Original Article

Prevalence of Low Back Pain among Physiotherapy Students of Riphah College of Rehabilitation Sciences

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ABSTRACT

OBJECTIVE: To determine the prevalence of low back pain among physiotherapy students studying at Riphah College of Rehabilitation Sciences Faisalabad.

METHODOLOGY: This cross-sectional study was conducted among 110 female students Riphah College of Rehabilitation Sciences (RCRS) during the academic year 2016–2017 from December 2016 to June 2017. The sample size for this study was calculated using Open Epi tool. Self- administered questionnaire was used and consisted of three sections; demographic information of the participants, the Standardized Nordic Musculoskeletal Questionnaire for the musculoskeletal complaints of low back and Visual Analogue Scale for pain intensity. The statistical analysis was performed with SPSS ver.18.

RESULTS: Out of 110 students, 61 (55.4%) had 12 months (prevalence period) Low back pain and 40 (36.4%) had a point prevalence (7 days prevalence). Of these 61 (55.4%) who had LBP, only 25 students stated that they were absent from university because of their back pain, and 32 (52.2%) of the participants thought that working activity during the last 12 months was affected by pain. Of 61 (55.5%) participants with back pain, 16 (26.7%) had mild, 23 (37.7%) had nagging, 19(31.1%) distressing, and 3 (4.9%) had severe pain.

CONCLUSION: The prevalence of LBP in physiotherapy students is high and the most common type of pain is nagging in nature.

KEY WORDS: Low back pain, prevalence, physiotherapy students, prolonged sitting

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INTRODUCTION

Low back pain (LBP) is one of the most common complaints in at least 90% of the population in their lifetime[1,2]. Backache is also considered a major musculoskeletal problem of modern age[3]. Approximately 60-80% of the population in the United States has back pain and it is observed that this is the second leading cause of hospital visits in the adult population[4]. Prolonged working in faulty positions, frequent manual handling techniques, and performance of repetitive movements are have been reported as risk factors for LBP development among the students the same as for the clinicians[5]. LBP does not always refers to the old age group[6]. Even though the complaint of bck pain reported by a young patient is unusual but nonetheless literature reports the prevalence of back pain between 13.5%-39.8% for the 18-24 years age group[6-8]. It has also been the most common causative factor that restricts activities performed daily in population below 45 years of age[9]. Susceptibility to stress and extended study time predispose the students in health science domain for having LBP[10,11]. Students pertaining to the health sciences are reported to have overall prevalence rate of 40.1 to 57.9% but it is still not clear as under this braod category which students have highest prevalence rates[10-12]. According to Nordic classifcation of LBP, reported lifetime prevalence, 1-year prevalence and point prevalence of LBP among the physical therapy students were 69.2–82.3, 63.2–73.7, 27.6%; for the medical students these were 73.4, 46.1 –59.9 and 27.2%; and for the nursing students 79, 71 and 30%correspondingly[6,10-13].

Physical therapy students have a high frequency of low backache as compared to other medical students and this reduces student's work and leisure activity strikingly[14]. Physical therapy practice with poor body postures, and other risk factors associated with back pain in students not only affect the student's work but also affect the socioeconomic and physiological activities[15,16]. Physical therapy students were found to have a 48.3% lifetime prevalence and 81.60% 12-month prevalence[5]. The onset of LBP in physical therapy students also have same risk of low back pain as an occupational therapist or graduated therapist[17]. Prolonged sitting hour could cause the stiffness of the lumbar spine, and performing full range flexion movements after a long time sitting increase the risk of soft tissues injuries of the lumbar region[18]. There is a relationship among back pain as well as environmental risk factors including time spent in a static sitting position during class, carrying heavy school bags and books, and time spent in leisure or sportsactivities[19-22]. Students suffering from low back pain face difficulty in performing activities of daily

living and mostly find their self-dependent on others for carrying out different daily tasks[14]. Different postures are also considered as the contributing factors that cause backache[23]. Although LBP is a widespread phenomenon among physical therapy students worldwide[24]. However, limited studies of the prevalence of back pain among health science students have been conducted in our region. Therefore, the purpose of this study was to determine the prevalence by time and period of 12-month prevalence of LBP among physiotherapy students of 3rd and 4th years studying at RCRS.

METHODOLOGY

A cross-sectional study was conducted between December 2016 to June 2017 at Riphah College of Rehabilitation Sciences, Riphah International University among 3rd and 4th year's physiotherapy students in the academic year 2016-2017. Ethical approval was taken from the Ethical Review Broad of Riphah International University. A purposive sampling technique was used to collect the sample size of 110 students using the OpenEpi sample size calculator. Female students of 3rd year and 4th year Physical therapy, having age between 18 years to 25 years, minimum 6 hours continuous itting per day were included in the study while the students having pain due to nerve root irritation, any vertebral fracture, and inflammatory diseases of the vertebral column were excluded. Every subject amenable to take part in the study was briefed about the research project and the purpose of this study and data was collected from the subject following signing consent from the subject of study. Data was collected from the subject by using the Standardized Nordic Musculoskeletal Questionnaire for musculoskeletal complaints in the low back region[25] and the Visual Analogue Scale[26].

After taking consent of subjects participating in the study the participants were asked to fill the questionnaire. The questionnaire included necessary personal data like age, gender, weight, socioeconomic status, psychosocial factors, year of study, history of back, pain, history of back trauma, and other study parameters like off days, LBP timing, LBP duration, sitting hours, positional habbits and college furnitureas identified from the literature[6,7,10,12,13].

Also, to measure the pain intensity visual analogue scale (VAS) wasused. 130 questionnaires were given to physiotherapy students out of whom 110 were foundfilledto be included in the research study and 84.6% was the response rate. Data was analyzed using SPSS version 18. Descriptive statistics were used for the description of students demographic data and factors related to LBP. Chi-square statistical analysis was used to find association between the categorical variables. Statistical significant differences were considered to be present when p-value was<0.05.

RESULT

Out of 110 students (Mean ± SD, 21.23±1.05),(23.6%) had 20 years of age, 42 (38.2 %) of students had 21 years of age, 32 (29.1%) had 22 year and another 10 (9.1%) of them had more than 23 years age, 62 (56.4%) of students were studying in 3rd-year class while 48 (43.6%) of students were studying in the 4th-year class. (Table I).

Out of the total 110 students,61(55.4%) had low back pain while 49(45%) of them were never having LBP. Of these 61 students who had LBP, only 25 (41%) students reported absenteeism due to their backache. 31 (51%)of students have less than one day duration of LBP during last 12 month, 30 (49%) of students have 1-7 days duration of LBP during last 12 month.61% of the students reported sitting continuously for long hours. 32 (52%) of the respondents said that their LBP results in reduction of their work activity during the last 12 months, whereas 29 (48%) of them disagreed that their pain cause to reduce their work activity during the last 12 months. 33 (54%)of the students informed that their LBP causes to reduce their leisure activities during the last 12 months, whereas 28 (46%)of them disagreed that their pain cause to reduce their leisure activities. (Table II).

Among 61 (55%)of sufferers, 22 (33%) of the students told that they have no time to LBP has prohibited them from doing their normal work. Out of 61 (55%)of sufferers, 58 (95 %) of the students never hospitalized due to LBP while only 3 (5 %) of them told that they ever been hospitalize due to backache. This study shows that among the participants who have had pain in the past 12 months, the level of LBP is associated with the reduction in work and leisure activities and made him visit doctor in the past 12 months with (p-value=0.00). However, no association has been found between continuous sitting and participants with LBP in the last 12 months (p-value=0.697). (Table III & IV).

TABLE I: DEMOGRAPHIC INFORMATION AND LBP PREVALENCE OF PARTICIPANTS (n=110)

Variables		Frequency	Percent
Age (Mean ±SD, 21.23±1.05)	20 years	26	23.63
	21 years	42	38.18
	22 years	32	29.09
	23 years	10	9.09
Year of study	3rd year	62	56.36
	4th year	48	43.63
Low back pain during the last 12 month (Period Prevalence)	Yes	61	55.45
	No	49	44.54
Low back pain during the last 7 days (Point Prevalence)	Yes	40	36.36
	No	70	63.63

TABLE II:
FREQUENCY OF DIFFERENT VARIABLES AMONG PARTICIPANT WITH LBP (n=61)

Variables	Response	Frequency	Percent
Off days due to LBP	Yes	25	40.98
	No	36	59.01
LBP caused to reduce their work activity during the last 12 months	Yes	32	52.45
	No	29	47.55
LBP caused to reduce their leisure activity during the last 12 months	Yes	28	45.90
	No	33	54.10
LBP has prohibited them from doing their normal work during the last 12 months	0 day	20	32.78
	1-7 days	33	54.09
	0-30 days	06	09.83
	More than 30 days	02	03.27
Visit to doctor, physiotherapist due to LBP during the last 12 months	Yes	27	44.27
	No	34	55.73

-sectional study to evaluate the prevalence of LBP among undergraduate physiotherapy students of age 17 to 22 year that support our results. The reason for selecting this age group was the fact that as the graduates enter in their professional life, they are exposed to the professional hazards[30-32]. A study by West DJ 2001[30] reported that 16% of the physical therapists reported having LBP during their graduation. In the present study, students were belonged to the 3rd and 4th professional years, students in senior semesters are at significant risk to the development of LBP as stated in study by Nyland LJ 2003[28].

The current study found that 52% of students said they were working less because of back pain. This is demonstrated by the retrospective cohort study by Hiebert R 2003[33]. who concluded that 43% of students have limited their work because of back pain. Moreover, finding of this study shows that there is no association between low back pain and continuous sitting ($\chi 2 = .206$, $p = .697$). Similarly, Hartvigsen J 2000[34] reported that the literature does not support the view that sitting at work is associated with back

TABLE III: ASSOCIATION OF DOCTOR'S VISIT, WORK AND LEISURE ACTIVITIES WITH LEVEL OF PAIN AMONG PARTICIPANTS (n=61)

Variables	Response	Pain level				P-value
		Mild pain	Nagging pain	Distressing pain	Intense pain	
LBP caused to reduce their work activity during the last 12 month	Yes(32)	0(0%)	15(46.87%)	14(43.75%)	3(9.37%)	0.000
	No (29)	16(55.17%)	8(27.58%)	5(17.24%)	0(0%)	
LBP caused to reduce their leisure activity during the last 12 months	Yes (28)	1(3.57%)	10(35.71%)	14(50%)	3(10.71%)	0.000
	No (32)	15(46.87%)	13(40.62%)	5(15.62%)	0(0%)	

TABLE IV: ASSOCIATION BETWEEN SITTING AND LPB AMONG PARTICIPANTS (n=110)

Variables	Response	LBP in Students		Total	Pearson Chi-Square	P-value
		No	Yes			
Continuous Sitting for minimum 6 hours	Yes	31(46.26)	36(53.73)	67(60.90)	0.206	0.697
	No	18(42.69)	25(58.13)	43(39.09)		
	Total	49(44.54)	61(55.45)	110		

DISCUSSION

Physical therapys students are at increased risk for the development of LBP when compared to the other health care students as well as with the practitioners, thus there is continuous need to educate the students about the prevention of LBP. The period prevalence of LBP among physiotherapy students was found to be 61(55.5%) and point prevalence reported in our study is 40(36.4%) which is within the range of previous studies (40.1–57.9%)[27]. Similarly another study by Nyland LJ 2003[28] reported that LBP prevalence was 69% (lifetime), 63% (12- month), 44% (one-month), 28% (one-week). Nyland LJ 2003[28] conducted a cross

pain. In contrary to this, study by Beach TA 2005[35] reported that prolong sitting increases pressure load of the spine which causes significantly higher point prevalence among students. Our study revealed that LPB is cause of absence due to sicknessamong the Physiotherapy students. Similarly, Alexopoulos EC 2008[36] reported in the longitudinal study that back pain is one of the causes of absence from work.

The results of our study have shown that work and leisure activities are affected by LBP, which means that students have participation restriction for recreational activities and also in tasks related to heavy weight lifting due to LBP. The results of our

study are supported by another study that found that LBP is a prominent cause for reducing participation in leisure activities and influencing work activities[37].

CONCLUSION

This study concluded that the prevalence of LBP in physiotherapy students is high. In addition, LBP is a major cause of absenteeism, hospital visit, reduced leisure and work activity among students.

Limitations: This study is only applicable to physiotherapy students and more especially the RCRS Riphah International University. Longitudinal studies on the students are needed for deep insight into the LBP and associated factors and long-term effects created on their lives.

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AUTHOR CONTRIBUTIONS

Kashif M: Concept, design, data collection, writeup
Kokab T: Concept, writeup, data collection
Rafique Z: Data analysis
Arshi A: Critical review, draft, final approval
Iram H: Data interpretation, Critical review

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