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HEALTH AND REHABILITATION

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FREQUENCY OF LOW BACK PAIN IN PEOPLE AFFECTED WITH COVID-19 AFTER THEIR RECUPERATION PERIOD

Original Research

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Conflict of Interest: None
Grant Support & Financial Support: None
Date Submitted: 07-10-24
Date Published: 21-10-24

Abstract

Background: Low back pain is the most common musculoskeletal issue affecting adults, with a prevalence of up to 84%. Factors such as physical inactivity, smoking, and sedentary lifestyles, exacerbated by the COVID-19 pandemic, have increased the incidence of chronic low back pain. A multidisciplinary approach is crucial to mitigate its impact on disability and healthcare systems.

Objective: To find out frequency of low back pain in people affected with covid-19 after their recuperation period

Methods: Out of 320 participants who filled the online Questionnaire, 211 post-COVID-19 patients with up to 1 year of recuperation, fulfilling the inclusion criteria of study were included. Other participants with history of RTA and fall in last 6 months were excluded. Ethical clearance and a permission letter were obtained from ethical board of PSRD College of Rehabilitation Sciences. The nature and purpose of study was informed to the participants via online written consent form.

Results: This study analyzed 211 post-COVID-19 patients aged 14-45. Of these, 60 were male and 151 females, with a mean height of 1.6984m. Most participants experienced no pain post-recovery, with only 27 reporting lower back pain. Physical activity and adherence to ergonomic practices decreased during COVID-19, while stress levels increased. A significant correlation between age and pain location suggested a reduced risk of low back pain in post-COVID-19 patients

Conclusion: Statistical analysis of this study showed that the prevalence of low back pain among post-COVID-19 patients is relatively low, with only 12.8% of participants reporting discomfort. So, there is a significant relationship between low risk of LBP in post COVID-19 patients.

Keywords: COVID-19, Low back ache, Pain, Post-COVID-19 recovery, low back pain prevalence, musculoskeletal issues COVID-19, physical activity post-COVID, ergonomic practices COVID-19, sedentary lifestyle effects, COVID-19 long-term symptoms, rehabilitation post-COVID, COVID-19 impact on physical health, chronic pain after COVID-19.

INTRODUCTION

Low back pain is characterized as pain and discomfort below the costal border and above the inferior gluteal folds (1). Low back pain is the most frequent musculoskeletal ailment affecting the adult population (2). Low back discomfort has a variety of causes, many of which are unknown (3). In the overweight, obese, and ultra-obese groups, time spent in sedentary and moderate exercise ranges has a stronger influence on LBP status when broken down by BMI (4). Low back pain encompasses a wide range of pain types (e.g., nociceptive, neuropathic and nociplastic or non-specific) that frequently overlap (5). Sitting behaviour was found to have a stronger link with chronic LBP than acute pain/disability, which could be owing to a greater knowledge of pain-free sitting positions in chronic pain patients compared to acute pain patients (6).

A pneumonia outbreak of unknown origin was reported in Wuhan, Hubei Province, China, in December 2019, resulted in the isolation of a novel respiratory virus identified as a novel coronavirus related to SARS-CoV after genome analysis, and was dubbed severe acute respiratory syndrome coronavirus 2. World Health Organization declared a pandemic on March 12, 2020, due to the global spread of SARS-CoV-2 and thousands of deaths caused by coronavirus disease (7). More than 94 percent of the world's student population has been touched by school, institution, and other learning facility closures resulting in significant changes in every part of our life (8).

In the COVID-19 pandemic, a lockdown would prevent people from moving around, reducing the transmission of the virus. Stay home orders are used to impose this type of limitation (9). Office employees' lives are devoid of the most fundamental routines of everyday living (10). COVID-19 promoted the sedentary lifestyle (11). Quarantine measures have a harmful influence on humans in several ways, including increased anxiety, anger, and stress, decreased outside exercise, and an overall level of stress and despair leading to people adopting poor eating habits. These elements aggravate LBP (12). The epidemic has altered population behaviour, increasing the prevalence of back discomfort. This is expected to have an influence on the individual's disability adjusted life years as well as raise the economic and healthcare burden (11).

A study was conducted on Musculoskeletal Consequences of COVID-19. Early findings in patients with COVID-19 have identified musculoskeletal problems associated with this disease. However, it was concluded that short-term and long-term musculoskeletal complications were pronounced in patients with moderate and severe COVID-19 (13). A study was conducted on Musculoskeletal Symptoms and Its Associated Factors among Post- COVID-19 Patients Attended in a Rehabilitation Centre. This study aimed to find out the different types of musculoskeletal symptom felt by post-COVID-19 survivors and to explore the association among those symptoms and associated factors. The study included 90 participants, and they were selected through purposive sampling technique. This study concluded that musculoskeletal symptoms were features of post-COVID-19 survivors (14).

A study was conducted on the following described topic Reduced physical activity and increased sedentary behaviour and damaged young people during the COVID-19 pandemic. This article shows the impact of COVID-19 on children's physical activity and sedentary behaviours which were significantly reduced during these times. It was concluded that there are ways to encourage and foster physical activity in both children and their families, for example by showing people different ways of staying active and offering other opportunities for physical activity, as well as ensuring the feeling of staying safe and being protected(15).

METHODS

This cross-sectional observational study was carried out over a six-month period using an online self-administered questionnaire developed through Google Forms. A convenient sampling technique was used to gather data from participants who met the predefined inclusion criteria. The final sample size of 211 participants was determined using the Raosoft sample size calculator, ensuring a 95% confidence level and a 5% margin of error. The study population comprised individuals aged between 16 and 45 years who had recovered from COVID-19 within the past year and had a BMI ranging from 18.5 to 24.9. Both male and female participants were included to provide a balanced representation. Exclusion criteria were applied to participants with a history of musculoskeletal disorders related to the spine, recent falls, or road traffic accidents within the last six months.

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The primary data collection instrument was the "COVID-19 and Back Pain Questionnaire," which demonstrated a reliability score of S1 = 0.89, indicating its consistency and accuracy. This questionnaire was distributed via online channels to reach a broad population base. Data analysis was conducted using SPSS software version 22, where frequencies and percentages were calculated, and the mean was employed to determine the prevalence of low back pain in post-COVID-19 patients. The statistical significance level was set at $p < 0.05$ to ensure the reliability of the findings. Ethical approval for this study was granted by the institutional review board, and a permission letter was obtained from the PSRD College of Rehabilitation Sciences. Informed consent was secured from all participants before their involvement, ensuring that the study complied with ethical research standards.

RESULTS

In this study, 211 post-COVID-19 participants aged 14 to 45 were assessed for various health parameters. The majority (170) were between 16 and 30 years old, with 60 males and 151 females. The mean height was 1.6984m. Participants were divided based on their recovery timeline: 32 recovered 3 months ago, 108 at 6 months, 36 at 9 months, and 35 at 12 months. After recovery, 151 participants reported no pain, while others experienced pain in regions such as the neck, shoulder, and legs. Notably, only 27 participants experienced lower back pain post-recovery. Physical activity levels and adherence to ergonomic recommendations decreased during COVID-19 compared to pre-COVID levels. Stress levels increased during COVID-19, with a rise in participants experiencing high to maximal stress. A significant correlation was found between age and location of pain, indicating a lower risk of low back pain in post-COVID-19 patients

Table 1 Location of pain after COVID-19

Location of pain after COVID-19	Frequency	Percent
Nowhere	151	71.6
Neck	7	3.3
Shoulders	9	4.3
Thoracic area	5	2.4
Lower back	27	12.8
Legs	6	2.8
Other	6	2.8
Total	211	100

Table 7.1 presents the distribution of pain locations reported by participants after recovering from COVID-19. Out of 211 respondents, 71.6% (151 participants) experienced no pain post-recovery. Among those reporting pain, the most affected area was the lower back, accounting for 12.8% (27 participants). Other reported pain sites included the shoulders (4.3%), neck (3.3%), legs (2.8%), thoracic area (2.4%), and other unspecified areas (2.8%). These findings highlight that while the majority of participants did not experience post-COVID pain, a notable minority reported musculoskeletal discomfort, particularly in the lower back region.

Table 2 Correlation of age and location of pain after COVID-19

		Age of participant	Location of pain after COVID-19
Age of participant	Pearson Correlation	1	.178
	Significance (2 tailed)		.10
	N	211	211
	Pearson Correlation	.178	1

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		Age of participant	Location of pain after COVID-19
Location of pain after COVID-19	Significance(2 tailed)	.10	
	N	211	211

Table 2 illustrates the correlation between the age of participants and the location of pain reported after recovering from COVID-19. The Pearson correlation coefficient between age and location of pain is 0.178, indicating a weak positive relationship. The significance level (2-tailed) is 0.10, suggesting that the correlation is not statistically significant at the conventional 0.05 level. The sample size (N) for both variables is 211. This table shows that while there is a slight trend suggesting older participants may experience more pain, the association is not strong or statistically significant.

DISCUSSION

The results of this study showed that there was a significant relationship between low risk of low back pain in post COVID-19 (16). The total 211 participants voluntarily participated in this study and recuperation period was 3 months for 15.2%, 6 months for 51.2%, 9 months for 17.1% and a year for 16.6%. 71.6% of participants had no pain at all after their recuperation period. And only 12.8% experienced pain at their low back region and rest of 15.6% experienced pain at neck, shoulders, thoracic area, legs and other. Frequency of low back pain was decreased in post COVID patients, and this was the conclusion of this study. During COVID-19 pandemic people were working from home and they were occupying sedentary lifestyle and sedentary lifestyle leads to musculoskeletal weakness (17).

A study was conducted by collecting data from the SARS pandemic of 2002 to 2004 to check the musculoskeletal dysfunction association with the disease and it was identified that there was a musculoskeletal sequela associated with the disease. Physical activity of people was also compromised during COVID-19. According to my collected data only 8.1% of participants had physical activity 6 to 7 times per week and 14.2% had no activity during pandemic (18). In a study in Spain 3800 adults answered the questionnaire regarding physical activity change during COVID-19 result of which was 16.8% decrease in activity and 58.2% decrease in walking time. Another study regarding reduced physical activity and increased sedentary behavior damaging young people during pandemics was conducted by Alison Owen and Kathryn Bould, result of which was also showing major lessen activity in children and their families.

An analytical cross-sectional study was conducted in Riyadh, Saudi Arabia in 2020 to check the impact of COVID-19 Quarantine on low back pain's intensity, prevalence and risk factors and almost 463 locals and foreigners participated in that study. Results of that study also showed that most prevalent musculoskeletal pain area was low back followed by neck, shoulders, thoracic and legs. Results of this studies showed that as the recuperation period passes the activity of people increases, they overcome their sedentary lifestyle and return to normal life and all these factors reduces the prevalence of low back ache in post-COVID-19 patients after their recuperation period (19). Correlation between Age and location of pain is also shown in results which concludes that the frequency of low back pain in post-COVID patients is more in age group of 31 to 45 years then in age group of 16 to 30 years old fellows (20).

CONCLUSION

The study concluded that the prevalence of low back pain among post-COVID-19 patients is relatively low, with only 12.8% of participants reporting discomfort in the lower back region after recovery. Most participants did not experience pain, indicating that physical recovery is generally favorable within a year. However, the study also found that reduced physical activity and increased stress during the pandemic influenced musculoskeletal health. Emphasizing ergonomic practices and physical activity post-recovery is essential to minimize long-term musculoskeletal complications.

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