

# HOW CHRONIC PAIN AFFECTS SLEEP IN UNIVERSITY STUDENTS? A REVIEW

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## RESUMEN

El dolor crónico es un dolor persistente que dura al menos 3 meses, y padecerlo disminuye la calidad de vida del paciente. Entre un 50-70% de pacientes con dolor crónico sufren trastornos del sueño. Entre ellos se encuentran los estudiantes universitarios, observándose una relación directa y recíproca entre la intensidad del dolor y trastornos del sueño. El objetivo del presente trabajo es revisar la evidencia disponible de los últimos 10 años sobre la afección del dolor crónico en el sueño de estudiantes universitarios. Este trabajo sigue las directrices de la guía PRISMA. La búsqueda de artículos se llevó a cabo durante el mes de abril de 2023 en 3 bases de datos: PubMed, Scopus y PsycInfo. Los operadores lógicos utilizados fueron (chronic pain) AND (college students OR undergraduate OR university students) AND (sleep OR night OR rest). Los criterios de inclusión eran: publicaciones en inglés/español, estudios empíricos, dirigidos a evaluar a estudiantes universitarios diagnosticados de dolor crónico y valorar su influencia sobre el sueño, y con disponibilidad de texto completo. Del total de estudios encontrados (n=78) se incluyeron en la presente revisión únicamente los que cumplían los criterios (n=5). Los resultados muestran relación entre el dolor crónico y las alteraciones del sueño, las cuales persisten a lo largo del tiempo; una mayor prevalencia a desarrollar dolor crónico en las mujeres, a diferencia de los hombres, debido a factores biosociales; y mayores puntuaciones de trastornos de sueño en muestras con dolor crónico en comparación con muestras sin dolor. Para concluir, se propone realizar intervenciones en los estudiantes universitarios centradas en una evaluación adecuada, en la aplicación de la terapia cognitivo-conductual o la relajación muscular progresiva para mejorar su bienestar general y ayudarles a aceptar de manera adaptativa su enfermedad, teniendo en cuenta la atención personalizada de cada paciente.

Palabras clave: dolor crónico, sueño, estudiantes universitarios, calidad de vida, jóvenes.

## ABSTRACT

Chronic pain is a persistent pain that lasts at least 3 months, and suffering from it diminishes the patient's quality of life. Between 50-70% of patients with chronic pain suffer from sleep disorders. Among them are university students, and a direct and reciprocal relationship between pain intensity and sleep disorders has been observed. The aim of the present work is to review the available evidence of the last 10 years on the effect of chronic pain on sleep in university students. This work follows the PRISMA guidelines. The search for articles was conducted during the month of April 2023 in 3 databases: PubMed, Scopus, and PsycInfo. The logical operators used were (chronic pain) AND (college students OR undergraduate OR university students) AND (sleep OR night OR rest). The inclusion criteria were: publications in English/Spanish, empirical studies, aimed at evaluating university students diagnosed with chronic pain and assessing its influence on sleep, and with availability of full text. Of the total number of studies found (n=78), only those that met the criteria were included in the present review (n=5). The results show a relationship between chronic pain and sleep disturbances, which persist over time; a higher prevalence of developing chronic pain in women, as opposed to men, due to biosocial factors; and higher sleep disturbance scores in samples with chronic pain compared to samples without pain.

To conclude, it is proposed to carry out interventions in university students focused on adequate assessment, application of cognitive-behavioral therapy or progressive muscle relaxation to improve their general well-being and help them to adaptively accept their disease, taking into account the personalized care of each patient.

Key words: chronic pain, sleep, university students, quality of life, young people.

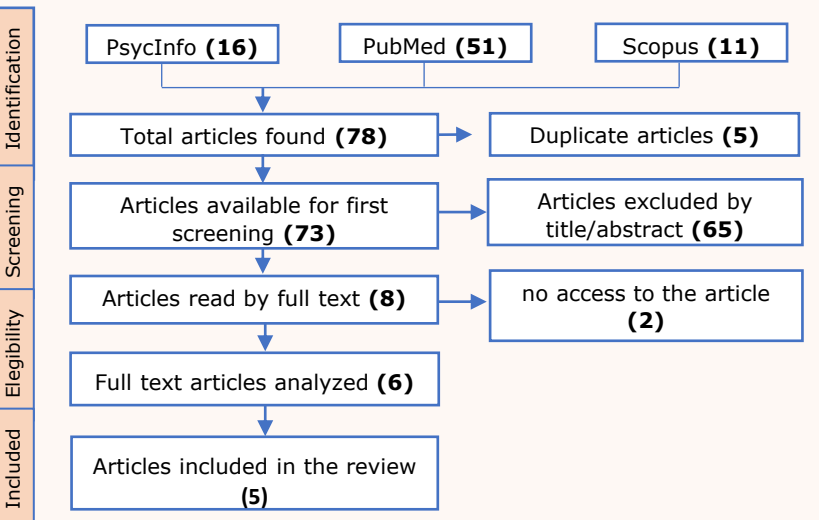
## INTRODUCTION

Chronic pain is persistent or recurrent pain lasting at least 3 months (Serbic et al., 2021). It should be considered in itself as a disease (Moscoso, 2013). It involves a significant reduction in the patient's quality of life, with decreased quality of sleep, among others. Sleep is essential in our lives and it is estimated that between 50-70% of pain patients suffer from sleep disorders (Hurtado & Rodríguez, 2012). Several previous studies show that pain is a common problem among college students and is related to decreased psychological and social functioning and well-being (El Ansari et al., 2014).

## OBJECTIVE

To review the evidence available over the last 10 years on the impact of chronic pain experience on the sleep of college students of any grade and any nationality.

## METHOD (PRISMA guidelines)



## INCLUSION CRITERIA

- (1) empirical studies with (2) open access in (3) English or Spanish (4) published between 2013-2023 (5) with sample of university students (6) diagnosed with chronic pain (7) that evaluate repercussions on sleep

## SEARCH STRATEGY

(chronic pain) AND (college students OR undergraduate OR university students) AND (sleep OR night OR rest)

## RESULTS

AUTHORS	OBJECTIVE	SAMPLE	METHOD	RESULTS
Isidora Vujcic et al. (2018)	To examine the prevalence of LBP among medical students.	N=459 (M=22,46 years old). Transversal study. Single experimental group. Treatment: NA. University degree: medicine.	Numerical rating scale (0-6) 0: no impact 6: extremely strong impact	- Pain prevalence rates were significantly higher in women. - Low back pain affects mainly sleeping and walking students.
Maja Lindell & Anna Grimby-Ekman (2022)	To investigate whether stress, sleep disturbance, and physical inactivity were risk factors of chronic pain among young adults.	N=1759 (M=23 years old). Longitudinal study. Single experimental group. Treatment: NA. University degree: computer science, medicine, nursing, others.	Sleep and wakefulness questionnaire with dichotomous responses (yes/no) Yes: "a couple of times a week", "every day". No: "never", "a couple of times a year", "a couple of times a month".	- Difficulty in falling asleep was observed in 13% of the participants; 4% reported frequent awakenings during the night; 37% reported not having a restful sleep; 45% of the total reported being tired during the day. - Unrefreshing sleep and daytime fatigue are predictors of chronic pain in the short term, but not in the long term.
Kim et al. (2021)	To assess the prevalence of acute and chronic pain, pain management methods, and pain interference among university students.	N=404 (M=22,40 years old). Transversal study. Study with control group. Use of treatment: medical aid, pharmacological treatment or non-pharmacological treatment. University degree: health sciences career.	Numerical rating scale (0-5) 0: no interference 5: complete interference	- The groups with and without pain differed in age, gender, year of school and field of study. - The students indicated that the pain interfered with normal work, walking ability and sleep. - The mean scores ranged from 0 to 5, obtaining 1.62 for sleep
Kato (2020)	To examine the associations of psychological inflexibility with depressive symptoms and sleep distribution.	N=410 (M=18,64 years old). Longitudinal study. Study with control group. Use of treatment: inpatient treatment, formal medical advice, no treatment. University degree: NA.	Epworth Sleepiness Scale (ESS)	- Depressive symptoms and sleep disorders were higher in women with chronic pain. - Mean for sleep disturbances in women with chronic pain 12.09 vs women without pain 10.66.
Grasdalsmoen et al. (2020)	To investigate the association between physical exercise and chronic pain.	N=36.625 (M=23,20 years old). Transversal study. Single experimental group. Treatment: NA. University degree: NA.	Sleep Questionnaire  Hopkins Symptom Checklist Depression Subscale (HSCL)-25 item.	- High gender differences in pain prevalence. - A mean sleep deficit was shown for women with chronic weekday pain of 44', while for men the mean deficit was 20'.

## CONCLUSIONS

As in previous studies, the evidence reviewed indicates that chronic pain and sleep deprivation have a bidirectional relationship (Okifuji & Hare, 2011). This relationship has been observed in college students, who report greater pain the more advanced the course they are in. This is related to their lifestyles and academic stress. From the field of psychology, practical actions should be implemented focusing on proper assessment, the use of cognitive-behavioral therapy or Jacobson's progressive muscle relaxation to improve the overall well-being of students, reducing pain and stress and improving sleep, as well as helping them to adaptively accept their illness.

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