



# The impact of headache symptoms in a population of Italian university students during the COVID period: an observational study based on 4926 cases

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## Abstract

We conducted an observational study of 4926 university students from all over Italy and different university courses, including health areas. Students were contacted through the most popular social networks and some student's course representatives also acted as intermediaries, from June 1 to August 31, 2021. A questionnaire has been carried out using "Google Forms" and MIDAS. The study confirmed how the headache was widespread among the student population and how much it was underestimated (only one-fifth of the interviewees had been to a specialist/headache center). The negative impact of habitual headache on school performance was confirmed by the attendance on courses and the overall study performance. The clinical phenomenon might have been impacted by the pandemic period and its changes in lifestyle, in the study methodology, and due to the stress increase. Finally, the means used in the study were very satisfactory: the use of peers of the interviewees and the social networks, obtaining a broad acceptance of the study and possibly offering a method which is likely to be used in the future. Students presenting habitual headaches must be aware of their condition and the need to search for an appropriate diagnosis and treatment.

**Keywords** Headache · University students · Questionnaire

## Introduction

Headache is a common disorder in young adults which affects their lives, including the performance of school activity [1]. The disorder often remains underdiagnosed and undertreated [2]; self-medication is often used with the risk of chronicization and drug overuse.

## Materials and methods

Our young nursing students have contacted numerous Italian universities (Piemonte, Lombardia, Emilia Romagna, Lazio, Veneto, Campania, Toscana, others). An anonymous online questionnaire created via Google Forms was sent to all students from different faculties, via student representatives, student blogs, and the most popular social networks. The anonymous questionnaire took place over a 3-month period, from June 1 to August 31, 2021; university courses were concluded, but it was a period of exams.

The questionnaire provided demographic information on gender and age, home university, degree, course, and student occupation. The items were inspired by the MIDAS questionnaire, simple and clear.

The questionnaire spoke of headaches, not a specific headache like migraine and TTH.

Table of questionnaire components: "Did you get headaches during your 3 months of observation?" In your 3 months of observation:

(a) How many days of headache did you had? (b) How many days of total inability to study did you had?

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(c) How many days of reduction of academic activity? (d) Did your headaches adversely affect your exam results? (e) Have you received an accurate diagnosis of your headache from a specialist or headache centre) \*f) Did you take therapies for your headaches?

4926 university students filled out the questionnaire, 84,4% females and 15,6% males, aged over 18 years (18–21 27, 9%; 22–25 48, 1%, over 25 24%), from all over Italy. Students came from a variety of academic, humanist, scientific, and social courses, including areas of health such as medicine and nursing.

Inferential statistical methods have been used for the data analysis.

## Results

55% of them had common headache symptoms, and during the 3-month observation period, the average number of headache days was 12 (SD  $\pm$  16.2). In terms of the impact of headaches on academic achievement, on average, there were 2 days of total inability to study (SD  $\pm$  5.7) and 7-day reduction of academic activity (SD  $\pm$  10.4). 26% of students report that headaches have had a negative impact on examination results. Only 19% of them had been to a specialist or to a headache center and received a precise diagnosis. Only 27% of them use drugs during the attacks.

## Limitations of the study

Recruitment via a voluntary questionnaire can create an inclusion bias by selecting above all the subjects presenting the problem. This may explain the adhesion discrepancy between females and males and the high prevalence.

## Conclusions

Our large observational study confirmed that headache is a frequent symptom in the student population. More than 50% of the students who answered the questionnaire usually suffer from it.

The items were centered on 3 specific months of the Covid period, and therefore, no comparisons could be made with periods prior to the pandemic. We do not know if this clinical phenomenon might have been impacted by the pandemic period and its changes in lifestyle (such as the absence of physical activities), in the study methodology (use of distance learning, calendar uncertainty, and method for exam sessions), and due to the stress increase caused by isolation and changes in social relationships. This could be a subject of future investigations. The negative impact of headaches

on academic achievement has been confirmed. Only one-fifth of those surveyed (19%) had seen a specialist/headache centre for a specific clinical diagnosis. That confirmed to what extent the headache is underestimated. Only 27% of the students usually use drugs. In the literature, it is frequent that the students do not adhere to specific therapies and this data also concerns those who attend clinical faculties [3].

The literature supports the need to promote public health policies and strategies to help reduce the disability and burden associated with habitual headaches among young people.

The means used in this study are very satisfactory for that: to contact students through young people like them and through social networks obtained a broad acceptance of the study and perhaps offers a method that is likely to be utilized in the future. Students presenting habitual headaches must be aware of their condition and the need to search for an appropriate diagnosis and treatment. The compilation of a questionnaire like this can make people reflect on their own disorder and encourage the young persons who suffer from habitual headaches to consider the possibility of being followed up at a headache centre.

The study also demonstrates how the online interview tool is well received among young people. This method is likely to be used in the future to make students aware of their condition and of the need to search for an appropriate diagnosis and treatment.

## Declarations

**Conflict of interest** The authors declare no competing interests.

**Ethical approval** The authors declare No competing interests and grant informed consent.

**Informed consent** The authors grant informed consent.

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