

**ACADEMIC PERFORMANCE DURING THE COVID-19 PANDEMIC: A
SYSTEMATIC REVIEW**

**DESEMPENHO ACADÊMICO DURANTE A PANDEMIA DA COVID-19: UMA
REVISÃO SISTEMÁTICA**

**RENDIMIENTO ACADÉMICO DURANTE LA PANDEMIA DE COVID-19: UNA
REVISIÓN SISTEMÁTICA**



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ABSTRACT: The objective of this study was to investigate the impact of social isolation on the academic and psychological performance of university students in on-line classes during COVID-19. A systematic review was carried out with searches in five electronic databases. Of 187 studies identified, seven were included for the qualitative synthesis. Students and teachers expose challenges experienced in this pandemic period, such as lack of infrastructure and technological resources, socioeconomic difficulties and psychological factors. However, given the impossibility of face-to-face classes, there is a positive evaluation of the universities' decision, but most of the target audience is looking forward to fully face-to-face academic feedback.

KEYWORDS: Anxiety. Academic Performance. Depression. Education distance. COVID-19.

RESUMO: O objetivo deste estudo foi investigar o impacto do isolamento social no desempenho acadêmico e psicológico de universitários em aulas on-line durante a COVID-19. Foi realizada uma revisão sistemática com buscas em cinco bases de dados eletrônicas. De 187 estudos identificados, sete foram incluídos para a síntese qualitativa. Alunos e professores expõem desafios vivenciados neste período pandêmico, como falta de infraestrutura e recursos tecnológicos, dificuldades socioeconômicas e fatores psicológicos. Entretanto, frente à impossibilidade de aulas presenciais, há uma avaliação positiva da decisão das universidades, mas a maior parte do público-alvo anseia pelo retorno acadêmico totalmente presencial.

PALAVRAS-CHAVE: Ansiedade. Desempenho Acadêmico. Depressão. Educação a Distância. COVID-19.

RESUMEN: El objetivo de este estudio fue investigar el impacto del aislamiento social en el rendimiento académico y psicológico de estudiantes universitarios en clases en línea durante el COVID-19. Se realizó una revisión sistemática con búsquedas en cinco bases de datos electrónicas. De 187 estudios identificados, siete se incluyeron para la síntesis cualitativa. Estudiantes y docentes exponen desafíos vividos en este período de pandemia, como la falta de infraestructura y recursos tecnológicos, dificultades socioeconómicas y factores psicológicos. Sin embargo, ante la imposibilidad de las clases presenciales, se valora positivamente la decisión de las universidades, pero la mayor parte del público objetivo espera con ansias una vuelta académica totalmente presencial.

PALABRAS CLAVE: Ansiedad. Rendimiento Académico. Depresión. Educación a distancia. COVID-19.

Introduction

At the beginning of 2020, the World Health Organization (WHO) declared the *Coronavirus Disease 2019* (COVID-19) pandemic, an acute respiratory infection whose main initial symptoms are fever and cough. The disease can worsen and have lethal consequences, especially in individuals considered to be at risk. In this sense, the biggest concern about the disease is its high transmissibility, with social isolation being instituted to avoid mass contamination and the overload of infected patients in hospitals (ASSELAH *et al.*, 2020).

With social isolation, the face-to-face activities of more than 90% of students around the world were paralyzed (UNESCO, 2020). Therefore, public and private higher education needed to seek distance educational strategies, aiming to continue learning during the pandemic (GUSSO *et al.*, 2020).

In addition to remote teaching, the COVID-19 pandemic has caused negative consequences for individuals. High rates of unemployment, poverty and financial losses are frequent concerns in the economic sector. The mental well-being of the population is also affected, as quarantine is associated with sensations such as loneliness, anger and boredom (DUARTE *et al.*, 2020).

From this perspective, rates of anxiety, suicide, depression and use of alcohol and other drugs increased during this period, compared to previous data. Furthermore, the possibility of becoming infected and transmitting the disease brings insecurities and fears to citizens, alleviating the discomfort caused by social isolation (HWANG *et al.*, 2020).

When entering a university, students need to adapt to the new conditions imposed by higher education. This transition is made up of several stressful factors, which generate feelings of anguish, despair and stress. This situation imposes harm on several areas of learning, imposing barriers to the academic performance of undergraduates (FONSECA *et al.*, 2019).

Therefore, the combination of hardships arising from the pandemic period and the adversities common to university students can have significant impacts on the student performance of these individuals. For this reason, the objective of this Systematic Review (RS) was to investigate the level of depression, loneliness, stress and anxiety associated with the academic performance of university students in online classes during the Covid-19 pandemic.

Methodology

Protocol and registration

This RS was described following the PRISMA checklist (PAGE *et al.*, 2021). A protocol based on the Reporting Items for Systematic Reviews and Meta-Analysis Protocols (PRISMA-P) (SHAMSEER *et al.*, 2015), was developed and registered in the Prospective Register of Systematic Reviews (PROSPERO; Center for Reviews and Dissemination, University of York; and at the National Institute for Health Research) (BOOTH *et al.*, 2011) under number CRD42021231455.

Eligibility Criteria

The inclusion criteria were based on the acronym PECOS (Population, Exposure, Comparator, Outcome and Types of studies) (De Luca Canto, 2020), in which: P) University students in the pandemic period of both sexes and without age range limit; E) Remote learning and social isolation; C) not applicable; O) academic performance of university students during the COVID-19 pandemic period with remote classes; and S) Observational studies. The studies were included and identified by clinical criteria in university students taking remote classes during the COVID-19 pandemic period, regardless of gender and age, with quantitative data such as level of depression, loneliness, stress, anxiety related to academic performance. As in previous studies, depression, loneliness, stress, anxiety and academic performance were defined as stressful factors that, together, can trigger low academic performance for students, especially in the midst of social isolation (MAIA; DIAS, 2020). No language restriction criteria were applied and the publication time was set at the period of 2019 and 2020, following the start of the global COVID-19 pandemic. The following exclusion criteria were applied: 1) Did not report academic performance; 2) Inadequate target audience; 3) Secondary studies (review articles, letters to the editor, books, book chapters, etc.); 4) Articles without complete data; 5) Studies with other types of design, non-observational and 6) Did not report the relationship between academic performance and the COVID-19 pandemic. A literature search was carried out on February 18, 2021.

Search strategy and information sources

Individual search strategies with terms such as “Academic Performance”, “COVID-19”, “Universities” and their synonyms were carried out for each of the five electronic databases: Latin American and Caribbean a Health Sciences (LILACS), Livivo, PubMed (MEDLINE), Scopus, and Web of Science. Additional gray literature searches were conducted on OpenGrey. Reference lists of included articles were manually searched and subject matter experts were contacted to recommend additional studies to be included (GREENHALGH; PEACOCK, 2005). References and duplicate articles were managed by the software (EndNote X7, Thomson Reuters) (OUZZANI *et al.*, 2016).

Study selection

A two-phase selection process was conducted by two independent reviewers (LSFM; GTdeA). In phase I, titles and abstracts were screened using the online software program (Rayyan, Qatar Computing Research Institute) applying the eligibility criteria. In phase II, the same reviewers applied the eligibility criteria after reading the remaining full articles. In both phases, any discrepancies were resolved by consensus and discussion with a third reviewer (APE) who was involved to make a final decision, if necessary. If the minimum data for inclusion were not clear or missing, contact would be made with the corresponding authors to clarify the question and include or exclude the study for analysis.

Data collect

Relevant data from the included studies were independently extracted by reviewers (LSFM; GTdeA) with an extraction form and verified in a consensus discussion to ensure the integrity of the collected data. From the included studies, the following information was extracted: authors, country and year of publication, sample size, age group, level of depression, loneliness, stress, anxiety and academic performance.

Assessment of the individual methodological quality of the included studies

The methodological quality of the selected studies was assessed using the Joanna Briggs Institute (JBI) critical appraisal checklist for observational studies, using the checklist tool previously made available by the JBI (BRIGGS, 2017). Independently, the two reviewers (LSFM; GTdeA) evaluated the included studies and all decisions about the scoring system were agreed before the evaluation. The methodological quality of the studies was characterized according to the percentage of “yes” answers, being high when the study had up to 49% of a “yes” score, moderate when the study had 50% to 69% of “yes”, and low when the study had more than 70% “yes” scores. Additionally, the Robvis (Risk-Of-Bias Visualization) online tool (National Institute for Health Research) was used to generate the figures.

Data analysis

A qualitative analysis of the data was performed.

Results

Of a total of 186 studies identified in database searches, 155 remained after removing duplicate records. After phase I of title and abstract selection, 35 full-text studies were read in phase II. Then, seven studies were included for qualitative synthesis (SCHLENZ *et al.*, 2020; KIM *et al.*, 2020; GOMEZ; MAGID, 2020; PELOSO *et al.*, 2020; RADU *et al.*, 2020; MORCILLO-RAMOS *et al.*, 2020; WILCHES; DÍAZ; AVILA, 2020) (ANNEX 1).

Of the seven studies included in this SR, two were carried out in Brazil (SCHLENZ *et al.*, 2020; PELOSO *et al.*, 2020), one in South Korea (KIM *et al.*, 2020), one in the United States (GOMEZ; MAGID, 2020), one in Romania (RADU *et al.*, 2020), one in Spain (MORCILLO-RAMOS *et al.*, 2020) and one in Bolivia (WILCHES; DÍAZ; AVILA, 2020). All studies included university students from their own countries.

The sample sizes ranged from 32 to 704 individuals, while the sum of the number of students included in six of the seven studies is 1,540 (SCHLENZ *et al.*, 2020; KIM *et al.*, 2020; GOMEZ; MAGID, 2020; PELOSO *et al.*, 2020; RADU *et al.*, 2020; MORCILLO-RAMOS *et al.*, 2020), one of the studies did not mention the number of participants (WILCHES; DÍAZ; AVILA, 2020).

In three of the studies that presented sex information, female prevailed, 91% (SCHLENZ *et al.*, 2020; PELOSO *et al.*, 2020; MORCILLO-RAMOS *et al.*, 2020). Age had a mean of 23.09 years with a standard deviation of 6.28 years in the study by Peloso *et al.* (2020); in another study, ages ranged from 18 to 50 years with an average of 25.3 (MORCILLO-RAMOS *et al.*, 2020) and in the study by Wilches, Díaz and Avila (2020) ages ranged from 20 to 32 years. The other studies did not present this information.

The studies included evaluated different aspects of remote classes during the COVID-19 pandemic involving the online learning method and students. Three studies evaluated undergraduate healthcare students on their perspectives, concerns, experience on implementing learning, student satisfaction, academic performance and preference for online or in-person teaching methods due to COVID-19, through questionnaire (SCHLENZ *et al.*, 2020; KIM *et al.*, 2020; PELOSO *et al.*, 2020). In the study by Gomez & Magid, 2020, the objective was to describe the strategies and tools used to quickly transform an elective course for in-person radiology medical students into an interactive and comprehensive remote learning experience, the effects on course enrollment and the lessons learned. In another study, the quality of the educational process on online platforms in the context of the COVID-19 pandemic was evaluated, using a questionnaire, among undergraduate and master's students in the areas of engineering and health (RADU *et al.*, 2020).

In the study by Morcillo-Ramos *et al.* (2020), the focus was on evaluating care for others, uncertainty, time, teaching methodologies, context of confinement, additional difficulties and in-person teaching. In another study that evaluated civil engineering graduates, data was collected on socioeconomic information and aspects related to the use of online tools and their potential impact on the educational process (WILCHES; DÍAZ; AVILA, 2020).

Four of the included studies were carried out using online questionnaires that were sent via email or *WhatsApp* (SCHLENZ *et al.*, 2020; KIM *et al.*, 2020; GOMEZ; MAGID, 2020; WILCHES; DÍAZ; AVILA, 2020). Two studies used Google Forms (PELOSO *et al.*, 2020; RADU *et al.*, 2020) and one study was carried out through semi-structured interviews, with thematic analysis using the COREQ scale (Consolidated Criteria For Reporting Qualitative Research) (MORCILLO-RAMOS *et al.*, 2020).

Among the topics evaluated, academic performance considered unchanged, within normal limits, for the majority of students evaluated in the studies by Kim *et al.* stands out. (2020) and Gomez and Magid (2020). However, in the study by Wilches, Días and Avila

(2020), the majority of students rated their academic performance as negative, due to the poor quality of online teaching.

The lack of motivation was highlighted among the majority of students in the article by Radu *et al.* (2020). However, 50% of respondents (SCHLENZ *et al.*, 2020) and the majority of individuals (KIM *et al.*, 2020) reported that online teaching motivated them to learn and that they were satisfied. Females are more motivated (SCHLENZ *et al.*, 2020).

However, most studies pointed out that online teaching for theoretical activities was a good option for the moment and that it could continue (SCHLENZ *et al.*, 2020; KIM *et al.*, 2020; PELOSO *et al.*, 2020; RADU *et al.*, 2020). However, most students do not feel prepared for the practical part of their courses (SCHLENZ *et al.*, 2020; PELOSO *et al.*, 2020), and some students prefer face-to-face teaching (MORCILLO-RAMOS *et al.*, 2020; WILCHES; DÍAZ; AVILA, 2020). The little interaction between teachers and students was also cited (KIM *et al.*, 2020; RADU *et al.*, 2020), as well as the degradation of physical and mental health (RADU *et al.*, 2020); anxiety and fear were present in less than half of the students in the Peloso *et al.*, 2020 study, and the minority did not present difficulties (PELOSO *et al.*, 2020). In one study, the increase in the number of enrollments was pointed out due to the fact that the modality is online (GOMEZ; MAGID, 2020). The characteristics of the individual studies are presented in ANNEX 2.

Five of the included studies were considered to have a moderate methodological quality (KIM *et al.*, 2020; GOMEZ; MAGID, 2020; RADU *et al.*, 2020; MORCILLO-RAMOS *et al.*, 2020; WILCHES; DÍAZ; AVILA, 2020), while one had a low risk of bias (SCHLENZ *et al.*, 2020) and another high risk (PELOSO *et al.*, 2020). The *checklist* questions (7, 9 and 10) about the researcher's influence on the research and vice versa, ethical evidence and conclusions bringing the researchers' opinion not based on results, were considered high risk in the assessment of methodological quality, as the studies provided vague information about these issues (Figure 2A).

Due to the low number of studies with separate information on the impact of the COVID-19 pandemic on academic performance and the level of anxiety, loneliness, depression, and stress in university students in online classes, meta-analyses were not performed.

Figure 1 – Summary of risk of bias, as assessed by the Joanna Briggs Institute Critical Review Checklist. Authors' judgments for each included study (generated using Review Manager 5.4 software, The Cochrane Collaboration)

	1	2	3	4	5	6	7	8	9	10
(A) GOMEZ;AZADI;MAGID, 2020	+	+	+	+	+	+	+	+	-	+
KIM et al, 2020	+	+	+	+	+	+	-	+	+	-
MORCILLO et al, 2020	+	+	+	+	+	+	-	+	+	+
PELOSO et al, 2020	+	+	+	+					+	
RADU et al, 2020	+	+	+	+	+	+	+	+	-	+
SCHLENZ et al, 2020	+	+	+	+	+	+	+	+		+
WILCHES; DÍAZ;AVILA, 2020	+	+	+	+	+	+	+	+	-	+

Source: Prepared by the authors

Discussion

The present study aimed to investigate the level of depression, loneliness, stress and anxiety associated with the academic performance of university students in online classes during the COVID- 19 pandemic, using the systematic literature review method, which allows investigating what was published in national and international literature, using systematized strategies for searching, including and evaluating results (GALVÃO; RICARTE, 2019).

The pandemic caused by the virus had important impacts on education and, in particular, on higher education. The global demand for adaptation of universities amid the Sars-Cov-2 outbreak and the need for social isolation led to the practice of remote teaching and distance education (EAD) in the daily lives of academics (FAVERO; FERREIRA; GOIS, 2020).

Furthermore, associated with the stressful factors caused by the transition between in-person classes and remote classes, the pandemic directly impacts emotional issues, such as fear and insecurity, causing mental suffering in young adults. In this context, it is observed that, in addition to the need for strategies to mitigate the impacts caused by distance learning, university students face feelings of loneliness, anguish and lack of hope. It is also worth highlighting that the beginning of social isolation corroborates pre-existing problems, exacerbating psychological symptoms that can result in depression and anxiety (SHANAHAN *et al.*, 2020).

Schlenz *et al.* (2020) evaluated the perspective of students and teachers regarding the implementation of remote teaching in the dentistry degree at the University Giessen, in Germany, in which they concluded that students and teachers showed a positive perspective on

remote teaching, as the majority of students agreed that online learning was well structured, enabling them to follow the teaching content, without prejudice to sound and image problems, being a good alternative in the midst of the COVID-19 pandemic. Corroborating with Asiry (2017), in which students evaluated online teaching as a useful resource that complements academic training in dentistry, although before the pandemic, virtual teaching was already presented as an additional resource for graduation. However, in the current context, remote teaching presented itself as a great challenge for academics and teachers, given the pandemic condition and uncertainties regarding the future, remote teaching became necessary and challenging.

The study by Peloso *et al.* (2020) assessed the concerns of health students regarding the use of resources for distance learning at a private university in Brazil. 704 students participated in the survey, 48.2% reported being anxious and 19.5% afraid of having the disease caused by SarsCov-2. Furthermore, 51.4% agreed with the practice of remote teaching, and stated that the teaching was consistent with the activities and learning. It is observed that even in the face of the challenging scenario, online teaching was a resource that enabled the link between academics and the university, allowing academic performance in the midst of the health crisis, as presented by Hoffmann *et al.* (2020), in which he discusses the importance of virtual tools and how they are important structural and fundamental pillars for the current reality.

Morcillo *et al.* (2020) analyzed the experiences and expectations of undergraduate and postgraduate nursing students at public universities in Spain, conducting interviews with 32 participants. The authors emphasize that an important limitation of the study is the fact that the results are aimed at the first month of social isolation, however, the students already had recurring concerns, such as the uncertainty of practical classes, concern about the limitations imposed by teaching distance as well as less interaction with teachers and also time management. Structural planning of activities carried out remotely is extremely important for good academic development, as it allows for better routine management. There is also a need for good interaction between academics and teachers, given the importance of didactic adjustments and technological resources to maintain the quality of teaching amid the pandemic (RIES; ROCHA; SILVA, 2020).

Gomez *et al.* (2020) bring the experiences provided by the implementation of online classes for radiology students, as well as the strategies used. The authors consider the transition to remote activities a learning opportunity for academics, which they also evaluated as a positive experience. In a previously carried out study, this situation is also seen in an opportune

way, as the authors note remote teaching as a driver of more horizontal relationships between students and teachers, which increases the bond and provides an environment with higher quality teaching. In this way, communication is also more efficient, as the technological resources used, such as *WhatsApp*, facilitate contact between students and also with teachers (DUTRA; GUIMARÃES; MORAES, 2021).

In this study, Radu *et al.* (2020) considered student assessment as a priority to measure the quality of the remote educational process. Therefore, students at a university in Romania believe that the institution's attitude towards the obstacles created by social isolation was satisfactory. However, some points are critical for complete learning, such as the lack of face-to-face communication between teachers and students, infrastructure and socialization. Furthermore, there is a failure to guarantee health, especially mental health, for students amid the pandemic. It is interesting to point out that students perceive marked sedentary behavior, which had previously been demonstrated in the literature by Leitão *et al.* (2021), who carried out a study with 115 students. Of these, the most common reasons for not exercising during social isolation are discouragement and fear of contracting COVID-19. According to the World Health Organization, at least 150 minutes of daily physical activity is recommended to ensure physical and mental well-being. In this sense, around 85% of those interviewed stopped physical activities during the pandemic, which contributes to the mental exhaustion reported by the university students participating in the study by Radu *et al.* (2020).

The study by Kim *et al.* (2019) reveals the authors' experiences with online classes in Korea, comparing student and teacher satisfaction. It is observed that there is a preference among students in relation to remote teaching, which contrasts with the desire of teachers to return to in-person teaching after the pandemic. Another relevant factor is that subjects with a higher percentage of practice, such as Anatomy, saw a drop in academic performance during online classes. Therefore, it is important to highlight that strategies were created during this period with the aim of promoting knowledge at a distance. As examples, social media such as Instagram (MENESES *et al.*, 2021) and virtual games (CLEBIS *et al.*, 2021) can be used to assist in the teaching-learning process by stimulating the student's ability to adapt to remote teaching.

Wilchez, Diaz and Avila (2020) demonstrated in their study the impact of online tools on the academic teaching of undergraduate Engineering students at a public university in Colombia. The majority of study participants report that the quality of teaching was harmed by remote teaching (71%). Furthermore, the authors, after analyzing the data, indicate

socioeconomic barriers to digital access, as some students do not have computers (34%) and a significant number do not have an effective internet connection speed (81%). In their article, Freitas *et al.* (2021) state the problem, as they describe the COVID-19 virus as a cause of alleviating pre-existing inequalities in society, highlighting the socioeconomic exclusion of students who do not have access to the internet and/or adequate conditions for home study.

Therefore, it becomes important to comprehensively investigate all structural, physical and mental health issues of academics during the period of the COVID-19 pandemic, as well as the “post-covid” consequences left in this population.

Conclusion

The social isolation imposed by the COVID-19 pandemic negatively impacted the academic performance of some university students. With remote classes, students and teachers exposed challenges experienced during this pandemic period, such as lack of infrastructure and technological resources, socioeconomic difficulties and psychological factors (stress, anxiety and loneliness). However, it is noted that, given the impossibility of face-to-face classes, there is a positive assessment of the universities' decision, but the majority of the target audience for this review was looking forward to the return to face-to-face academics and the end of distancing.

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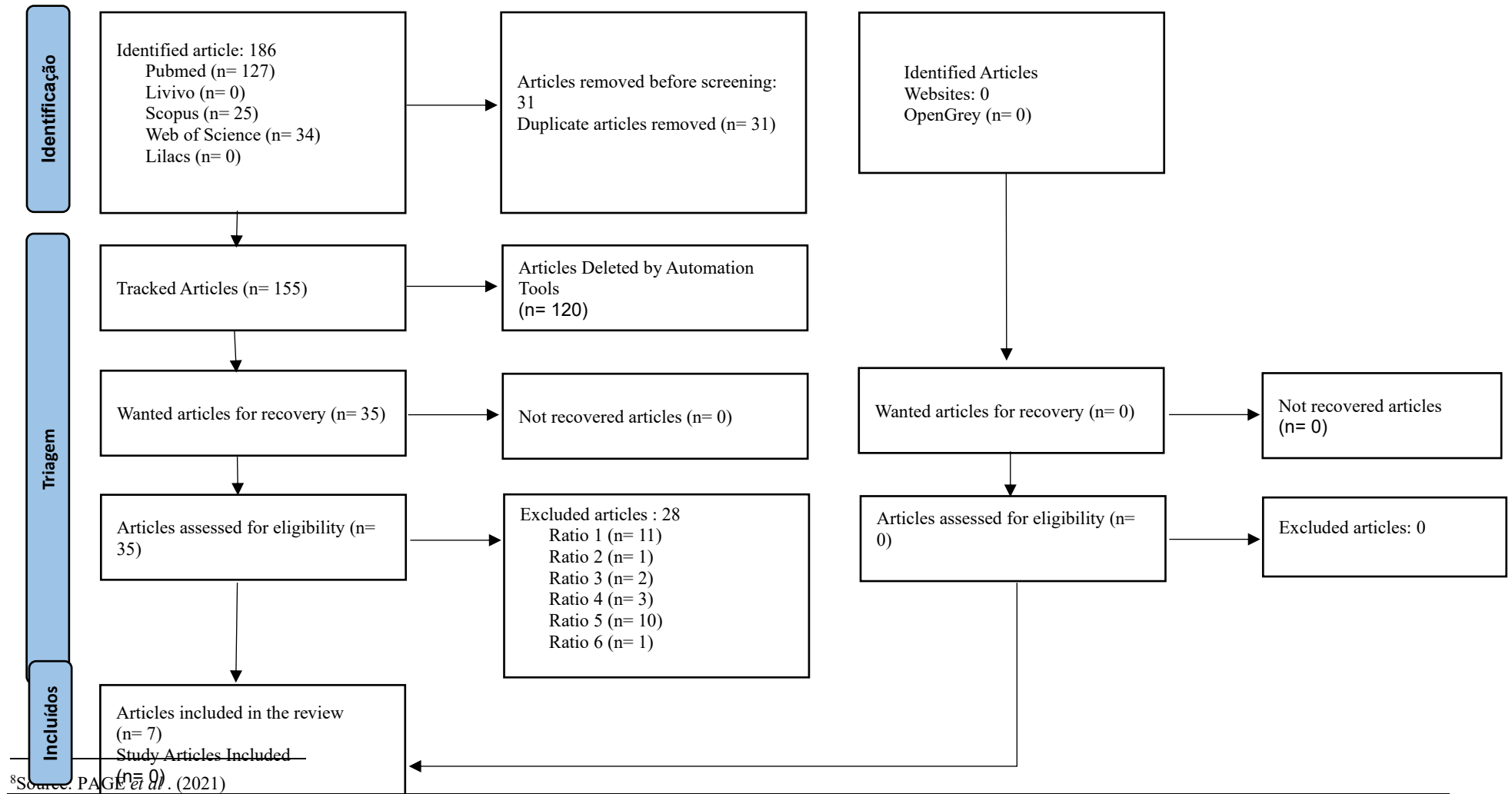
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ANNEX 1

Flow diagram that included searches of databases, records and other sources⁸



⁸Source: PAGE *et al.* (2021)

ANNEX2

Summary of the characteristics of the included studies (n=7)

Author, year of study	Type of publication and design	Population	Goals	Methods	Results
SCHLENZ, Maximilian e Amelie <i>et al.</i> 2020, Germany.	Original article and observational study	299 students and 47 teachers	Assess student and teacher perspectives on the implementation of online learning due to COVID-19 through a questionnaire survey.	Online questionnaire, regression analysis, T-test.	36.8% of students preferred “face-to-face” learning over online. “Our emphasis”.
KIM, Ju <i>et al.</i> 2020, South Korea.	Original article and observational study	318 students and 44 teachers	Report the experience of running online classes with offline clinical internship under pandemic conditions and also present data on student satisfaction, academic performance and preference.	Questionnaire, items: 1) general satisfaction with the online course, 2) satisfaction with the technical aspects of the online lectures, 3) preference for an online course, 4) strengths of the online course, 5) weaknesses of the online course and 6) any other comments or suggestions. Students were asked to respond using a 5-point scale ranging from 1 (very dissatisfied) to 5 (very satisfied).	Most students wanted to keep the course online after COVID-19 ended. In contrast, only 13.6% of teachers preferred online classes and half (52.3%) wanted to return to offline courses. With the introduction of online classes, students' academic performance did not change significantly in four subjects but decreased in two subjects. “Our emphasis”.
GOMEZ; AZADI; MAGID, 2020, United States.	Original article and observational study	116 medical students	Describe the strategies and tools used to quickly transform an in-person radiology elective course into a comprehensive, interactive remote learning experience.	Software tools and strategies for student engagement and collaboration. Review of faculty feedback following remote course participation, as well as lessons learned from the transition to	The development of an online elective course led to a tenfold increase in student enrollment compared to traditional course offerings, providing a unique opportunity to reach large numbers of students, many of whom were in the early stages of their career in medical school.

					distance learning and its implications for future work.
PELOSO, Renan <i>et al.</i> 2020, Brazil.	Original article and observational study	704 students	Assess the concerns of higher education students in health in Brazil regarding distance learning during the coronavirus pandemic	Google Forms where survey items assessed personal information, feelings regarding the coronavirus pandemic, distance learning, and the impact of distance learning on their higher education course performance. The level of anxiety/stress due to the pandemic was assessed using a numerical rating scale.	Most students agreed with the possibility of continuing their education through distance learning, but relatively few of them liked it. Furthermore, students feared that their learning of clinical material and professional training would be jeopardized, and they feared that they would fail the academic year. “Our emphasis”.
RADU, Maria-Crina <i>et al.</i> 2020, Romania.	Original article and observational study	135 students	To present the results of a student survey carried out at the University and “Vasile Alecsandri” of Bacau, Romania, on the quality of the educational process on online platforms in the context of the COVID-19 pandemic.	A questionnaire was used as a tool. An anonymous online survey assessing students' opinions about the quality of the educational process on online platforms was created using Google Forms. The survey consisted of 12 questions that took as a starting point the public consultation of the European Commission's Action Plan for Digital Education.	The survey results highlighted that the majority of students were satisfied with the measures taken by the university during the lockdown period and with the way the teaching-learning-assessment process took place. However, some negative aspects were reported, such as: lack of adequate infrastructure for some students, less effective teacher-student communication and interaction, impossibility of carrying out practical applications, lack of socialization, lack of motivation to learn, less objective exam (e.g. possibility of cheating), possibility of deterioration of physical and mental health (for example, too much time spent in front of screens, installation of a sedentary lifestyle). “Our emphasis”.
MORCILL O-RAMOS, Antonio <i>et</i>	Original article and	32 students	Discover the learning experiences	Qualitative study, with semi-structured	The imposition of e-learning sets limitations for older students, those living

al. 2020, Spain.	observational study	and expectations about changes in education, in light of the abrupt shift from face-to-face teaching to e-learning, of nursing students enrolled in bachelor's and master's degrees at two Spanish public universities during the first month of confinement due to the COVID-19 pandemic.	interviews, with thematic analysis using the COREQ scale. In the interview, six main themes were defined: practicing care; uncertainty; time; teaching methodologies; context of confinement and additional difficulties; face to face victory.	in rural areas, with work and family responsibilities and with limited electronic resources. Online education goes beyond the continuation of in-person classes. “ Our emphasis”.	
WILCHES; DÍAZ; AVILA, 2020, Bolivia.	Original article and observational study	Civil Engineering undergraduate students	Present socioeconomic information and aspects related to the use of online tools and its potential impact on the educational process.	Questionnaire used to collect sociodemographic data, conditions of virtual education and the impact and perception of the aforementioned methodology on university students. WhatsApp and Email were used to share the questionnaire with students.	Regarding the demographic characteristics of the interviewees, it can be observed that around 76% of the students surveyed are between 20 and 23 years old, 76% come from urban areas and 24% from rural areas, 33% have their own homes and 22% from population surveyed were displaced by the violence that has devastated the country in recent years. Regarding the characterization of students and their academic conditions, it can be seen that 31% of students failed a course, 32% canceled at least one subject during their academic period and 86% of those interviewed preferred the traditional face-to-face teaching methodology. “ Our emphasis”.

Source: Prepared by the authors