

**How to Cite:**

Gupta, P., Khan, S., Verma, R., & Sahiba, S. (2022). Multisite pain and reduce workability in college students. *International Journal of Health Sciences*, 6(S6), 2021–2029.

<https://doi.org/10.53730/ijhs.v6nS6.10105>

## **Multisite pain and reduce workability in college students**

**Pranjal Gupta**

Student Researcher, Division of Physiotherapy, Galgotias University, India

**Sumera Khan (PT)**

BPT, Division of Physiotherapy, Galgotias University, India

**Dr. Rituraj Verma**

Professor, Division of Physiotherapy, Galgotias University, India

**Sahiba (PT)**

BPT, Assistant Professor, Division of Physiotherapy, Galgotias University, India

**Abstract**---Background: Multisite pain includes discomfort or strain in the neck, shoulder, low back, or other parts of the body. It is one of the most serious health issues affecting both adults and kids. This study focuses on determining the impact of multisite pain and reducing the workability of collegiate students. Method: A sample of 145 students was taken from Galgotia's university in India. Using pen-paper mode, Standard Nordic Musculoskeletal Discomfort Form and workability index were the tools to assess the pain and workability among the students. Result: The final score of the Workability index (WAI) for Group A was  $39.27 \pm 6.301$  and for Group B was  $37.52 \pm 4.688$ . and P-value is 0.70. As the Group A score was greater than the Group B score, but the P-value was 0.70, we may conclude that there is no significant difference between the two groups, as Multisite pain had no influence on workability. For Multisite pain, we discovered that the pain percentages were as follows: NECK 79.8%, SHOULDERS 38.1 percent, ELBOW 4.8 percent, WRISTS/HANDS 6%, UPPER BACK 17.9 percent, LOWER BACK 40.5 percent, ONE OR BOTH HIPS/THIGHS 10.7 percent, ONE OR BOTH KNEES 15.5 percent, ONE OR BOTH ANKLE/FEET 17.9 percent. For the correction with discomfort with pain only positive correction was seen in the Neck (0.126) as only neck pain has an effect on workability as compared with other pain levels. Conclusion: This study concludes that multisite pain/discomfort does not affect students' ability to perform at work, there is a larger neck pain ratio among students, according to the research. More research is needed for detailing the cause of Musculoskeletal Discomfort in students. The results could

come out better if the study was conducted with different college/university students. The findings of this study provide direct information about students' workability and multisite pain. Hence can be used to develop more interventions that can positively deal with underlying musculoskeletal disorders.

**Keywords**---multisite pain, college students, reduce workability, discomfort, pain, teenage.

## Introduction

Multisite pain cause discomfort or strain in the neck, shoulder, low back, or other parts of the body[1]. It is one of the most serious health issues affecting both adults and kids[2]. The MSP is a community health issue because it is acute, persistent, and recurrent, which affects the quality of life of people of all ages, professions, genders, and countries[1]. MSP is defined as pain in two or more body locations, regardless of anatomical distribution. MSP has to do with working conditions, unfavourable organizational, physical, and cognitive circumstances, monotonous labour, insufficient environmental circumstances, repeated actions, and unsuitable posture[3]. Apart from this increase in high exposure to bad ergonomics like prolonged sitting, prolonged grip, useless leotard footwear, and the increase in physical effort, the risk of MSP increases. Multisite pain is becoming a more well-acknowledged health risk to address in research and clinical practice[4].

According to research conducted with students, the occurrence of back pain varies between 30% and 70%, based on the period and anatomic area analysed. engaged, as well as the time it took for them to evolve. In the new version, the relationship between pain and disability in the literature as well as the impact of pain on daily activities has been discovered that there is a substantial link between pain and impairment ( $r=P=0.000$ ),405,  $P=0.000$ ) in college students suffering from severe ache in the lower back. Leggat P, et al. said that there was impairment in 38.8% of people who participate in everyday life activities, while 25% participate in extracurricular activities. pharmacological and/or other therapy is required[5].

It is the pain that is felt in a particular place of the body and is produced by the muscles, ligaments, bones, or joints. Acute MSP Buttocks discomfort, elbow pain, shoulder pain, neck pain, back pain, hip pain, and ankle, and knee pain are all examples of this sort of pain. Chronic MSP is considered if it lasts more than three months, which is the typical duration for recovery[6]. Extreme, extensive, and pelvis/groin pain have all been linked to a higher risk of long-term impairment. This is a frequent health condition among the general public and workers, which results in a major cause of work incapacity[7]. The United Nations and the World Health Organization (WHO) recognized the impact of musculoskeletal disorders on individuals, and this subject was given attention. According to a World Health Organization study the top causes of years spent disabled, neck and low back pain were in first and fourth place, respectively[8]. Musculoskeletal pain is the most prevalent reason for missed work in the United

States. Millions of individuals in Europe suffer from neck, shoulder, and back discomfort as a result of musculoskeletal pain. There is a significant prevalence of musculoskeletal pain and discomfort across all Chinese occupational categories. Musculoskeletal disorders are a leading cause of mortality in the United Arab Emirates. Pain in the muscles, tendons, and joints that persists for an extended period is a significant problem for adolescents and young adults.

According to Chinese research, musculoskeletal diseases affect 67.6% of the population, with the lower back, neck, and shoulders being the most often affected areas. Low back discomfort was also linked to bad posture, obesity, lack of physical activity, and large backpacks[9]. High mental strain, sadness, and constant workload were shown to be more prevalent in healthcare students with low back problems in Delhi, India[10]. A growing number of people are turning to MSP, which has been linked to both their professional and personal life in the academic and corporate worlds[11]. In public health facilities, 65.7 to 92.1 percent of employees have MSPs[12]. Health science students are exposed to both physical and psychological factors that might lead to MSP in the classroom and the workplace. Both international and Brazilian studies have shown that 67.1 percent of medical students suffer from MSP[13]. It's not uncommon for students in the health professions to spend long periods sitting at desks with insufficient furnishings and lugging heavy things[14]. In addition, students spend time in medical facilities, where they get hands-on experience and do internships to further their education. Unproductive stances and repetitive motions are common when they have to do time-sensitive professional tasks[15].

### **Objective of the study**

The objective of the study is to evaluate how multisite pain affects the workability of college-going students.

### **Aim**

To know about how multisite pain affects workability in college-going students.

### **Methodology**

- **Hypothesis:** There is a correlation between the multisite pain and workability of the students.
- **Null Hypothesis:** There is no correlation between the multisite pain and workability of the students.
- **Study design:** co-relation study
- **Sample selection:** Galgotia's university students
- **No. of sample:** 145 students
- **Tools:** Standard Nordic musculoskeletal questionnaire and Workability index (WAI).

### **Inclusion criteria**

- Both female and male between 18-30years.
- Presence of chronic neck, Back and Shoulder Pain.

- Students complaining about pain from last 3 months.

### **Exclusion criteria**

- Any Fracture/trauma suffered by the student in past life, especially in the concerned extremity.
- Any previous cardiological, neurological, surgical and medical history of upper musculoskeletal extremity.
- Any pathology in the concerned extremity.
- Unwilling and Uncooperative students.

### **Procedure**

Students from Galgotia's University in Greater Noida were given physical copies of the Stand Nordic Musculoskeletal Discomfort Form and the Workability Index (WAI). Based on the inclusion and exclusion criteria, a total of 145 students were chosen to participate in the research. n=84 students reported pain in one or more parts of their bodies, whereas n=61 students did not report any discomfort in any region of their bodies, according to the findings. Following that, all 145 students completed the workability index and noted their physical workability answer (WAI). After that, data was transformed from paper to digital format using Microsoft Excel.

### **Result Analysis**

The final score of the Workability index (WAI) for Group A was  $39.27 \pm 6.301$  and for Group B was  $37.52 \pm 4.688$ . and P-value is 0.70. As the Group A score was greater than the Group B score, but the P-value was 0.70, we may conclude that there is no significant difference between the two groups, as Musculoskeletal Discomfort had no influence on workability. For Musculoskeletal Discomfort, we discovered that the pain percentages were as follows: NECK 79.8%, SHOULDERS 38.1 percent, ELBOW 4.8 percent, WRISTS/HANDS 6%, UPPER BACK 17.9 percent, LOWER BACK 40.5 percent, ONE OR BOTH HIPS/THIGHS 10.7 percent, ONE OR BOTH KNEES 15.5 percent, ONE OR BOTH ANKLE/FEET 17.9 percent. For the correction with discomfort with pain only positive correction was seen in the Neck (0.126) as only neck pain has an effect on workability as compared with other pain levels.

### **Demographic average**

Table no-1

	GROUP A(PAIN)(N-84)	GROUP B (NON-PAIN) (N-61)
AGE	22.3 $\pm$ 1.112	21.53 $\pm$ 1.490
WEIGHT	60.85 $\pm$ 12.098	65.80 $\pm$ 7.643

The average Age and Weight of Group A are  $22.3 \pm 1.112$  and  $60.85 \pm 12.098$  respectively For Group B are  $21.53 \pm 1.490$  and  $65.80 \pm 7.643$ .

Table no-2

GENDER RATIO (GROUP A)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	FEMALE	49	58.3	58.3	58.3
	MALE	35	41.7	41.7	100.0
	Total	84	100.0	100.0	

In group A the gender ratio of females is 58.3%, and for males is 41.7%.

Table no-3

GENDER RATIO (GROUP B)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	FEMALE	40	65.6	65.6	65.6
	MALE	21	34.4	34.4	100.0
	Total	61	100.0	100.0	

In group B the gender ratio of females is 65.6 % and for males is 34%.

### **Prevalence of pain**

Table no- 4

BODY AREA	REPORTED PAIN %
NECK	79.8%
SHOULDERS	38.1%
ELBOW	4.8%
WRISTS/ HANDS	6%
UPPER BACK	17.9%
LOWER BACK	40.5%
ONE OR BOTH HIPS/ THIGHS	10.7%
ONE OR BOTH KNEES	15.5%
ONE OR BOTH ANKLE /FEET	17.9%

The prevalence of pain in Neck region is 79.8%, Shoulder region 38.1%, Elbows 4.8%, Wrist/Hands 6%, Upper Back region 17.9%, Lower Back region 40.5%, Hips/Thighs region 10.7%, Knees 15.5% and Ankle/Foot region is 17.9%.

**The final score of the Workability index**

VARIABLES	MEAN±SD	T-test	P-VALUE
GROUP A	39.27±6.301	1.848	0.70
GROUP B	37.52±4.688		

**Table no – 5**

The Workability index (WAI) for Group A was 39.27±6.301 and for Group B was 37.52±4.688. and P-value is 0.70.

## Discussion

The findings of this study provide Deep information about the prevalence of multisite pain and workability of the college students; hence we can use it to develop more interventions that can help to reduce the prevalence of multisite musculoskeletal pain that can positively deal with the maintain the normal workability of the college students. A previous study revealed that MSP has to do with working conditions, unfavourable organizational, physical, and cognitive circumstances, monotonous labour, insufficient environmental circumstances, repeated actions, and unsuitable posture[3]. Apart from this increase in high exposure to bad ergonomics like prolonged sitting, prolonged grip, useless leotard footwear, and the increase in physical effort, the risk of MSP increases (4)

This is a frequent health condition among the general public and workers, which results in a major cause of work incapacity[7]. multisite pain people are more likely to become disabled and fall. Multisite discomfort is also linked to a lack of trust in one's ability to balance and poor athletic performance[16]. According to Chinese research, musculoskeletal diseases affect 67.6% of the population, with the lower back, neck, and shoulders being the most often affected areas. Low back discomfort was also linked to bad posture, obesity, lack of physical activity, and large backpacks[9]. High mental strain, sadness, and constant workload were shown to be more prevalent in healthcare students with low back problems in Delhi, India[10]. Undergraduate health students, like health workers, are exposed to physical and psychological elements that might provoke MSP, both in the classroom and in the workplace. In the worldwide (67.1%) as well as Brazilian (87%) literature, the high prevalence rate of MSP among health students has been reported[13]. Health students' academic routines include sitting for extended periods, frequently in insufficient furniture, developing a large number of curricular tasks, and carrying heavy materials, all of which can contribute to musculoskeletal overload [14]. There is a need to teach more information about good ergonomics and posture to college students so that they can maintain their normal workability and reduce the prevalence of multisite pain in the body.

### Limitation of study

- The sample size included in the study could have been more.
- The sample could be taken from different university/college students.

### Future Scope

- This study can be used to identify the cause of multisite pain in college-going students.
- Further research can be done with the proper physical assessment of the students for multisite pain.

### Conclusion

This study concludes that multisite musculoskeletal pain/discomfort does not affect students' ability to perform at work, there is a larger neck pain ratio among students, according to the research. More research is needed for detailing the cause of Musculoskeletal Discomfort in students. The results could come out better if the study was conducted with different college/university students. The findings of this study provide direct information about the workability and musculoskeletal pain of students. Hence can be used to develop more interventions that can positively deal with underlying multisite pain.

### References

1. Arnawa, I.K., Sapanca, P.L.Y., Martini, L.K.B., Udayana, I.G.B., Suryasa, W. (2019). Food security program towards community food consumption. *Journal of Advanced Research in Dynamical and Control Systems*, 11(2), 1198-1210.
2. Gede Budasi, I. & Wayan Suryasa, I. (2021). The cultural view of North Bali community towards Ngidih marriage reflected from its lexicons. *Journal of Language and Linguistic Studies*, 17(3), 1484-1497
3. Ghita, D. ., Ahmad, M. ., Budi, P., Liantanty, F. ., & Ahmar, H. . (2021). Effect of e-module stage iv childbirth care with blended learning model on skills improvement of midwifery students. *International Journal of Health & Medical Sciences*, 4(1), 110-116. <https://doi.org/10.31295/ijhms.v4n1.1527>
4. Abdulaziz AA, Althaqafi AM, Hindi AM, Khan SA, Atalla AA, Hendi OM. Prevalence of musculoskeletal disorders and its correlation to physical activity among health specialty students. *International Journal of Preventive Medicine* 2019;10:19-24. [https://doi.org/10.4103/ijpvm.IJPVM\\_436\\_18](https://doi.org/10.4103/ijpvm.IJPVM_436_18).
5. Obembe AO, Johnson OE, Tanimowo TO, Onigbinde AT, Emechete AA. Musculoskeletal pain among undergraduate laptop users in a Nigerian University. *Journal of Back and Musculoskeletal Rehabilitation* 2013;26:389-95. <https://doi.org/10.3233/BMR-130397>.
6. Souza Mattos de Araújo Vieira LM, de Oliveira Sato T. Prevalence of multisite pain and association with work ability – Cross-sectional study. *Musculoskeletal Science and Practice* 2020;50. <https://doi.org/10.1016/j.msksp.2020.102279>.
7. Rundell SD, Patel K v., Krook MA, Heagerty PJ, Suri P, Friedly JL, et al. Multi-site Pain Is Associated with Long-term Patient-Reported Outcomes in

- Older Adults with Persistent Back Pain. *Pain Medicine (United States)* 2019;20:1898–906. <https://doi.org/10.1093/pm/pny270>.
8. Casas S AS, Patiño S MS, Camargo L DM. Association between the sitting posture and back pain in college students. *Revista de La Universidad Industrial de Santnader Salud* 2016;48:446–54. <https://doi.org/10.18273/revsal.v48n4-2016003>.
  9. Ogunlana MO, Govender P, Oyewole OO. Prevalence and patterns of musculoskeletal pain among undergraduate students of occupational therapy and physiotherapy in a South African university. *Hong Kong Physiotherapy Journal* 2021;41:35–43. <https://doi.org/10.1142/S1013702521500037>.
  10. Almhdawi KA, Mathiowetz V, Al-Hourani Z, Khader Y, Kanaan SF, Alhasan M. Musculoskeletal pain symptoms among allied health professions' students: Prevalence rates and associated factors. *Journal of Back and Musculoskeletal Rehabilitation* 2017;30:1291–301. <https://doi.org/10.3233/BMR-169669>.
  11. Kamper SJ, Henschke N, Hestbaek L, Dunn KM, Williams CM. Musculoskeletal pain in children and adolescents. *Brazilian Journal of Physical Therapy* 2016;20:275–84. <https://doi.org/10.1590/bjpt-rbf.2014.0149>.
  12. Hasan MM, Yaqoob U, Ali SS, Siddiqui AA. Frequency of Musculoskeletal Pain and Associated Factors among Undergraduate Students. *Case Reports in Clinical Medicine* 2018;07:131–45. <https://doi.org/10.4236/crcm.2018.72011>.
  13. Aggarwal N, Anand T, Kishore J, Ingle GK. Low back pain and associated risk factors among undergraduate students of a medical college in Delhi. *Education for Health: Change in Learning and Practice* 2013;26:103–8. <https://doi.org/10.4103/1357-6283.120702>.
  14. Gomes Neto M, Santos Sampaio G, Santos PS, Gomes M, Br N-MN. ARTIGO ORIGINAL FREQUÊNCIA E FATORES ASSOCIADOS A DORES MUSCULOESQUELÉTICAS EM ESTUDANTES UNIVERSITÁRIOS 2016. <https://doi.org/2238-2704rpf.v6i1.790>.
  15. Garbin AJÍ, Garbin CAS, Arcieri RM, Rovida TAS, Freire AC da GF. Musculoskeletal pain and ergonomic aspects of dentistry. *Revista Dor* 2015;16. <https://doi.org/10.5935/1806-0013.20150018>.
  16. Morais BX, Dalmolin G de L, Andolhe R, Dullius AI dos S, Rocha LP. Musculoskeletal pain in undergraduate health students: Prevalence and associated factors. *Revista Da Escola de Enfermagem* 2019;53. <https://doi.org/10.1590/S1980-220X2018014403444>.
  17. Caromano FA, Amorim CAP de, Rebelo C de F, Contesini AM, Fâvero FM, Frutuoso JRC, et al. Prolonged sitting and physical discomfort in university students. *Acta Fisiátrica* 2015;22. <https://doi.org/10.5935/0104-7795.20150034>.
  18. Martins AC, Felli VEA. Sintomas músculo-esqueléticos em graduandos de enfermagem. *Enfermagem Em Foco* 2013;4:58–62. <https://doi.org/10.21675/2357-707X.2013.v4.n1.505>.
  19. Kumar, S. (2022). A quest for sustainium (sustainability Premium): review of sustainable bonds. *Academy of Accounting and Financial Studies Journal*, Vol. 26, no.2, pp. 1-18



20. Allugunti V.R (2022). A machine learning model for skin disease classification using convolution neural network. *International Journal of Computing, Programming and Database Management* 3(1), 141-147
21. Thapa S, Shmerling RH, Bean JF, Cai Y, Leveille SG. Chronic multisite pain: evaluation of a new geriatric syndrome. *Aging Clinical and Experimental Research* 2019;31:1129–37. <https://doi.org/10.1007/s40520-018-1061-3>.