*Biological and Clinical Sciences Research Journal*
*eISSN: 2708-2261; pISSN: 2958-4728*
*www.bcsrj.com*
DOI: https://doi.org/10.54112/bcsrj.v2024i1.765
*Biol. Clin. Sci. Res. J., Volume, **2024**: 765*
***Original Research Article***

# FREQUENCY OF LOW BACK PAIN AND ITS IMPACT ON MEDICAL STUDENTS OF BILAWAL MEDICAL COLLEGE: A RETROSPECTIVE SURVEY

**BALOCH S[*1], DURANI W[2], DURANI RZ[2], ALI Z[2], RIYYAN M[1], CHANIA HA[2], SAJID S[2], FATIMA M[2], KUMAR S[1], ALI B[1], LAGHARI F[1], LAGHARI A[1], LASHARI A[1], BUGHIO M[1], RAI R[1], BHATTI J[1], JUMMAN M[1]**

*[1]Bilawal Medical College for Boys, Liaquat University of Medical & Health Sciences, Pakistan*
*[2]Liaquat University of Medical & Health Sciences, Pakistan*
**Corresponding author's email address:* Saira.Baloch@lumhs.edu.pk

*(Received, 19th December 2023, Revised 10th March 2024, Published 17th April 2024)*

**Abstract:** *Low back pain (LBP) is a significant health and economic problem among populations in high-resource countries. LBP is one of the prevalent complaints among all age groups.* ***Objective:*** *To assess the frequency of low back pain (LBP) among medical and its impact on their daily activities and life while exploring potential associations with socio-demographic factors, exercise habits, pain-relieving consumption, history of spine trauma, and body mass index (BMI)* ***Methods:*** *A retrospective survey was conducted at Bilawal Medical College (BMC) among first year to final year MBBS students. Data was collected during the period of January 2022 to February 2023 using a questionnaire created on Google Form that included questions regarding the information on socio-demographic characteristics and factors such as exercise, pain-relieving consumption, any history of spine trauma, specific questions pertaining to LBP pain frequency and issues.* ***Results:*** *A total of 62 medical students participated in the study, of which about half were in their fourth year (50.0%), followed by the third year (20.9%) of medical school. The 20–24 age group accounted for most individuals (64.5%), followed by the 25–30-year-old age group (33.9%). Only 25.8% of the participants were overweight, defined as having a BMI of more than 25 kg/m2.* ***Conclusion:*** *It was concluded that low back pain is one of the most frequent health crises among medical students. Students from senior academic years reported more frequent lower back pain, which was highly significant due to increased mental stress and increased physical strain due to clinical learning. Additionally, it was found that there is no potential link between BMI and a history of spine trauma on the frequency of lower back pain or its impact on the medical student's life and their daily activities.*

**Keywords:** Frequency, Low Back Pain, Medical Students, Retrospective Survey

## Introduction

Low back pain (LBP) is a significant health and economic problem among populations in high-resource countries. LBP is one of the prevalent complaints among all age groups (1). At least 90% of the population has experienced LBP once (2). LBP is commonly recognised as ‘‘non-specific’’ for no organic cause is found. The onset of back pain goes from the age of 30 and peaks between 45 and 60 years of age (3). The impact of job and profession on the frequency and prevalence of Low back pain is proven. A systematic review highlighted that 54.8% of medical professionals experienced low back pain once (4). LBP is reported by many students or leisure club members: among students, the reported LBP prevalence rate was 38.2%; among dental hygiene students, the LBP prevalence was high (57%) (5). Another study from Belgrade medical students showed that 75.8 % of medical students suffered from lower back pain due to lack of exercise (6). The reported prevalence of musculoskeletal disorder (MSP) and LBP among medical students was between 45.7% and 65.1%. The onset of LBP is believed to be influenced by factors such as frequent repetitive movements of a particular body part and positions like prolonged standing or sitting (7-9). However, the most important factors that favour the occurrence of LBP and its transition to chronicity are stressors, fear of pain, and lack of physical activity. Therefore, they are at high risk of developing LBP. Therefore, this study aims to identify the frequency of low back pain, establish risk factors for low back pain and assess the impact of low back pain on daily activities and quality of life among Bilawal Medical College students.

## Methodology

A retrospective survey was conducted at Bilawal Medical College (BMC) among first-year and final-year MBBS (Bachelor of Medicine, Bachelor of Surgery) students. This research was carried out after getting approval from the Research Ethics Committee of Liaquat University of Medical and Health Sciences (NO.LUMHS/REC/-214 Dated: 19-11-2021)

Data was collected from January 2022 to February 2023 using a questionnaire created on Google Form that included questions regarding socio-demographic characteristics and factors such as exercise, pain-relieving consumption, any history of spine trauma, and specific questions about LBP pain frequency and issues.

Out of 105 students who filled out the questionnaire, only 62 of them met the inclusion criteria. The study's inclusion criteria were MBBS students of Bilawal Medical College (BMC) who consented to participate and had lower back pain. Participants without lower back pain and those who submitted incomplete forms were subjected to the exclusion criteria. All statistical analyses were performed using SPSS-

[Citation: Baloch, S., Durani, W., Durani, R.Z., Ali, Z., Riyyan, M., Chania, H.A., Sajid, S., Fatima, M., Kumar, S., Ali, B., Laghari, F., Laghari, A., Lashari, A., Bughio, M., Rai, R., Bhatti, J., Jumman, M. (2024). Frequency of low back pain and its impact on medical students of Bilawal Medical College: a retrospective survey. *Biol. Clin. Sci. Res. J.*, **2024***: 765*. doi: https://doi.org/10.54112/bcsrj.v2024i1.765]

20 (SPSS, Chicago, IL). Data was analysed using descriptive statistics and presented in frequencies (n) and percentages (%). To determine statistical significance, a chi-squared test ($\chi 2$) was used. For all analyses, a P-value of <0.05 was considered statistically significant.

**Results**

Sixty-two medical students participated in the study, of which about half of the participants were in their fourth year (50.0%), followed by the third year (20.9%) of medical school. The age group of 20–24 years old accounted for the majority of individuals (64.5%), followed by the 25–30-year-old age group (33.9%). Only 25.8% of the participants were overweight, defined as having a BMI of more than 25 kg/m2. A history of spine trauma was reported by nearly 12.9% of the individuals. Most participants (62.9%) exercised just 'once a week' followed by those (24.1%) who exercised 'more than twice a week'. Daily walking for more than thirty minutes (59.7%) and jogging (17.7%) were the most common exercise. The frequency of low back pain was categorised as several times per month, several times per week, and several times per day, as shown in Table 2. The lower back pain was reported significantly more in higher academic years, such as the third (n=9, 69.2%) and fourth (n=26, 83.9%) years (p=0.007). Increased frequency of low back pain was reported from the age bracket 20-24 years, but statistically non-significant (p=0.60). Participants who had no history of spine trauma reported a higher frequency of low back pain (n=42, 77.8%) as compared to those without any such history (n=4, 50.0%). Individuals with BMI<25m/2 (n=35, 76.1%) and overweight participants (n=11, 68.8%) experienced more or less similar frequency of low back pain several times per month. Moreover, 10 (66.7%) participants who exercised 'often' (> two times/week), 31 (79.5%) who exercised 'sometimes' (once a week) and 5 (62.5%) participants who 'never' exercised experienced low back pain several times per month. About 29 participants who opted for daily walking>30 minutes as their choice of exercise and 8 participants who indulged in indoor sports presented with low back pain many times a month; however, the p-value was not significant (p=0.08). To determine the impact of pain, the participants were asked whether their academic work, daily life, social activities, and sleep quality were affected by back pain, as shown in Table 3. Individuals without a history of spine damage (n=32, 59.3%) reported considerably more impact on their academic work. In comparison, 5 (62.5%) of the participants with a history of spine trauma reported their social life is the most affected. Subjects aged 20-24 years (n=23, 57.5%) and 25-30 years (n=9, 42.9%) claimed their student work was most affected by low back pain. Participants from the fourth academic year (n=18, 58.1%) reported an increased impact on their academic work, while individuals from the third year presented with increased impact on student work (n=5, 38.5%), social activities and quality of sleep (n=3, 23.1%).

**Table 1. Low-Back Pain (LBP) Questionnaire for Medicine Students**

| | |
|---|---|
| **Date of birth:** | |
| **Medical year level:** | |
| History of spine trauma: | (Yes/No) |
| Overweight (BMI >25 kg/m$^2$): | (Yes/No) |
| **Exercise** | |
| Never | (Yes/No) |
| Sometimes (1/wk) | (Yes/No) |
| Often (>2/wk) | (Yes/No) |
| **Exercise type** | |
| Licensed sport | (Yes/No) |
| Indoor sport | (Yes/No) |
| Jogging | (Yes/No) |
| Daily walk >30 min | (Yes/No) |
| Low-back pain | (Yes/No) |
| Low-back pain >2 yrs | (Yes/No) |
| **Frequency of low-back pain** | |
| Several times/mo | (Yes/No) |
| Several times/wk | (Yes/No) |
| Several time/d | (Yes/No) |
| **Pain-relieving consumption** | |
| Several times/mo | (Yes/No) |
| Several times/wk | (Yes/No) |
| Several time/d | (Yes/No) |
| **Low-back pain issue** | |
| Student work | (Yes/No) |
| Daily life | (Yes/No) |
| Social activities | (Yes/No) |
| Quality of sleep | (Yes/No) |

**Table 3. Study variables analyzed using a lower back pain issue stratification**

| Variables | | Student work, n(%) | Daily life, n(%) | Social activities, n(%) | Quality of sleep, n(%) | P-value |
|---|---|---|---|---|---|---|
| Age of medical student | 20-24 | 23(57.50%) | 4(10.00%) | 7(17.50%) | 6(15.00%) | 0.871 |
| | 25-30 | 9(42.90%) | 4(19.00%) | 4(19.00%) | 4(19.00%) | |
| | >30 | 1(100.00%) | 0(0.00%) | 0(0.00%) | 0(0.00%) | |
| Medical year level | 1st-year MBBS | 0(0.00%) | 0(0.00%) | 0(0.00%) | 0(0.00%) | 0.584 |
| | 2nd-year MBBS | 8(80.00%) | 0(0.00%) | **1(10.00%)** | 1(10.00%) | |
| | 3rd-year MBBS | 5(38.50%) | 2(15.40%) | 3(23.10%) | 3(23.10%) | |
| | 4rth year MBBS | 18(58.10%) | 4(12.90%) | 5(16.10%) | 4(12.90%) | |
| | Final year MBBS | 2(25.00%) | 2(25.00%) | 2(25.00%) | 2(25.00%) | |
| History of Spine trauma | Yes | 1(12.50%) | 1(12.50%) | 5(62.50%) | 1(12.50%) | 0.004 |
| | No | 32(59.30%) | 7(13.00%) | 6(11.10%) | 9(16.70%) | |
| | Yes | 9(56.30%) | 2(12.50%) | 3(18.80%) | 2(12.50%) | 0.973 |

[Citation: Baloch, S., Durani, W., Durani, R.Z., Ali, Z., Riyyan, M., Chania, H.A., Sajid, S., Fatima, M., Kumar, S., Ali, B., Laghari, F., Laghari, A., Lashari, A., Bughio, M., Rai, R., Bhatti, J., Jumman, M. (2024). Frequency of low back pain and its impact on medical students of Bilawal Medical College: a retrospective survey. *Biol. Clin. Sci. Res. J.*, **2024***: 765*. doi: https://doi.org/10.54112/bcsrj.v2024i1.765]

| | | | | | | |
|---|---|---|---|---|---|---|
| Overweight (BMI >25 kg/m*2) | No | 24(52.20%) | 6(13.00%) | 8(17.40%) | 8(17.40%) | |
| Exercise | never | 4(50.00%) | 3(37%50 %) | 0(0.00%) | 1(12.50%) | 0.115 |
| | sometimes (1/wk) | 21(53.80%) | 2(5.10%) | 10(25.60%) | 6(15.40%) | |
| | often (>2/wk) | 8(53.30%) | 3(20.00%) | 1(6.70%) | 3(20.00%) | |
| Exercise type | licensed sport | 2(100.00%) | 0(0.00%) | 0(0.00%) | 0(0.00%) | 0.321 |
| | indoor sport | 3(37.50%) | 2(25.00%) | 3(37.50%) | 0(0.00%) | |
| | jogging | 5(45.50%) | 0(0.00%) | 4(36.40%) | 2(18.20%) | |
| | daily walk >30 min | 20(54.10%) | 5(13.50%) | 4(10.80%) | 8(21.60%) | |
| | low-back pain | 3(75.00%) | 1(25.00%) | 0(0.00%) | 0(0.00%) | |
| | low-back pain >2 yrs | 0(0.00%) | 0(0.00%) | 0(0.00%) | 0(0.00%) | |
| Pain relieving consumption | several times/mo | 26(60.50%) | 3(7.00%) | 7(16.30%) | 7(16.30%) | 0.088 |
| | several times/week | 4(26.70%) | 5(33.30%) | 4(26.70%) | 2)13.30%) | |
| | several times/d | 3(75.00%) | 0(0.00%) | 0(0.00%) | 1(25.00%) | |
| Frequency of LBP | several times/mo | 25(54.30%) | 6(13.00%) | 7(15.20%) | 8(17.40%) | 0.897 |
| | several times/week | 5(45.50%) | 2(18.20%) | 3(27.30%) | 1(9.10%) | |
| | several times/d | 3(60.00%) | 0(0.00%) | 1(20.00%) | 1(20.00%) | |

**Table 2. Study variables were analyzed using a frequency of lower back stratification**

| **Variables** | | **Several times/mo, n(%)** | **Several times/wk, n(%)** | **Several times/d, n(%)** | **P-value** |
|---|---|---|---|---|---|
| Age of medical students | 20-24 | 27(67.50%) | 9(22.50%) | 4(10.00%) | 0.601 |
| | 25-30 | 18(85.70%) | 2(9.50%) | 1(4.80%) | |
| | >30 | 1(100.00%) | 0(0.00%) | 0(0.00%) | |
| Medical year level | 1st-year MBBS | 0(0.00%) | 0(0.00%) | 0(0.00%) | 0.007 |
| | 2nd-year MBBS | 5(50.00%) | 1(10.00%) | 4(40.00%) | |
| | 3rd-year MBBS | 9(69.20%) | 3(23.10%) | 1(7.70%) | |
| | 4rth year MBBS | 26(83.90%) | 5(16.10%) | 0(0.00%) | |
| | Final year MBBS | 6(75.00%) | 2(25.00%) | 0(0.00%) | |
| History of Spine trauma | Yes | 4(50.00%) | 2(25.00%) | 2(25.00%) | 0.119 |
| | No | 42(77.80%) | 9(16.70%) | 3(5.60%) | |
| Overweight (BMI >25 kg/m*2) | Yes | 11(68.80%) | 3(18.80%) | 2(12.50%) | 0.732 |
| | No | 35(76.10%) | 8(17.40%) | 3(6.50%) | |
| Exercise | never | 5(62.50%) | 2(25.00%) | 1(12.50%) | 0.719 |
| | sometimes (1/wk) | 31(79.50%) | 5(12.80%) | 3(7.70%) | |
| | often (>2/wk) | 10(66.70%) | 4(26.70%) | 1(6.70%) | |
| Exercise type | licensed sport | 1(50,00%) | 0(0.00%) | 1(50.00%) | 0.086 |
| | indoor sport | 8(100.00%) | 0(0.00%) | 0(0.00%) | |
| | jogging | 6(54.50%) | 4(36.40%) | 1(9.10%) | |
| | daily walk >30 min | 29(78.40%) | 5(13.50%) | 3(8.10%) | |
| | low-back pain | 2(50.00%) | 2(50.00%) | 0(0.00%) | |
| | low-back pain >2 yrs | 0(0.00%) | 0(0.00%) | 0(0.00%) | |
| Pain relieving consumption | several times/mo | 38(88.40%) | 4(9.30%) | 1(2.30%) | 0 |
| | several times/week | 7(46.70%) | 7(46.70%) | 1(6.70%) | |
| | several times/d | 1(25.00%) | 0(0.00%) | 3(75.00%) | |
| Lower back pain issue | student work | 25(75.80%) | 5(15.20%) | 3(9.10%) | 0.897 |
| | daily life | 6(75.00%) | 2(25.00%) | 0(0.00%) | |
| | social activities | 7(63.60%) | 3(27.30%) | 1(9.10%) | |
| | quality of sleep | 8(80.00%) | 1(10.00%) | 1(10.00%) | |

[Citation: Baloch, S., Durani, W., Durani, R.Z., Ali, Z., Riyyan, M., Chania, H.A., Sajid, S., Fatima, M., Kumar, S., Ali, B., Laghari, F., Laghari, A., Lashari, A., Bughio, M., Rai, R., Bhatti, J., Jumman, M. (2024). Frequency of low back pain and its impact on medical students of Bilawal Medical College: a retrospective survey. *Biol. Clin. Sci. Res. J.*, **2024***: 765*. doi: https://doi.org/10.54112/bcsrj.v2024i1.765]

## Discussion

This study highlighted the frequency and severity of low back pain amongst medical students and its association with various potential implicating factors. One of the key findings which was highlighted was that the frequency of low back pain was significantly greater amongst students studying in clinical years of medical education (third year onwards). Due to more significant physical activity during the ward postings, students have experienced more frequent lower back pain. This finding is somewhat similar to the ones presented by Alshagga et al. and Boussaid et al., which also endorsed that the involvement of students in clinical learning (advanced years) had eventually resulted in a greater incidence of low back pain (10-11). Interestingly, according to our data findings, exercise had no impact on the frequency of lower back pain, as participants with a habit of exercising had almost similar patterns of frequency of lower back pain compared to the participants with no history of exercise. Boszczowskis et al. discussed a similar point in their study about the role of exercise and its impact on low back pain among medical students (12). Secondly, the frequency of low back pain was not associated with a history of joint trauma, as a more significant number of students who reported pain with greater frequency did not have any history of trauma. This finding was consistent with the findings reported by Taha et al., that medical students without a history of trauma are more prone to low back pain during their medical education (13). Participants of comparatively older age groups and senior medical class levels who had to attend classes and ward rounds of more significant duration reported a greater impact of low back pain on their health and daily life, although statistically insignificant. Still, this finding is of immense importance as it highlights the correlation between physical stress and loss of daily productivity. Mroczek B et al. raised the same concern in their detailed work, stating that healthcare professionals with longer working hours had the lowest quality of life and work routine results (14). Interestingly, participants experiencing lower back pain reported no association between BMI with frequency of LBP and quality of life, sleep, social activities, etc., affected by the LBP. This finding is important as it predicts that weight does not play a role in the frequency and severity of low back pain. In contrast, Alwashmi AH identified that more students from Qassim University reported LBP who were obese and overweight (15).

Little information shows the frequency and the associated risk factors of low back pain among medical students. No accurate data on students from any medical institution in Pakistan has yet been published, which highlighted the frequency of low back pain and the far-reaching impact of it on daily activities, along with measuring the impact of various modifiable risk factors on the formerly mentioned two variables. Only by identifying the true frequency, impact on various activities of life, and modifiable risk factors of low back pain among medical students could further interventions be established to promote a better quality of life for our future medical doctors.

Our study has certain limitations, too; foremost is the limited number of participants, and along with it, data was collected from one single medical institution. Secondly, the duration of low back pain (acute or chronic) experienced by the participants was not included in the questionnaire, which is another factor affecting student's physical health. Therefore, further research should be conducted in Pakistan involving a more significant number of students from a variety of professions. Participants should be added from institutions across the country, and the duration of pain should also be included in data collection to eliminate recall bias.

## Conclusion

This study concluded that low back pain is one of the most frequent health crises among medical students. Students from senior academic years reported more frequent lower back pain, which was highly significant due to increased mental stress and increased physical strain due to clinical learning. Additionally, it was found that there is no potential link between BMI and a history of spine trauma on the frequency of lower back pain or its impact on the medical students' lives and daily activities.

## Declarations

**Data Availability statement**
All data generated or analyzed during the study are included in the manuscript.

**Ethics approval and consent to participate**
Approved by the department concerned. (NO.LUMHS/REC/-214 Dated: 19-11-2021)

**Consent for publication**
Approved

**Funding**
Not applicable

## Conflict of interest

The authors declared the absence of a conflict of interest.

## Author Contribution

***SAIRA BALOCH (Assistant Professor)***
*Coordination of collaborative efforts.*
*Study Design, Review of Literature.*
*Conception of Study, Development of Research Methodology Design, Study Design, manuscript Review, and final approval of manuscript.*
***WARISHA DURANI, RAMSHA ZAFAR DURANI,***
*Conception of Study, Final approval of manuscript.*
*Manuscript revisions, critical input.*
*Coordination of collaborative efforts.*
*Data acquisition and analysis.*
***ZAFAR ALI, MUHAMMAD RIYYAN, HASSAN ALI CHANIA, SAWAIRA SAJID, MANAYIM FATIMA SURESH KUMAR, BABAR ALI, FAROOQ LAGHARI, ABDULLAH LAGHARI, AZHAR LASHARI, MOHSIN BUGHIO, RAHUL RAI, JAHANZAIB BHATTI, MUHAMMAD JUMMAN***
*Data collection and literature review.*

## References

1. Nordin N, Singh D, Kanglun L. Low back pain and

associated risk factors among health science undergraduates. *Sains Malaysiana* 2014;43:423–8.
2. Hafeez K, Ahmed Memon A, Jawaid M, et al. Back pain - are health care undergraduates at risk? *Iran J Public Health* 2013;42:819–25.
3. Falavigna A, Teles AR, Mazzocchin T, et al. The prevalence of low back pain is higher among physiotherapy students than among medical students. *Eur Spine J* 2011;20:500–5.
4. Low back pain and its related risk factors in health care providers at hospitals: a systematic review. Rezaei B, Mousavi E, Heshmati B, Asadi S. *Ann Med Surg (Lond)* 2021;70:102903
5. Urquhart DM, Berry P, Wluka AE, et al. 2011 young investigator award winner: increased fat mass is associated with high levels of low back pain intensity and disability. *Spine (Phila Pa 1976)* 2011;36:1320–5.
6. Low back pain among medical students in Belgrade (Serbia): a cross-sectional study. Vujcic I, Stojilovic N, Dubljanin E, Ladjevic N, Ladjevic I, Sipetic-Grujicic S. *Pain Res Manag.* 2018;2018:8317906.
7. Aggarwal N, Anand T, Kishore J, et al. Low back pain and associated risk factors among undergraduate students of a medical college in Delhi. *Educ Health Abingdon Engl* 2013;26:103–8.
8. Nawrocka A, Mynarski W, Powerska-Didkowska A, et al. Mus- culoskeletal pain among Polish music school students. *Med Probl Perform Art* 2014;29:64–9.
9. Hayes MJ, Smith DR, Cockrell D. Prevalence and correlates of musculoskeletal disorders among Australian dental hygiene stu- dents. *Int J Dent Hyg* 2009;7:176–81.
10. Alshagga, M.A., Nimer, A.R., Yan, L.P. *et al*. Prevalence and factors associated with neck, shoulder and low back pains among medical students in a Malaysian Medical College. *BMC Res Notes* **6**, 244 (2013). https://doi.org/10.1186/1756-0500-6-244
11. Boussaid Soumaya*, Daldoul Cyrine, Rekik Sonia, Jammali Samia, Cheour Elhem, Sahli Hela and Elleuch Mohamed, Low Back Pain Among Students of Medical University of Tunis, Current Rheumatology Reviews 2023; 19 (2) . https://dx.doi.org/10.2174/1573397118666220821143041
12. Boszczowski N, Pinto Rcr, Araújo Junior Fad. Low Back Pain In Medical Students: Prevalence And Related Factors. Coluna/Columna [Internet]. 2021Jul;20(3):197–200. Available from: https://doi.org/10.1590/S1808-185120212003244850
13. Taha YA, Al Swaidan HA, Alyami HS, Alwadany MM, Al-Swaidan MH, Alabbas YH, Dhaen HM, Faidhi AA. The Prevalence of Low Back Pain Among Medical Students: A Cross-Sectional Study From Saudi Arabia. Cureus. 2023 May 14;15(5):e38997. doi: 10.7759/cureus.38997. PMID: 37323335; PMCID: PMC10262762.
14. Mroczek B, Łubkowska W, Jarno W, Jaraczewska E, Mierzecki A. Occurrence and impact of back pain on the quality of life of healthcare workers. Ann Agric Environ Med. 2020;27(1):36-42. doi:10.26444/aaem/115180.
15. Alwashmi AH. Prevalence of Low Back Pain and Associated Factors Among Qassim University Medical Students: A Cross-Sectional Study. Cureus. 2023 Sep 3;15(9):e44596. doi: 10.7759/cureus.44596. PMID: 37795055; PMCID: PMC10546240.



[Citation: Baloch, S., Durani, W., Durani, R.Z., Ali, Z., Riyyan, M., Chania, H.A., Sajid, S., Fatima, M., Kumar, S., Ali, B., Laghari, F., Laghari, A., Lashari, A., Bughio, M., Rai, R., Bhatti, J., Jumman, M. (2024). Frequency of low back pain and its impact on medical students of Bilawal Medical College: a retrospective survey. *Biol. Clin. Sci. Res. J.*, **2024***: 765*. doi: https://doi.org/10.54112/bcsrj.v2024i1.765]