PJPT

ISSN NO: 2663-0796 (Print)
ISSN NO: 2663-080X (Online)

THE UNIVERSITY OF LAHORE
UPT
UNIVERSITY INSTITUTE OF PHYSICAL THERAPY

PAKISTAN JOURNAL OF PHYSICAL THERAPY

VOL. 03 ISSUE 03
July - Sep 2020

AHS
FACULTY OF ALLIED HEALTH SCIENCES

THE UNIVERSITY OF LAHORE

About the Journal

The advancement in technology has been fast during the past two decades. Although it has rendered many positive impacts and made life extremely fast, just one click away; on the other hand, it has converted life into sedentary mode. Hence, comes the need and utility of physical therapy. It is one of the allied health professions that uses biomechanics or kinesiology, manual therapy, exercise therapy and electrotherapy. It helps to rehabilitate and improves mobility and function.

Here, we are introducing the "Pakistan Journal of Physical Therapy" (PJPT), a pioneer, international, peer reviewed, open access and quarterly journal. Scope of the journal includes manuscripts mainly from physical therapy profession and research. It will cover aspects on:

- Physical therapy in lifestyle-related health problems
- Functioning, activity and participation
- Behavioural medicine in physical therapy
- Disability and health in areas of pain
- Physical activity in health promotion and rehabilitation

The journal prioritizes original studies, systematic reviews, reports of clinical trials, economic analysis, experimental studies, qualitative analysis, epidemiological studies and observational studies. Scientific contributions will be accepted in the form of

- Case Study
- Guest Editorials
- Meta-Analysis
- Original Research Article
- Short communications
- Systematic Review

The aim is to improve implementation of research findings into clinical physical therapy and practice. There is no author fees for publication

Research scripts can be sent at the following address for review and publications.

Dr. Syed Amir Gilani (Editor in Chief)
Dr. Ashfaq Ahmed (Editor)
Dr. Riffat Mehboob (Editor)
pjpt@uipt.uol.edu.pk

Pakistan Journal of Physical Therapy (PJPT) welcomes contributions that are relevant to the science or practice of physiotherapy and other allied health sciences.

Human and animal rights

If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with 'The Code of Ethics of the World Medical Association' (Declaration of Helsinki) for experiments involving humans; Uniform Requirements for manuscripts submitted to Biomedical journals. Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed.

Conflict of interest

To prevent the information on potential conflict of interest for authors from being overlooked or misplaced, it is necessary for that information to be part of the manuscript. It should therefore also be included as a single line on title page.

Submission declaration and verification

Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder.

If additional papers have or will be published with any overlap of the current dataset, it is the authors' responsibility to notify the editor at the time of submission.

Changes to authorship

Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Only in exceptional circumstances will the Editor consider the addition, deletion or

rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum

Clinical trial results

The policy of PJPT regarding clinical trial registration is consistent with the position of the International Committee of Medical Journal Editors(ICMJE). Results may be posted in the same clinical trials registry in which primary registration resides. This will not be considered to be prior publication if the results are posted in the form of a brief structured (less than 500 words) abstract or table. However, divulging results in other circumstances (e.g., investors' meetings) is discouraged and may jeopardise consideration of the manuscript. Authors should fully disclose all posting in registries of results of the same or closely related work.

Reporting clinical trials

Randomized controlled trials should be presented according to the CONSORT guidelines. At manuscript submission, authors must provide the CONSORT checklist accompanied by a flow diagram that illustrates the progress of patients through the trial, including recruitment, enrollment, randomization, withdrawal and completion, and a detailed description of the randomization procedure.

Registration of clinical trials

Registration in a public trials registry is a condition for publication of clinical trials in this journal in accordance with ICJME recommendations. Trials must register at or before the onset of patient enrolment. The clinical trial registration number should be included at the end of the abstract of the article. A clinical trial is defined as any research study that prospectively assigns human participants or groups of humans to one or more health-related interventions to evaluate the effects of health outcomes. Health-related interventions include any intervention used to modify a biomedical or health-related outcome (for example drugs, surgical procedures, devices, behavioural treatments, dietary interventions, and process-of-care changes). Health outcomes include any biomedical or health-related measures obtained in patients or participants, including pharmacokinetic measures and adverse events. Purely observational studies (those in which the assignment of the medical intervention is not at the discretion of the investigator) will not require registration.

Authorship Letter:

The corresponding author has to submit an authorship letter at the time of submission of manuscript, duly signed by all co-authors along with description of their contributions, affiliations and email addresses. Declaration of any potential conflict of interest, transfer of copyrights and funding will also be mentioned in it.

Open access

This is an open access journal: all articles will be free for everyone to read and download.

Informed consent and patient details

Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in the paper. Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in PJPT publication. Written consents must be retained by the author but copies

should not be provided to the journal. Only if specifically requested by the journal in exceptional circumstances the author must provide copies of the consents or evidence that such consents have been obtained.

Submission

Manuscripts may be submitted to the following email address:

pjpt@uipt.uol.edu.pk

All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Article length

Manuscript length (not including title page, abstract, references, tables or figure legends) depends on the type of study:

Systematic reviews: up to 5000 words
Clinical trials, experimental and qualitative studies: up to 3500 words
Observational studies: up to 2500 words

Peer review

This journal operates a double blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final.

Editorials

Pakistan Journal of Physiotherapy (PJPT) publishes two editorials on scientific or professional issues of physiotherapy practice and other health related matters and innovations in each issue. Editorials are usually commissioned; however, anyone wishing to write an editorial should contact the Journal Editor for discussion about the topic. Editorials should be no more than 2000 words with a maximum of three authors and 20 references. Commissioned editorials are not formally peer reviewed, but may be subject to informal review. Non-commissioned editorials will be formally peer reviewed.

Manuscript preparation

Essential title page information

Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.

Running title: Write a short running title on title page

- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology. Ensure that the e-mail address and contact number is given and that contact details are kept

Discussion

This should explore the significance of the results of the work, not repeat them. Avoid extensive citations and discussion of published literature.

Conclusions

The main conclusions of the study should be presented in a short concluding paragraph at the end of the Discussion section.

Figures

Ensure that each illustration has a caption. Supply captions below the figure. A caption should comprise a brief title and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used. Include the number of figures on title page. Maximum number of figures or images is 4.

Tables

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.Write captions below the table. Include the number of tables on title page. Maximum number of tables to be included is 4.

References
Citation in text

Please ensure that every reference in the text should be mentioned as arabic numerals in superscript.Reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Reference management software

Use the support of Citaion Style Language styles, such as Mendeley and Zotero, as well as EndNote.

Reference style

Text: Indicate references by (consecutive) superscript arabic numerals in the order in which they appear in the text. The numerals are to be used outside periods and commas, inside colons and semicolons.

The referencing style used by the journal is the Vancouver style, which can be found as a standard referencing style in EndNote, RefWorks, Mendeley, and Zotero.

Submission checklist

The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.
Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:

up to date by the corresponding author.The corresponding author details should be included on title page. Email address should be institutional and including the name of corresponding author.

- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes

- **Word count**
  Mention the word count of the manuscript (without references) on the title page.

Highlights

Highlights consist of a short collection of bullet points that convey the core findings of the article. Please include 3 to 5 bullet points to explain the key findings.

Abstract

Abstract should comprise of the following: Background,Objective , Design, Methodology, Results, Conclusion, Recommendations. A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using Australian / British spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Units and Abbreviations

This journal does not favour abbreviations in the text. However, 95% CI, SD, OR, RR, MD and such commonly used terms do not require spelling out in full at first mention (they would usually appear within parentheses), but even when presented outside of parentheses these do not require defining. The journal uses an approved list of units and abbreviations.

Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results

Methodology

Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

Results

Results should be clear and concise.

- E-mail address
- Full postal address

All necessary files have been uploaded, and contain:

- Keywords
- All figure captions
- All tables (including title, description, footnotes)

Further considerations

- Manuscript has been 'spell-checked' and 'grammar-checked'
- References are in the correct format for this journal
- All references mentioned in the Reference list are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Internet)

THE UNIVERSITY OF LAHORE

Pakistan Journal of Physical Therapy
University Institute of Physical Therapy
The University of Lahore
Lahore, Pakistan

ISSN 2663-080X (Online), ISSN 2663-0796 (Print) VOL. 03 ISSUE 03 JULY-SEP 2020

Editorial Board & Peer Reviewers

THE UNIVERSITY OF LAHORE

Pakistan Journal of Physical Therapy
University Institute of Physical Therapy
The University of Lahore
Lahore, Pakistan

ISSN 2663-080X (Online), ISSN 2663-0796 (Print) VOL. 03 ISSUE 03 JULY-SEP 2020

Editorial Board & Peer Reviewers

THE UNIVERSITY OF LAHORE

Pakistan Journal of Physical Therapy
University Institute of Physical Therapy
The University of Lahore
Lahore, Pakistan

ISSN 2663-080X (Online), ISSN 2663-0796 (Print) VOL. 03 ISSUE 03 JULY-SEP 2020

Publication Office

Prof. Dr. Riffat Mehboob
Editor,
Faculty of Allied Health Sciences
The University of Lahore,
Defence Road Campus
Lahore, Pakistan

Mailing Address:
pjpt@uipt.uol.edu.pk
http://journal.uol.edu.pk/pjpt

Editorial

Guest Editorial

Original Articles

Disclaimer:

Editorial

Emerging Trends in the Field of Physical Therapy

There are some major advancements trending in Physical therapy field including wearable vibrating posture sensors, gait-correcting insoles monitoring devices such as Fitbit video games programmed to make treatment sessions more enjoyable, and sensors for helmets that warn sports persons and physiotherapists of possible impacts causing concussion[1]. With the invention of the Ekso suit, an aluminum and titanium exoskeleton that allows patients/clients facing different stages of paralysis or hemiparesis with movement, the Berkeley-based Ekso Bionics Company set new standards in rehabilitation facilities and gait training. Moreover for patients/clients suffering from neurological impairments which are traumatic brain injury, strokes, and cerebral paralysis, another promising option for rehab therapists are therapy robots, which help therapists with exercises and can accelerate recovery. More and more clinicians have begun integrating the Xbox Kinect and Nintendo Wii into therapy plans over the past few years. Wii games are designed to use motion-sensitive controls and repeated motions equivalent to physical therapy. In addition to helping victims of stroke and people suffering from knee surgery, video game workouts have been found to help people recover from brain injury and patients in ICUs. The application of virtual reality technology in PT has expanded a fascinating, interactive treatment session in a virtual world to virtual reality rehab. The CAREN-Computer Assisted Rehabilitation Environment (CAREN) VR system is designed to support stroke patients or patients with serious injuries, geriatric population with disability and improve their sense of stability and mobility[2]. The Recovery Tracker software from Reflexing Health offers advised client-specific videos with proper instructions and guidelines, training resources, and exercises. The software allows therapists to track client's success plus monitor his/her progress in real time and in addition allows them to visually check their clients carrying out the exercises with the help of Kinect camera. In 2010, Chase Curtiss created “Sway”, a solution for concussion management that highlights the forever present risks linked with chronic or untreated head injuries, to assist "health professionals manage objective balance and reaction time virtually testing in any setting.” Rocky Mountain University of Health Professions, Utah is working on wearables that notify when the gait speed of a patient decreases, so that they can intervene before a patient falls. These devices can be used within and outside of the clinic to monitor patients, while offering actual measures which avoid exhaustion or injury.Physical therapy is a hands-on field, and will always be, but for sure technology can always play a significant part. Progresses in robotics and bionics are helping physiotherapists to diagnose more reliably and boost treatment efficiencies which in addition enhance patient/client involvement and compliance with Home Exercise Program(HEP). All of this results in an improved patient/client experience, eventually leading to enhanced and long-term outcomes in return.

References:

1- Oh J, Eser RA, Ehrenberg AJ, Morales D, Petersen C, Kudlacek J, Dunlop SR, Theofilas P, Resende ED, Cosme C, Alho EJ. Profound degeneration of wake-promoting neurons in Alzheimer's disease. Alzheimer's & Dementia. 2019 Aug 12.

2- Winer JR, Mander BA, Helfrich RF, Maass A, Harrison TM, Baker SL, Knight RT, Jagust WJ, Walker MP. Sleep as a potential biomarker of tau and β-amyloid burden in the human brain. Journal of Neuroscience. 2019 Aug 7;39(32):6315-24.

Prof. Dr Riffat Mehboob
Editor
Pakistan Journal of Physical Therapy

Cancer: A Life Threatening Peril Becoming Lifestyle Disease

Caner a dreadful disease is actually one large group of diseases which dates back to times of "Hippocrates", The Father of Medicine, (460-370 BC) who used this name for the first time to talk about non-ulcer and ulcer forming tumors. The evidence of its presence from the very past history comes from fossilized "Egyptian Mummies" having tumors on bones. Then Galen (130-200 AD) used the term "Oncos" to explain tumors. So it's a disease involving growth of abnormal cells, their proliferation and metastasizing the other tissues and organs. Now we know that biology has a branch named Oncology to deal with the scientific study of cancer and oncogenes. It took centuries to get knowledge and use modern technologies against this malady. Now we know cancer is a group disease which has hundreds of types. 19th Century saw much advancement towards its cure. Along with surgery, radiotherapy and chemotherapy were the main methods to cure cancer patients. Day by day, scientists are looking for new methods to control and cure of this curse. Hundreds of natural medicinal compounds are being tested to use clinically for its cure in order to replace the radiotherapy and chemotherapy and lower their side effects. But humanity is still fighting against this disease as the numbers of cases throughout the world are increasing day by day. If we look on the reports presented by WHO (World Health Organization), Cancer is the second leading cause of deaths globally which means one person in every six deaths, dies due to cancer. In 2018, the most common types of cancers reported in men were of liver, prostate, stomach, lung and colorectal. Whereas in females the most common forms were breast, thyroid, cervical and colorectal. Cancer has become a global disaster which is not only crunching the cancer patient but it also has damaging effects on the whole family of the patient. It imparts physical, emotional and financial crisis. Unfortunately, the condition is bitterer in under developing countries. Cancer has become a lifestyle disease these days. We are living in the world with superficial comfort but we are breathing with urbanizations, ozone depletion, exposure to microwave and ultraviolet radiations, hazardous chemicals etc. Moreover, It is becoming a lifestyle disease due to lack of exercise, Obesity, consumptions of drugs, tobacco and alcohols. The cases of cancers are reported more in urban areas than in rural areas more likely due to above mentioned factors. The ratio of cancer patients is expected to raise up-to 27.5 million by 2040 globally. So the battle is never ending, Humans need to figure out the factors and cutting these from their lives in order to live a healthy life which is a blessing indeed.

Sara Hayee[1] & Amna Rehman[2]
[1]Govt. Graduate College for Women, Samanabad, Lahore, Pakistan
[2]Govt. M. A. O. College, Lahore, Pakistan

Level of Postural Awareness Among Teaching Staff of University of Azad Jammu & Kashmir, Muzaffarabad

Syeda Abida Hussain Sherazi[1*], Syeda Maham Batool[1], Umara Qadar[1], Shagufta Hameed[1], Syed Tayyib Shah[1] and Sheikh Abdul Basit[1]

[1]University of Azad Jammu & Kashmir, Muzzafarabad (UAJ&K).
*syeda.abida.sherazi@gmail.com

Highlights:

- Postural awareness among faculty of University of Azad Jammu & Kashmir (UAJ&K) was assessed
- Most of the faculty had some knowledge about posture but 68% had average level of postural awareness
- Neck and back pain were found to be common
- Majority of teaching staff used improper positioning during different work.

Abstract:

Background:

Postural problems are very common these days among youth including office workers, University staff, students and from other walks of life.

Objective:

To evaluate the level of postural awareness and proper positioning during different tasks performed by teaching staff of University of Azad Jammu &Kashmir, Muzzafarabad (UAJ&K).

Methodology:

A cross-sectional study with purposive sampling technique was conducted in UAJ&K. In this study 100 faculty members, both male and females, with age between 25 to 55 years were included. 54% were males. The data was analyzed on SPSS version 22.

Results:

63% worked for 4-8 hours daily, 95%, respondents traveled 1-7 hour daily and 61% had knowledge about posture, among them 47% had back and 20% had neck pain. Majority of the teaching staff used improper positioning during different work.

Conclusions:

There was moderate level of information regarding correct positioning during work in different environment. They used improper postures which leads to physical abnormality, absenteeism, increased expenditure on their treatment.

Keywords:

Posture, travel, Pain, Faulty Position, back pain.

Introduction:

Posture is the attitude assumed by body either when the body is immobile or when it is in motion in relation to the time. Posture is attained as a result of coordinated action of many muscles working to maintain stability.[1] Optimal or ideal posture is the state of muscular and skeletal balance that protects the supporting structures of the body against injury or progressive deformity, either at work or rest. It involves the positioning of the joints to provide minimum stress to the body. Conversely, faulty posture increases stress on the joints.[2] The concepts of posture is based on a series of chains which rely on the mechanics of the body in which complications develop anywhere along the body. The disturbance in the chain can lead to abnormality below or above that junction. This generates more strain on the supportive structures. Additionally, persisting postural faults can produce ache, distress, or disability. The American Academy of Orthopedic Surgeons (AAOS) define poor posture as a faulty relationship of the deferent body parts, which creates increased strain on the supporting structures. Moreover, persisting postural faults can result in pain, discomfort, or disability. Physical job demands such as, static postures, repetition and forceful exertions have been

reported as underlying mechanisms leading to the development of work related musculoskeletal disorders (WMSDs). Hence, the risk factor of bad posture during teaching, classroom environment and daily activities should be addressed at younger age to prevent musculoskeletal injuries in adulthood . There is need to highlight certain issues that are going to be deciding factors for future postural education programs and life style modification awareness programs.

Methodology:

A cross-sectional study was conducted in UAJ&K. A total of 100 participants were recruited. The sample size was calculated from Reosoft Sample size calculator at 95% confidence interval. Both male and female teaching staff with age between 25 to 55 years were included. The survey with close-ended, self-administered questionnaire that focused on various positions while working was used as the data collection method. The questionnaire was prepared, keeping in mind the various faulty positions of working staff and was aimed at drawing their attention to their strained positions that can potentially cause pain. The questions were designed so that they evaluate the level of postural awareness by eliciting the details of the body posture of the staff, their manner of working, and the presence or absence of pain. The questionnaire was distributed among the staff after permission from the head of department and written informed consent taken from each respondent. Data was analyzed using SPSS version 16 showing frequency and percentages of different variables.

Results:

There were 54% males and 46% females. All participants were educated; among them 15% were BS/ MSc, 65 % were M.Phil, MS and 20% were Ph.D., Majority (99%) were right handed and most of the participants (63%) worked 4-8 hours daily , 95% respondents traveled 1-7 hours daily (Table 1).

Demographical Detail		Frequency
Gender	Male	54
	Females	46
Education	BS/MSc	15
	M.Phil/MS	65
	Ph.D	20
Dominant Hand	Right	99
	Left	1
Daily Working Hours	1 - 4	19
	4 - 8	63
	8 - 12	16
	12 - 16	2
Traveling	Yes	62
	No	48
Duration of Traveling Daily	>1 hours	7
	2 - 3	49
	4 - 5	29
	6 - 7	10
	Other	5

Table 1: Demographic variables

61% respondents had general information about posture: 9% had poor, 68% had average and 23% had good knowledge and 71% tried to maintain correct posture. Due to bad posture 81% had pain in different regions. The pain in different regions included neck (16%), back (47 %), upper limb (17%) and lower limb (3%) (Table 2).

The graphical date showed that posture during different activities/tasks and the correct positioning used by participants included; exact standing (83%), washing clothes manually (59%), sitting in high (51%), low(43%) back rest chair, driving(65%) and gardening (85%),while keeping weight on high level(61%) ,while carrying an object(70%), carrying bucket(52%), carrying back pack(61%), sleeping posture(83%) and correct mattress(55%) (Figure 1).

Posture Knowledge and Pain		Frequency
Knowledge about Posture	Yes	61
	No	39
Level of postural awareness	Poor	9
	Average	68
	Good	23
Tried to maintain posture	Yes	81
	No	29
Pain related to bad posture	Yes	65
	No	35
	Neck	20
	Back	47
	Upper Limb	15
	Lower Limb	3
	Nil	15

Table 2: Posture and pain related variables

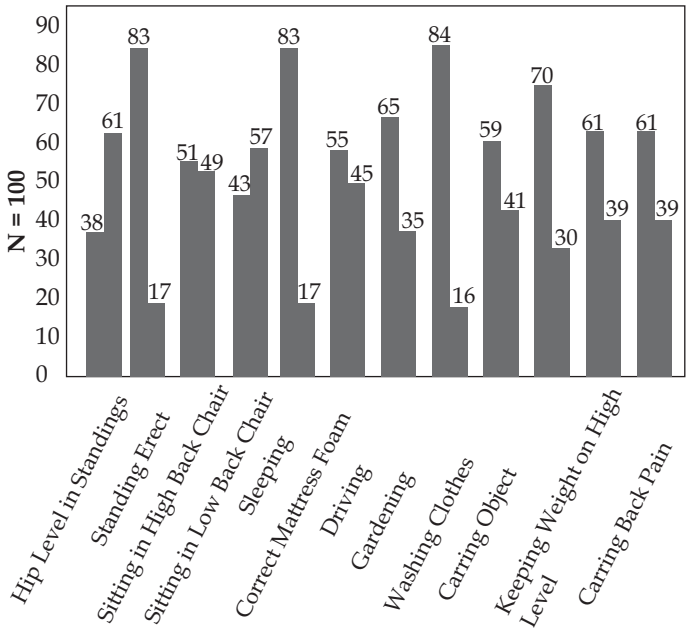


Figure 1 : Posture during different task

Discussion:

In Azad Kashmir, particularly in Muzaffarabad, no study has been conducted on postural awareness with regards to University teachers. So, the information of postural awareness, proper positioning during different tasks performed by teaching staff and its association with pain is unknown. Therefore, there is a need to investigate above mentioned basic information related to the body posture in teaching staff of UAJ&K. A survey was done in Karachi in which 64.4% of the participants had general information regarding their body posture.[16] The level of postural Awareness is 09% had poor 68% had average and 23% had good in the current is somewhat be similar to to the previous study conducted in Saudi Arabia it showed that 21% poor 67% had average & 11% had good postural awareness. [17] The posture is directly proportional to the performer's work, if the performers have no knowledge about posture, they can develop different problems. A study was done by Elizabeth Mailoa & Peter Rovani who claimed 56.8% of respondents had complaints of pain[18]. In the current study, 81% participants had pain due to bad posture. These findings are not similar to the above mentioned studies, the participants had less knowledge about posture and they had no proper environment of work, because the AJK is a remote area, and after earthquake the basic infrastructure was demolished so there is no standard work environment for teaching. They also have no proper platform for physical activity. In current study, the males are more than females, may be due to the decreased number of females in the employment. This is completely different than what is observed in the western countries where there is equality in regards to job responsibilities, work load and amount of stress, and also males in our country are more likely to be subjective to abnormal posture and musculoskeletal problems. Long traveling effects posture and development of pain due to prolonged & persisted sitting.[19-21] 95% of the respondents travelled 1-7 hours daily. The basic infrastructure of roads in Azad Jammu Kashmir is not meeting the international standards. The awareness of posture is important to prevent any musculoskeletal disease. The participants of this study mention different locations of pain, among which 47% have backache, 20% have neck pain, 15% have upper limb pain, and 3% have lower limb pain. The same musculoskeletal problems were identified but showed different margin in Indonesia by Elizabeth Mailoa & Peter Rovani the 25% of complaints of back pain, 23.9% limb pain and 8% of neck.[18] To our knowledge, it is a pioneer study of its type and included qualified staff. One of the major limitations of this study is that it covered three campuses of UAJ&K instead of all campuses. Distribution of pamphlet regarding the postural awareness was missed; it should be consider in future when it is done on large demographical area for validation of the results.

Conclusions:

Most of the faculty members were unaware of the correct sitting postures during work. They suffered neck pain, low back pain and other pains due to improper posture.

References:

01- Coglianese D. Muscles: Testing and Function With Posture and Pain, ed 5 (with Primal Anatomy CD-ROM). Physical Therapy. 2006 Feb 1;86(2):304-5.

02- American Physical Therapy Association: Posture (PDF) Pages 1 - 16 - Text Version | FlipHTML5 [Internet]. Fliphtml5.com. 2020 [cited 7 June 2020]. Available from: http://fliphtml15.com/zlwu/twsz/basic

03- Houglum PA, Bertoti DB. Brunnstrom's clinical kinesiology. FA Davis; 2011 Dec 7

04- Stanos S, Mogilevsky M, Vidakovic LR, McLean J, Baum A. Physical medicine approaches to pain management. In Current Therapy in Pain. Elsevier Inc. 2009. p. 527-540

05- McLellan DL. A Comprehensive Guide to Geriatric Rehabilitation. Journal of Rehabilitation Medicine. 2015 Mar 5;47(3):286-.

06- Cramer H, Lauche R, Haller H, Langhorst J, Dobos G, Berger B. "I'm more in balance": a qualitative study of yoga for patients with chronic neck pain. The Journal of Alternative and Complementary Medicine. 2013 Jun 1;19(6):536-42.

07- Neumann DA. Kinesiology of the musculoskeletal system; Foundation for rehabilitation. Mosby & Elsevier. 2010.

08- Cramer H, Mehling WE, Saha FJ, Dobos G, Lauche R. Postural awareness and its relation to pain: validation of an innovative instrument measuring awareness of body posture in patients with chronic pain. BMC musculoskeletal disorders. 2018 Dec;19(1):109.

09- Nowotny J, Nowotny-Czupryna O, Brzęk A, Kowalczyk A, Czupryna K. Body posture and syndromes of back pain. Ortopedia, traumatologia, rehabilitacja. 2011;13(1):59-71.

10- Cramer H, Mehling WE, Saha FJ, Dobos G, Lauche R. Postural awareness and its relation to pain: validation of an innovative instrument measuring awareness of body posture in patients with chronic pain. BMC musculoskeletal disorders. 2018 Dec;19(1):109.

11- Marcus M, Gerr F, Monteilh C, Ortiz DJ, Gentry E, Cohen S, Edwards A, Ensor C, Kleinbaum D. A prospective study of computer users: II. Postural risk factors for musculoskeletal symptoms and disorders. American journal of industrial medicine. 2002 Apr;41(4):236-49.

12- Pourmahabadian M, Azam K. Evaluation of risk factors associated with work-related musculoskeletal disorders of upper limbs extremity among press workers. Pak J Med Sci. 2006 Oct;22(4):379-84.

13- Krechman B. Musculoskeletal dysfunction and the effects of: Prolonged poor sitting postures, work ergonomic settings and therapeutic exercises. Australasian Musculoskeletal Medicine. 2015 Aug;19(2):28.

14- Novak CB. Upper extremity work-related musculoskeletal disorders: a treatment perspective. Journal of Orthopaedic & Sports Physical Therapy. 2004 Oct;34(10):628-37.

15- Balci R, Aghazadeh F. The effect of work-rest schedules and type of task on the discomfort and performance of VDT users. Ergonomics. 2003 Apr 1;46(5):455-65.

16- Yasmeen S, Shahrukh M, Farooqui Z. Postural Awareness in School Going Students and Teachers. Pak. j. rehabil. 2014;3(1)39-45

17- Kanaparthy A, Kanaparthy R, Boreak N. Postural awareness among dental students in Jizan, Saudi Arabia. Journal of International Society of Preventive & Community Dentistry. 2015 Dec;5(Suppl 2):S107.

18- Mailoa E, Rovani P. Study of ergonomic aspect in daily practice dentistry of some private dental clinic in Makassar.

19- Jaiswal A. Low Back Pain and Work-Related Risk Factors among Drivers of Pondicherry. International Journal of Scientific Footprints. 2013;1(2):7-16.

20- Hakim S, Mohsen A. Work-related and ergonomic risk factors associated with low back pain among bus drivers. Journal of Egyptian Public Health Association. 2017;92(3):195-201.doi:7.10.21608/EPX.2018.16153

21- Okunribido OO, Shimbles SJ, Magnusson M, Pope M. City bus driving and low back pain: a study of the exposures to posture demands, manual materials handling and whole-body vibration. Applied ergonomics. 2007 Jan 1;38(1):29-38.

Prevalence of Thumb Pain Among Physiotherapists Perform Manual Techniques During Clinical Practice

Ihsan kareem[1], Sana Batool[1] , Fareeha Amjad[1] and Samia Arif[1]

[1]University Institute of Physical Therapy, Faculty of Allied Health Sciences, The University of Lahore, Pakistan.
*ihsankareem49@gmail.com

Highlights:

- Thumb pain among the physiotherapists is common occupational hazards.
- Physiotherapists may develop thumb pain due to their professional techniques including, manual therapy, ischemic pressure release, massage, mobilization, and gliding etc.
- Thumb pain may irritate the physiotherapists and may alter their way to perform the manual techniques

Abstract:

Background:

Thumb pain among the physiotherapists is common occupational hazards. The physiotherapists working in their fields perform repetitively manual techniques, massage, mobilization and glides etc. This occupation needs to find out the number of physiotherapists having thumb pain due to manual work they perform during clinical practice in different rehabilitation centers.

Objective:

To determine the frequency of thumb pain among physiotherapists perform manual techniques in clinical practice; a cross sectional study

Methodology:

A cross-sectional study design with convenient sampling technique was used, with sample size 190 to determine the frequency of thumb pain among physiotherapists in Lahore and data was analyzed by SPSS, mean and standard deviation was calculated for the quantitative variable while qualitative variable was presented in the form of frequency and percentage.

Results:

In the present study a self-made questionnaire was distributed among 190 physiotherapists. Among 190 participants 58(30.5%) were male and 132(69.5%) were Females. 40(21.1%) felt pain while performing ischemic pressure release from thumb. 38(20.0%) felt pain while giving massage. 12(6.3%) felt pain while holding an object between thumb and index finger. 2(1.1%) felt pain in circumduction. (5.3%) felt pain while making snuff box. 24(12.6%) felt pain in isometric exercises of thumb. 27(14.2%) felt pain in hyper flexion at DIP. 17(8.9%) felt pain in hyper flexion at PIP. 51(26.8%) rated 3 pain and 15(7.9%) rate 5 pain on VAS.

Conclusions:

Study concluded that frequency of thumb pain among physiotherapists working in different hospitals of Lahore was found to be 35.26%. This thumb pain was due to their professional techniques including, manual therapy, ischemic pressure release, massage, mobilization, and gliding etc.

Keywords:

Thumb Pain, frequency, manual techniques, Physiotherapists

Introduction:

Work related musculoskeletal problems mostly thumb pain has become a common problem for professional manual physiotherapists deal with patients of different musculoskeletal disorders. Thumb pain may irritate the physiotherapists and may alter their way to perform the manual techniques. On average, 43% to 91% of therapists alter their special manual skills due to their work related thumb pain. Alteration in the manual techniques due to their work related thumb pain may decrease required effectiveness in treating the patients rather than to enhance the treatment benefits leading towards less effective and less

benefitted treatment which ultimately increase the treatment cost[1]. Over use of thumb or inappropriate use of thumb during the performance of manual techniques during therapy causes the hypermobility of the metacarpophalangeal (MCP) joints which is ultimately a major cause of osteoarthritis of the MCP joints later on[2]. Thumb pain is the most common problem among physiotherapists doing clinical practice. Because they always use their distal hand especially thumb for applying manual techniques during mobilization and massage in physiotherapy department[3]. Many other risk factors associated with thumb pain includes mishandling the patient, shifting the dependent patient in ICU, during abrupt movement response by obese patient while applying manual therapy, confined work places, age and gender. Such kind of factors may injure the practitioner[3]. In the field of physiotherapy the physiotherapists always use his hands and mostly both thumbs in mobilization and soft tissue release. Continuous pressure on thumb causes micro trauma to the small joints. Micro trauma changes the anatomy of the small joints. Alternative methods should be adopted to use the manual techniques; it may helps the therapist to prevent himself from injury[4]. By using both thumbs physiotherapists can produce the spinal movements by applying anteriorly directed force on spinus process while patient is in prone position[5]. The physiotherapists must consider the possible cause of work related problems and pain and should take proper preventive measures[6]. Thumb pain is a most commonly seen professional risk for physical therapists, with the occurrence second most to back and neck pain and principally found in clinical practices that frequently affecting the thumb joints. The World Health Organization (WHO) deliberates work-related musculoskeletal complaints; as all musculoskeletal complaints are caused by work and the conditions of its presentation. This description reflects chronic and acute both complications, with or without a cause-effect association. This teaching methodology is satisfactory in order to improve the essential skills of practitioners to avoid them from injury[7]. According to a study highly injured area of the body was found to be hand. This study was done on Canadian massage therapist, it was more frequent in the overweight respondents[8]. Work related musculoskeletal disorders are common among the physiotherapists in personnel in Lusaka, Kitwe and Ndola districts of Zambia[9]. According to an other study the risk factors associated with thumb and back pain among physiotherapists working in hospital settings are lifting the patients, bending, twisting, stooping, pushing or pulling, carrying and prolonged standing[10]. Record of international labor organization show that work related disorders have high influence on civilization, in relations to loss of health status and social prices[11] Even though some for Safety and Health at Work discoveries it is tough to measure and link work related disorders prices, some readings have expected the rate of work-related upper-limb musculoskeletal disorders among 1% and 3% of Gross National Product[12]. Whereas the prevalence of problems related to thumb in different populations of Australian physiotherapists has been explored. Furthermore, it is inadequate study about the problem causing factors for thumb problems among physical therapists and their influence on physical therapists' careers[13]. As compare to the high rate for civilization, work related thumb problems is a new division of study, frequently present in professionals. Afferent discharge is associated with spinal manipulation giving by the physiotherapist[14] .Work related thumb problems inhibition among healthcare employees are not broadly examined. In most physiotherapists 'work related disorders are positioned in upper limb ends. Ratios are seen to be higher when linked to a wide usage of physical practices. These findings show a study on physiotherapists to fully observe work-related wrist and hand area illnesses. In relations to thumb pain, the stated one-year occurrence ranges from 11.1% to 83%. There were no past

studies examining occurrence and danger aspects related with thumb pain in Pakistani physiotherapists who work in physical rehabilitation centers.[15] The purpose of present study was to determine the life time and current frequency of thumb pain among physiotherapists perform manual techniques in different hospitals of Lahore. The second aim was to investigate the nature of thumb pain and factors associated with them.

Methodology:

A cross sectional study design with convenient sampling technique was used. Mean and standard deviation were calculated for the quantitative variables while qualitative variables were presented in the form of frequency and percentage. Self-made questionnaire was used to determine frequency of thumb pain among physiotherapist in Lahore with sample size 190 physiotherapists working in university of Lahore teaching hospita, Jinnah hospital, Hamid latif hospital, doctors hospital and Farooq hospital. After taking the informed consent, the data was calculated and analyzed by SPSS.

Results:

In the present study a self made questionnaire was circulated among 190 physiotherapists and found following results. Among 190 physiotherapists 58(30.5%) were male and 132(69.5%) were female. 40(21.1%) felt pain while performing ischemic pressure release from thumb (fig.1) 38(20.0%) felt pain while giving massage (fig.2), 24(12.6%) felt pain in isometric exercises of thumb (fig.3). 51(26.8%) rated 3 pain and 15(7.9%) rate 5 pain on VAS Frequency of thumb pain among physiotherapists who used to performed manual techniques was found to be 35.26%..

Pain felt by physiotherapist while performing ischemic pressure release	Frequency(%)
Yes	40(21.1)
No	150(78.9)
Total	190(100.0)

Table: 1 The pain felt by physiotherapist while performing ischemic pressure release

The pain felt by physiotherapist while giving massage.	Frequency(%)
Yes	38(20)
No	152(80)
Total	190(100)

Table 2 : The pain felt by physiotherapist while giving massage

The pain felt by hysiotherapist while doing isometric exercises of thumb.	Frequency(%)
Yes	24(12.6)
No	166(87.4)
Total	190(100.)

Table 3: The pain felt by physiotherapist while doing isometric exercises of thumb.

Discussion:

The aim of present study was to determine the frequency of thumb pain among physiotherapists perform manual techniques; a cross sectional study. Results of the study show that 88% of the physiotherapists have experienced a job-associated disorder. In 33% problems were found within the first 6 years of job. The main cause of thumb pain was found in physiotherapists who were practicing with manual therapy sittings. Occupation approval and social problems were also recognized as adjacent-belongings of the financial go-slow.[16] Results findings show that physiotherapists who were under training commonly apply lower mean peak forces, lesser force amplitudes, and used lower frequencies than therapists who were giving the same therapies. The factors associated with manual force factors were parallel for both therapists and students. These involved gender of the therapist, student or rmobilized subject, spinal stiffness at C2, mobilized subject weight, and the frequency of thumb pain.[17] A study conducted by Snodgrass SJ on physiotherapy students who were treating

the cervical spine. Result findings show that common manipulation techniques involve postero-anterior (PA) glides in the physiotherapy departments. The manual forces applied by the physiotherapists for learning cervical mobilization are actually not known.[18] However, in the present study physiotherapists who provide their services in prevention and treatment of musculoskeletal injuries were found to suffer with occupational musculoskeletal injuries which were associated with long manipulation sittings. Incidence of job associated disorders is maximum. Another study conducted by Wajon A and Ada L to find out the prevalence of thumb pain in physical therapists practicing spinal manipulative therapy. Result findings show that the techniques most commonly responsible for aggravation of symptoms were unilateral (87%) and central poster-anterior glides (85%). Maximum physiotherapists (74%) altered their way of treatment technique to reduce symptoms. Suggestions are made about the safe position of the thumb during the application of spinal manipulative therapy techniques.[19] However, in present study problem causing factors of thumb pain were associated with incorrect handling techniques. Based on these findings, it is recommended that the potential for thumb problems in physiotherapists, including possible risk factors, should be discussed in undergraduate and work place settings. As if physiotherapists choose to work in an area of high thumb usage, particularly if they have unstable or hypermobile thumb joints, they should modify their work practices to reduce repeated weight transmission through the thumb joints. A study conducted by Sehar B et al. show that the exact etiology of the thumb pain is due to de quervain's tenosynovitis that is caused by the acute trauma, unaccustomed new exercise. It may also be caused by certain modified risk factors like repetitive micro trauma, overuse frequent fall, psychological causes, and sedentary lifestyle, systemic diseases, fracture, risk factors and poor nutrition. Age, gender, ethnicity and postmenopausal women are non-modified risk factors. Modified risk factors can be improved by diet, active life style, daily exercisel, pharmacological and physiotherapy treatment, but it depends upon the underline cause. Not modified risk factors are not always cured but compensated.[20] However, in the present study among 190 physiotherapists 40 physiotherapists experienced pain on ischemic pressure release, 38 felt pain while giving massage and 24 physiotherapists have felt pain on isometric exercise. Result findings of a study show that among 81 physiotherapists who were practicing manual techniques, 40 physiotherapists were having thumb pain, 25 physiotherapists had diffused nature of pain and 16 had centralized pain.[20] Reason of their pain was de quervais syndrome of thumb.

The result of present study are also similar to a study in which 58.07% subjects, with mean age of 22.43 years using mobile phones had developed de quervais syndrome, which leads to thumb pain and inflammation.[20]

Here it is important to repeat the same procedure in different patient population that may benefit the patient from cervical manipulation with neck pain whiplash injury cervicogenic headache and lateral epicondylitis.[21]

The present study concluded the frequency of thumb pain among physiotherapists in Lahore is 35.26% in physiotherapists. This study also concluded that physiotherapists showed pain in thumb was mild to moderate ranges 3 to 5 on VAS. This thumb pain was due to their professional techniques including, manual therapy, ischemic pressure release, massage, mobilization, and gliding etc.

In this present study 190 questionnaire were circulated into physiotherapists, present study found following results, 58(30.5%) were Male and 132(69.5%) were Female. 40(21.1%) felt pain while performing ischemic pressure release from thumb. 38(20.0%) felt pain while giving massage. 12(6.3%) felt pain while holding an

object between thumb and index finger. 2(1.1%) felt pain in circumduction. (5.3%) felt pain while making snuff box. 24(12.6%) felt pain in isometric exercises of thumb. 27(14.2%) felt pain in hyper flexion at DIP. 17(8.9%) felt pain in hyper flexion at PIP. 51(26.8%) rated 3 pain and 15(7.9%) rate 5 pain on VAS

Conclusion:

The present study concluded the frequency of thumb pain among physiotherapists in Lahore is 35.26% in physiotherapists. This study also concluded that physiotherapists showed pain in thumb was mild to moderate ranges 3 to 5 on VAS. This thumb pain was due to their professional techniques including, manual therapy, ischemic pressure release, massage, mobilization, and gliding.

Refrences:

01- Snodgrass SJ, Riyett D, Chiarelli P, Bates AM, Rowe LJ. Factors related to thumb pain in physiotherapists. Australian Journal of Physiotherapy 2003; 49(4): 243-50.

02- Mubeen M, Ans M, Ayaz S, et al. The Frequency of Thumb Pain Among Physiotherapists Practicing Spinal Manual Therapy in Lahore, Pakistan. Pak J Med Biol Sci 2018; 2(1).

03- Yaseen A, Yaseen H, Yaseen A. Work related thumb pain, its prevalence, risk factors and prevention among physical therapists.

04- Snodgrass SJ, Rivett DA. Thumb pain in physiotherapists: potential risk factors and proposed prevention strategies. Journal of Manual & Manipulative Therapy 2002; 10(4): 206-17.

05- Wajon A, Ada L, Refshauge K. Work-related thumb pain in physiotherapists is associated with thumb alignment during performance of PA pressures. Manual Therapy 2007; 12(1): 12-6.

06- Caragianis S. The prevalence of occupational injuries among hand therapists in Australia and New Zealand. Journal of Hand Therapy 2002; 15(3): 234-41.

07- DeMont R. Abstracts from the Canadian Athletic Therapists Association: May 29–31, 2014, Winnipeg, Manitoba, Canada. Athletic Training and Sports Health Care 2014; 6(3): 139-44.

08- Chan T, Smith J. Work-related Injury in New Zealand MNZ Massage Therapists.

09- Nkhata LA, Zyaambo C, Nzala S, Siziya S. Work-related musculoskeletal disorders: Prevalence, contributing factors and coping strategies among physiotherapy personnel in Lusaka, Kitwe and Ndola districts, Zambia. Medical Journal of Zambia 2010; 37(4): 262-7.

10- West DJ, Gardner D. Occupational injuries of physiotherapists in North and Central Queensland. Australian Journal of Physiotherapy 2001; 47(3): 179-90.

11- Vieira ER, Svoboda S, Belniak A, et al. Work-related musculoskeletal disorders among physical therapists: an online survey. Disability and rehabilitation 2016; 38(6): 552-7.

12- Marshall M, van der Windt D, Nicholls E, Myers H, Dziedzic K. Radiographic thumb osteoarthritis: frequency, patterns and associations with pain and clinical assessment findings in a community-dwelling population. Rheumatology 2010; 50(4): 735-9.

13- McMahon M, Stiller K, Trott P. The prevalence of thumb problems in

Australian physiotherapists is high: an observational study. Australian Journal of Physiotherapy 2006; 52(4): 287-92.

14- Bialosky JE, George SZ, Bishop MD. How spinal manipulative therapy works: why ask why? : JOSPT, Inc. JOSPT, 1033 North Fairfax Street, Suite 304, Alexandria, VA …; 2008.

15- Rossettini G, Rondoni A, Schiavetti I, Tezza S, Testa M. Prevalence and risk factors of thumb pain in Italian manual therapists: An observational cross-sectional study. Work 2016; 54(1): 159-69.

16- Anyfantis I, Biska A. Musculoskeletal Disorders Among Greek Physiotherapists: Traditional and Emerging Risk Factors. Safety and Health at Work 2017.

17- Snodgrass SJ, Rivett DA, Robertson VJ, Stojanovski E. A comparison of cervical spine mobilization forces applied by experienced and novice physiotherapists. journal of orthopaedic & sports physical therapy 2010; 40(7): 392-401.

18- Snodgrass SJ, Rivett DA, Robertson VJ, Stojanovski E. Cervical spine mobilisation forces applied by physiotherapy students. Physiotherapy 2010; 96(2): 120-9.

19- Wajon A, Ada L. Prevalence of thumb pain in physical therapists practicing spinal manipulative therapy. Journal of Hand Therapy 2003; 16(3): 237-44.

20- Sehar B, Ashraf I, Rasool S, Raza A. Frequency of thumb pain among mobile phone user students.

21- Fernández-De-Las-Peñas C, Pérez-De-Heredia M, Brea-Rivero M, Miangolarra-Page JC. Immediate effects on pressure pain threshold following a single cervical spine manipulation in healthy subjects. Journal of Orthopaedic & Sports Physical Therapy 2007; 37(6): 325-9.

Satisfaction Level with Physical Therapy Following Total Knee Replacement

Soleman Warner[1*], Ashfaq Ahmad[1], Muhammad Waqar Afzal[1], Sadia khan[1] and Syed Amir Gilani[1]

[1]University Institute of Physical Therapy, Faculty of Allied Health Sciences, University of Lahore, Lahore, Pakistan
*solemanwarner@gmail.com

Highlights:

- Study was conducted to check the satisfaction level of physical therapy in 95 patients after total knee replacement
- Likert Scale questionnaire was used to assess the patient satisfaction level
- 80% patients were satisfied with the physical therapy after total knee replacement.

Abstract:

Background:

Knee replacement surgery is becoming popular nowadays due to less calcium and vitamin D levels and indoor living. Avoiding sunlight is making people more prone to knee osteoarthritis. Physical therapy after knee surgery is very important for a speedy recover.

Objective:

To determine the effects of physical therapy in increasing the satisfaction level of total knee replacement patients

Methodology:

Data was collected from 95 patients after 4 weeks following total knee replacement in different hospitals of Lahore with age 50-80years of both genders. Patients underwent physical therapy from day one after surgery. Likert Scale was used to collect data.

Results:

80% of the patients were very satisfied with the physical therapy after total knee replacement. While few patients still had pain and were less satisfied or dissatisfied.

Conclusions:

Most of the patients were very satisfied, felt a reduction in pain and improved mobility after with physical therapy following total knee replacement.

Key words:

Short assessment patient satisfaction, total knee replacement, physical therapy

Introduction:

Knee joint is a large complex joint of human body. Stabilized by ligaments and further stabilized by strength of muscles connecting knee joint with femur and tibia. Menisci acts as shock absorber and are C shape cartilages.[1] Knee moves in flexion and extension only because it is hinge type synovial joint[2]. Being largest joint in the body, knee suffers in everybody' life at least once in a life time. Most common problem is knee osteoarthritis with high prevalence in old age people due to wear and tear in cartilages of knee, hence, affecting knee movement leading to swelling, stiffness and pain in knee[3]. Patella of knee is also affected due to inside irritation of cartilage called chondromalacia patella exacerbating pain[4]. Knee ligaments damage can be a serious trouble causing instability issues. Knee ligaments are divided into two categories called intra-capsular and extra-capsular[5]. Knee can have multiple problems in every age of life. Knee Pathologies have a big list which can affect normal function, gait and lifestyle of individual even forcing them to leave their job, ending the career of athletes, leaving them in severe agony like pain which make them crippled and immobilized[6]. Knee osteoarthritis is the leading source of elderly disabilities and is a progressive degenerative condition. The knee osteoarthritis prevalence in women is higher and rises with age. Total knee replacement is a widely accepted surgical procedure for severe knee osteoarthritis, with radiographic evidence of joint damage, moderate to severe persistent pain and clinically significant constraint in quality of

life functional activities. Conservative treatments like non-steroid anti-inflammatory medicines, physical therapy and corticosteroid intra-articular treatment play an important role in patient mobility and increasing the life quality[7]. By 2030, there are projections of a 40% increase in the number of people with arthritis who are medically diagnosed as compared to current levels, to almost 76 million or 25% of adults[8]. Following total knee replacement, rehabilitation is critical for the success of surgery. Sustainability focuses on exercise programs to enhance movement, strength, stamina and walking skills. Most studies recommend rehabilitation immediately after hospital discharge[9]. Berg balance scale and timed up and go test were performed on 43 older patients after functional task of 6 minutes walk and stairs climbing. There was no significant difference in stability index score, leading to conclusion that moderate training does not affect stability of older adults[10]. Satisfaction score of patients of total knee replacement was measured to assess the improvement on overall health of patients. It was found that patients become satisfy at 6 to 12 months after surgery depending upon the decrease in pain of patients[11]. Satisfaction does not only rely on range of motions and limitations but also by psychological state of older patients.[12] Lack of harmony between patient discordance and surgeon satisfaction is patient' expectations and complications[13]. Patient satisfaction is important for those who pay for it and neglecting satisfaction of patient brings bad the overall factors related to patient's satisfaction should be assessed by surgeon[14]. Quality care is connected with satisfaction level of patients admitted in hospital or outpatients visiting hospital after surgeries taking follow-ups and expecting to avoid complications[15].

Methodology:

Data was collected from 95 patients after 4 weeks following total knee replacement in different hospitals of Lahore with age 50-80years of both genders. Patients were taking physical therapy and from day one after surgery. Likert Scale was used to collect data. Data was tabulated and analyzed by using SPSS version 21. Patients having co-morbidities along with were excluded and patients with unilateral and bilateral knee replacement surgery were included.

Results:

19% patients were very satisfied with physical therapy recovery after total knee replacement, 61% were satisfied and remaining dissatisfied (Table 2, Figure 1). Less satisfied and dissatisfied patients still had pain. Mean age of patients was 62.93± 9.14 years with minimum value of 50 years and maximum value of 79 years (Table 1).

Age (Years)	Frequency (%)
50 - 59	37 (39.0)
60 - 69	35 (36.8)
70 - 79	23 (24.2)
Total	95 (100)

Tabel 1: Age wise grouping of patients

Likert scale	Frequency (%)
Very Satisfied	18 (19.0)
Satisfied	58 (61.0)
Dissatisfied	17 (18.0)
Very Dissatisfied	2 (2.0)
Total	95 (100)

Table 2 : Grouping according to satisfaction of patients

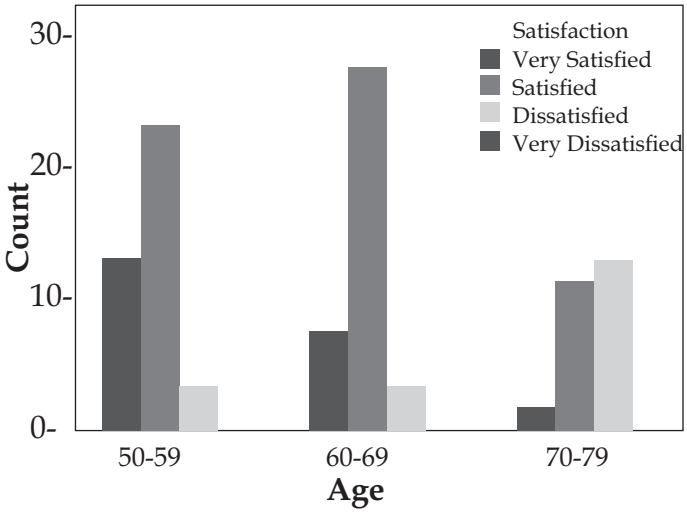


Figure 1: Satisfaction level of patients among Age groups

Discussion:

Patient satisfaction is integral part of surgery. Expectations and complications of patients and burden of number of surgeries in a day by surgeons lead to discordance between surgeon and patient. Patient satisfaction level is the happiness and comfort of patient. Patient healthcare experience at hospital and willingness to recommend a friend or family defines the performance of healthcare facility providers[14]. Measuring satisfaction is becoming the protocol of hospitals to provide and understand the better healthcare facilities which are demands and expectations of patients. They reflect the overall health of patient including psychomotor satisfaction1[5]. Net promoter scale has been using nowadays to assess the satisfaction outcome of the patient for the company. It gives a limited information about the patient' overall health and is less valid than other satisfaction measuring tools[16]. Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scale can also be used to assess patient' satisfaction[17]. Patient' expectation form was used to measure the satisfaction level of total knee replacement patients along with WOMAC and Short Form (SF-36). Patients with better satisfaction score, perform better on WOMAC and SF-36. It shows satisfaction level has co-relation with functional score. Patient overall health includes emotional and physical performance. These factors help to predict the outcome of surgeries[18]. There are a few predictors of surgery outcome, including preoperative satisfaction level and postoperative dissatisfaction level. Patient early postoperative dissatisfaction is due to pain and discomfort and high demands of patients. As the time increases, patient satisfaction level rises[19]. Katia *et al.*, in 2013 studied the level of satisfaction among total knee replacement patients. It was found that patients with improved functional outcome are more satisfied [20]. Patient satisfaction was measured by 4-point Likert scale with options including 100 points for very satisfied, 75 points for somewhat satisfied, 50 points for somewhat dissatisfied and 25 points for dissatisfied. Patients with primary or secondary osteoarthritis were included. There was 85% satisfaction level among patients. Reliable and valid short four point scale was used for measuring satisfaction. Greater the post operation month , greater the satisfaction level[21]. Knee injury and osteoarthritis outcome score (KOOS) scale was used to assess the satisfaction level. Before operation readings showed high level of anxiety and depression while after 3 to 6 months of operation, patients satisfaction level increased. In 2018, 83% patients had 80% satisfaction level among total knee replacement patients while dissatisfaction was higher among pre operative patients[22]. Old age patient take time to get satisfied and found 80% satisfaction level among total knee replacement patients[23]. Patient satisfaction measured by KOOS scale was not affected by age, sex, symptoms and co-morbidities[24]. Cynthia *et al.*, found the satisfaction level in total knee replacement patients. She found that 80% patients were more satisfied with their surgery. She listed the predictors of satisfaction and dissatisfaction among patients.[25]

Conclusions:

Most of the patients were very satisfied with physical therapy following total knee replacement. Patients still having pain were less satisfied or dissatisfied.

References:

01- May BM, Fox DA, Metzger R. Knee joint prosthesis system and method for implantation. Google Patents; 2012.

02- Milanese S, Gordon S, Buettner P, Flavell C, Ruston S, Coe D, et al. Reliability and concurrent validity of knee angle measurement: smart phone app versus universal goniometer used by experienced and novice clinicians. Manual therapy. 2014;19(6):569-74.

03- Spaková T, Rosocha J, Lacko M, Harvanová D, Gharaibeh A. Treatment of

knee joint osteoarthritis with autologous platelet-rich plasma in comparison with hyaluronic acid. American Journal of Physical Medicine & Rehabilitation. 2012;91(5):411-7.

04- Duran S, Cavusoglu M, Kocadal O, Sakman B. Association between trochlear morphology and chondromalacia patella: an MRI study. Clinical imaging. 2017;41:7-10.

05- Cook S, Ridley T, McCarthy MA, Gao Y, Wolf BR, Amendola A, et al. Surgical treatment of multiligament knee injuries. Knee Surgery, Sports Traumatology, Arthroscopy. 2015;23(10):2983-91.

06- van Meer BL, Meuffels DE, Vissers MM, Bierma-Zeinstra SM, Verhaar JA, Terwee CB, et al. Knee injury and Osteoarthritis Outcome Score or International Knee Documentation Committee Subjective Knee Form: which questionnaire is most useful to monitor patients with an anterior cruciate ligament rupture in the short term? Arthroscopy: The Journal of Arthroscopic & Related Surgery. 2013;29(4):701-15.

07- Sled EA, Khoja L, Deluzio KJ, Olney SJ, Culham EG. Effect of a home program of hip abductor exercises on knee joint loading, strength, function, and pain in people with knee osteoarthritis: a clinical trial. Physical therapy. 2010;90(6):895-904.

08- Stolee P, Lim SN, Wilson L, Glenny C. Inpatient versus home-based rehabilitation for older adults with musculoskeletal disorders: a systematic review. Clinical rehabilitation. 2012;26(5):387-402.

09- Alnahdi AH, Zeni JA, Snyder-Mackler L. Hip abductor strength reliability and association with physical function after unilateral total knee arthroplasty: a cross-sectional study. Physical therapy. 2014;94(8):1154-62.

10- Palm H-G, van Uden C, Riesner H-J, Lang P, Friemert B. Influence of submaximal exercise on postural control in older adults. American journal of physical medicine & rehabilitation. 2015;94(10):749-57.

11- Bryan S, Goldsmith LJ, Davis JC, Hejazi S, MacDonald V, McAllister P, et al. Revisiting patient satisfaction following total knee arthroplasty: a longitudinal observational study. BMC musculoskeletal disorders. 2018;19(1):423.

12- Gustke K, Golladay G, Roche M, Jerry G, Elson L, Anderson C. Increased satisfaction after total knee replacement using sensor-guided technology. The bone & joint journal. 2014;96(10):1333-8.

13- Harris IA, Harris AM, Naylor JM, Adie S, Mittal R, Dao AT. Discordance between patient and surgeon satisfaction after total joint arthroplasty. The Journal of arthroplasty. 2013;28(5):722-7.

14- Hamilton D, Lane JV, Gaston P, Patton J, Macdonald D, Simpson A, et al. Assessing treatment outcomes using a single question: the net promoter score. The bone & joint journal. 2014;96(5):622-8.

15- Al-Abri R, Al-Balushi A. Patient satisfaction survey as a tool towards quality improvement. Oman medical journal. 2014;29(1):3.

16- Krol MW, de Boer D, Delnoij DM, Rademakers JJ. The Net Promoter Score–n asset to patient experience surveys? Health Expectations. 2015;18(6):3099-109.

17- Walker LC, Clement ND, Bardgett M, Weir D, Holland J, Gerrand C, et al. The WOMAC score can be reliably used to classify patient satisfaction after total knee arthroplasty. Knee Surgery, Sports Traumatology, Arthroscopy. 2018;26(11):3333-41.

18- Becker R, Döring C, Denecke A, Brosz M. Expectation, satisfaction and clinical outcome of patients after total knee arthroplasty. Knee surgery, sports traumatology, arthroscopy. 2011;19(9):1433.

19- Williams D, O'Brien S, Doran E, Price A, Beard D, Murray D, et al. Early postoperative predictors of satisfaction following total knee arthroplasty. The Knee. 2013;20(6):442-6.

20- Turcot K, Sagawa Jr Y, Fritschy D, Hoffmeyer P, Suvà D, Armand S. How gait and clinical outcomes contribute to patients' satisfaction three months following a total knee arthroplasty. The Journal of arthroplasty. 2013;28(8):1297-300.

21- Mahomed N, Gandhi R, Daltroy L, Katz J. The self-administered patient satisfaction scale for primary hip and knee arthroplasty. Arthritis. 2011;2011.

22- Duivenvoorden T, Vissers M, Verhaar J, Busschbach J, Gosens T, Bloem R, et al. Anxiety and depressive symptoms before and after total hip and knee arthroplasty: a prospective multicentre study. Osteoarthritis and Cartilage. 2013;21(12):1834-40.

23- Clement N, Walker L, Merrie K, Bardgett M, Weir D, Holland J, et al. Which patients are satisfied with their overall outcome but dissatisfied with their return to recreational activities after total knee arthroplasty? The Knee. 2019;26(1):258-66.

24- Garg R, editor assessment of patient satisfaction and functional outcome after tka: an indian prospective. Orthopaedic Proceedings; 2017: The British Editorial Society of Bone & Joint Surgery.25.Kahlenberg CA, Nwachukwu BU, McLawhorn AS, Cross MB, Cornell CN, Padgett DE. Patient satisfaction after total knee replacement: a systematic review. HSS Journal®. 2018;14(2):192-201.

Frequency of Work-related Low Back Pain and Disability Among Automobile Mechanics in Lahore

Sameed Liaqat[1*], Muhammad Jawad[1], Wardah Rauf [1] and Mehak Hamna Zahra Gilani[1]

[1]University Institute of Physical Therapy, Faculty of Allied Health Sciences, University of Lahore, Lahore, Pakistan

*samiliaqat3@gmail.com

Highlights:

- Frequency of work-related Low Back Pain (LBP) was 69.4% among automobile mechanics
- LBP caused severe disability to a lesser degree
- Oswestry Low Back Pain Disability Questionnaire was used to assess the disability caused by LBP

Abstract:

Background: Automobile mechanic work is an extensive and physically hard job. Consequently, the automobile workers suffer from ergonomic risk factors including Low Back Pain (LBP) as a major.

Objective:

To find out the prevalence of Low Back pain (LBP) and disability among automobile mechanics in Lahore.

Methodology:

The study was cross-sectional and included 180 auto-mechanics of Lahore. Oswestry Low Back Pain Disability Questionnaire (OLBPDQ) was used to measure the disability caused by pain. Pain was measured by Visual Analog Scale (VAS). Data was collected from 180 auto mechanics from auto repair shops of Lahore.

Results:

Out of 180 individuals, 125 subjects reported LBP with average age of 30±5.3 years. 87 individuals (69.6%) were minimally disabled and 31 individuals (24.8%) experienced moderate disability, whereas only 7 individuals (5.6%) experienced severe disability in activities of daily living (ADLs).

Conclusions:

LBP is highly frequent among automobile mechanics. Majority of the individuals suffering from LBP had minimal disability. The rate of moderate disability was also noticeable but number of individuals with severe disability was very low. Overall, LBP disturbed the quality of life.

Key Words:

LBP, Disability, Auto mechanics, Visual Analog Scale, Quality of life

Introduction:

LBP can be attributed as leading cause of absenteeism from work. According to a research it is estimated that number of days unrecalled due to LBP was 4.6% and individual lost 101.8 million days due to LBP . Lumber spine has a unique construction which can be compared to a barrel shaped structure. The top of the barrel is made of deformable cartilage plate known as end plate which is 0.6 millimeter thick at the top but thinnest in the center. The end plate is porous for transfer of nutrients, has load bearing ability and allows 6^0 between vertebras. Its capability to bear load depends on its shape and geometry. Collagen fibers orientation within the concentric rings of annulus is oblique to others. Annulus is able to resist loads when disc is twisted. Half of this mode of loading the other half becomes disabled resulting in substantial loss of ability to bear load. Annulus and nucleus both collaborate to hold up compressive load disc is subjected to bending and compression. Under compacting forces, the nucleus compresses applying hydraulic forces to end plates vertically and inner annulus laterally. As a result annulus collages fibers protrude outward and become tensed.[3] The lumber spine movements are supervised by four major muscle groups divided into extensors, flexors, lateral rotators and rotators.[4] LBP can be categorized as acute

when the pain is experienced for less than 4 weeks, sub-acute when the pain ranges between 4–12 weeks. Any pain exceeding the duration of 12 weeks is called as chronic pain. Although classification based solely on timeframe is not satisfactory. Some researches classify LBP on the basis of beginning of indication, location, symptoms, extent, regularity and severity[5]. Grading system have been devised combing pain intensity and disability.[6] According to sources of pain it can be classified as mechanical with a known origin such as tumor or fracture or non- mechanical with a unknown cause.[7] Major cause of Work Related Low Back Pain (WRLBP) arises due to Awkward Posture (AP) of the auto-mechanics and poor egronomical settings of the workshops. AP is defined as deviation of the body from its natural position.n Postures attained mostly by the mechanics include kneeling, stooping, twisting and squatting. All these factors play a pivotal role in developing LBP. Another risk factor for LBP is increasing age.[9,10] LBP can cause severe disability among individuals. LBP have decreased physical activity as compared to healthy individuals having same characteristics. The quality of life declines due to workspace environment and habits while performing work along with LBP in automobile mechanics. Auto mechanics mostly work in moist condition and work space does not contain required safety precautions and equipment. It can cause physical injuries as many of them may fall from elevated platform or slip from greasy floors. .[11-15] Even though a number of studies have explored the relation between auto mechanics and musculoskeletal symptoms and has consistently shown significant relationship, the association between WRLBP and it causing disability has not been studied. This study was conducted aiming at determining the frequency of WRLBP and disability among auto mechanics of Lahore.

Methodology:

180 subjects were enrolled in this cross sectional study using non purposive probability sampling technique. Sample size was calculated using 95% confidence interval and 5% absoulte precision. Mechanics of age 22-40 years, having WRLBP were included in this study and those having risk factors such as recent trauma or other systemic dieseases were excluded. Information was collected using Oswestry Low Back Pain Disability Questionnaire (OLBPDQ) and Visual Analog Scale (VAS). The validity of questionnaire was found sufficient. The data was collected from auto-mobile workshops in Lahore city. Data was analyzed using SPSS 21.

Results:

Frequency of LBP was found to be 69.4% (Table 1).Out of 125 individuals, 87 (69.6%) were minimally disabled, 31 (25%) were moderatley disabled, wheras a small count of individuals 7(5.6%) were severly disabled during ADL' on OLBPDQ (Figure 1). Frequency of mechanincs standing without causing them extra pain was 44(35%), indivduals experiencing extra pain during standing was 47(37%) (Table 2).The response rate in this study was 67%.

LBP	Frequency(%)
Yes	125 (69.4)
No	55(30.6)
Total	180

Table 1 : Frequency of Low Back Pain

Standing	Frequency(%)
I can stand as long as I want to	44 (35)
I can stand as long as I want to but it causes e extra pain	47(37)
Pain prevents me from standing more than 1 hour	23(18)
Pain prevents me from standing more than half hour	8(6)
Pain prevents me from standing more than 10 inutes	2(1)

Table 2: Frequency of standing disability among mechanics

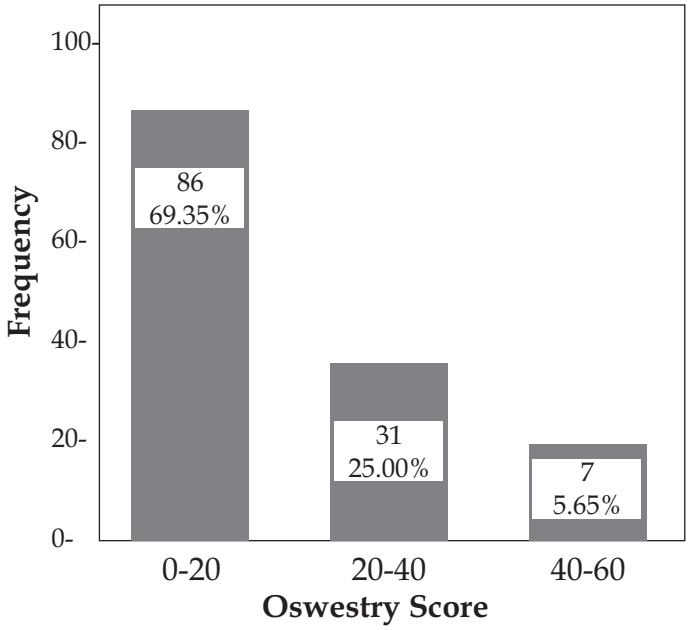


Figure 1: Frequency of Disability on OLBPDQ

Discussion:

This study documented WRLBP and Disability among automobile mechanics which was 69.4% in Lahore city. In Bangladesh it was reported that the burden of LBP in auto repairers was 67%.[16] In developed countries such as Norway, where the prevalence of LBP was 76%[17] in automobile mechanics which is significantly higher than current results. Mechanics in this study reported that common habit of work was in squat sitting position and frequently transitoned their position from siiting to standing and often lifted heavy weights. A study conducted by Levangie18 demonstrated a direct interrelation between lifting as a risk factor for LBP.In common practice mechanics attain unnnautral postion of spine thus compressing and overstrechting the sructures beyond their natural limit.[8] In this study it is found that 48 individuals could stand for long duration but it caused them extra pain. The most regular finding was agonist-antagonist muscle coactivation.In a study conducted by Nelson and *et al.* [19] demonstrated co-activation of gluteus medius in subjects developing LBP during prolong standing. In this study the response rate was 67% which is low as compared to similar study conducted in developed countries.[17] A pretext for this difference might be that developed countries have established framework regarding occupational health , wheras in Pakistan a developing country conventional framework is lacking .Similar response rates have been seen in other study conducted in Pakistan.[20] Job dissatisfaction, increased workload and low wages are considered as trigger psychosocial variables.Several startegies are used to subsist the stressors including avoidence from work, attainment of specific posture during work.[21] Sleep was occasionally disturbed in 45 (36%) and 23 (18.40%) individual could only sleep less than 6 hours. This can be attributed to the psychological factors such as anxiety and burnout and muscle fatigue due to faulty posture. Numerous studies point out the fact that anxiety and burnout cause decrease in sleep.[22] Moreover, workstation ergonomics were found major contributor to anxiety in comparison to socio demographic variables and job nature.[23] Muscle weakness can be caused due to high work demands. Muscle weakness can be defined as a condition in which muscle does not give the required ouput. Muscle weakness can be accounted as a major cause of functional disability and low back pain as a end result.[24] In contradiction to a research that was conducted in 2018 by Jamdade showed that AP a probable cause of LBP. But, the conclusion of contemporary systematic reviews rejects these universally acknowledged facts. The study demonstrates absence of corelation between work-related posture and LBP. They examined standing sitting and twisting, non ergonomic postures like kneeling or squatting, and prolonged sitting at work and leisure time are not associated with back pain.[10]

Conclusions:

Frequency of LBP was high among automobile mechanics. Majority of the individuals suffering from LBP had minimal disability and rate of moderate disability was also remarkable but fewer numbers of mechanics suffered from severe disability. LBP was identified as a major

contributor in decline of quality of life.

References:

01- Guo H-R, Tanaka S, Halperin WE, Cameron LL. Back pain prevalence in US industry and estimates of lost workdays. American journal of public health 1999; 89(7): 1029-35.

02- Roberts S, Menage J, Urban J. Biochemical and structural properties of the cartilage end-plate and its relation to the intervertebral disc. Spine 1989; 14(2): 166-74.

03- McGill SM. Low back disorders: evidence-based prevention and rehabilitation: Human Kinetics; 2018.

04- Allegri M, Montella S, Salici F, Mechanisms of low back pain: a guide for diagnosis and therapy. F1000Research 2016; 5.

05- Dionne CE, Dunn KM, Croft PR, A consensus approach toward the standardization of back pain definitions for use in prevalence studies. Spine 2008; 33(1): 95-103.

06- Von Korff M, Ormel J, Keefe FJ, Dworkin SF. Grading the severity of chronic pain. Pain 1992; 50(2): 133-49.

07- Eromon PE. Psychological and functional disabilties in patients with low pain presenting at the family medicine clinics of Irrua Specalist Teaching hospital, Irrua, Edo state. Faculty of Family Medicine 2015; 4(2).

08- Anita A, Yazdani A, Hayati K, Adon M. Association between awkward posture and musculoskeletal disorders (MSD) among assembly line workers in an automotive industry. 2014.

09- Toossi M. Employment outlook: 2008-18-labor force projections to 2018: older workers staying more active. Monthly Lab Rev 2009; 132: 30.

10- Jamdade B, Shimpi A, Rairikar S, Shyam A, Sancheti P. Factors predisposing to work-related lower back pain in automobile industry workers. International Journal of Occupational Safety and Ergonomics 2018: 1-7.

11- Kamal A, Cincinelli A, Martellini T, Palchetti I, Bettazzi F, Malik RN. Health and carcinogenic risk evaluation for cohorts exposed to PAHs in petrochemical workplaces in Rawalpindi city (Pakistan). International journal of environmental health research 2016; 26(1): 37-57.

12- Khan AA, Inam S, Idrees M, Dad A, Gul K, Akbar H. Effect of automobile workshop on the health status of automechanics in NWFP, Pakistan. African Journal of Environmental Science and Technology 2010; 4(4): 192-200.

13- Rehan M. Workplace Safety and Health Conditions and Facilities in Small Industries in jeddah Saudi Arabia. 2017; 3: 34.

14- Caldwell DJ, Armstrong TW, Barone NJ, Suder JA, Evans MJ. Hydrocarbon solvent exposure data: compilation and analysis of the literature. AIHAJ-American Industrial Hygiene Association 2000; 61(6): 881-94.

15- Brosseau L, Bejan A, Parker D, Skan M, Xi M. Workplace safety and health programs, practices, and conditions in auto collision repair businesses. Journal of occupational and environmental hygiene 2014; 11(6): 354-65.

16- Akter S, Rahman MM, Mandal S, Nahar N. Musculoskeletal symptoms and physical risk factors among automobile mechanics in Dhaka, Bangladesh. South East Asia Journal of Public Health 2016; 6(1): 8-13.

17- Torp S, Riise T, Moen BE. Work-Related Musculoskeletal Symptoms among Car Mechanics: A Descriptive Study. Occupational Medicine 1996; 46(6): 407-13.

18- Levangie PK. Association of Low Back Pain With Self-Reported Risk Factors Among Patients Seeking Physical Therapy Services. Physical Therapy 1999; 79(8): 757-66.

19- Nelson-Wong E, Gregory DE, Winter DA, Callaghan JP. Gluteus medius muscle activation patterns as a predictor of low back pain during standing. Clinical Biomechanics 2008; 23(5): 545-53.

20- Fiaz MW, Ahmad A, Munawar A, Rabia K, Fatima M. Prevalence of musculoskeletal pain in traffic police wardens of Lahore, Pakistan. Rawal Medical Journal 2018; 43(1): 61-3.

21- Torp S, Riise T, Moen BE. The impact of social and organizational factors on workers' coping with musculoskeletal symptoms. Physical Therapy 2001; 81(7): 1328-38.

22- Thinkkhamrop W, Laohasiriwong W. Factors associated with musculoskeletal disorders among registered nurses: Evidence from the thai nurse cohort study. Kathmandu University Medical Journal 2015; 13(3): 238-43.

23- De Silva P, Hewage C, Fonseka P. Burnout: an emerging occupational health problem. Galle Medical Journal 2009; 14(1).

24- Nur NM, Dawal S, Dahari M. The prevalence of work related musculoskeletal disorders among workers performing industrial repetitive tasks in the automotive manufacturing companies. Proceedings of the 2014 international conference on industrial engineering and operations management Bali, Indonesia; 2014; 2014. p. 7-9.

Association Between Patient's Characteristics and Hamstring Flexibility in Patients with Knee Osteoarthritis

Komal Tariq[1*], Filza Shoukat[1], Umair Ahmed[1], Farwa Batool[1] and Aruj Fatima[1]

[1]University Institute of Physical Therapy, Faculty of Allied Health Sciences, University of Lahore, Lahore, Pakistan.
*komaljutt358@gmail.com

Highlights:

- Osteoarthritis is most common skeletal disease.
- Patients characteristics such as occupation have association with hamstring muscle in osteoarthritis

Abstract:

Background:

Knee osteoarthritis is most common among patients. Patients with knee Osteoarthritis usually have pain, brittle bone and felt difficulty during movement. Mostly individuals after forty years of age have felt the symptom of knee osteoarthritis.

Objective:

The objective of this study was to find out the association between patients characteristic and hamstring flexibility in knee osteoarthritis.

Methodology:

A cross sectional study was conducted in one hundred and one patients that were selected from rehabilitation centre of Allied hospital, Faisalabad. The study duration was six months. Participants with knee osteoarthritis (stage 1 & 2), age forty to sixty five years were involved in this study if they had nerve related issues, bone or muscle related disorder were not counted in this study. Subject's characteristics such as their profession, age, pain location as well as duration of pain related questions were asked from patients. Active knee extension test was used for recording the hamstring length. Chi square test was used to determine the association.

Results:

Men were 38(37.6%) and women 63(62.4%). Occupations of patients had influence on hamstring flexibility (P 0.000) while patient's age (P<0.071) durations of pain (P 0.856) and pain region (P<0.956) had not associated with hamstring flexibility.

Conclusions:

It is concluded that patient's characteristic in which only occupations of patients had compromised the hamstring flexibility in knee osteoarthritis subjects rather than age, duration of pain and pain region.

Keywords:

Patient's characteristics, hamstring flexibility, Osteoarthritis

Introduction:

Knee osteoarthritis is most common among patients. Patients with knee Osteoarthritis usually have pain, brittle bone and felt difficulty during movement. Majority of individuals after forty years of age have felt the symptom of knee osteoarthritis. Approximately 3.8% of the people around the globe having the knee osteoarthritis which is equalize to two hundred and seventy seven individuals that have been experience the knee osteoarthritis.[1 - 4] Individuals with overweight also have linked with knee osteoarthritis. Body over weight affects the knee mechanic or exerts pressure on joint and individuals have complained of arthritis. Females are more suffered from Knee osteoarthritis as compared to males due to overweight issues.[5] Some studies stated that higher blood pressure and glucose level also affects the knee joint as well as subject with this issue have complained to knee osteoarthritis.[6,7] Knee osteoarthritis cause pain and functional disability worldwide.[8] Osteoarthritis frequency increases with the passage of time so strategies are necessary to be taken to reduce the impact of knee osteoarthritis on patients through primary

and secondary prevention.[9] Osteoarthritis is most common between middle aged populations whose reduced quality of life and loss to productivity leads to high disease cost.[10] Personal and economic factor cause widespread pain, but its etiology is not exact known. Longitudinal studies describe that anxiety, cognitive decline, poor sleep, and multi joint osteoarthritis, poor health-related quality of life (QOL) baseline pain status, older age and a family history of chronic pain all are the risk factor for widespread pain. However, both non modifiable and modifiable risk factors have been recognized but exact mechanisms through which these risk factors may lead to widespread pain have not been investigated.[11] A cross-sectional study of patients with knee osteoarthritis show a relation among high pain severity and low-grade radiographic knee Osteoarthritis[12], declared that may be pain itself rather than structural pathology may lead to widespread pain. Hamstring muscle played important role in maintenance of knee joint function during walking or any physical activity. Hamstrings muscle produced the hip extension and knee flexion there are many factors that cause or linked with knee osteoarthritis. But the reason to conducted this study have to evaluated the subjects demographic characteristic either have linked with or not to hamstring flexibility in knee osteoarthritis because subjects occupational level and activity level both have impact on knee joint or muscle activity and disturbed their knee joint mechanic and articular joint as well as bone. So, the purpose of this study was to evaluate either the subject's characteristic have association with knee osteoarthritis or not.

Methodology:

A descriptive cross sectional study was conducted. Patients' information was obtained from rehabilitation centre of Allied hospital Faisalabad after taking the ethical approval letter. One hundred and one patients were participated in this study. Permission forms were signed from all patients to take part in this study. Participants with knee osteoarthritis (stage 1 & 2), age forty to sixty five years were involved in this study if they had nerve related issues, bone or muscle related disorder were not counted in this study. AKT (active knee extension test) was used to evaluate the hamstring muscle length.[13] Participant's demographical data were obtained by asking questions about their duration of pain, their occupation, location of pain and age. Chi square test was used to find out the association between participants characteristic with hamstring muscle flexibility

Results:

Out of 101 (100%) males were 38(37.6%) and females 63(62.4%). Majority of the respondents 27.7 %(28) were belongs to 40 to 45 years age group. Chi square test showed that there was no association between age of respondents and hamstring flexibility in knee osteoarthritis (P <0.071) (Table 1). Majority of respondents 42(41.6%) had pain in patellofemoral joint. So, there was no association between pain region and hamstring flexibility in knee osteoarthritis (P<0.965) (Table 2).

Age	Frequency(%)	P-Value
40 - 45	28 (27.7%)	0.071
46 - 50	21 (20.8%)	
51 - 55	17 (16.8%)	
56 - 60	16 (1587%)	
61 - 65	19 (18.8%)	

Table 1: Descriptive statistics

Variable	Frequency(%)	P-Value
Pain Region		
Patellofemoral Joint Pain	42 (41.6%)	0.956
Tibiofemoral Joint Pain	23 (22.8%)	
Bilateral Joint Pain	36 (35.6%)	

Table 2: Association of age and pain region with hamstring flexibility

Mostly respondents were females, and they were housewives. Housewives 52(51.5%) were mostly facing the knee problems. Secondly there were workers and thirdly businessmen who were facing the knee problems. They both were

10(9.9%) and 9(8.9%) of the total respondents. These all individuals had hamstring tightness so, there was association of occupations with hamstring flexibility in knee osteoarthritis (P<0.000) (Table 3)

Variable	Frequency (%)	Variable	Frequency (%)	P-Value
Businessman	9 (8.9%)	Policeman	1 (1.0%)	0.000
designer	1 (1.0%)	Radiologist	1 (1.0%)	
Driver	2 (2.0%)	Retired	1 (1.0%)	
Electrician	1 (1.0%)	Retired	1 (1.0%)	
House Wife	52 (51.5%)	Officer	3 (3.0%)	
Jeweler	1 (1.0%)	Security Guard	6 (5.9%)	
Lawyer	1 (1.0%)	Servant	2 (2.0%)	
Milkman	1 (1.0%)	Tailor	6 (5.9%)	
Nurse	1 (1.0%)	Teacher	10 (9.9%)	
Peon	1 (1.0%)	Worker		

Table 3: Descriptive statistics and association between occupation and hamstring flexibility

Many of the respondents 20.8 %(21) were facing the knee problems for last 2 months. 14.9 %(15) of the respondents were facing the knee problem since last one month. 12.9 %(13) of the respondents were facing the knee problem from last 3 months. So there was association between duration of pain and hamstring flexibility in osteoarthritis (P<0.856).

Duration of Pain	Frequency (%)	Variable	Frequency (%)	P-Value
2 Days	1 (1.0%)	3 Months	13 (12.9%)	0.856
10 Days	1 (1.0%)	3.5 Months	1 (1.0%)	
15 Days	2 (2.0%)	4 Months	3 (3.0%)	
1 Week	3 (3.0%)	5 Months	5 (5.0%)	
2 Weeks	7 (6.9%)	6 Months	1 (1.0%)	
3 Weeks	4 (4.0%)	8 Months	7 (6.9%)	
6 Weeks	5 (5.0%)	9 Months	2 (2.0%)	
8 Weeks	2 (2.0%)	1 Years	1 (1.0%)	
1 Month	15 (14.9%)	2 Years	1 (1.0%)	
1.5 Months	2 (2.0%)	5 Years	1 (1.0%)	
2 Months	21 (20.8%)	15 Years	2 (1.0%)	
2.5 Months	1 (1.0%)		1 (1.0%)	

Table 4: Descriptive statistics and Association between pain duration and hamstring flexibility

Discussion:

This study reported that subject's characteristics such as occupation and duration of pain had compromised the hamstring flexibility while the pain regions and age had not compromised the hamstring flexibility in knee osteoarthritis patients. It means patients occupation and duration of pain had associated with hamstring flexibility. Fitzgerald *et al.*, claimed that subject's physical feature (muscle power) or outward form, lineament or non-physical or intellectual factor, emotional states had also linked with knee Osteoarthritis disease. If this entire element were changed in subjects their pain sensation and activity level compromised with passage of time. All subjects' information was getting by WOMAC questionnaire (Western Ontario and McMaster Universities Osteoarthritis Index).[14] This present study also reported the result that activity level compromised during occupation had influence on hamstring extensibility. Tharakan *et al.*, explained that tibiofemoral degradation had compromised the strength of hamstring muscle. They had also compromised the function of knee joint (P<0.001) in knee Osteoarthritis patients as well as their pattern of walking. They had evaluated the muscle flexibility by PKET (passive knee extension test. This study results showed that tibiofemoral joint pain had not compromised the hamstring extensibility in knee Osteoarthritis patients. But duration of pain affects the knee mechanic and flexibility of hamstring muscle (P<0.000).[15] But this present study also showed that tibiofemoral joint pain had not any effect on hamstring length (P<0.956). But duration of pain had not support the previous study because it had not compromised the hamstring flexibility (p=0.865). Abolahrari *et al.*, proclaim that muscles that are inserted at the knee joint had been affected in knee arthritis patients. This study was done on 23 normal females. VAS was used for pain. This study concluded that muscle lengths were compromised in this disease patient due to pain (p<0.0001)[16] and duration of pain also affected the muscle flexibility especially of hamstrings (p<0.0001). But in this latest study a hamstring muscles were also affected (p<0.000) while duration of pain had not affected the hamstring muscle group in knee Osteoarthritis patients. King *et al.*, showed that overweight or obesity also had relation with knee Osteoarthritis disease because over weight

affect the joint and their load shift result in joint dreadful conditions, lead to continuance of this disease (P=0.039). More muscle mass progress the cartilage obliteration as well as inner bone mass[17] if overweight is reduced Osteoarthritis subject relived from pain.[18,19] But this study had not told about the overweight or obesity either compromise the flexibility or not. A study of Bednarz *et al.*, result showed that occupation had effect on knee joint mechanic as well as hamstring muscle length. Different functional activities while doing their work affect muscle flexibility (p<0.002).[20] This present study results also support this study because occupations of subjects had relation with hamstring muscle flexibility (p<0.000)

Conclusions:

In case of knee osteoarthritis, patient's characteristic in which only occupations of patients had association with hamstring flexibility rather than age, location of pain and pain region.It is recommended to conduct a research to find out the association of BMI with hamstring flexibility in osteoarthritis patients with large sample size.

References:

01- Cross M, Smith E, Hoy D, Nolte S, Ackerman I, Fransen M, *et al.*, The global burden of hip and knee osteoarthritis: estimates from the global burden of disease 2010 study. Annals of the rheumatic diseases. 2014 Jul 1;73(7):1323-30.

02- U.S. Census Bureau. International data base [Internet]. Washington, DC: U.S. Census Bureau; 2016.

03- Sancheti P, Shetty VD, Dhillon MS, Sprague SA, Bhandari M. India-based knee osteoarthritis evaluation (iKare): A multi-centre cross-sectional study on the management of knee pain and early osteoarthritis in India. Clinics in orthopedic surgery. 2017 Sep 1;9(3):286-94.

04- Eymard F, Parsons C, Edwards MH, Petit-Dop F, Reginster JY, Bruyère O, *et al.*, Diabetes is a risk factor for knee osteoarthritis progression. Osteoarthritis and cartilage. 2015 Jun 1;23(6):851-9.

05- Yusuf E, Nelissen RG, Ioan-Facsinay A, Stojanovic-Susulic V, DeGroot J, van Osch G, Association between weight or body mass index and hand osteoarthritis: a systematic review. Annals of the rheumatic diseases. 2010 Apr 1;69(4):761-5.

06- Zhang YM, Wang J, Liu XG. Association between hypertension and risk of knee osteoarthritis: A meta-analysis of observational studies. Medicine. 2017 Aug;96(32).

07- Maeda Y, Nakamura N, Sugano N. Perioperative hyperglycemia and postoperative periprosthetic joint infection (PJI) after total knee and hip arthroplasty. Ann Musculoskelet Med. 2018;2(1):001-5.

08- Vos T, Flaxman AD, Naghavi M, Lozano R, Michaud C, Ezzati M, *et al.*, Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. The lancet. 2012 Dec 15;380(9859):2163-96.

09- Cross M, Smith E, Hoy D, Nolte S, Ackerman I, Fransen M, *et al.*, The global burden of hip and knee osteoarthritis: estimates from the global burden of disease 2010 study. Annals of the rheumatic diseases. 2014 Jul;73(7):1323-30.

10- Losina E, Paltiel AD, Weinstein AM, Yelin E, Hunter DJ, Chen SP, *et al.*, Lifetime medical costs of knee osteoarthritis management in the United States: impact of extending indications for total knee arthroplasty. Arthritis care & research. 2015 Feb;67(2):203-15.

11- McBeth J, Lacey RJ, Wilkie R. Predictors of new-onset widespread pain in older adults: results from a population-based prospective cohort study in the UK. Arthritis & Rheumatology. 2014 Mar;66(3):757-67.

12- Riddle DL, Stratford PW. Knee pain during daily tasks, knee osteoarthritis severity, and widespread pain. Physical therapy. 2014 April 1;94(4):490-8.

13- Shamsi M, Mirzaei M, Khabiri SS. Universal goniometer and electro-goniometer intra-examiner reliability in measuring the knee range of motion during active knee extension test in patients with chronic low back pain with short hamstring muscle. BMC Sports Science, Medicine and Rehabilitation. 2019 Dec;11(1):4.

14- Tharakan MV, Gopalswami AD. A Study to Determine the Influence of Tibiofemoral Degeneration over Hamstring Flexibility and Functional Performance. Indian Journal of Physiotherapy and Occupational Therapy-An International Journal. 2016 Jul;10(3):102-7.

15- Fitzgerald GK, White DK, Piva SR. Associations for change in physical and psychological factors and treatment response following exercise in knee osteoarthritis: an exploratory study. Arthritis care & research. 2012 Nov;64(11):1673-80.

16- Abolahrari Shirazi S, Ghafari Nezhad F, Ebrahimian M, Nouraddini E, Mansoorian A, Emami F. Flexibility of knee Joint muscles in women with knee osteoarthritis and healthy controls. Journal of Rehabilitation Sciences & Research. 2016 Mar 21;2(3):47-52.

17- Berry PA, Wluka AE, Davies-Tuck ML, Wang Y, Strauss BJ, Dixon JB, *et al.*, The relationship between body composition and structural changes at the knee. Rheumatology. 2010 Aug 18;49(12):2362-9.

18- King LK, March L, Anandacoomarasamy A. Obesity & osteoarthritis. The Indian journal of medical research. 2013 Aug;138(2):185.

19- Thijssen E, van Caam A, van der Kraan PM. Obesity and osteoarthritis, more than just wear and tear: pivotal roles for inflamed adipose tissue and dyslipidaemia in obesity-induced osteoarthritis. Rheumatology. 2014 Dec 11;54(4):588-600.

20- Bednarz J, Kolatorowicz A, Lowe CM. Activity level influences the likelihood of developing knee osteoarthritis. Osteoarthritis and Cartilage. 2019 Apr 1;27:S279.

Prevalence of Shoulder, Back and Neck Pain in Female Nurses of Nishtar Hospital, Multan

Ayesha Abdul Razzaq, Sana Sharif, Saima Bibi, Muhammad Kashif, Muhammad Arif, Umm e Kalsoom

University Institure of Physical Therapy, Faculty of Allied Health Sciences, The University of Lahore, Lahore, Pakistan

Highlights:

- Prevalence of back, shoulder and neck pain in female nurses of Nishtar hospital Multan was evaluated
- Nordic questionnaire and visual analogue scale was used.

Abstract:

Work related musculoskeletal disorder is increasing ration in nursing population of hospital about 33% which in result affect the quality of life and limits the activity of daily living

Objective:

To find prevalence of back, shoulder and neck pain in female nurses of Nishtar hospital Multan

Methodology:

This cross sectional study was conducted on female nurses of Nishter Hospital, Multan. Non Probability Convenience sampling technique was used and total of 80 nurses were participated in this study. Nordic questionnaire and visual analogue scale was used tool for data collection. Nurses of age 18-55, Student professional nurses, nurses willing to participate, nurses having minimum one year experience in this field were included while nurses who refused to participate in this study, pregnant nurses, nurses having spinal issue and systemic problems were excluded from the study. Data was analyzed by using SPSS 22.0 version.

Results:

63.8% nurses were having low back pain, 40% nurses having neck pain and 38.75 complaints about the shoulder pain. The results of chi-square test revealed $p<0.05$ which showed that there was analytical significant symbolic affiliation between neck, shoulder, Low back pain and Working hours / week.

Conclusions:

Majority nurses reported they suffer from low back, neck and shoulder pain. Working for long time or increased working hours is a potential risk factor for low back, neck and shoulder Problems.

Key words:

Musculoskeletal Disorder, posture, ergonomics, Low Back pain, Shoulder Pain, Neck pain.

Introduction:

Disorder occurs in muscle, tendon, cartilage, nerve, ligaments and joints are also known as Musculoskeletal Disorder". Musculosketal disorder mostly occurs due to work related issues.[1] Work related musculoskeletal disorder (WRMSD) affects 33% of nursing population which affects their quality of life and limits the ADL'S. There are many internal and external factors contributing to musculoskeletal disorder.[2] Nurses perform activities which includes lifting of heavy load and patient's transfer in faulty postures from bed to bed or to floor which require greater muscle work.[3] Due to these activity of daily living they are more prone to suffer from musculoskeletal disorder like shoulder pain, neck and back pain.[4] According to studies it is stated that 80% back pain is suffered by individual once in a life. The studies revealed that prevalence of low back pain is about 29-70% percent in nurses and mostly occur in nurses having age less than 45 year and majority of them is suffering from work related musculoskeletal disorder. Researcher suggests that low back pain in nurses is the third leading causes of work related issue.[5] Influencing risk features were awkward or faulty posture during working time

for a long duration like transferring the patient, standing for prolonged hour or duty hour which will automatically affect their lifestyles and health.[6] It is stimulating to explanation that there is insufficient figure of journals investigative the value of the unlike intrusion approaches employed among nurses. And prevalence of shoulder, neck and back pain occur in nurses also because nurses performs repetitive movements over a prolonged period of duration,[20] leads to fatigue, and tiredness, sometime such fatigue with repetitive movements can lead to injury.[7,8] but mostly happens with the nurses if they performed activity prolonged period of time without any relaxation period. These disorders[18] can be prevented by limiting the repetition of the movement, adopting good posture, avoid lifting heavy load by using proper ergonomics and avoid heavy duty performance.[9,10] Serranheira F. conducted a study on work related musculoskeletal disorder in hospital nurses in 2014 and concluded that 60.9% nurses suffering from low back pain.[11] Kermit G. Davis and Susan E. conclude that occurrence of musculoskeletal disorder and ache intended for nurses was maximum in the back, shadowed by shoulders and then on neck.[19] Nevertheless, the preponderance of the researches has been focused on 12-month ache happening in low back also mainly in the hospitals.[12, 13] While keeping in mind this growing problem among nurses, the aim of present study is to determine the prevalence of Neck, shoulder and low back pain among Nurses of Nishtar Hospital Multan.

Methodology:

This cross sectional study was conducted on female nurses of Nishter Hospital, Multan. Non Probability Convenience sampling technique was used and total of 80 nurses were participated in this study. This study was approved by the ethical committee of University of Faisalabad. Data was collected after taking Informed consent from the nurses and their administration. Nordic questionnaire and visual analogue scale was used tool for data collection. Nordic questionnaire consists of close ended questionnaire related to shoulder pain, Neck pain and Low back pain Nurses of age 18-55, Student professional nurses, nurses willing to participate, nurses having minimum one year experience in this field were included while nurses who refused to participate in this study, pregnant nurses, nurses having spinal issue and systemic problems were excluded from the study. Data was analyzed by using SPSS 22.0 version. Mean and standard deviation of age, working hours, and experience was calculated. The Frequency, percentage of low back pain, neck and shoulder were calculated and presented in the form of bar charts. Chi-square test was used to find out the association between low back/neck/shoulder pain and working hours per week.

Results:

The purpose of current study was to assess the prevalence of low back ache, neck and shoulder pain in nurses due to work related issue. This study shows that there is association between working hours and work related musculoskeletal disorders (e.g Neck pain, Low back pain, Shoulder Pain) which explains as the working hours increases more will be the risk for Neck shoulder and Low back pain and the average weekly working hours of Nurses noted in this study was 43.90±10.13 (Table 1,2,3).

Variables	Frequency(%)	Mean ± SD
Age(Years)		29.15±10.98
18-23	37 (46.3)	
24-29	10 (12.5)	
30-35	13 (16.3)	
Working hours in a week		43.90±10.13
24-39	20 (25)	
40-50	47 (58.8)	
>50	13 (16.3)	

Table 1: Descriptive of Age and Working Hours

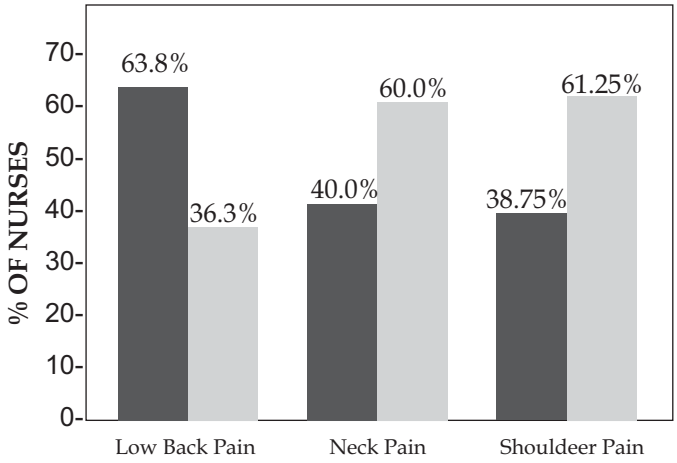


Figure 1: Prevalence of low back, neck and shoulder pain

Low Back Pain				
Working hours /week	No%	Yes%	Total	P-value
24-39	14(70)	6(30)	20(100)	<0.01
40-50	15(31.9)	32(68.1)	47(100)	
>50	0(0)	13(100)	13(100)	
Total	29(36.3)	51(63.8)	80(100)	
Neck Pain				
Working hours /week	No%	Yes%	Total	P-value
24-39	13(65)	7(35)	20(100)	<0.01
40-50	32(68.1)	15(31.9)	47(100)	
>50	2(23.1)	10(76.9)	13(100)	
Total	48(100)	32(40)	80(100)	
Neck Pain				
Working hours /week	No%	Yes%	Total	P-value
24-39	14(70)	6(30)	20(100)	<0.01
40-50	32(68.1)	15(31.9)	47(100)	
>50	3(23.1)	10(76.9)	13(100)	
Total	49(62)	31(37.5)	80(100)	

Table 2: Association between working hours per week and low back, neck and shoulder pain

Discussion:-

The prevalence of neck pain and shoulder pain in nurses are 29% and 34% by an author Altmann. JR[14] and The prevalence of musculoskeletal disorders was 31.6%, among them the highest percentage is for low back pain (32%) followed by the shoulder (20%), thoracic, and knees (10%).[15] and a study was conducted in 2014 on hospital nurses task and work related musculoskeletal disorder symptoms result that 60.9% nurses having low back pain[11] and results of these study supports the findings of this study revealed that 63.8% nurses reported that they feel low back pain, 40% nurses having neck pain and 38.75 complaints about the shoulder pain.

Davis and his colleagues concluded in their study that prevalence of shoulder and neck pain in nurses were lower as compared to low back pain, concluded that 24% nurses suffer with shoulder pain and 20 % with neck pain.[12] which contradicts the results of this study showed that nurses suffer 40% neck pain and 38.75% shoulder pain due to musculoskeletal disorder. The results of this study is favored by the results of a study carried out in 2017, revealed that work for 50 hrs/week and a daily working time of 8.5 hrs were well thought-out as a risk factor for the WMSDs. In this study while the working time of the nurses was in a range of 30–65 hrs and the weekly time was 46.7±.4.42.[16] Another study revealed that the prevalence of musculoskeletal complaints was statistically higher among nurses who work continuously more than 6 hours .because increasing working hours is associated with increased work load.[17]

Conclusions:

The prevalence of low back pain, Neck pain And shoulder pain among nurses was found to be 63.8%, 40% and 38.5% which is considerably high as compared to previous studies. Working for long time or increased working hours is a potential risk factor for low back, neck and shoulder Problems.

References:

01- Davis KG, Kotowski SE. Prevalence of musculoskeletal disorders for nurses in hospitals, long-term care facilities, and home health care: a comprehensive review. Human factors. 2015;57(5):754-92.

02- Anap DB, Iyer C, Rao K. Work related musculoskeletal disorders among hospital nurses in rural Maharashtra, India: a multi

centre survey. International Journal of Research in Medical Sciences. 2017;1(2):101-7.

03- LeMone P, Burke K, Dwyer T, Levett-Jones T, Moxham L, Reid-Searl K. Medical-surgical nursing: Pearson Higher Education AU; 2015.

04- Munabi IG, Buwembo W, Kitara DL, Ochieng J, Mwaka ES. Musculoskeletal disorder risk factors among nursing professionals in low resource settings: a cross-sectional study in Uganda. BMC nursing. 2014;13(1):7.

05- Attar SM. Frequency and risk factors of musculoskeletal pain in nurses at a tertiary centre in Jeddah, Saudi Arabia: a cross sectional study. BMC research notes. 2014;7(1):61.

06- Arsalani N, Fallahi-Khoshknab M, Josephson M, Lagerström M. Musculoskeletal disorders and working conditions among Iranian nursing personnel. International Journal of Occupational Safety and Ergonomics. 2014;20(4):671-80.

07- Ellapen T, Narsigan S. Work related musculoskeletal disorders among nurses: systematic review. J Ergonomics. 2014;4:S4-003.

08- Azma N, Rusli B, Noah R, Quek K. Work Related Musculoskeletal Disorders in Female Nursing Personnel: Prevalence and Impact. International Journal of Collaborative Research on Internal Medicine & Public Health. 2016;8(3).

09- D.Agostin F, Negro C. Symptoms and musculoskeletal diseases in hospital nurses and in a group of university employees: a cross-sectional study. International Journal of Occupational Safety and Ergonomics. 2017;23(2):274-84.

10- Raithatha AS, Mishra DG. Musculoskeletal disorders and perceived work demands among female nurses at a tertiary care hospital in India. International journal of chronic diseases. 2016;2016.

11- Serranheira F, Sousa-Uva M, Sousa-Uva A. Hospital nurses tasks and work-related musculoskeletal disorders symptoms: A detailed analysis. Work. 2015;51(3):401-9.

12- Davis KG, Kotowski SE. Prevalence of musculoskeletal disorders for nurses in hospitals, long-term care facilities, and home health care: a comprehensive review. Human factors. 2015;57(5):754-92.

13- Nkhata LA, Esterhuizen TM, Siziya S, Phiri PD, Munalula-Nkandu E, Shula H. The Prevalence and Perceived Contributing Factors for Work-Related Musculoskeletal Disorders among Nurses at the University Teaching Hospital in Lusaka, Zambia. Science. 2015;3(4):508-13.

14- Altmann JR. Neck and shoulder pain in nurses working in seven wards of Tygerberg hospital: Quantifying the problem and exploring the risks: Stellenbosch University; 2010.

15- Rathore FA, Rayan Attique YA. Prevalence and Perceptions of Musculoskeletal Disorders Among Hospital Nurses in Pakistan: A Cross-sectional Survey. Cureus. 2017;9(1).

16- Yan P, Li F, Zhang L, Yang Y, Huang A, Wang Y, et al. Prevalence of work-related musculoskeletal disorders in the nurses working in hospitals of Xinjiang Uygur Autonomous region. Pain Research and Management. 2017;2017.

17- Elsherbeny E, Elhadidy S. Prevalence and associated factors of musculoskeletal complaints among nurses of mansoura university children hospital. Egyptian Journal of Occupational Medicine. 2018;42(2):151-66.

18- High incidence and recurrence of shoulder and neck pain in nursing home employees was demonstrated during a 2-year follow-up. 2015

19- Correlation between shoulder pain and functional disability. 2007

20- Risk factors for incident neck and shoulder pain in hospital nurses. 2018

PJPT

ISSN NO: 2663-0796 (Print)
ISSN NO: 2663-080X (Online)

Pakistan Journal of Physical Therapy
University Institute of Physical Therapy
The University of Lahore
Lahore, Pakistan
pjpt@uipt.uol.edu.pk

THE UNIVERSITY OF LAHORE

LETTER OF AUTHORSHIP

Dear Editor:

This is to confirm that the manuscript titled _____

_____

submitted for publication in Pakistan Journal of Physical Therapy has been read and approved by all the authors. We, the authors, confirm that:

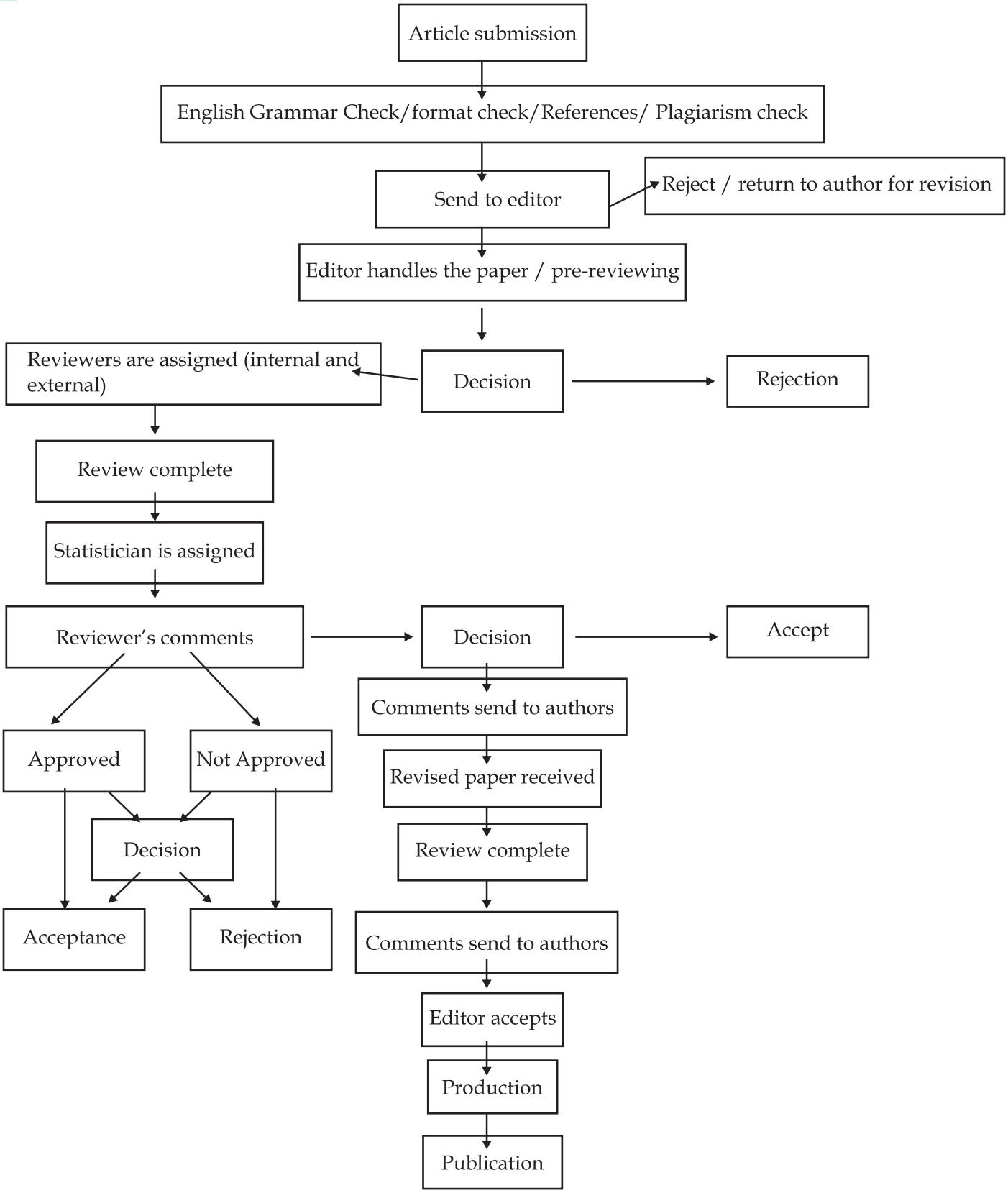
- The article has not been published in any other journal;
- Is being submitted exclusively to Pakistan Journal of Physical Therapy (PJPT)
- If accepted for publication, it will not be published in any other national or international journal.

We transfer the copyrights of this manuscript to the Pakistan Journal of Physical Therapy, University Institute of Physical Therapy, The University of Lahore. We have disclosed the conflict of interests, funding source and ethical permission.

Sr. No	Author's Full Name with Designation & Institution	Contributions to the Paper(Please Give Brief Description of the Role of Each Author Separately)	Author's Signature
1.			
2.			
3.			
4.			
5.			
6.			
7.			

(Please use extra sheet in case of more than seven authors)

Electronic signatures will be considered valid for all articles submitted using the online article submission services.



Schematic representation of manuscript submission process

UNIVERSITY INSTITUTE OF
PHYSICAL THERAPY

PUBLICATION SECRETARIAT
University Institute of Physical Therapy
Main Campus
1-Km Defence Road, Near Buptian Chowk,
Off Rawind Road, Lahore.
Tel: (042) 111-865-865 | **Email:** pjpt@uipt.uol.edu.pk