



RESEARCH ARTICLE

PREVALENCE OF LOWER BACK PAIN AMONG TAIBAH UNIVERSITY STUDENTS.

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Abstract

Background: Lower back pain is a common multifactorial disorder that could be of neurological, musculoskeletal or even psychiatric origin. It affects multiple age groups ranging from adolescent to the geriatric age group.

Objectives: Our aim in this study is to determine the prevalence of lower back pain, assessing its impact on students' lives and detection of the most common risk factors of lower back pain among Taibah university students.

Methodology: A cross sectional study was carried out. The study was conducted in Al-medainh city among Taibah university students at any level and any faculty. (i.e. the sampling selection method was random) with nearly sample size of 500. A specially designed self-administered questionnaire in Arabic was used.

Results: Most of the respondents (82.35%) were between 21 to 25 years of age. Females responded more than males did (74.35%). Nearly half of the sample (41.2%) was comprised of medical students followed by students of applied medical science and science, respectively. Ninety-five students were in their third academic year. Lower back pain was significantly prevalent among Taibah University students as (56.47%) were complaining of it.

Conclusion: The prevalence of lower back pain among Taibah university students was approximately higher compared to other similar studies with a percentage of (56.74%). The impact of lower back pain on the students though not major yet still lead to the absence of some of them from university and to the consumption of pain killers.

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Introduction: -

Lower back pain is a common multifactorial disorder that could be of neurological, musculoskeletal or even psychiatric origin¹. It affects multiple age groups ranging from adolescent to the geriatric age group¹. It causes an impact on the patient's life socially and economically² in the form of either inability to work or working with the minimum physical activity leading to decrease in the income. It can also affect the patient psychologically subjecting him to an increased risk of developing anxiety and depression disorders⁴.

Lower back pain has a various risk factors. Some are related to habits such as smoking and alcohol consumption. Others include physical factors like strong physical activity, frequent lifting of heavy objects, postural stress. There are also some individual life style factors such as the occupation, age, gender, race, height and weight³. Furthermore,

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the deficiency of vitamin D was considered as a potential risk factor of Low back pain in the Gulf because of decreased adequate exposure to sunlight¹. Finally poor general health and psychosocial factor are considered as significant risk factors as well³.

A remarkable number of preventive medicine literature has studied the influence of profession or lifestyle on the incidence of back pain⁵. University students however, usually have a demanding curricula, making the bulk of student's time consumed by long sitting hours spent either on studying or receiving lectures, hence leading to physical inactivity and a raising prevalence of lower back pain⁴.

According to recent studies, nearly 60-80% of individuals worldwide will suffer from LBP at a given time in their lives and 20-30% are already suffering from it³. Even though back pain in Arab countries presents at a much less frequency than some western nations, it still appears to be relatively common among its unindustrialized locations^{1,4}. There are ongoing growing efforts aimed towards researching the prevalence of LBP in Saudi Arabia but reported data are still too limited to generalize such evidence¹.

Our aim in this study is to determine the prevalence of lower back pain, assessing its impact on students' lives and detection of the most common risk factors of lower back pain among Taibah university students.

Methodology: -

A cross sectional study was carried out. The study was conducted in Al-medainh city among Taibah university students at any level and any faculty. (i.e. the sampling selection method was random) with nearly sample size of 500. A specially designed self-administered questionnaire in Arabic was used.

The electronic self-administrated questionnaire, consisted of 3 main sections: students' demographic data, prevalence of lower back pain and it is associated symptomatology, risk factors and related medical history.

The statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 20.0. Chi Square analysis applied to compare the differences between the groups included in the study and a P value < 0.05 considered statistically significant.

Results: -

The response rate of this survey was 85% (n=425/500). Most of the respondents (82.35%) were between 21 to 25 years of age (See figure 1). In figure 2 we can see that females responded more than males did (74.35%). Nearly half of the sample (41.2%) was comprised of medical students followed by students of applied medical science and science, respectively (Figure 3). Ninety-five students were in their third academic year (Figure 4). Lower back pain was significantly prevalent among Taibah University students as (56.47%) were complaining of it (Figure 5).

Regarding the association between lower back pain and students' demographics, there was a statistically significant association between lower back pain and gender (P=0.010). Females reported back pain more than did males. Lower back pain was more prominent among underweight students (71.67%). Among the medical students, responded (45.71%) have lower back pain. Majority (62.5%) of first year university students have lower back pain (Table 1).

Table 2 shows a statistically significant association between the lack of exercise and lower back pain (P=0.024). (61.54%) of the students that seldom exercise reported lower back pain. Long studying hours contributed to significant prevalence of lower back pain (P=0.039). Most of the students are usually studying on the floor which is significantly associated with lower back pain (P=0.002). Students that usually perform weight lifting exercises reported lower back pain less than those who don't do weight lifting with a statistically significant association with lower back pain (P=0.000). Many students are used to wear backpacks, among those (65.6%) are suffering from lower back pain with a significant association to the frequent backpack wearing (P=0.044). Drinking soft drinks is significantly associated with lower back pain (P=0.025). Among students who suffer from lower back pain (61.63%) have a positive family history (P=0.012). Anxiety and lower back pain are strongly associated among Taibah University (P=0.000). In our sample there is a strong evidence (P=0.000) that a bad body posture directly contributes to lower back pain with thoracic kyphosis being the most commonly associated with lower back pain (80.00%).

Most commonly reported symptoms associated with back pain among the participant are pain that improves by sitting (139 students) and increases by walking (97 students) suggesting a musculoskeletal origin. Alarming symptoms that necessitate medical attention also reported such as; paresthesia (101 students), pain radiating from

the back to the lower limb (82 students), urinary incontinence (29 students) and fecal incontinence (4 students) (See table 3).

Regarding the impact of lower back pain on Taibah University students', (15.36%) have absented from university due to lower back pain and (25.38%) of the students suffering from back pain used painkillers to relieve it.

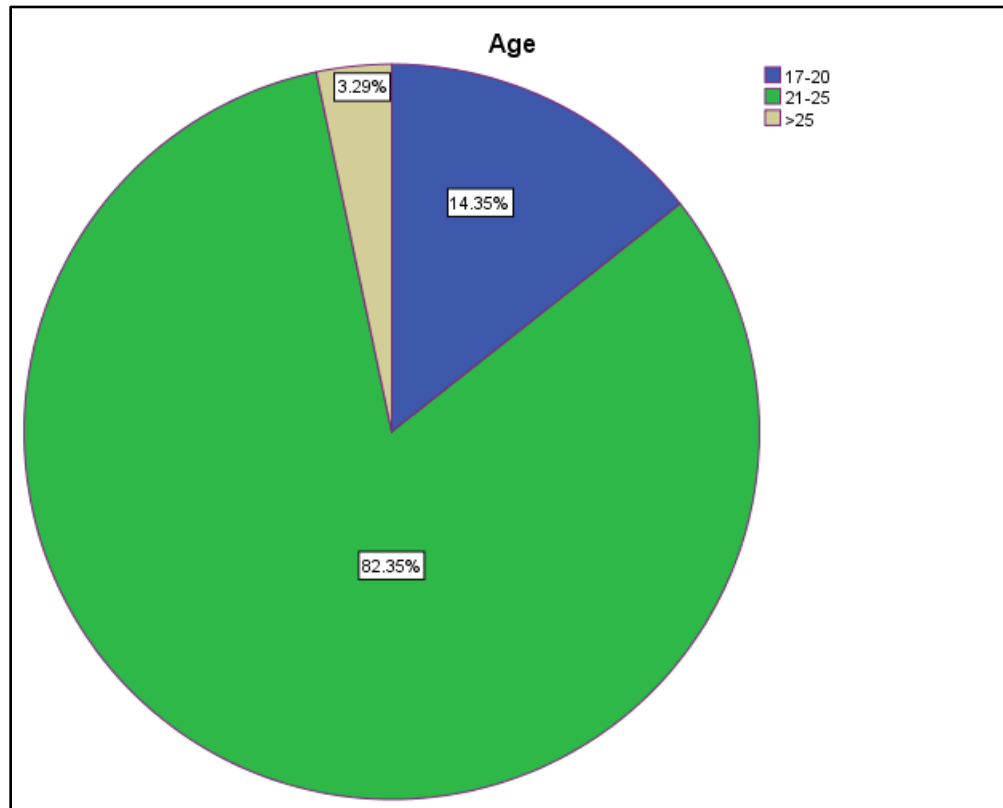


Figure 1:- Age distribution of the respondents

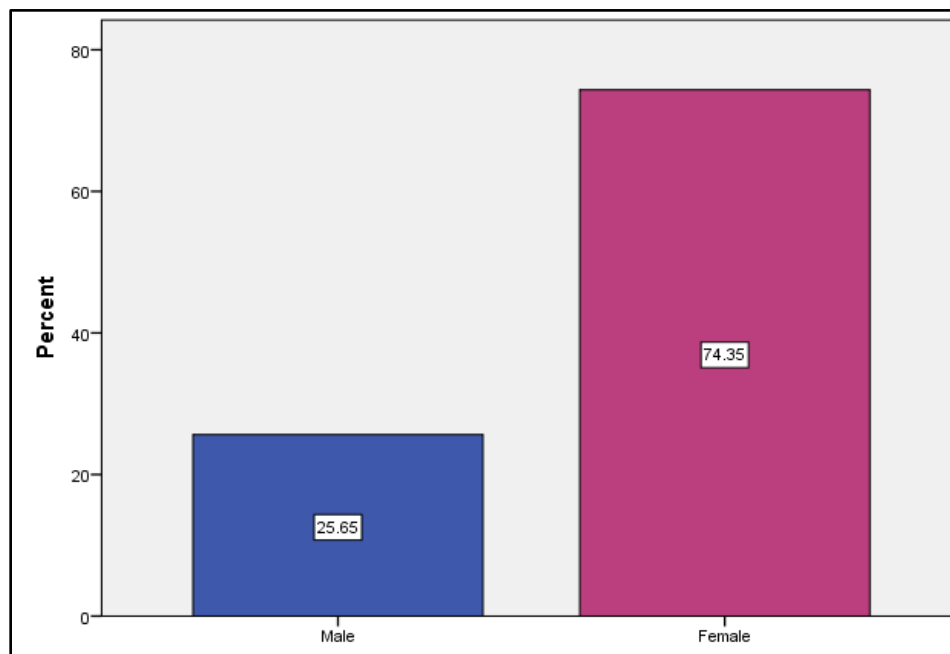


Figure 2:-Gender distribution of the respondents

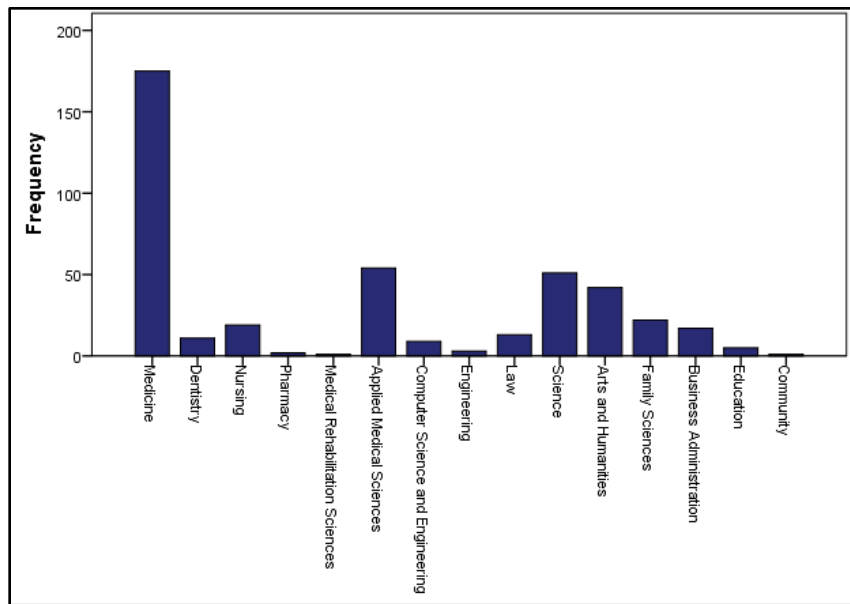


Figure 3:- Distribution of the respondents by colleges

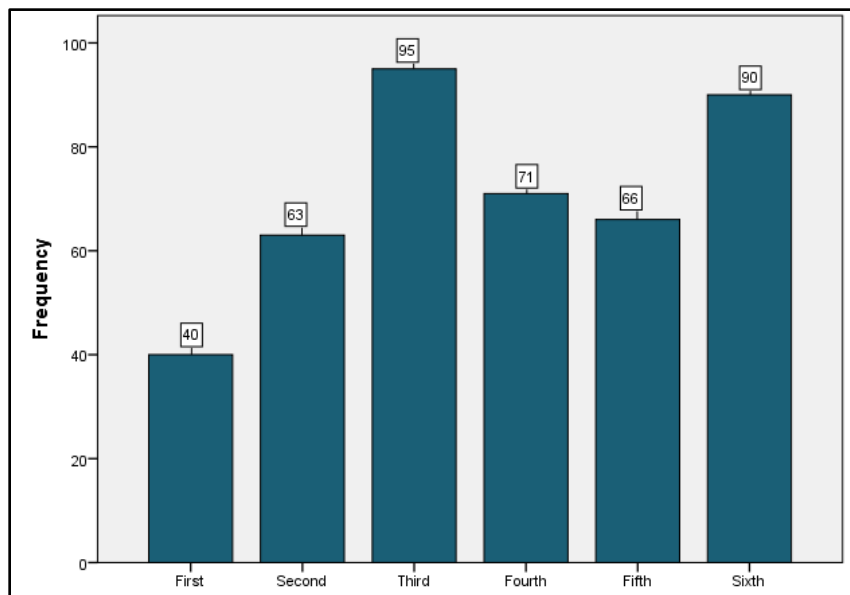


Figure 4:- Distribution of the respondents by academic year

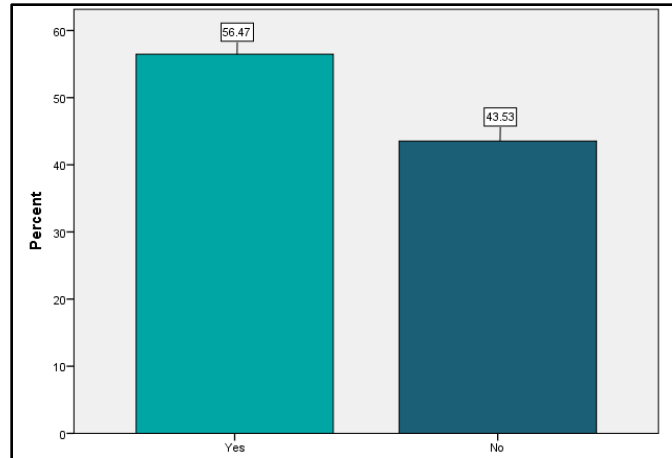


Figure 5:-Prevalence of lower back pain among Taibah University students

Table 1:- Association of students' demographics with lower back pain

Variable	LBP +	%	X2	P.Value
Age				
17-20 (N= 61)	38	62.35%	1.441	0.487
21-25 (N= 350)	193	55.14%		
>25 (N= 14)	9	64.35%		
Gender				
Male (N= 109)	50	45.87%	6.700	0.010*
Female (N= 316)	190	60.13%		
BMI				
Underweight (N= 60)	43	71.67%	7.343	0.062
Normal weight (N= 225)	124	55.11%		
Over weight (N= 90)	45	50.00%		
Obese (N= 50)	28	56.00%		
College				
Medicine (N= 175)	80	45.71%	19.561	0.145
Dentistry (N= 11)	6	54.55%		
Nursing (N= 19)	11	57.89%		
Pharmacy (N= 2)	2	100.0%		
Medical Rehabilitation Sciences (N= 1)	1	100.0%		
Applied Medical Sciences (N= 54)	33	61.11%		
Computer Science and Engineering (N= 9)	6	66.67%		
Engineering (N= 3)	2	66.67%		
Law (N= 13)	9	69.23%		
Science (N= 51)	30	58.82%		
Arts and Humanities (N= 42)	30	71.43%		
Family Sciences (N= 22)	16	72.72%		
Business Administration (N= 17)	10	58.82%		
Education (N= 5)	3	60.00%		
Community (N= 1)	1	100.0%		
Academic year				
First (N= 40)	25	62.5%	9.430	0.093
Second (N= 63)	36	57.14%		
Third (N= 95)	64	67.37%		
Fourth (N= 71)	34	47.89%		
Fifth (N= 66)	37	56.06%		
Sixth (N= 90)	44	48.89%		

Table 2:- Association of life style, habits and students' medical history with lower back pain

Variable	LBP +	%	X2	P.Value
Exercise				
Always (N=53)	20	37.74%	9.467	0.024*
Sometimes (N=201)	118	58.71%		
Seldom (N=130)	80	61.54%		
Never (N=41)	22	53.66%		
Smoking				
Yes (N=25)	12	48.00%	0.775	0.379
No (N=400)	228	57.00%		
Long studying hours				
Yes (N=240)	146	60.83%	4.269	0.039*
No (N=185)	94	50.81%		
Study place				
Desk (N=104)	46	44.23%	12.030	0.002*
Bed (N=148)	81	54.73%		
Floor (N=173)	113	65.32%		
Using computer for long hours				
Always (N=137)	72	52.55%	2.067	0.559
Sometimes (N=205)	122	59.51%		
Seldom (N=67)	36	53.73%		
Never (N=16)	10	62.50%		
Watching TV				
Always (N=43)	22	51.16%	0.665	0.881
Sometimes (N=139)	80	57.55%		
Seldom (N=160)	92	57.50%		
Never (N=83)	46	55.43%		
Weight lifting				
Yes (N=66)	22	33.33%	17.016	0.000*
No (N=359)	218	60.72%		
Driving for long hours (Males)				
Always (N=21)	10	47.62% ⁵	0.152	0.985
Sometimes (N=61)	27	44.26%		
Seldom (N=23)	11	47.83%		
Never (N=4)	2	50.00%		
Wearing heels (Females)				
Always (N=19)	13	68.42%	4.327	0.228
Sometimes (N=143)	82	57.34%		
Seldom (N=117)	70	59.83%		
Never (N=33)	25	75.76%		
Wearing backpack				
Always (N=125)	82	65.6%	8.125	0.044*
Sometimes (N=118)	57	48.31%		
Seldom (N=84)	44	52.38%		
Never (N=98)	57	58.2%		
Daily diary products consumption				
Yes (N=181)	98	54.14%	0.694	0.405
No (N=244)	142	58.26%		
Vitamin D rich diet				
Always (N=85)	42	49.41%	3.117	0.374
Sometimes (N=249)	144	57.83%		
Seldom (N=82)	50	60.98%		
Never (N=9)	4	44.44%		
Daily sun exposure				

Yes (N=187)	103	55.08%	0.263	0.608
No (N=238)	137	57.56%		
Drinking soft drinks				
Always (N=91)	60	65.93%	9.353	0.025*
Sometimes (N=165)	79	47.87%		
Seldom (N=121)	74	61.27%		
Never (N=48)	27	56.25%		
Family history				
Yes (N=245)	151	61.63%	6.271	0.012*
No (N=180)	89	49.44%		
Anxiety				
Yes (N=202)	138	68.32%	21.978	0.000*
No (N=223)	102	45.74%		
Depression				
Yes (N=66)	47	71.21%	6.907	0.009
No (N=359)	193	53.76%		
Back Injury				
Yes (N=40)	26	65.00%	1.307	0.253
No (N=385)	171	44.42%		
Body posture				
Sway back (N=18)	13	72.22%	20.396	0.000*
Anterior pelvic tilt (N=18)	13	72.22%		
Thoracic kyphosis (N=45)	36	80.00%		
Forward Head (N=144)	38	26.38%		
Normal posture (N=200)	95	47.50%		
History of TB				
Yes (N=1)	1	100.0%	0.773	0.379
No (N=424)	239	56.37%		
History of Sciatica				
Yes (N=3)	2	66.67%	0.128	0.721
No (N=422)	238	56.41%		
History of desk prolapse				
Yes (N=8)	6	75.00%	1.139	0.286
No (N=417)	234	56.12%		

Table 3:-Frequency of lower back pain associated symptoms among the students

Symptoms	Frequency	%
Pain increases by walking (N=273)	97	35.5%
Pain improvesby Sitting(N=268)	139	51.9%
Pain radiating from the back downwards to the leg (N=425)	82	19.3%
Paresthesia (N=425)	101	23.8%
Muscle weakness (N=425)	73	17.2
Urinary incontinence (N=425)	29	6.8%
Fecal incontinence (N=425)	4	0.9%
Pain in lower limbs (N=425)	124	29.2%
Limping (N=425)	11	2.6%
Night sweating (N=425)	41	9.6%
Fever (N=425)	33	7.8%

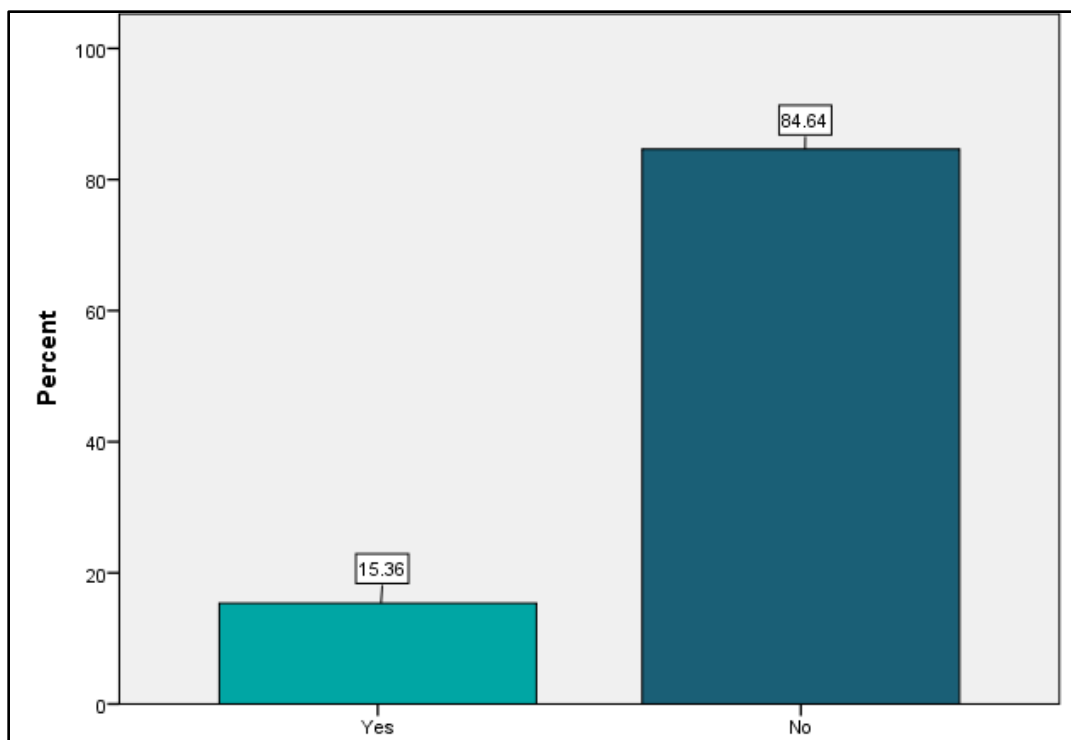


Figure 6:-Absence from university due to back pain

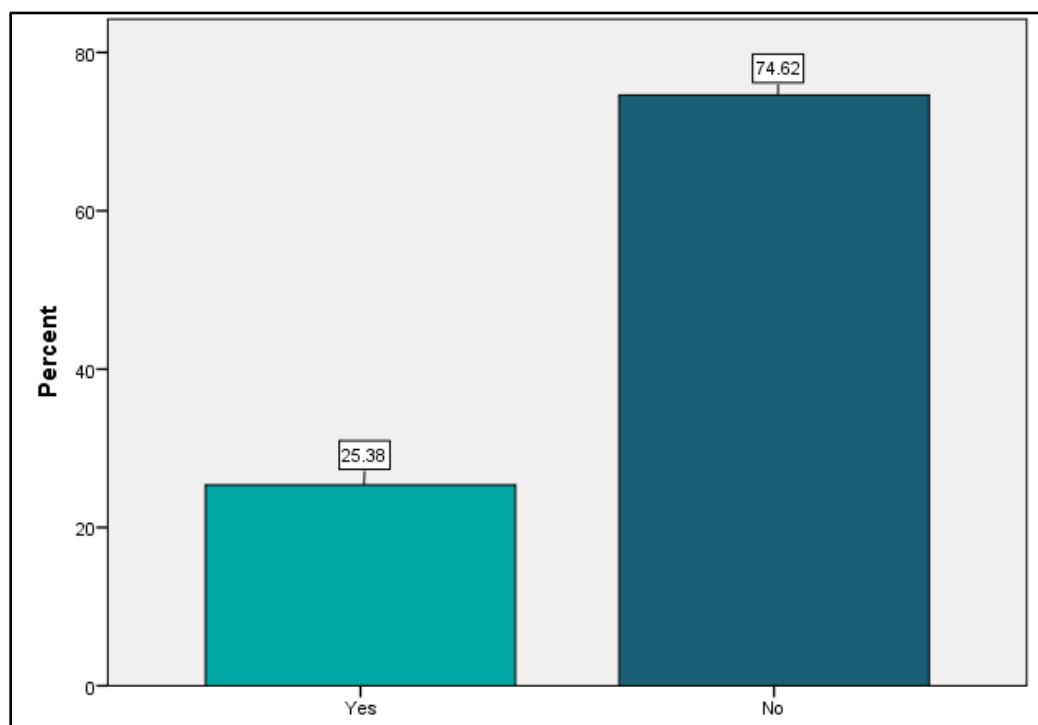


Figure 7:- Using of painkillers due to back pain

Discussion: -

Lower back pain is a major problem throughout the world, and it is prevalent among adult population based on cross sectional study conducted in AlQassim (18.8%)⁵. Some studies have shown significant incidence in the rates of LBP between college students. As in Indian medical college revealed a LBP prevalence of 48% in medical students⁶, and 53% rate reported for medical students at Paracelsus Medical University in Austria⁷. Consistent with previous studies, we observed higher mean and median prevalence of lower back pain among Taibah university students approximately (56.74%). However, in the present study females reported LBP higher than males did, compatible with study done by Damian Hoy et al.²

In our study, we observed that incidence of LBP high in underweight students (71.67%). In contrast to Han et al, reported that women who are overweight, have a significantly increased likelihood of lower back pain⁸.

Lack of exercise is one of the main etiologies of LBP. In our study, we found significant association between prevalence of LBP and lack of exercise, a lower prevalence of lower back pain significantly found in students who usually perform weight lifting exercises. This finding supported by Damian Hoy et al² observed that low incidence of LBP in developing countries estimated to be attributable to higher levels of exercise.

On the other hand, long studying hours contributed to significant increase of lower back pain. Unlike Grace O et al⁹, they found no significant association between LBP and sitting for long time. However, (65.6%) among the students who complain of LBP used to wear backpacks and we found a significant association to the frequent backpack wearing consist with a study done by Heuscher et al.¹⁰

Abnormal body posture observed to be significantly higher in students suffers from LBP according to Nupur Aggarwal et al⁶. Similar to our study we found that (80.0%) of our respondents who have thoracic kyphosis suffer from LBP.

As a family history play, a significant risk factor for LBP based on Nupur Aggarwal et al⁶ and other researches, among students who suffer from lower back pain (61.63%) have a positive family history.

Several psychological factors contribute to the prevalence of low back pain such as depression, anxiety and stress. According to that, Nupur Aggarwal et al⁶ suggested that mental stress and depression are predisposing factors to LBP. Therefore, significant association between anxiety and LBP observed in the present study. Furthermore, have an influence on student's attendance in which (15.36%) have absented from university due to lower back pain.

Limitation of the study: -

Using of a self-administered questionnaire might create a misunderstanding of some asked questions. Also, students were not interviewed personally to assess the exact impact of low back pain on their lives.

Conclusions: -

The prevalence of lower back pain among Taibah university students was approximately higher compared to other similar studies with a percentage of (56.74%). The commonest risk factors included female gender, low BMI, lack of exercise, long studying hours on the floor, psychological factors in the form of anxiety, positive family history and most importantly bad body postures especially thoracic kyphosis. The impact of lower back pain on the students though not major yet still lead to the absence of some of them from university and to the consumption of pain killers.

Recommendations: -

Since lower back pain prevalence was higher in comparison to other studies, we recommend raising awareness of its risk factors among students to help them take the right precautions in order to protect themselves from developing such a condition in the future. Also, to teach the ones who already suffer from a LBP how to cope and if possible alleviate their pain aiming to achieve a better life style.

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References: -

1. Awaji M. Epidemiology of Low Back Pain in Saudi Arabia. *J Adv Med Pharm Sci.* 2016;6(4):1-9. doi:10.9734/JAMPS/2016/24173.
2. Hoy D, Bain C, Williams G, et al. A systematic review of the global prevalence of low back pain. *Arthritis Rheum.* 2012;64(6):2028-2037. doi:10.1002/art.34347.
3. Bal G. Topical Review. 2009;25(2):1-48. doi:10.1088/0266-5611/25/5/053001.
4. Aggarwal N, Anand T, Kishore J, Ingle GK. Low back pain and associated risk factors among undergraduate students of a medical college in Delhi. *Educ Health (Abingdon).* 2013;26(2):103-108. doi:10.4103/1357-6283.120702.
5. Abdurhman S. Al-Arfaj, Salman S. Al-SalehFRCP, Suliman R. Alballa,Abdullah N. Al-Dalaan, Sultan A. Bahabri,Mohammed A. Al-Sekeit, PhD,Mohammed A. Mousa. How common is back pain in Al-Qaseem. 2002
6. Aggarwal, N., Anand, T., Kishore, J., & Ingle, G. K. (2013). Low back pain and associated risk factors among undergraduate students of a medical college in Delhi. *Education for Health*, 26(2), 103.
7. Moroder, P., Runer, A., Resch, H., & Tauber, M. (2011). Low back pain among medical students. *Acta Orthopaedica Belgica*, 77(1), 88.
8. Han, T. S., Schouten, J. S. A. G., Lean, M. E. J., & Seidell, J. C. (1997). The prevalence of low back pain and associations with body fatness, fat distribution and height. *International journal of obesity*, 21(7), 600-607.
9. Vincent-Onabajo, G. O., Nweze, E., Kachalla Gujba, F., Ali Masta, M., Usman Ali, M., Alhaji Modu, A., & Umeonwuka, C. (2016). Prevalence of Low Back Pain among Undergraduate Physiotherapy Students in Nigeria. *Pain research and treatment*, 2016.
10. Heuscher, Z., Gilkey, D. P., Peel, J. L., & Kennedy, C. A. (2010). The association of self-reported backpack use and backpack weight with low back pain among college students. *Journal of manipulative and physiological therapeutics*, 33(6), 432-437.