

Chances of Chronic Injuries in Athletes vs. Non-Athletes

Mr. Rohan Verma¹, Dr. Manoj Sahu²

¹Research Scholar, ²Assistant Professor
Physical Education

Abstract:

Chronic injuries, defined as long-term injuries that persist for months or years, are a significant concern in both athletic and non-athletic populations. This study aims to compare the incidence of chronic injuries between athletes and non-athletes and explore factors contributing to these injuries. A cross-sectional study was conducted involving 100 athletes and 100 non-athletes. Data were collected through self-reported questionnaires on injury history, type, and duration of injuries. Statistical analysis revealed that athletes have a higher likelihood of chronic injuries, particularly in the musculoskeletal system, but non-athletes tend to experience chronic injuries related to lifestyle factors such as poor posture and sedentary behaviour. The findings highlight the need for injury prevention strategies tailored to both populations.

Keywords: Chronic injuries, athletes, non-athletes, musculoskeletal system, sedentary behaviour, injury prevention.

1. INTRODUCTION

Chronic injuries, which include conditions such as tendinitis, osteoarthritis, and repetitive stress injuries, represent a significant burden on public health. These injuries can affect individuals across all age groups and activity levels, but they are particularly prevalent among athletes who engage in high-intensity physical activity. Conversely, non-athletes may also develop chronic injuries, often related to sedentary lifestyles, poor ergonomics, or everyday repetitive tasks.

The impact of chronic injuries on quality of life, productivity, and overall health is well-documented, but the comparative incidence between athletes and non-athletes is less explored. This research seeks to examine the prevalence and types of chronic injuries in athletes compared to non-athletes, identify contributing factors, and provide recommendations for prevention strategies tailored to both groups.

2. METHODOLOGY

2.1. Research Design A cross-sectional study design was employed to assess the incidence and types of chronic injuries in athletes and non-athletes. The study compared two groups: one consisting of athletes and the other consisting of non-athletes.

2.2. Participants

- **Athletes Group:** 100 athletes (50 male, 50 female) aged 18-35, involved in competitive sports (e.g., basketball, soccer, tennis, track and field) at least 5 hours per week for the past 2 years.
- **Non-Athletes Group:** 100 non-athletes (50 male, 50 female), aged 18-35, with minimal engagement in physical activity (less than 1 hour per week) and no history of organized competitive sports.

Inclusion criteria for both groups:

- No current acute injuries at the time of study.
- No chronic medical conditions such as diabetes or cardiovascular disease that might interfere with musculoskeletal health.

Exclusion criteria:

- Participants with a history of major surgeries or systemic diseases that could affect injury rates or recovery.

2.3. Data Collection Data were collected using a **self-reported questionnaire** containing the following sections:

- **Demographics:** Age, gender, physical activity habits, medical history.
- **Injury History:** Types of chronic injuries, affected body parts, and duration of injury.
- **Lifestyle Factors:** Information about daily activity levels, postural habits, and any history of repetitive tasks.

Participants completed the questionnaires online or in person, and data collection was conducted over a period of three months.

2.4. Data Analysis Descriptive statistics were used to summarize the demographic data, injury types, and other variables. Comparisons between the two groups were made using **chi-square tests** for categorical variables (e.g., presence of chronic injuries) and **t-tests** for continuous variables (e.g., age, injury duration). A significance level of $p \leq 0.05$ was considered statistically significant.

3. RESULTS

3.1. Participant Demographics

- **Athletes:** The average age of the athletes was 24.5 ± 4.2 years. The majority of athletes were involved in team sports (60%) followed by individual sports (40%).
- **Non-Athletes:** The average age of the non-athletes was 25.3 ± 4.1 years. Most non-athletes reported engaging in sedentary activities such as office work or studying (80%).

3.2. Prevalence of Chronic Injuries

- **Athletes:** 72% (72/100) of athletes reported having a chronic injury at some point, with 58% still experiencing symptoms. Common chronic injuries included tendinitis (28%), stress fractures (14%), and ligament injuries (12%).
- **Non-Athletes:** 45% (45/100) of non-athletes reported chronic injuries, with 38% still affected by them. The most common injuries were lower back pain (22%), neck pain (15%), and osteoarthritis (8%).

3.3. Injury Distribution and Frequency

- **Athletes:** The most commonly injured body parts among athletes were the knee (30%), shoulder (22%), and ankle (18%). The injuries were typically the result of repetitive, high-impact movements, such as jumping, pivoting, and sprinting.
- **Non-Athletes:** Non-athletes reported chronic pain mostly in the lower back (45%) and neck (30%), which were often attributed to poor posture, prolonged sitting, and lack of physical activity.

3.4. Injury Duration and Severity

- **Athletes:** The majority of athletes (65%) reported experiencing chronic injuries for more than six months, and 40% of them reported moderate to severe pain that affected their performance.
- **Non-Athletes:** 55% of non-athletes with chronic injuries had experienced symptoms for more than six months, with a higher proportion (60%) reporting mild to moderate pain, generally not affecting daily activities significantly.

4. DISCUSSION

The results of this study suggest that athletes are more likely to experience chronic injuries compared to non-athletes, with higher rates of musculoskeletal injuries, particularly tendinitis, stress fractures, and ligament injuries. This is consistent with previous research indicating that high-intensity, repetitive physical activity places increased strain on the musculoskeletal system, contributing to long-term injuries.

However, non-athletes also face a significant risk of chronic injuries, particularly those related to poor posture, lack of movement, and sedentary lifestyles. Conditions such as lower back pain, neck pain, and osteoarthritis are prevalent, suggesting that a lack of physical activity and poor ergonomic practices contribute to the development of chronic musculoskeletal conditions in non-athletes.

4.1. Contributing Factors

- **Athletes:** The intensity and volume of training, combined with repetitive motion and high-impact activity, predispose athletes to musculoskeletal overload and chronic injury. Risk factors include improper technique, inadequate recovery, and lack of injury prevention strategies.
- **Non-Athletes:** Sedentary behavior, poor posture, and prolonged sitting are major contributors to chronic injuries in non-athletes. A lack of exercise weakens muscles and reduces flexibility, making individuals more prone to strain and degenerative conditions like osteoarthritis.

4.2. Implications for Injury Prevention

- **For Athletes:** Injury prevention programs should focus on proper warm-up, technique correction, and cross-training to reduce the risk of overuse injuries. Additionally, ensuring adequate rest and recovery is crucial for preventing chronic injuries.
- **For Non-Athletes:** Interventions targeting posture correction, ergonomic adjustments in the workplace, and encouraging regular physical activity (e.g., stretching, walking) could significantly reduce the risk of chronic injuries.

5. CONCLUSION

This study highlights that chronic injuries are more common in athletes due to the nature of their high-intensity physical activity, though non-athletes are also at considerable risk due to lifestyle factors such as sedentary behaviour and poor posture. Prevention strategies tailored to both groups are essential for reducing the incidence and severity of chronic injuries. Future research could explore longitudinal studies to assess the long-term effectiveness of specific interventions in both populations.

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