

Prevalence of Musculoskeletal Hip Pain Among Health-Care Professionals of Lahore: A Cross-Sectional Study

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Abstract

Musculoskeletal hip pain constitutes one of the main professional hazards among health-care professionals. Because of physical workloads and characteristics, hip pain varies among them, lowering their productivity and quality of life. Various studies have been conducted focusing on musculoskeletal pain among health-care professionals of Pakistan apart from hip pain. Therefore, a cross-sectional survey-based study was designed to assess the prevalence of musculoskeletal hip pain among health-care professionals and its association with some risk factors (age, gender, occupation). Data was collected by Örebro Musculoskeletal Pain Questionnaire from 971 health-care professionals. The average age of respondents was 36.39 (S=8.82) years with the males in the majority (52.5%). Hip pain prevalence was found to be 147 (15.1%). Younger therapists and professionals had a higher percentage of hip pain 64(42.9%) at the age of (26-35). There was a significant association of hip pain with age, gender, and occupation, as p-value was less than (0.05). Musculoskeletal hip pain commonly affects (15.1%) of health-care professionals, with males being at a higher percentage of (53.1%). Significant risk factors for hip pain include age and occupation as younger professionals reported more hip pain. Prevalence was higher among Surgeons, Physicians and Dentist. A greater advocacy is needed to prevent work-related hip pain by adaptation of strategies for prevention and better working conditions.

Keywords: Prevalence, Musculoskeletal hip pain, Healthcare professionals, Lahore, Therapy

Introduction

Hip pain is a common complaint caused by various problems. Location of hip pain can precisely give us clues and valuable information about its cause. Problems that lie within the joint can initiate hip pain, on inside of hip or in the groin(1). Musculoskeletal hip pain or discomfort encompass a range of conditions resulting from inflammatory or degenerative processes, often accompanied by persistent pain in hip joint structures(2). Work-related hip pain is a symptom, caused or aggravated by occupational risk factors, such as workplace activities including, manual handling, job strain, strenuous actions and repetitive tasks.(3).

Due to different characteristics and workloads, there is a significant variation in hip pain among different occupations and countries.(4). Therefore designing preventive physiotherapy for needs of occupational groups among hospital workers, a great deal of understanding and awareness of hip pain is required(5). All around the world, hip pain is explainable for substantial social and work related trouble regarding quality at work, disability and distress in life(6). According to some studies, the prevalence of hip pain majorly influenced by work habits, posture, practice specialty, and other demographical factors such as; patient's age and gender(7).

In case of hip joints; asymmetric loading, wear along joint surfaces, and muscular imbalances are mechanical factors predisposing them to be painful, and their detailed understanding is required(8). Musculoskeletal hip pain has been recognized as an important emerging occupational problem related to health(9), especially in hospital staff and health care workers(10). Noticeable decrease in productivity and job satisfaction of hospital staff along with financial loss can severely affect their psychological state and working lives.(4).

Causes of hip pain include; lumbar spine referring pain due to impingement, pain in greater trochanter, tears of acetabular labrum and among all, OA(osteoarthritis) being most common. Pain is localized at the anterior groin, with stiffness peculiarly, appearing at activity initiation are few of typical signs of hip OA. At first, pain is activity or movement related, later progressing to articular cartilage disease and increased structural loss(11). Apparently, it has become very clear that in the absence of OA hip pain may be caused by a complex union of mechanical stressors; dynamic or static(12). Abnormal contact within the hip joint (femoral-head and acetabular-rim) can result in hip pain. Further sprains and pain in the pelvic region can occur due to the adverse effect of compensatory motion on dynamic muscular forces(12).

Norwegian Union of Health and Social Workers represented nurses in a random sample. A questionnaire was mailed to them to determine the prevalence of MSP, its variation with demographic data, service sector and working hours a week. Hip pain was 26.6% prevalent, increases with age and more common in women(13). Most of the people have occupations that involve high hip joint loading for longer durations in a day. Thus economically relying on their joints and ultimately placing them at higher risk of getting chronic hip pain.(14). The occurrence of joint pain is more common in larger ones, being more significant in elders, most commonly involving hip joints(15).

Prevalence of hip pain among health-care professionals was the basic purpose of this study. With the best of

my knowledge and research databases, there is no proper study specifically on the prevalence of musculoskeletal hip pain among health-care professionals working in different hospitals of Pakistan. Although a huge literature is present about musculoskeletal pain them.

Methods

A Cross-sectional study was conducted among health-care professionals using Non-probability convenient Sampling procedure. Örebro Musculoskeletal Pain Questionnaires (ÖMPQ) was used as data collecting instrument. Data was collected from health care professionals of different hospitals in Lahore city (Jinnah Hospital, Nawaz Sharif social security hospital, Farooq hospital, CMH Lahore, Gulaab Devi, Ganga Ram, PSRD, KKT, General Hospital, and Mayo Hospital). Subjects, who were willing to participate, were explained about the study. The questionnaire was distributed to each of them at their place of work along with consent form to get permission from higher authorizes of that respective place.

The sample size was determined by using the online Epi Tools software (epitool.ausvet.com)(16). An assumed prevalence of 23% hip pain was used, reported in the survey based study on dentist (17) and precision of (0.04). To allow for adequate sub analysis, the confidence level of (0.99) was selected to give a sample size of 735 health care professionals. Although final target sample size of 1000 professionals were used for more accurate results and allowance for non-responsive. Out of which 971 responded, 12 did not give any response, and 17 subjects didn't lie in inclusion criteria.

Health-care professionals less than 60 years of age, with minimum three years of practice and subjects willing to participate in this survey falls in inclusion criteria. Subject with any systemic disease i.e. uncontrolled diabetes hypertension, heart disease or tumors which may influence the musculoskeletal system, having any recent hip joint surgery, any other hip joint disability along with musculoskeletal complaint and pregnancy falls in exclusion criteria for this study.

Time Duration to collect data and complete work was around six months in total. After collecting data, it was entered in IBM SPSS 21 for statistical analysis. Descriptive (mean, standard deviation, and minimum, maximum) statistics were used to analyze variables i.e. Age, missed days, psychological state, pain with activity and work satisfaction. Demographics (age, gender, occupation) and pain were analyzed using frequencies and percentage. For the association of hip pain with Age, Gender, and occupation, Chi-square test was used. A p-value less than (0.05) was considered significant. Results were computed using scoring instructions given at the end of the questionnaire.

Results

Prevalence of hip pain among health care professionals was 147 (15.1%) in this study (Table 1). There were 78 males and 69 Females. Altogether, different factors had their effect; age group, occupation, gender, working environment and extent of their effect varied as well. Hip pain was more prevalent in younger age group and was more common in the male. Mental exhaustion, activities of daily living, work place and environment also had a relationship with hip pain.

Frequencies of male and female participated in this study were 510 (52.5%) males and 461 (47.5%) females respectively. There was a higher percentage of male reporting hip pain among health care professionals as compared to female (Table 1).

Frequencies of occupation are represented according to two categories. The first category is of Medical Doctors (Physician, Surgeon, and Dentist) represents a total number of 651(67%) participants. The second category is of Allied Health Professionals (Physical Therapist, Radiologist, Medical Lab technologist and nurses) representing a total number of 320 (33%) participants. According to this study, there was a higher number of Surgeons, Physicians, and Dentist who responded, as compared to Allied Health Professionals (Table 1).

For frequency of age, in first category (26-35) of age, numbers of participants were 545 (56.1%), in the second category of age (36-45), there were 236(24.3%) participants and 190 (19.6%) participants were in third category (46-60) of age (Table 1). Cross-tabulation between Age and Pain is represented with (low pain, moderate pain). According to this study, younger therapists had a higher percentage of hip pain. In first category (26-35) of age, 64 (42.9%) subjects had about hip pain. In second category (36-45) of age, 36 (24.5%) of subjects had hip pain. In third category (46-60) of age, 48 (32.7%) subjects had hip pain. Although the percentage of hip pain was least at middle age, χ^2 (14.82) & p value (.001) shows the significant association between age and pain (Table 2).

In case of Cross-tabulation between Gender and Pain (low pain, moderate pain), male participants had higher percentage. Male 78 out of 510 participants showed a percentage of (53.1%) for hip pain as compared to female 69 out of 461 having (46.9%). χ^2 (22.98) & p value (.000) of Chi-square shows significant association between gender and pain (Table 2).

For occupation and pain, χ^2 (6.51) & p value (0.011) shows significant association, which reflects that pain occurrence was higher in Medical Doctors (Physician, Surgeon, and Dentist) as compared to Allied Health

Professionals (Physical Therapist, Radiologist, Medical Lab Technologist and Nurses). Among Medical Doctors, the percentage was 113(76.9%), and in case of Allied Health Professionals, the percentage was 34(23.1%). (Table 2).

According to analysis, p-value is less than 0.05 for association of hip pain with age, gender and occupation, so it implies that there is a significant association between them. Following tables show analysis of different variables used in questionnaire.

Table 1 Descriptive analysis of the respondents concerning Pain, and risk factors

Attributes	Categories	No. of respondents	Percentage
Pain	Yes	147	15.1
	No	824	84.9
Gender	Male	510	52.5
	Female	461	47.5
Age (Years)	26-35	545	56.1
	36-45	236	24.3
	46-60	190	19.6
Occupation	Medical Doctors	651	67
	Allied Health Professionals	320	33

Table 1 shows prevalence of hip pain among health care professionals. Out of 971 subjects, 147 (15.1%) had hip pain while 824(84.9%) did not have hip pain. For frequency of gender, out of were 971subjects 510 (52.5) were male, and 461 (47.5%) were female. Out of 971 participants, 545 (56.1%) number of subjects in first category, 236 (24.3%) in second category and 190 (19.6%) lies in the third category of age. For occupation, 651(67%) participants in Medical Doctors and 320 (33%) participants in Allied Health Professionals.

Additionally, Table 2 shows Cross-tabulation Pain (low pain, moderate pain) with Age, gender, and Occupation. χ^2 (14.82) & p-value (.001) shows significant association between age and pain. χ^2 (22.98) & p value (.000) of Chi-square shows significant association between gender and pain. Cross-tabulation for occupation in two categories i.e. Medical Doctors and Allied Health Professionals. χ^2 (6.51) & p value (.011) shows significant association between occupation and pain.

Table 2 Cross-tabulation of Pain regarding risk factors

Risk Factors	Categories	Low	Moderate	Total	χ^2	P
Age	26-35	35 (55.6%)	28 (44.4%)	63 (42.9%)	14.82	0.001
	36-45	21 (58.3%)	15 (41.7%)	36 (24.5%)		
	46-60	11 (22.9%)	37 (77.1%)	48 (32.7%)		
	Total	67 (45.6%)	80 (54.4%)	147(100%)		
Gender	Male	50 (64.1%)	28 (35.9%)	78 (53.1%)	22.98	0.00
	Female	17 (24.6%)	52 (75.4%)	69 (46.9%)		
	Total	67 (45.6%)	80 (54.4%)	147 (100%)		
Occupation	Medical Doctors	58 (51.3%)	55 (48.7%)	113 (76.9%)	6.51	0.011
	Allied Health Professionals	9 (26.5%)	25 (73.5%)	34 (23.1%)		
	Total	67 (45.6%)	80 (54.4%)	147 (100.0%)		

Discussions

This study assessed work-related musculoskeletal hip pain and associated risk factors among health-care professionals. Significant findings of this study were association between different risk factors; demographics (age, gender) and work-place factor (occupation, workloads, working under painful conditions and nature of work) for hip pain. Few factors were excluded as they were not statistically significant i.e. psychological state of respondent, duration of current pain and its effect on activities of daily living and work life.

Hip pain prevalence in this study showed percentage of 15.1% in 147 out of 971 subjects. Similar findings with a small difference were obtained by Hill et al. (2009) of sonographers in the USA. To identify work-related hip pain based on work habits and job demands Hill Iii et al. (2009) got a percentage of 19% of hip pain (18). Percentage of 20% hip pain was given by Islam et al. 2015, who conducted Observational retrospective cross sectional survey for OT and PT in Bangladesh with 101 sample size (19). Vieira et al. (2016) with 23% Hip pain (20).

Association of hip pain and age showed a significant p-value (.001) in this study and representing a greater percentage of 42.9% in age group (26-35) years. Balakrishnan, Chellappan et al. showed the highest prevalence at the age of 20-29, because of poor professional knowledge, skills, and experience(21), while those in old age had the least prevalence. But differences can still occur, as a person's work life span at every age and physiological state vary accordingly. These findings can also be compared with cross-sectional survey of nurse in Taiwan, involving greater prevalence of hip pain with lack of experience and poor patient handling (22, 23).

Although de Carvalho, Soriano et al. concluded that work-related pain has a greater prevalence at old age (24).

Hip pain and gender association for health care professionals in this study showed a percentage of 78(53.1%) male with hip pain and a percentage of 69 (46.9%) in female, with a significant (0.00) p-value. So, male being more involved at physical loading and greater burdens considered to be at higher risk of developing hip pain according to this survey. A study by Long et al. confirmed that being in the same occupation, men do greater work and lifting heavy objects than female (25). Similarly, Milhem, Kalichman et al. have also reported their male colleagues amongst 2688 Chartered Society of Physiotherapy members. Males suffered more hip(3% vs. 1%) problems than females(26). But in contrast to this study, female were more prevalent according to six different studies in muscular hip pain(27, 28). Prevalence of hip pain was considered to be higher among female because of their household work, but for men, they have to face more challenging physical demands(29). Differences are still there, as gender physiology varies and so the working life span of a person.

Occupation and hip pain association in this study have been done in two categories. One is being Physicians, Dentist, and surgeons representing greater hip pain 113(76.9%) than the other category including Physical Therapist, Medical Lab Technicians, Radiologist and nurses with 34(23.1%) of hip pain. In contrast to my study, Van Gaalen, Linn - Rasker et al. concluded that nurses had more complaints regarding their musculoskeletal hip among other healthcare professionals (30). According to Balakrishnan et al. occupation have a greater impact on musculoskeletal problem, in case of health care professionals hip pain is more common as compared to other occupations (21). Patient handling, hospital stay, prolonged standing or sitting and providing direct care to patients put healthcare professionals at greater risk for hip pain of around 27.9% (31, 32). Working life of a professional and life span of his working time effect accordingly. Thus subjects being at greater burden of work and taking over time could be at greater risk for developing musculoskeletal hip pain.

All above outcomes were consistent with work-related musculoskeletal pain in health-care professionals, no examination or studies were found on hip pain specifically among health care professionals for association and comparisons. Although there were many studies conducted on occupational hip pain in non-health care professionals.

This study is limited to

- Prevalence of hip pain only.
- Healthcare Professional, working in different hospitals only (private or Govt. setting).
- Few hospitals of Lahore only, so it cannot be generalized to other cities
- A cross-sectional survey that does not allow getting chronological relationship among hip pain and associated risk factors.

Conclusion

Results of the current study show that work related musculoskeletal hip pain is (15.1%) prevalent in health care professionals of different settings of Lahore. Risk factors related to advancement of hip pain in this population are higher in less experienced, younger therapists and male doctors dealing with more repetitive tasks and manual handling. Subjects are exposed to many psychological and physical factors leading to development of musculoskeletal hip pain in them. Due to nature of work, dentist, physicians, and surgeons showed higher percentage of hip pain because of working in awkward posture and mental exhaustion.

Acknowledgments

The authors would also like to express sincere gratitude to Sana for her continuous support, patience, and immense knowledge.

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