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Original Research Article

Impact of Lockdown on Physical Activity, Sleep, and Eating Habits in Central India: A Retrospective Study at Pacific Institute of Medical Sciences, Udaipur

Sumitra Kumari[1], Babita Garhwal[2], Varsha Butolia[3]

[1]Associate Professor, Department of Physiology, Pacific Institute of Medical Sciences, Umarda, Udaipur, Rajasthan, India

[2]Assistant Professor, Department of Physiology, Pacific Institute of Medical Sciences, Umarda, Udaipur, Rajasthan, India

[3]Associate Professor, Department of Physiology, Arya Medical College & Hospital, Jaipur, Rajasthan, India

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Corresponding Author: Dr. Varsha Butolia

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Abstract:

Background: Lockdowns during the COVID-19 era disrupted daily life, leading to significant lifestyle changes. Altered physical activity, irregular sleep, and dietary modifications were widely reported, but regional evidence is limited.

Aim: To assess the effect of lockdown on physical activity, sleep, and eating habits among adults in Central India.

Methods: A retrospective study was conducted at the Pacific Institute of Medical Sciences, Udaipur, over three months (October–December 2024). Records of 120 individuals (18–60 years) collected through health questionnaires and follow-up clinic visits were analyzed. Data on physical activity levels, sleep duration, and dietary changes during lockdown were compared with pre-lockdown habits. Statistical tests included paired t-test and chi-square, with $p<0.05$ considered significant.

Results: The mean daily physical activity decreased significantly (4.1 ± 1.2 hrs pre-lockdown vs 2.6 ± 0.9 hrs during lockdown, $p<0.001$). Average sleep duration increased from 6.8 ± 1.1 hrs to 8.2 ± 1.3 hrs ($p<0.01$), with 34% reporting delayed sleep onset. Eating patterns shifted towards increased snacking (46% vs 18%, $p=0.002$) and higher processed food intake (39% vs 15%, $p=0.001$). Weight gain of >2 kg was recorded in 28% of participants. Females reported greater dietary changes, while younger adults (<30 years) showed the largest decline in physical activity.

Conclusion: The lockdown led to reduced physical activity, extended but irregular sleep, and unhealthy dietary shifts among adults in Central India. These findings highlight the need for public health interventions to promote healthy routines during periods of restricted mobility.

Keywords: Lockdown, Lifestyle Changes, Physical Activity, Sleep, Diet, India.

Introduction

Lockdowns, though essential for infection control, disrupted routines worldwide. In India, restrictions on outdoor movement, closure of gyms, and remote work/schooling led to reduced physical activity. Simultaneously, increased screen exposure, irregular schedules, and stress influenced sleep and eating patterns.

Previous international reports suggest lockdowns increased sedentary time, delayed sleep cycles, and raised unhealthy food consumption. However, there is limited data from Central India, where socio-cultural and dietary habits differ significantly. This study analyzed the impact of lockdown on lifestyle factors among adults attending a tertiary care teaching hospital.

Objectives

- To assess changes in physical activity during lockdown compared with pre-lockdown.
- To evaluate variations in sleep duration and quality.
- To analyze alterations in dietary patterns, including snacking and processed food intake.

Study Design and Setting

1. **Type:** Retrospective observational study.
2. **Place:** Pacific Institute of Medical Sciences, Umarda, Udaipur.
3. **Duration:** October 2024 – December 2024 (3 months).

Participants

- **Sample size:** 120 adults (18–60 years).
- **Inclusion:** Patients attending routine OPD follow-ups who had completed lifestyle questionnaires.
- **Exclusion:** Individuals with chronic illnesses affecting activity (neurological disorders, advanced arthritis) or incomplete records.

Outcomes

- **Primary:** Change in physical activity (hours/day).
- **Secondary:** Change in sleep duration/patterns and eating habits (snacking frequency, processed food intake, weight gain).

Materials and Methods

Pre- and during-lockdown data were obtained from health questionnaires and OPD follow-ups. Physical activity was categorized as active (>3 hrs/day), moderate (1–3 hrs/day), or sedentary (<1 hr/day). Sleep data included average hours and bedtime shift. Eating habits were recorded as increase, decrease, or no change in snacking and processed food intake.

Analysis: SPSS v25 was used. Paired t-tests assessed continuous changes; chi-square analyzed categorical shifts.

Results

Demographics: Mean age 34.7 ± 10.5 years; 54% male, 46% female.

Table 1: Physical Activity Changes

Category	Pre-Lockdown (n=120)	During Lockdown (n=120)	p-value
Active (>3 hrs/day)	48 (40%)	22 (18%)	<0.001
Moderate (1–3 hrs)	54 (45%)	58 (48%)	0.42
Sedentary (<1 hr)	18 (15%)	40 (34%)	0.002

Table 2: Sleep and Eating Pattern Changes

Parameter	Pre-Lockdown	During Lockdown	p-value
Mean sleep duration (hrs)	6.8 ± 1.1	8.2 ± 1.3	<0.01
Delayed sleep onset (%)	12%	34%	0.001
Increased snacking (%)	18%	46%	0.002
Processed food intake (%)	15%	39%	0.001
>2 kg weight gain (%)	–	28%	–

Discussion

This study demonstrates that lockdown measures reduced activity, increased sedentary time, and shifted daily routines. The rise in delayed sleep onset and snacking indicates behavioral disruptions linked to stress and altered schedules.

Females were more prone to dietary shifts, while younger participants (<30 years) had the sharpest decline in physical activity—likely due to reliance on gyms and outdoor sports. Similar findings were reported in European and Asian lockdown studies, suggesting global parallels despite regional differences.

The retrospective design and reliance on self-reported data are limitations. Nevertheless, results highlight the urgent need for home-based exercise programs, sleep hygiene awareness, and dietary counseling during future lockdowns or mobility restrictions.

Conclusion

Lockdown restrictions significantly impacted physical activity, sleep, and eating habits among adults in Central India, leading to sedentary behavior, extended but irregular sleep, and unhealthy dietary changes. Public health strategies should focus on maintaining structured routines and promoting wellness during such disruptive events.

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