

# Anxiety, sleep quality and stress in college students during the COVID-19 confinement

## Ansiedad, calidad del sueño y estrés en estudiantes universitarios durante el confinamiento por COVID-19

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### SUMMARY

*Confinement by COVID-19 impacted the physical, mental and psychological health of the Colombian population and other countries, increasing the rates of stress, anxiety, and insomnia, which is an alert to mental health professionals. Therefore, this article aims to analyze the impact of confinement due to COVID-19 on the quality of sleep, anxiety, and stress in young people, with the main objective of observing the relevant changes perceived in the population as well as significant aspects in mental health that may affect the population, through a review of the literature associated with the problem posed and analysis of variables in them, from different scientific sources.*

**Keywords:** isolation, COVID-19, anxiety, insomnia, stress.

### RESUMEN

*El confinamiento por el COVID-19 impactó la salud física, mental y psicológica de la población colombiana y de otros países, aumentando los índices de estrés, ansiedad e insomnio, lo que es una alerta para los profesionales de la salud mental. Por ello, este artículo pretende analizar el impacto del confinamiento a causa del COVID-19 en la calidad del sueño, la ansiedad y el estrés en los jóvenes, con el objetivo principal de observar los cambios relevantes percibidos en la población, así como aspectos significativos en la salud mental. que puedan afectar a la población, a través de una revisión de literatura asociada al problema planteado y análisis de variables en las mismas, provenientes de diferentes fuentes científicas.*

**Palabras clave:** Aislamiento, COVID-19, ansiedad, insomnio, estrés.

DOI: <https://doi.org/10.47307/GMC.2022.130.s3.23>

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**Recibido: 12 de abril 2022**  
**Aceptado: 23 de junio 2022**

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## INTRODUCTION

The pandemic caused by the new coronavirus (COVID-19), which was reported by the World Health Organization (WHO) in March 2020, and which spread to every country, modifying the lifestyle of the population, who, in view of this situation, adopted biosecurity and isolation measures (Paricio and Pando) (1). The respective public health institutions took actions intending to prevent the spread of the virus, creating new regulations, which affect social, educational, family, and health aspects of citizens, and it is here where attention is directed especially to mental health, an issue that has been observed during the confinement; various groups of people between the stages of childhood, adolescence, young adulthood, adulthood and the elderly, have possibly presented stressors, fear, anxiety, anger, grief, stress, and difficulties in the quality of sleep.

Some cases of contagion by COVID-19 can occur because a person expels small particles of infected saliva and these come into contact with other people, as well as when a surface on which the virus is touched by hands, which are carried to the face, mouth, nose or eyes enter the body of another individual, therefore isolation and disinfection are essential to avoid contagion (Mayo Clinic) (2). Therefore, according to authors such as Gualano et al. (3), and Diz et al. (4), it can be inferred that the use of restrictive measures to counteract the COVID-19 pandemic has caused significant alterations in the quality of sleep, increasing the symptoms of stress as well as the incidence of insomnia, depression, and anxiety.

Especially young adults affected by social distancing, isolation, or the same lockdown by COVID-19, suffered a profound lifestyle change since individuals at this stage of the life cycle interrupted academic activities, sports, recreation, and leisure, generating their feelings of irritability, stress, anxiety, and difficulty in falling asleep, moving to risk behaviors such as domestic violence, cases of physical or sexual abuse, as indicated by Espada et al. Therefore, they are the ones who have been perceived as more predisposed to social confinement, due to possible emotional alterations that they experience in such a situation, such as fear, uncertainty, anguish,

among others, plus the lack of interest in their studies, recreational activities and family life, which can cause possible psychological disorders (Atencio et al.) (5).

In addition, it is important to investigate the variables of sleep quality, anxiety, and stress in the population at this point, especially when social isolation was implemented, focusing on individuals who meet the ages that involve the stage of the life cycle known as youth or young adulthood, since mainly, due to the lack of departmental (Norte de Santander Colombia) or international bibliographic and research content, it is hard to find research products on these topics, highlighting the alterations that it has caused in mental health, as reported in some national and international institutions on the consequences of isolation due to the pandemic, as well as the interest for the guild of psychology and psychiatry.

Given the above, a premise is proposed on the main problems seen in the isolation by the COVID-19 associated with the variables to be studied, followed by current published research, which has references of relevance as relevance to the topic to be studied, then thanks to the bibliographic collection in which the investigative background at the municipal, national and international level is exposed in greater detail on the impact of the confinement of the COVID-19. This study desires to describe the consequences found in the quality of sleep, anxiety, and stress in such published material, to then state the various theories found in the quality of sleep, anxiety, and stress in the published material, national and international on the impact of the confinement of COVID-19, to then describe the consequences found in the quality of sleep, anxiety, and stress in such published material, to then state the various theories that frame the research to be proposed and likewise, the methodology applied.

## METHOD

As pointed out by the methodology in a review article is intended to summarize, collect and analyze information on a particular topic, allowing the consolidation of multiple scientific research articles, allowing such analysis, as well as creating conclusions of scientific evidence in

an objective manner (FESC) (6), selection of the information according to prior compliance with the necessary characteristics being the selection criteria proposed in this article such as topics associated to Anxiety, Sleep Quality and Stress these in the period of confinement by COVID-19; affectation by confinement in young people; national or international studies; studies belonging to indexed magazines; period of confinement and isolation from 2020 to the present, with a final total of 10, with previous revision of other writings that show a minor relationship with the topic to be treated.

### Anxiety

For Rodríguez et al. (7) in their article *Ideación suicida, ansiedad, capital social y calidad de sueño en el transcurso del primer mes de aislamiento* establish as objective to explore suicidal ideation, anxiety, social capital and sleep quality in Colombian men and women in the first month of isolation by COVID-19 pandemic, with an exploratory and online research design, whose sample of 484 people, where four Okasha scales were used in suicide theme (Okasha. IS), Zung Self-Rating Anxiety Scale-15 (SAS-15), The Personal Social Capital Scale (PSCS) and the Pittsburgh Sleep Quality Index (PSQI). The instruments were digitized (Online) and provided median social networks (WhatsApp, Facebook, and E-mail).

The following results were obtained with these applications: an index of suicidal ideation of 40 % between mild and severe, 97 % of mild to severe anxiety, 81 % in relation to regular person social capital, and 23 % with poor quality of sleep ( $p < 0.01$ ) and with PSCS ( $p < 0.05$ ), sex was positively correlated with SAS-15 ( $p < 0.01$ ) and PQSI ( $p < 0.05$ ). The authors found a significant difference in men, as opposed to women, in relation to the various age groups, which led to the conclusion that women are more likely to experience anxiety and suicidal ideation associated with physical isolation, with low social capital, causing possible major psychological problems. Finally, it was recommended by the study to make it clear that the distancing is physical, but it does not mean that it is social isolation, relating it to the fact that social relationships can be maintained from

different levels than physical contact. Taking into account the above, it is observed that one of the variables of interest in Colombia in the first months of isolation by COVID-19 was the quality of sleep people; it should be added that there are other processes and factors associated with the alterations caused by preventive confinement, one of them being alterations in the quality of sleep.

According to Baysan et al. (8), the lockdowns have had a significant impact on the health of people from an international perspective. Thus, they studied the mental health of people in the United States, evaluating characteristics of anxiety and depression, allowing them to determine if these are related to the appearance of new cases in their research effects of the COVID-19 pandemic on mental health (anxiety and depression symptoms) in the United States of America, conducting a retrospective study obtaining data from 1 351 911 adults. According to these authors, new cases of COVID-19 were positively correlated with the mean of anxiety, depression, and anxiety or depression symptomatology, as indicated by the data  $r = 0.858$ ,  $r = 0.710$ , and  $r = 0.887$ ;  $p < 0.001$ , data  $r = 0.858$ ,  $r = 0.710$ , and  $r = 0.887$ ;  $p < 0.001$ .

From another point of view, Monterrosa-Castro et al. (9) developed their studies in pandemic regarding the possibility of the presence of symptoms related to generalized anxiety in pandemic and medical performance in general practitioners in the Colombian Caribbean, of cross-sectional type, specifying thoughts, feelings, perceptions, as well as subjectivities. They found that 38.4 % presented generalized anxiety disorder and more than half of them indicated feeling fear or dread of COVID-19. To this, it is possible to associate the symptoms, discomfort in the pandemic, work disillusionment, and perception of discrimination by other individuals towards themselves.

### Sleep Quality

According to Monterrosa and Monterrosa (9) in their paper *Prevalencia de problemas de sueño en mujeres climatéricas durante la pandemia COVID-19* to build an approach to the prevalence of sleep problems (PDS) in Colombian climacteric women during the COVID-19 pandemic, a cross-sectional methodology study

that corresponds to a research project on quality of life in menopause under the pandemic where Colombian women and residents in Colombia from 40 to 50 years of age participated in the study in June 2020 anonymously and voluntarily, using the Menopause Rating Scale tool, focusing especially on the third item where the PDS were identified. Likewise, sociodemographic differences were identified, the presence and severity of the PDS as the menopausal status, with which to use to develop quantitative research with descriptive statistics. A sample of 984 women was obtained with a median age of 47.0 (RIC: 42.0 - 53.5) years; 84.5 % of the women were mestizo, 13.7 % Afro-descendants, and 1.7 % indigenous.

In total, 64.5 % were premenopausal; In turn, 39.3 % were in their postmenopausal state, 70 % lived in the Caribbean region of Colombia, and it was found that 637 (64.7 %) of the participants had PDS and 112 (11.3 %) of the participants presented severe PDS. 65.1 % of postmenopausal women reported PDS and 10.1 % had severe PDS. This led the authors to conclude that PDS could be a common difficulty in women in the premenopausal and postmenopausal states during the pandemic. Therefore, this situation should be explored in the gynecological consultation to access prevention services.

In relation to the present investigation, it can be observed how the female population of older ages in their premenopausal or postmenopausal state, can present sleeping problems. This subject is being investigated in the present study but regarding young people, unlike the first investigation at the national level where it is pointed out that women do not present symptoms of stress as they get older; problems are mostly perceived in the quality of sleep, as shown by these authors.

On the other hand, young people were not only influenced by the confinement caused by the pandemic but also by children, as their sleep habits changed. In fact, Rosero and Ortega (10), study the variable of sleep quality in children under the COVID-19 lockdown, which modified mental health. The authors studied how confinement as a preventive measure modified sleeping habits in a sample of Colombian children.

The objective as proposed by Rosero and Ortega (10) was to determine the problems in sleeping habits and their relationship with some characteristics generated by confinement, taking a sample of 259 children aged 5 to 12 years of Colombian nationality residents of Pasto Nariño, through the application of questionnaires addressed to their parents, using the Children's Sleep Habits Questionnaire and the Ad Hoc Questionnaire to evaluate alterations in daily routines, the use of technology and the emotionality of the minors. The research had a descriptive analysis methodology for each instrument, applying an X2 test to verify the association of the variables of sex and socioeconomic level and Spearman's rho correlations between the scales.

This had as relevant results the finding that 45.5 % of boys and girls showed some sleep problems. Parasomnias and daytime sleepiness had the highest prevalence; in turn, positive correlations were found between the scores of the scales, identifying a relationship between the use of technology and emotional changes with sleep difficulties. Thus, it was concluded that indeed sleep habits have been altered due to confinement.

However, it can be observed that the sleep variable is studied in children, while we wish to work with adolescents and young adults as the confinement by COVID-19, has caused alterations in their quality of sleep which has repercussions on their mental health. Likewise, stress is given as a cause of the multiple lifestyle changes, specifically in confinement.

It is noteworthy that Medina-Ortiz et al. (11) developed their study on sleep disorders as a result of the COVID-19 pandemic through the analysis and narrative review of indexed scientific articles and databases such as PubMed, Science Direct, Scopus, and Scielo, identifying the publications where the evaluation or assessment associated with sleep disorders is performed. A total of 12 publications were identified, finding that the different studies indicate that confinement has a negative influence on sleep, in addition to finding that other factors such as stress and anxiety also have an impact on the presence of insomnia. Medina-Ortiz et al. (11) also indicate that, for public health, it is essential to maintain

adequate sleep hygiene. This would positively influence the reduction of difficulties present in chronic diseases.

Rodríguez-De Avila (12), in his article Psychological impact and sleep quality in the COVID-19 pandemic in Brazil, Colombia, and Portugal, evaluates through online questionnaires characteristics of anxiety, suicidal thoughts, and sleep quality in 988 people from Colombia, Brazil, and Portugal, using a non-probabilistic snowball sampling in virtual platforms such as Facebook, email, WhatsApp and Google Forms. It was identified that 85.5 % of the participants had moderate anxiety; in terms of suicidal thinking the results ranged from 57 % to 31.1 % in moderate levels, 53.5 % had poor sleep quality and 32.5 % had a possible presence of a sleep disorder.

### Stress

During the confinement due to COVID-19, children, adolescents, young people, adults, and older adults, according to Muvdi et al. (13), indicate that they experienced a variety of emotions, behaviors, and physical or mental symptoms, among others. In this case, the research *Estrés percibido en estudiantes de enfermería durante el confinamiento obligatorio por COVID-19* aimed to determine the level of stress perceived in the period of confinement by COVID-19 in nursing students of a university of the Caribbean region of Colombia. It used a methodology of analytical study, with a sample of 398 students of a university on the Colombian Caribbean coast, using two instruments; one to obtain sociodemographic information and the scale called Perceived Stress created by Cohen and Williamson in 1988, which evaluates the perception of psychological stress and everyday situations that may be perceived as stressful, which was validated in Bucaramanga, Colombia, with a cross-sectional, analytical, quantitative research methodology.

The results were 18.83 and 5.19 in average stress, which indicates a moderate level of stress, being lower in individuals 30 to 35 years of age, with a score of (0.0), in relation to females. Women presented a slightly decreased level of stress, in parallel with men with a score of

(0.04). Finally, the people with higher levels of stress were people residing in rural areas, as conclusions mention that younger males stand out with higher levels of stress in comparison to women, who show lower levels of stress as they age. It is worth mentioning that this research was used as a variable to investigate the “stress in confinement by COVID-19”, which is related to the research that was developed with young university students in the psychology program of the Simon Bolivar University in Cucuta, where the need to study the levels of stress in young people during a pandemic is observed.

On the other hand, in the research conducted in Peru by Marquina (14), he proposes to describe the self-perception of stress in isolation in times of COVID-19. To achieve this, he proposed a quantitative methodology of cross-sectional type, with a sample of 1,420 people; within the data obtained, it was found that the population under study had high levels of stress during confinement, and women had higher stress compared to men, and those who perform work virtually and those who are between 20 and 30 years old. With respect to the stress variable, the psychological responses to the pandemic are classified as *very high*, due to the concern of acquiring the virus and suffering from the disease caused by it.

Ozamiz et al. (15) analyzed the relationship between the levels of stress, anxiety, and depression in the initial stage of the COVID-19 outbreak. To achieve this, an exploratory-descriptive cross-sectional study was carried out with a sample of 976 individuals, using the DASS-21 (Depression, Anxiety, and Stress Scale). The evaluation instrument used in the research was provided through social networks and e-mail.

The results of this research showed that 81.1 %, representing 792 people were women and 18.9 %, 184 people, were men: 56.5 % were between 18 and 25 years of age for a total of 551 people, while those aged 61 or more represented only 8 %. Stress, anxiety, and depression increase in the high-risk population, as well as the essential preparation to face difficult situations or confinement again, on the other hand, it was evidenced that psychological well-being is essential to face changes in daily life due to isolation.

## CONCLUSIONS

This study carried out the collection of different references in which variables or categories such as anxiety, stress, and sleep quality were consulted, where different populations in Colombia and abroad were addressed, which had in common the social isolation by COVID-19. This situation affected different populations significant level, according to what was collected in the various investigations mentioned above, where it is highlighted through statistical evidence, percentages, or through the fulfillment of the hypotheses, it is possible to perceive the negative damage caused by isolation by COVID-19 in the female population as well as in young people or young adults, who are perceived with higher rates of insomnia, high levels of stress and anxiety, which has caused damage to healthy living habits, as well as mental health.

Therefore, it has generated the interest to continue with research on mental health issues in populations at ages that involve the stage of adolescence, young adulthood, and women, who have highlighted a greater impact on variables such as sleep quality, anxiety, and stress in a time of social isolation by COVID-19, including an increase in possible symptoms that can become over time in mental disorders that can cause consciences, if not prevented with the support of professionals in psychology and psychiatry.

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