

Original Article

When Exercise Hurts: Prevalence and Intensity of Low Back Pain Among Gym-Goers in Hyderabad, Pakistan

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Received: 12 January 2026

Revised: 09 February 2026

Accepted: 11 March 2026

Published: 15 March 2026

HOW TO CITE

Ayesha Arif et al. 2026. When Exercise Hurts: Prevalence and Intensity of Low Back Pain Among Gym-Goers in Hyderabad, Pakistan. Journal of Health, Wellness and Community Research. 4, 5 (Mar. 2026), 1–7. DOI:https://doi.org/10.61919/15r38g08

ARTICLE INFORMATION

Author Contributions	Concept: AA, KN; Design: AA, KN, RS; Data Collection: AA, KN, MS, FR; Analysis: RS, AF; Drafting: AA, KN, RS, AF, MS, FR.
Ethical Approval	The study was approved by research ethical board of AL-BIRUNI Institute of Physical Therapy and Rehabilitation Sciences, Hyderabad, Pakistan
Informed Consent	Written informed consent was obtained from all participants
Conflict of Interest	The authors declare no conflict of interest.
Funding	No external funding.
Data Availability	Available from the corresponding author on reasonable request.
AI Declaration	No generative AI was used for conceptualization, analysis, or content generation. AI use was limited to language refinement, and the authors remain fully responsible for the accuracy, originality, validity, and integrity of the manuscript's content.

ABSTRACT

Background: Low back pain (LBP) is an important musculoskeletal complaint, but its occurrence and severity among recreational gym-goers in Hyderabad, Pakistan, remain insufficiently characterized. **Objective:** To determine the prevalence of self-reported LBP and describe its intensity, frequency, and reported aggravating activities among gym-goers in Hyderabad. **Methods:** An observational cross-sectional study recruited 277 gym-goers aged 18–35 years through convenience sampling from multiple gyms over six months. A structured self-administered questionnaire assessed demographic characteristics, gym participation, health history, and LBP symptoms. Pain intensity was assessed using the Visual Analog Scale. Data were summarized using frequencies, percentages, means, and standard deviations in IBM SPSS Statistics version 25.0. **Results:** Participants were predominantly male (62.5%), and 91.0% were classified as having healthy weight. LBP was reported by 243 participants (87.7%). Mild, moderate, and severe pain accounted for 63.5%, 23.8%, and 0.4% of the total sample, respectively. Once-weekly pain was the most frequently recorded frequency category (63.5%). Weightlifting was the most frequently reported aggravating activity (30.0%), followed by cardio exercise (19.1%) and powerlifting (15.9%). **Conclusion:** Self-reported LBP was common in this gym-going sample, with mild symptoms predominating. Its functional importance and relationship with specific training practices remain undetermined. **Keywords:** Low back pain; gym-goers; pain intensity; resistance training; prevalence; Pakistan.

INTRODUCTION

Low back pain (LBP) is a major musculoskeletal health problem and a leading contributor to disability worldwide. Its substantial population burden makes it an important concern for healthcare systems and public-health planning (1). Among working-age adults, LBP also has implications for participation in daily activities and employment, highlighting the importance of understanding its occurrence across different activity settings (2). Recreational gyms provide one such setting, where individuals undertake exercises involving varied movement patterns and

physical loads. Investigating LBP in gym-going populations therefore requires attention to both the presence of symptoms and the activities during which participants report discomfort.

The relationship between physical activity and LBP is complex and should not be interpreted as a uniform effect of exercise. Previous studies have examined whether this relationship is nonlinear, including a possible U-shaped association between activity levels and LBP; however, findings must be interpreted within the specific populations, activity measures, and pain definitions investigated (3,4). Resistance exercise and lifting activities are particularly relevant because they involve repeated loading of the trunk and lumbar region. Reviews of weightlifting and powerlifting have identified the lower back as an important site of symptoms and injury, although injury occurrence does not establish that resistance exercise inevitably causes LBP (5,6). Furthermore, pain reported during exercise, clinically diagnosed injury, and symptoms requiring interruption of training represent distinct outcomes and should not be treated as interchangeable measures of burden.

Research involving recreational gym users provides a more directly relevant context for understanding exercise-associated symptoms. A study of 1,387 recreational athletes examined pain-provoking gym exercises and the corresponding anatomical locations, illustrating the importance of assessing symptoms in relation to specific activities (7). A nationwide cross-sectional study in Bangladesh similarly identified the back as a commonly reported site of musculoskeletal injury among gym members (8). Research from Saudi Arabia has also documented exercise-related injuries among gym users, although its broader injury outcome differs from an assessment focused specifically on LBP prevalence and intensity (9). Collectively, these studies support investigating musculoskeletal symptoms in gym settings while emphasizing that comparisons require consideration of differences in outcome definitions, participant characteristics, and recruitment methods.

Within Pakistan, research has examined LBP in relation to body mass index, while a cross-sectional survey of weightlifters has addressed the broader occurrence of musculoskeletal pain (10,11). These studies provide relevant national context but do not directly establish the prevalence and intensity of LBP among recreational gym-goers in Hyderabad. Evidence from competitive lifting populations or studies combining pain across multiple body regions cannot fully characterize the local distribution of lumbar symptoms. In particular, the literature cited here leaves uncertainty regarding how commonly gym-going young adults in Hyderabad report LBP, how intense and frequent their symptoms are, and which activities they identify as aggravating those symptoms.

A focused descriptive assessment could provide local information to guide subsequent research and inform discussions about symptom recognition and exercise practices within gyms. Measuring pain intensity alongside its occurrence is important because a high proportion of participants reporting pain does not necessarily indicate a similarly high burden of severe symptoms. Recording participants' perceived aggravating activities can also describe their symptom experiences, although these reports cannot establish exercise-specific risk or causation. Accordingly, this cross-sectional study aimed to determine the prevalence of self-reported LBP among gym-goers aged 18–35 years in Hyderabad, Pakistan, and to describe its intensity, frequency, and reported aggravating activities, together with participants' gym-attendance characteristics.

MATERIAL AND METHODS

An observational cross-sectional study was conducted among gym-going adults in Hyderabad, Pakistan, to describe the prevalence and characteristics of self-reported low back pain (LBP). This design allowed the assessment of pain symptoms and gym-participation characteristics without assigning an exercise intervention or following participants over time. The study was conducted over six months following approval of the research synopsis and involved participants attending multiple commercial and local gyms.

The target population comprised male and female Hyderabad residents aged 18–35 years who attended gyms regularly. Participants were recruited using non-probability convenience sampling, and the reported study sample comprised 277 gym users. Sample size was estimated using OpenEpi version 3.0 with a 95% confidence level and a 5% margin of error, using an approach for estimating a population proportion in cross-sectional research (12).

Data were collected using a structured, self-administered questionnaire covering demographic characteristics, anthropometric information, gym participation, relevant health history, and LBP symptoms. Demographic variables included age, sex, marital status, and occupation. Anthropometric variables included body weight, height, and body

mass index classification. Age was grouped into 18–23, 24–29, and 30–35 years. Gym participation was described by duration of attendance and training frequency. Attendance duration was recorded in categories of 6–12 months, 13–18 months, 19–24 months, and more than 24 months, while training frequency was categorized as daily, 1–2 times per week, 3–5 times per week, or occasionally. Health-history items addressed previous lower back injury, injury or fracture history, neurological or musculoskeletal disease, and steroid use.

The principal outcome was the presence of self-reported LBP, recorded as a yes-or-no response. Additional symptom measures included pain intensity, frequency, and activities reported to aggravate pain. Pain intensity was assessed using the instrument identified in the study as the Visual Analog Scale (VAS), a pain-intensity measure discussed in the cited measurement literature (13).

Recorded scores were categorized as no pain (0), mild pain (1–3), moderate pain (4–7), or severe pain (8–10). Pain frequency was recorded as daily, once a week, several times a week, or rarely. The questionnaire also recorded aggravating activities under the categories of squats, deadlifts, bench press, weightlifting, powerlifting, cardio exercise, and multiple activities. These responses represented participants' reported symptom experiences rather than clinically confirmed causes of LBP.

Data were analyzed using IBM SPSS Statistics version 25.0. Categorical variables were summarized using frequencies and percentages, while body weight and height were summarized using means and standard deviations.

The proportion reporting LBP was calculated using the number of affirmative responses relative to the total analyzed sample. Descriptive summaries were also produced for pain intensity, pain frequency, reported aggravating activities, gym-participation characteristics, and relevant health-history variables. The analysis was descriptive and did not estimate adjusted associations or causal effects.

RESULTS

The study included 277 participants, of whom 173 (62.5%) were male and 104 (37.5%) were female. Participants aged 18–23 years constituted the largest age category, accounting for 104 (37.5%) respondents, followed closely by those aged 24–29 years, comprising 102 (36.8%). Most participants were single (200; 72.2%), and students constituted the largest occupational category (142; 51.3%). Healthy weight was the most frequently reported BMI classification, comprising 252 (91.0%) participants (Table 1). Mean body weight was 68.44 ± 3.07 kg, and mean height was 169.40 ± 5.23 cm (Table 2).

Self-reported LBP was present in 243 participants (87.7%; Wilson 95% confidence interval, 83.3%–91.1%), while 34 (12.3%) reported no pain. Mild pain was recorded in 176 participants (63.5% of the total sample), moderate pain in 66 (23.8%), and severe pain in one (0.4%) (Table 3).

Table 1. Sociodemographic characteristics of participants (N = 277)

Characteristic	Category	n (%)
Age, years	18–23	104 (37.5)
Age, years	24–29	102 (36.8)
Age, years	30–35	71 (25.6)
Sex	Male	173 (62.5)
Sex	Female	104 (37.5)
Marital status	Single	200 (72.2)
Marital status	Married	77 (27.8)
Occupation	Student	142 (51.3)
Occupation	Office worker	7 (2.5)
Occupation	Professional/teacher	39 (14.1)
Occupation	Housewife	28 (10.1)
Occupation	Other	61 (22.0)
BMI classification	Underweight	10 (3.6)
BMI classification	Healthy weight	252 (91.0)
BMI classification	Overweight	14 (5.1)
BMI classification	Obesity	1 (0.4)

BMI, body mass index.

Table 2. Anthropometric measurements of participants (N = 277)

Measurement	Mean ± SD
Weight, kg	68.44 ± 3.07
Height, cm	169.40 ± 5.23

SD, standard deviation.

Table 3. Self-reported low back pain and pain intensity among participants (N = 277)

Characteristic	Category	n (%)
Low back pain	Yes	243 (87.7)
Low back pain	No	34 (12.3)
Pain intensity, VAS score	0	34 (12.3)
Pain intensity, VAS score	1–3	176 (63.5)
Pain intensity, VAS score	4–7	66 (23.8)
Pain intensity, VAS score	8–10	1 (0.4)

VAS, visual analog scale; 0, no pain; 1–3, mild pain; 4–7, moderate pain; 8–10, severe pain.

Table 4. Reported pain frequency and aggravating activities, expressed relative to the total sample (N = 277)

Characteristic	Category	n (%)
Pain frequency	Daily	11 (4.0)
Pain frequency	Once a week	176 (63.5)
Pain frequency	Several times a week	33 (11.9)
Pain frequency	Rarely	57 (20.6)
Aggravating activity	Squats	18 (6.5)
Aggravating activity	Deadlifts	34 (12.3)
Aggravating activity	Bench press	15 (5.4)
Aggravating activity	Weightlifting	83 (30.0)
Aggravating activity	Powerlifting	44 (15.9)
Aggravating activity	Cardio exercise	53 (19.1)
Aggravating activity	Multiple activities	30 (10.8)

Table 5. Gym participation and relevant health-history characteristics (N = 277)

Characteristic	Category	n (%)
Duration of gym participation	6–12 months	138 (49.8)
Duration of gym participation	13–18 months	81 (29.2)
Duration of gym participation	19–24 months	36 (13.0)
Duration of gym participation	>24 months	22 (7.9)
Frequency of gym participation	Daily	116 (41.9)
Frequency of gym participation	1–2 times/week	23 (8.3)
Frequency of gym participation	3–5 times/week	120 (43.3)
Frequency of gym participation	Occasionally	18 (6.5)
Previous lower back injury	Yes	16 (5.8)
Previous lower back injury	No	261 (94.2)
Neurological/musculoskeletal disease	Yes	11 (4.0)
Neurological/musculoskeletal disease	No	266 (96.0)
Steroid use	Yes	6 (2.2)
Steroid use	No	271 (97.8)

In the pain-frequency responses, once-weekly pain was the most frequently recorded category, accounting for 176 (63.5%) participants, followed by rarely occurring pain in 57 (20.6%). Weightlifting was the most frequently reported aggravating activity (83; 30.0%), followed by cardio exercise (53; 19.1%) and powerlifting (44; 15.9%) (Table 4).

Nearly half of participants reported 6–12 months of gym participation (138; 49.8%), while 81 (29.2%) reported 13–18 months. Attendance was most commonly reported as 3–5 times per week (120; 43.3%) or daily (116; 41.9%). Previous lower back injury was reported by 16 participants (5.8%), neurological or musculoskeletal disease by 11 (4.0%), and steroid use by six (2.2%) (Table 5).

DISCUSSION

Self-reported low back pain was common among the sampled gym-goers in Hyderabad, although mild symptoms predominated and severe pain was uncommon. Weightlifting was the most frequently reported aggravating activity,

followed by cardio exercise and powerlifting. These findings describe the symptom experiences of participating gym users; they do not establish that gym attendance caused LBP or that particular exercises carried greater risk.

The prominence of lumbar symptoms is broadly consistent with literature identifying the lower back as an important site of injury in weightlifting and powerlifting. Nevertheless, injury surveillance and symptom-prevalence studies measure different outcomes, and the proportion of injuries involving the lower back cannot be interpreted as the proportion of athletes experiencing LBP (5,6). Similarly, research among recreational gym users has examined pain-provoking exercises and anatomical symptom locations, supporting the relevance of activity-specific questioning without establishing that reported triggers represent the original cause of pain (7). The present findings therefore contribute descriptive information about lumbar symptoms rather than an estimate of exercise-related injury incidence.

Studies from Bangladesh and Saudi Arabia provide relevant comparisons because they examined recreational gym populations. The Bangladesh study identified the back as a commonly affected injury site, whereas the Saudi Arabian study assessed exercise-related injuries across multiple anatomical regions (8,9). Differences in symptom definitions, recall periods, recruitment strategies, and thresholds for classifying injury limit direct numerical comparisons with the present study. In particular, reporting any LBP may capture milder symptoms than definitions requiring an injury or disruption of training. The predominance of mild pain in the present sample is compatible with this possibility, but the unspecified recall period prevents a firm explanation of differences between studies.

The distinction between pain occurrence and clinical burden is important. Although many respondents reported LBP, relatively few were classified as having severe pain. Pain intensity alone does not establish functional impairment, and the study did not assess disability, healthcare use, or interruption of training. Consequently, the findings cannot determine whether the reported symptoms represented transient discomfort, recurrent activity-limiting pain, or persistent LBP. This distinction matters when interpreting the findings against the substantial disability and working-age burden described in population-level research (1,2). A high proportion reporting symptoms should therefore not be equated automatically with a high prevalence of disabling disease.

The reported activity pattern warrants similarly cautious interpretation. Weightlifting, powerlifting, and deadlifts were among the activities identified as aggravating symptoms, which is compatible with the attention given to lifting-related lumbar complaints in previous reviews (5,6). Repeated loading, muscular fatigue, and movement demands offer plausible explanations for symptom provocation during lifting. However, training loads, technique, recovery, and the timing of symptom onset were not measured, so these mechanisms remain hypotheses. Cardio exercise was also frequently reported, indicating that symptom aggravation was not confined to resistance exercise. Furthermore, without knowing how many participants performed each activity, the reported frequencies cannot establish comparative exercise-specific risk.

Most participants attended the gym daily or several times per week, but attendance frequency alone does not quantify training intensity, total workload, or recovery. Previous research has examined complex relationships between physical activity and LBP, including possible nonlinear associations that depend on how activity is measured (3,4). The current descriptive analysis cannot determine whether frequent attendance was associated with pain or whether symptoms influenced participants' training patterns. Likewise, the predominance of participants classified as having healthy weight does not demonstrate that BMI was unrelated to LBP. Although BMI has been investigated in Pakistani LBP research, no corresponding association analysis was performed in this study (10).

The small proportions reporting previous lower back injury or neurological or musculoskeletal disease do not establish that symptoms were caused by training. These variables were self-reported, and the absence of a known diagnosis does not exclude other contributors to pain. Pakistani research among weightlifters provides additional context for musculoskeletal complaints, but broader pain outcomes should not be treated as equivalent to lumbar symptoms alone (11). The present findings support attention to symptom assessment within gym settings, while individual clinical interpretation would require information about symptom duration, functional impact, and examination findings. Exercise-related injury studies provide a rationale for investigating training practices and supervision, but this study did not evaluate whether any particular preventive or rehabilitation approach was effective (8,9).

Strengths include the focus on a defined local population, recruitment from multiple gyms, and concurrent description of pain intensity, gym participation, and relevant health history. Several limitations substantially constrain interpretation. Convenience sampling limits representativeness, while recruitment among current attendees may exclude people who stopped attending because of pain. The cross-sectional design prevents establishing temporal relationships, and self-administered responses are susceptible to recall and reporting errors. The absence of a defined LBP recall period limits interpretation of the prevalence estimate. In addition, pain-frequency and aggravating-activity categories total the entire sample despite some participants reporting no pain, leaving uncertainty about questionnaire routing and symptom-specific denominators. The reported attendance durations and health conditions also conflict with the original eligibility criteria, creating uncertainty about the composition of the analyzed sample. Finally, the descriptive analysis did not account for potential confounding or differences between gyms. Future studies using consistent eligibility criteria, explicit symptom definitions, validated functional measures, and prospective assessment of training exposure would help clarify the clinical importance and determinants of LBP in this population.

CONCLUSION

Self-reported low back pain was common among the sampled gym-goers in Hyderabad, Pakistan, affecting 87.7% of participants, with mild pain predominating. Weightlifting was the most frequently reported aggravating activity, followed by cardio exercise and powerlifting. The findings identify lumbar symptoms as a relevant concern in this gym-going sample, although their functional importance and relationship to specific training practices remain undetermined.

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