

Non-specific low back pain and its associated risk factor among the private universities students of Dhaka city

1. A. K. M Rezwan

Senior consultant- PADT-Health fitness & Rehab center
House- 18, Road- 27, Sector -07, Uttara, Dhaka-1230

2. Pradip Kumar Saha

Assistant Professor & Chairman
Amola Health Care & Research
44, Shymoli PC culture Housing
Dhaka-1207

3. Sultana Farhat Jahan

Senior lecturer-
Gono Bishwabidyalay, Nolam, Savar, Dhaka

4. Sharmin Abeda Rafiq

Assistant Senior lecturer-
Gono Bishwabidyalay, Nolam, Savar, Dhaka

DOI: 10.31364/SCIRJ/v7.i4.2019.P0419644
<http://dx.doi.org/10.31364/SCIRJ/v7.i4.2019.P0419644>

ABSTRACT

Background: Non-specific low back pain is the most common causes of severe long-term pain and physical disability, affecting hundreds of millions of people around the world. Objective: The aim of the study was to determine the non-specific low back pain and its associated risk factor among the private universities students of Dhaka city. Materials and method: It was a cross sectional study. Sample size was 340 and a pre-tested, modified, semi-structured questionnaire was used to collect the data. Data were analyzed using SPSS software version 16.0. Results: In this study focused on identifying the factors associated of non-specific low back pain in private universities students, the mean age group were 25.33 ± 4.35 years with a range from 18 to 35 years and 23-27 years age groups students were more pain in lower back, More of the respondents were female (54.4 %) and unmarried (82.9%). Graduate students were more (46.2%) and average height and weight were (61-65) inches and (61-70) kg, maximum students did not use any farm bed (81.2%) and more (50.9%) were use side lying during sleep at night. Most of the student (63.8%) didn't do any physical exercise in daily. Most of the students (50.6%) were read at home average 5 to 6 hours and (41.2%) were read at university above 6 hours without interval, more of (40.0 %) students weight of university bag above 4 kg and carry bag (45.0%) on back side, more of the students (51.5%) distance of university from house were above 6 miles and (54.4%) students come to university by bus. Maximum student (94.4 %) were no history of trauma and (95.3 %) were didn't involvement any part time job. More of the student (59.7%) feeling mild types of pain and (42.6 %) feeling more pain during standing and (30.9 %) feeling pain in 6 months, (59.1 %) students taken self-treatment and (79.7 %) didn't visit any doctor. This study also found

highly significant association between sex and history of trauma ($p \leq 0.02$), sex and visit of the doctor ($p \leq 0.01$), marital status and visit of the doctor ($p \leq 0.007$) Conclusion: In high proportion of non-specific low back pain most often in university student therefore this study revealed what are the factors and how can we care our lower back for minimize the non-specific low back pain.

Key Word: *Non-specific LBP, Risk factor, physical disability, University student,*

INTRODUCTION

Low Back pain is an important public health problem in developed and developing countries. Globally, it is one of the leading musculoskeletal disorders and it is a worldwide disabling occupational hazard¹. It is the most frequent musculoskeletal disorder. It is defined as “pain between the costal margins and inferior gluteal folds and usually accompanied by painful limitation of movement”².

According to the Global Burden of Disease 2010 Study, the prevalence and burden of LBP are very high throughout the world³. Students usually attended the classroom session for the theories input and at the same time working in front of computer to browse through for resources, which involved prolonged sitting in most of their daily activities⁴. According to some estimates approximately 60-80% of the general population will suffer from Low back pain at some point in their lifetime and 20-30% are suffering from Low back pain at any given time Low back pain is very common that almost half of the adult population suffered from low back pain which last for more than 24 hours at times during the year⁵. In the USA, the prevalence of LBP has been estimated from 15 to 45% and In United Kingdom, LBP has been considered as the biggest single cause of absence from work (Kamper et al., 2015)⁶.

LBP is a condition with a high prevalence and recurrence rate. This condition has the potential to create a major impact on the individual over extended periods of time. Numerous reasons and factors for lower back pain have been suggested; including age, gender, body mass index (BMI) and physical activity of the patient. There are different treatments and techniques being implemented, however their effects are minimal. Students at University level are at high risk of low back ache (LBA) due to prolonged sitting and standing hour's⁷. The significance of this research study is to investigate low back problems and to what extent the activities of daily living of the students are affected. In order to increase the awareness of LBP among the population, a pamphlet comprising low back care exercises, the body mechanics of proper lifting techniques as well as proper sitting and standing postures will be given to all the participants at the end of their participation⁸.

METHODOLOGY

A pretested, modified, questionnaire was distributed to the university students who have complain of acute and chronic low back pain in different private university at Dhaka. A total 340 student were selected both male and female who having complain of low back pain. All of the respondents gave their informed consent. Non randomized purposive sampling technique was applied and 24 questionnaires were employed as the survey instrument. Data were summarized using the descriptive statistics of mean, standard deviation and percentages. Pearson's Chi-square analysis was used to determine the association of low back pain and its factor responsible. The data analyses were carried out using Statistical Package for Social Science (SPSS 16.0 version software Chicago) and the significant level was set at 0.05.

DATA ANALYSIS

Descriptive type of cross sectional study was conducted in different private university in Dhaka in order to determine the low back pain and its associated risk pain among the university students; a pre-tested modified interviewer administrated semi questionnaire was used to collect the information. A total of 340 students were interviewed to collect the information. All the data were entered and analyzed by using statistical packages for social science (SPSS) software version 16.0 (Chicago).

Table1: Distribution of respondents by age (n=340)

Age in years	Frequency	Percentage
18-22	88	25.9
23-27	161	47.4
28-31	44	12.8
32-35	47	13.8
Total	340	100
Mean ± SD		25.33 ± 4.35

The mean age of the respondents were 25.33 ± 4.35 years with a range from 18 to 35 years and found that 23-27 age groups were more pain (47.4%) in lower back region.

Table 2: Distribution of respondents by sex (n=340)

Sex	Frequency	Percentage
Male	155	45.6
Female	185	54.4
Total	340	100
Mean ± SD		1.54 ± .50

The table-2 revealed that the mean sex of the respondents were 1.54 ± .50 years and shown that more of the respondents were female (54.4 %)

Table 3: Distribution of respondents by Marital status (n=340)

Marital status	Frequency	Percentage
Married	58	17.1
Unmarried	282	82.9
Total	340	100
Mean ± SD		1.82 ± 0.37

The table-3 revealed that the mean marital status of the respondents were 1.82 ± .37 and shows that most of the respondent were unmarried (82.9%)

Studying	Frequency	Percentage
	www.scirj.org	

Graduate	191	46.2
Post graduate	149	43.8
Total	340	100
Mean ± SD		1.43 ± 0.50

Table 4: Distribution of respondents by studying of university (n=340)

The table-4 revealed that the mean of study of the respondents were $1.43 \pm .50$ and also shows that graduate respondent (46.2%) were more.

Table 5: Distribution of respondents by Height in inches (n=340)

Height in inches	Frequency	Percentage
55-60	38	11.1
61-65	210	61.8
66-70	92	27.1
Total	340	100
Mean ± SD		63.88 ± 2.78

The table-5 revealed that the mean of height of the respondents were 63.88 ± 2.78 inches and more of the respondents (61.8%) average 61-65 inches height

Table 6: Distribution of respondents by weight in kg (n=340)

Weight	Frequency	Percentage
40-50	21	6.3
51-60	57	16.9
61-70	180	52.6
71-80	82	24.2
Total	340	100
Mean ± SD		65.49 ± 8.32

The table-6 revealed that the mean of weight of the respondents were 65.49 ± 8.32 kg and more of the respondent (52.6 %) average 61-70 kg

Table 7: Distribution of respondents by use of farm bad (n=340)

Variable	Frequency	Percentage
-----------------	------------------	-------------------

Yes	64	18.8
No	276	81.2
Total	380	100
Mean ± SD	1.81 ± 0.39	

The table-7 revealed that the mean use of farm bad of the respondents were 1.81 ± 0.39 and most of the respondents (81.2%) were did not use farm bad.

Table 8: Distribution of respondents by sleep position at night (n=340)

Sleep position at night	Frequency	Percentage
Supine	33	9.7
Prone	134	39.4
Side lying	173	50.9
Total	340	100
Mean ± SD	2.47 ± 0.75	

The table-8 revealed that the mean of sleep position at night of the respondents were 2.47 ± 0.75 and shown that more of the respondents (50.9%) maintained side lying position during sleep at night

Table 9: Distribution of respondents by do physical exercise in daily (n=340)

Physical exercise	Frequency	Percentage
Yes	123	36.2
No	217	63.8
Total	340	100
Mean ± SD	1.63 ± 0.48	

The table-9 revealed that the mean of physical exercise in daily of the respondents were 1.63 ± 0.48 and shown that more of the respondents (63.8 %) didn't do any physical exercise in daily.

Table 10: Distribution of respondents by hours of home study (n=340)

Hours of home study	Frequency	Percentage
Near about 1 to 2 hours	5	1.5
Near about 3 to 4 hours	24	7.1
Near about 5 to 6 hours	172	50.6

Above 6 hours	139	40.9
Total	340	100
Mean ± SD	3.40 ± 0.68	

The table-10 revealed that the mean hours of home study of the respondents were 3.40 ± 0.68 and shown that more of the respondent (50.6%) near about 5 to 6 hours studied at home.

Table 11: Distribution of respondents by hours of university study without interval (n=340)

Hours of university study	Frequency	Percentage
Near about 1 to 2 hour	12	3.5
Near about 3 to 4 hours	53	15.6
Near about 5 to 6 hours	135	39.7
Above 6 hours	140	41.2
Total	340	100
Mean ± SD	3.18 ± 0.82	

Table 11 revealed that the mean hours of university study without interval of the respondent were 3.18 ± 0.82 and more of the respondents (41.2%) were study university average above 6 hours.

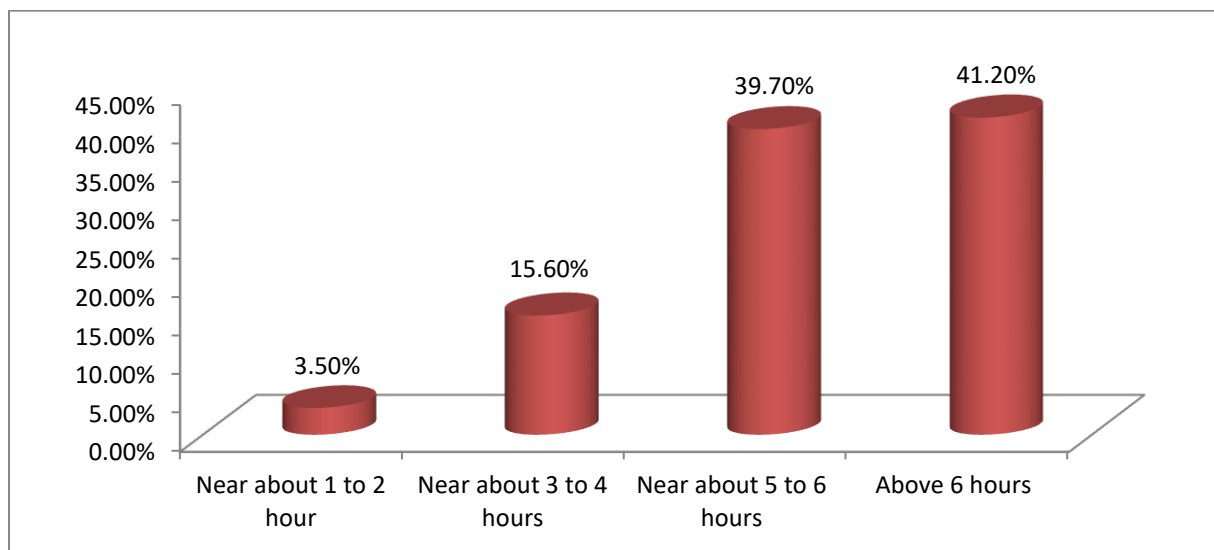


Figure 1: Distribution of respondents by hours of university study without interval.

Table 12: Distribution of respondents by weight of university bag (n=340)

Weight of collage bag	Frequency	Percentage
------------------------------	------------------	-------------------

Near about 1-2 kg	18	5.3
Near about 2-3 kg	67	19.7
Near about 3-4 kg	119	35
Above 4 kg	136	40
Total	340	100
Mean ± SD	3.09 ± 0.89	

Table 12 revealed that the mean of the weight of bag were 3.09 ± 0.89 and It was shown that more of the respondents (40.0 %) weight of bag average above 4 kg

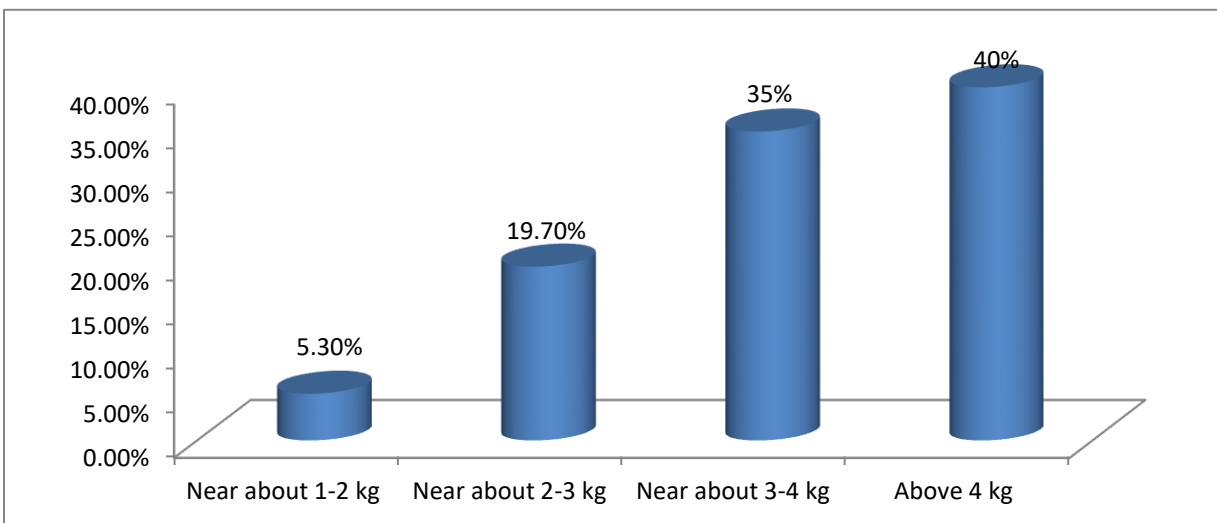


Figure 2: Distribution of respondents by weight of university bag

Table13: Distribution of respondents by sites of carry bag (n=340)

Site of carry bag	Frequency	Percentage
Right shoulder	63	18.5
Left shoulder	37	10.9
On back	153	45.0
On hand	87	25.6
Total	340	100
Mean ± SD	2.77 ± 1.02	

Table 13 revealed that the mean of the site of carry bag was 2.77 ± 1.02 and It was shown that most of the respondent (45 %) carry bag on back side

Table14: Distribution of respondents by distance of university from house (n=340)

Distance of university	Frequency	Percentage
Near about 1-2 miles	12	3.5
Near about 3-4 miles	28	8.2
Near about 5-6 miles	125	36.8
Above 6 miles	175	51.5
Total	340	100
Mean ± SD	3.36 ± 0.78	

Table 14 revealed that the mean distance of university from house was 3.36 ± 0.78 and It was shown that more of the respondent's (51.5%) average distance of university from house were above 6 miles

Table 15: Distribution of respondents by comes to university (n=340)

university	Frequency	Percentage
On walking	17	5.0
By rickshaw	68	20.0
By bus	185	54.4
By motor cycle	70	20.6
Total	340	100
Mean ± SD	2.90 ± .77	

Table-15 revealed that the mean of comes to university was $2.90 \pm .77$ and most of the respondent (54.4%) go to university by bus.

Table 16: Distribution of respondents by sit while studying at house (n=340)

Sit while studying	Frequency	Percentage
Bad	112	32.9
Chair	111	32.6
Floor	117	34.5
Total	340	100
Mean ± SD	2.01 ± 0.82	

Table-16 revealed that the means of sit while study at house was 2.01 ± 0.82 and more of the respondent (34.5 %) sit in floor while study at home.

Table 17: Distribution of respondents by the history of trauma (n=340)

Trauma	Frequency	Percentage
Yes	19	5.6
No	321	94.4
Total	340	100
Mean ± SD	1.94 ± 0.23	

Table-17 revealed that the means of the history of trauma was 1.94 ± 0.23 and found that most of the respondents (94.4 %) were no history of trauma.

Table 18: Distribution of respondents by the part time job (n=340)

Part time job	Frequency	Percentage
Yes	16	4.7
No	324	95.3
Total	340	100
Mean ± SD	1.95 ± 0.21	

Table-18 revealed that the means of the part time job were 1.95 ± 0.21 and also found that most of the respondents (95.3 %) were didn't involvement any part time job.

Table 19: Distribution of respondents by types of pain feeling (n=340)

Types of pain	Frequency	Percentage
Mild	203	59.7
Moderate	114	33.5
Sever	23	6.8
Total	340	100
Mean \pm SD	1.47 ± 0.62	

Table-19 revealed that the means of the types of pain was 1.47 ± 0.62 and most of the respondents (59.7 %) feeling mild types of pain.

Table 20: Distribution of respondents by position of more pain feeling (n=340)

Position of more pain	Frequency	Percentage
Sitting	47	13.8
Standing	145	42.6
Lying	44	12.9
Walking	104	30.6
Total	340	100
Mean \pm SD	2.60 ± 1.06	

Table-20 revealed that the means of the position of more pain was 2.60 ± 1.06 and more of the respondent (42.6 %) feeling more pain during standing

Table 21: Distribution of respondents by months of pain feeling (n=340)

Months of pain feeling	Frequency	Percentage
------------------------	-----------	------------

Near about 3 months	90	26.5
Near about 6 months	105	30.9
Near about 9 months	85	25.0
Near about 12 months	35	10.3
Above 12 months	25	7.4
Total	340	100
Mean ± SD	2.41 ± 1.19	

Table-21 revealed that the means of the months of feeling pain was 2.60 ± 1.06 and more of the respondent (30.9 %) feeling pain last 6 months

Table 22: Distribution of respondents by self treatment (n=340)

Self treatment	Frequency	Percentage
Yes	201	59.1
No	139	40.9
Total	340	100
Mean ± SD	2.41 ± .49	

Table-22 revealed that the means of the self treatment was $2.41 \pm .49$ and more of the respondent (59.1 %) taken self treatment

Table 23: Distribution of respondents by visit of doctor (n=340)

Visit doctor	Frequency	Percentage
Yes	69	20.3
No	271	79.7

Total	340	100
Mean ± SD	1.79 ± .40	

Table-23 revealed that the means of the self treatment was $1.79 \pm .40$ and most of the respondent (79.7 %) didn't take doctor visit.

Table-24: Distribution and association of respondent between Sex and history of trauma

Sex	History of trauma			P Value
	Yes	No	Total	
Male	9	146	155	0.02
Female	10	175	185	
Total	19	321	230	

P value obtained from Pearson Chi-square(x^2) Test

The table-24 showed that the significant association found between sex and history of trauma, where p-value is 0.02

-25: Distribution and association of respondent between Sex and visit of the doctor

Sex	Visit of doctor			P Value
	Yes	No	Total	
Male	31	124	155	0.01
Female	38	147	185	
Total	69	271	340	

P value obtained from Pearson Chi-square(x^2) Test

The table-25 showed that the significant association found between sex and visit of the doctor, where p-value is 0.01

Table-26: Distribution and association of respondent between marital status and visit of the doctor

Marital status	Visit of doctor			P- Value
	Yes	No	Total	
Married	12	46	58	0.007
unmarried	57	225	282	
Total	69	271	340	

P value obtained from Pearson Chi-square (x^2) Test

The table-26 showed that the significant association found between marital status and visit of the doctor, where p-value is 0.007

DISCUSSION

Globally, non-specific low back pain (NSLBP) is a common cause of morbidity in all people⁹. In a study focused on identifying the factors associated of non specific low back pain In university student the mean age group were 25.33 ± 4.35 years with a range from 18 to 35 years and 23-27 years age groups students were more pain in lower back region. More of the respondents were female (54.4 %) same things found by K M Khudhir et al¹⁰, and unmarried (82.9%). Graduate students were more (46.2%) and average height and weight were (61-65) inches and weight (61-70) kg same thing found by the study of G Brennan et al¹¹. Maximum students did not use any farm bed (81.2%) and maximum (50.9%) was side lying during sleep at night. Most of the student (63.8%) didn't do any physical exercise in daily. Most of the students (50.6%) were read at home average 5 to 6 hours and (41.2%) were read at university without interval above 6 hours same things found by Lucky anggiat panjaitan et al¹² (40.0 %) students weight of university bag above 4 kg and carry bag on back side of (45.0 %) student, more of the students (51.5%) distance of university from house were above 6 miles and (54.4%) students come to university by bus. more of the respondent (34.5 %) sit in floor while study at home same things found by Matias Noll et al¹³. Maximum student (94.4 %) were no history of trauma and (95.3 %) were didn't involvement any part time job. More of the student (59.7%) feeling mild types of pain and (42.6 %) feeling more pain during standing and (30.9 %) feeling pain in 6 months, (59.1 %) students taken self-treatment and (79.7 %) didn't visit any doctor. This study found highly significant association between sex and history of trauma ($p \leq 0.02$), sex and visit of the doctor ($p \leq 0.01$), marital status and visit of the doctor ($p \leq 0.007$)

CONCLUSION

This study conducted the within the different private universities students of Dhaka city and to examine the factors responsible for non-specific low back pain among the students. A high proportion of neck pain and injury most often in university students, the study has provided useful insight into the problem of LBP among the university student. This research should be expanded to other universities to get a broader assessment of the problem of LBP among the private university students

Conflicts of interest: None to declare

REFERENCES

1. Kanyenyeri L, Asiimwe B & Mochama M. Prevalence of Back Pain and Associated Factors among Bank Staff in Selected Banks in Kigali, Rwanda: A Cross Sectional Study. *Health Sci J* 2017; 11: 3
2. Meman SH, Pais V & Kalal BS. Physical risk factors for low back pain among young sedentary individuals- A prospective study. *Indian J Pain* 2017;31:157-63
3. D. Hoy, L. March, & P. Brooks. The global burden of low back pain: estimates from the Global Burden of Disease 2010 Study. *Annals of the Rheumatic Diseases*.2017; 73(6): 968–974
4. Lucky Anggiat , Wan Hazmy Che Hon & Siti Nur Baait, The incidence of low back pain among the university students. *Jurnal Pro-Life*. 2018 ; 5(3): 677
5. Lotfi Fahmi Issa1, Nagy A. Seleem, Ali M. Bakheit , Ayman Abdel Baky & Abdulaziz Fahad Alotaibi. Low back pain among undergraduate students at Taif University - Saudi Arabia. *International Journal of Public Health and Epidemiology* .2016; 5 (6): 276-284
6. Kamper, S. J., Apeldoorn, A., Chiarotto, A., Smeets, R., Ostelo, R., Guzman, J. & van Tulder, M. Multidisciplinary biopsychosocial rehabilitation for chronic low back pain: Cochrane systematic review and meta analysis. *BMJ*.2015; 350: 1-11
7. Ferkhanda Imdad, Farhan Ishaque, Samreen Yasmeen, Wakash Lal, Saeed Ahmed Sheikh, Umair Nawaz, Dr. Fazleazim & Shireen Khanzada. Prevalance of low back pain among the undergraduate students of ISRA University, Karachi campus, 2016; 3(1): 119-123

8. Lim Chia Voon, Sha ranjit Kaur & Tan Chieu Ling. The prevalence of low back pain and disability among university students. A Cross-Sectional Study. Final Year Project, Faculty of medicine and health science UTAR. 2013
9. M. Chiwaridzo, K. J. Chamarime & J. M. Dambi, the burden of low back pain among undergraduate physiotherapy students at the University of Zimbabwe: a cross-sectional study, BMC research note, 2018;11: 697
10. Karwan Mahmood Khudhir, Kochr Ali Mahmood, Kochar Khasro Saleh & Mosharaf hossain, A cross sectional study to determine the prevalence and risk factors of low back pain among public technical institute staff in Kurdistan Region, Iraq. 2017; 6:182
11. GrahamBrennan, Amir hafat, Ciarán Mac Donncha, & Carmel Vekins Lower back pain in physically demanding college academic programs: a questionnaire based study, BMC Musculoskelatal Disord. 2007; 8 (67)
12. Lucky Anggiat Panjaitan, Wan Hazmy Che Hon & Siti Nur Baait Mohd Sojran, The incidence of low back pain among the university students, Jurnal Pro-Life. 2018; 5(3)
13. Noll M, Silveira EA & Avelar ISd. Evaluation of factors associated with severe and frequent back pain in high school athletes. PLoS ONE.2017; 12(2): e0171978