the need for more focus on dietary habits.

Group 6

EFFECTS OF CAFFEINE CONSUMPTION ON SLEEP QUALITY AND COGNITIVE FUNCTIONING AMONG UNIVERSITY STUDENTS

Caffeine is a neuroactive stimulant consumed in the form of tea, coffee, energy drinks, and chocolates globally. It is also consumed widely among university students to combat sleep

deprivation and enhance attention and focus in order to manage academic stress. According to a study, 85- 95% of university students consume 150-200 mg (equal to 1-2 cups) daily. The objectives of the current study were to analyze the relationship between caffeine intake, sleep quality and cognitive functioning. A cross-sectional study on 122 university students as participants was conducted by using purposive sampling. Data was collected via digital platforms using a structured online questionnaire comprised of different sections, including Demographic Assessment, Caffeine Intake Assessment, Sleep Quality Assessment, and Cognitive Assessment. All the collected data from the participants were analyzed statistically to check the level of significance using SPSS Software. Results from the data revealed that caffeine consumption was significantly associated with sleep quality (sleep disturbances, sleep efficiency, sleep latency, sleep duration) and cognitive functioning (distractibility and triggering). Furthermore, forgetfulness and false triggering were also found significantly associated ($p \leq 0.05$). However, caffeine intake didn't show any significant association on forgetfulness and subjective sleep quality ($p \geq 0.05$). Although, caffeine enhances concentration and alertness, it may also impair sleep quality and increase distractibility and false triggering. Educating students to use caffeine responsibly is essential to support cognitive performance without compromising sleep and health.



جَزَاءُ اللَّهِ خَيْرًا

