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Self-evaluation of nursing students about their academic performance during the COVID-19 pandemic

Autoavaliação de estudantes universitários sobre seu desempenho acadêmico durante a pandemia da COVID-19

Autoevaluación de estudiantes universitarios con su desempeño académico durante la pandemia COVID-19

Etiane de Oliveira Freitas[a]
Nicolle Rampelotto da Silva[a]
Rosângela Marion da Silva[a]
Valquíria Toledo Souto[a]
Camila Pinno[a]
Daiana Foggiato de Siqueira[a]

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ABSTRACT

Objective: To analyze how university students self-evaluate their academic performance during the COVID-19 pandemic in a public university in southern Brazil.

Method: A cross-sectional study was carried out with 527 students of undergraduate courses in the health field. Descriptive statistical analyses and the chi-square test were performed to assess associations.

Results: For 49.5% of participants their academic performance was insufficient; for 24.1%, sufficient; 19.40%, good; 5.90% very good; and 1.10% excellent. It was found that there was an association between the variables, course (p=0.034), form of enrollment into the institution (p=0.016) and work activity (p=0.010) in academic performance during the COVID-19 pandemic.

Conclusion: Academic performance during the suspension of face-to-face classes is insufficient for many students, and groups of students from the occupational therapy course, who entered the university through the system of quotas and who work in addition to studying showed an inferior academic performance during the COVID-19 pandemic.

Keywords: Coronavirus infections. Pandemics. Academic performance. Health human resource training.

RESUMO

Objetivo: Analisar como os estudantes universitários autoavaliam o seu desempenho acadêmico durante a pandemia da COVID-19 em uma universidade pública do sul do Brasil.

Método: estudo transversal realizado por meio de um questionário *online* respondido por 527 estudantes em julho e agosto de 2020. Realizou-se análise estatística descritiva e o teste qui-quadrado para avaliar associações.

Resultados: Entre os participantes,49,5% referiram um desempenho acadêmico insuficiente,24,1% suficiente,19,40% bom,5,90% muito bom e 1,10% excelente. Verificou-se que houve associação entre as variáveis curso (p=0,034), forma de ingresso na instituição (p=0,016) e atividade de trabalho (p=0,010) e o desempenho acadêmico durante a pandemia de COVID-19.

Conclusão: O desempenho acadêmico durante a suspensão das aulas presenciais está sendo insuficiente para muitos estudantes. The occupational therapy students who entered in the university through the system of quotas and work in addition to studying had a worse academic performance during the COVID-19 pandemic.

Palavras-chave: Infecções por coronavírus. Pandemias. Desempenho acadêmico. Capacitação de recursos humanos em saúde.

RESUMEN

Objetivo: Analizar cómo los estudiantes universitarios autoevalúan su desempeño académico durante la pandemia de COVID-19 en una universidad pública del sur de Brasil.

Método: Se realizó un estudio transversal con 527 estudiantes de carreras de grado en el área de la salud. Se utilizó un análisis estadístico descriptivo y la prueba de Chi-cuadrado para evaluar las asociaciones.

Resultados: Entre los participantes, el 49,5% refirió rendimiento académico insuficiente;24,1%, suficiente;19,40%, bueno;5,90%, muy bueno; y 1,10%, excelente. Se encontró asociación entre las variables curso (p=0,034), forma de ingreso a la institución (p=0,016), y actividad laboral (p=0,010) en el desempeño académico durante la pandemia COVID-19.

Conclusión: El desempeño académico durante la suspensión de clases presenciales fue insuficiente para muchos estudiantes, y los estudiantes del curso de terapia ocupacional, que ingresaron a la universidad a través del sistema de cuotas, y que trabajan además de estudiar mostraron un peor desempeño académico durante la pandemia COVID-19.

Palabras clave: Infecciones por coronavirus. Pandemias. Rendimiento académico. Capacitación de recursos humanos en salud.

[a] Universidade Federal de Santa Maria, Centro de Ciências da Saúde, Departamento de Enfermagem. Santa Maria, Rio Grande do Sul, Brasil.

INTRODUCTION

Our society is going through a crisis that affects different aspects of people's daily lives: the emergence of the coronavirus, cause of the coronavirus disease (COVID-19). This is a pandemic that started in China, manifesting at first through cases of pneumonia of unknown etiology. In January 2020, the disease was identified as the new coronavirus, and received the name of SARS-CoV-2[1].

It manifests as an acute respiratory disease, with a mortality rate of 2% and high transmission rates, making it a reason for concern[2]. As a result, no effort was spared in the search for non-pharmacological public health measures that could reduce the speed of the spread of the pandemic, to prevent health systems from becoming overloaded and to permit the timely treatment of serious complications[3].

Considering this setting, many countries implemented a series of interventions to reduce virus transmission, such as the closing of schools and universities, the prohibition of mass events or groupings, the restriction of travels and public transportation[3]. In Brazil, in addition to these measures, in the field of teaching, in-person classes were suspended. Distance teaching was adopted to continue theoretical activities, using digital platforms for both synchronous and asynchronous communication.

This type of teaching shed a light on the inequality in the country, showing that, while part of the population has computers, smartphones, Internet, and quiet places to study in, others do not earn enough to have three meals a day[4]. In addition, literature indicates other aspects that can made the teaching-learning process more difficult, which include: the stress caused by social distancing; the organization of domestic activities; the organization of a routine of studies at home; the lack of familiarity with digital resources; the precariousness or difficulty in accessing Information and Communication Technologies (ICT); insufficient support from guardians and lack of training from professors; lack of motivation and expectations that are not met[5–7].

Therefore, one must have in mind the academic performance of the students, since this is an essential factor for the success of their professional lives, especially in regard to the world of work. The academic performance is seen as a significant tool for educators, since it allows one to identify and direct vulnerable students, those who my abandon the course or who may need additional attention[8–9].

The researches from this perspective are still scarce and most of them were made in the last 15 years. Several methods have been used to investigate academic performance: presence in classes, accumulated grade performance, the number of subjects the student finished in relation to the number of semesters they studied, the mean of their grades, satisfaction with academic life, attitude in regard to studying, and time in the classroom[10–13].

Investigations that address this outcome (academic performance) during the COVID-19 pandemic are relevant due to the fact that, in the pedagogical field, it is challenging to provide an education whose quality is not affected by the current context, even in the case of distance teaching. It stands out that dealing with this issue involves understanding and identifying the factors that influence said outcome, for teaching institutions to be able to take action to reduce the difficulties of their students[14]. With this in mind, this research was created to analyze how university students from a public university in the South of Brazil evaluate their performance during the COVID-19 pandemic.

METHOD

This research was created and reported according with the directives from the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE), which is ideal for observational studies[15].

This is a cross-sectional study, carried out in a public higher education institution in inland Rio Grande do Sul which provides 131 graduation courses and 106 post-graduation courses. In basic and technical education, there are 24 technical courses for high-school graduates, four for high schoolers, and one child education course. The institution has approximately 30 thousand students.

It should be noted that in-person academic and administrative activities were suspended on March 16, 2020. From then on, activities could be carried out in a virtual or home environment. In August 2020, the institution divulged norms regulating the Regime of Special Domiciliary Work (REDE), as a way to continue academic activities after in-person classes were suspended. To do so, theoretical classes and practical activities, when the professor thought possible, would use virtual means to continue during suspension. These included virtual teaching-learning environments, such as Moodle; E-mail; Skype; and other ways to share resources and apply/evaluate the activities the professor chose and made available to the students.

This research included students from health field courses, aged 18 years old or older, who were enrolled in one of the following courses: Nursing, Medicine, Physical Therapy, Dentistry, Speech-Language Therapy, Pharmacy, and Occupational Therapy. Students who were in exchange programs or on leave were excluded.

To determine the participants of the research, the sampling was non-probabilistic, and a minimum sample was

used to avoid selection biases. To estimate sample size, a level of confidence of 95% and a margin of error of 5% were used. Thus, from the 2,243 students enrolled in the courses mentioned above, a minimum sample of 329 participants was determined. Still, all students were invited to participate in the research; 527 of them accepted and formed the final sample.

Data collection was carried out online using Google Forms. The invitation to participate was sent via an e-mail with the link of the research protocol. Data collection took place from July to August 2020, using a semistructured questionnaire elaborated by the researches responsible, including sociodemographic and academic variables, as well as variables related to their adherence to the recommendations of the Ministry of Health in regard to the COVID-19 pandemic.

As a result, the following variables were addressed: sex, age, marital status, children, course, semester, type of enrollment, people they have lived with during the suspension of graduation in-person activities, work activities during the COVID-19 pandemic, whether they have respected social isolation, frequency of use of Personal Protection Equipment (PPE), and whether they have followed the recommendations from the Ministry of Health to prevent against the new coronavirus. The variable academic performance, outcome of this study, was self-evaluated by the participants using a five-point scale, where one meant insufficient; two, sufficient; three, good; four, great; and five, excellent.

Before data collection, a pilot test of the questionnaire was carried out with two nursing students and two nursing professors, to verify its face and content validity. The test was evaluated in regard to how easy or difficult these participants found it to fill the instrument in and how long they took to answer it. There were minor suggestions in regard to the writing and to the order in which the questions were presented. After these revisions, the instrument was sent to the participants of the study.

After collection, the data were organized in an electronic spreadsheet and the software Statistical Package for the Social Sciences (SPSS), version 19, for Windows, was used for data analysis. categorical variables were presented in simple (n) and relative (%) frequencies. The continuous variables were expressed as central tendency measures (minimum and maximum value and mean) and dispersion measures (standard deviation). To associate the academic performance with the sociodemographic variables, the chi-squared test was used. The results were considered to be significant when $p \leq 0.05$.

In respect to Directives and Regulating Norms for Researches Involving Human Beings (Resolution No. 466/2012), this study was approved by the university Research Ethics Committee (CEP) under CAAE No. 26387619.3.0000.5346.

RESULTS

From the 527 students who participated in this research, 79.2% were female, 65.7% did not have a partner, 94.3% did not have children, 37.1% were catholic, and 81.2% self-declared white. Their mean age was 22.3 (±4.6) years old. The academic variables regarding the behavior of the students during the pandemic of COVID-19 are presented on Table 1.

When students were asked about their academic performance during the period of the COVID-19 pandemic, 49.5% of them reported an insufficient academic performance (Figure 1).

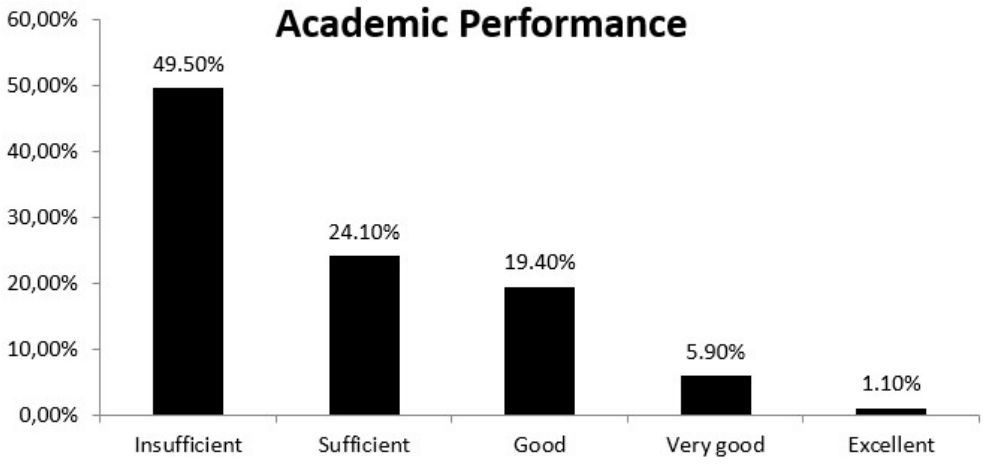

Figure 1 – Academic performance of students in the field of health during the COVID-19 pandemic. Santa Maria, RS, Brazil, 2020
Source: Research data, 2020.

Table 1 – Academic variables and variables related to the behavior of students during the COVID-19 pandemic. Santa Maria, Rio Grande do Sul, Brazil, 2020

Variables	N	%
Course		
Nursing	102	19.4
Medicine	125	23.7
Pharmacy	96	18.2
Dentistry	47	8.9
Speech-language therapy	43	8.2
Occupational therapy	55	10.4
Physical therapy	59	11.2
Type of enrollment		
General	295	56.0
Quota	232	44.0
Semester		
1st nd 2nd	142	26.9
3rd and 4th	112	21.3
5th and 6th	98	18.6
7th and 8th	101	19.2
9th and 10th	66	12.5
11th and 12th	8	1.5
During the suspension of in-person graduation activities, you live with:		
Relatives	422	80.1
Colleagues and/or friends	22	4.2
Alone	47	8.9
With a partner	36	6.8
In addition to studying, what do you work with during the COVID-19 pandemic?		
No	451	85.6
Yes	76	14.4

Table 1 – Cont.

Variables	N	%
Are you managing to keep social isolation?		
Always	258	49.0
Sometimes	253	48.0
Rarely	12	2.3
Never	4	0.8
Do you have practical activities? If so, how often do you use PPEs?		
Always	151	28.7
Sometimes	28	4.7
Rarely	1	2
Never	3	6
Does not apply because you do not have practical activities.	347	65.8
During your daily activities, are you able to follow the recommendations of the Ministry of Health in regard to coronavirus prevention?		
Always	435	82.4
Sometimes	60	11.4
Rarely	3	0.6
Never	28	5.3
I do not carry out these activities, other do it for me.	1	0.2
Do people you coexist with respect the coronavirus prevention recommendations from the Ministry of Health?		
Always	257	48.8
Sometimes	205	38.9
Rarely	26	4.9
Never	2	0.4
Does not apply	37	7.0

Source: Research data, 2020.

Below, in Table 2, the academic performance is presented according with the sociodemographic and academic variables.

Table 2 – Academic performance during the COVID-19 pandemic, according with sociodemographic and academic variables. Santa Maria, Rio Grande do Sul, Brazil, 2020.

	Academic performance					p
	Insufficient	Sufficient	Good	Very good	Excellent	
Sex						
Male	53(48.6%)	24(22.0%)	20(18.3%)	11(10.1%)	1(0.9%)	0.34
Female	208(49.8%)	103(24.6%)	85(19.6%)	20(4.8%)	5(1.2%)	
Marital status						
Does not have a partner	176(50.7%)	87(25.1)	62(17.9%)	20(5.8%)	2(0.6%)	0.32
Has a partner	85(47.2%)	40(22.2%)	40(22.2%)	11(6.1%)	4(2.2%)	
Children						
Yes	18(62.1%)	5(17.2%)	3(10.3%)	2(6.9%)	1(3.4%)	0.36
No	243(48.8%)	122(24.5%)	99(19.9%)	29(5.8%)	5(1%)	
Course						
Nursing	41(40.2%)	27(26.5%)	21(20.6%)	9(8.8%)	4(3.9%)	**0.034***
Medicine	63(50.4%)	30(24.0%)	24(19.2%)	8(6.4%)	-	
Pharmacy	46(47.9%)	27(28.1%)	17(17.7%)	6(6.3%)	-	
Dentistry	25(53.2%)	12(25.5%)	10(21.3%)	-	-	
Speech-language therapy	23(53.5%)	8(18.6%)	10(23.3%)	-	2(4.7%)	
Occupational therapy	33(60%)	9(16.4%)	12(21.8%)	1(1.8%)	-	
Physical therapy	30(50.8%)	14(23.7%)	8(13.6%)	7(11.9%)	-	
Type of enrollment						
General	136(46.1%)	72(24.4%)	61(20.7%)	22(7.5%)	4(1.4%)	**0.016***
Quota	125(53.9%)	55(23.7%)	41(17.7%)	9 (3.9%)	2 (0.9%)	
During the suspension of in-person graduation activities, you have been living with:						
Relatives	208(49.3%)	100(23.7%)	85(20.1%)	25(5.9%)	4(0.9%)	0.83
Colleagues and/or friends	14(63.6%)	6(27.3%)	1(4.5%)	1(4.5%)	-	
Alone	25(53.2%)	10(21.3)	8(17.0%)	3(6.4%)	1(2.1%)	
With a partner	14(38.9%)	11(30.6%)	8(22.2%)	2(5.6%)	1(2.8%)	
In addition to studying, what have you been working with during the COVID-19 pandemic?						
No	214(47.5%)	114(25.3%)	92(20.4%)	28(6.2%)	3(0.7%)	**0.010***
Yes	47(61.8%)	13(17.1%	10(13.2%)	3(3.9%)	3(3.9%)	

Source: Research data, 2020.

The variables course, type of enrollment, institution, and work activity were associated with academic performance during the COVID-19 pandemic. Occupational therapy students who entered in the university through the system of quotas and work in addition to studying had an inferior academic performance during the COVID-19 pandemic.

DISCUSSION

In this research, most students were female (79.2%), with no children or partners. This research, coupled with others from the Southeast region, showed that, in the field of health, the number of female students is greater, with more than 70%. In a research from the Universidade Federal do Triângulo Mineiro (UFTM), 89% of students from the field of health were female, while another, in the Universidade Federal do Estado do Rio de Janeiro (UFRJ), found that number to be 70.5%. This shows the predominance of women in courses in the health field[16].

Regarding the academic life of the participants, most were students who do not work. This variable had an association with academic performance. This result was expected, since those who have an activity other than studying must divide their time. These students tend to feel more tired and asleep, making their learning more difficult. They also have extracurricular classes, including academic papers, extracurricular activities and projects, which often limit their time for leisure and can lead to mental exhaustion[17].

Balancing work and university is a challenge that may have an impact on the academic performance of these students. A study carried out with worker-students from the nursing course showed financial difficulties, since some of the worker-students were the breadwinners of their homes and had trouble to adapt to their work hours, since the course is full-time. They also had difficulties in family life, due to the little time they have available for their families[18].

Concerning their type of enrollment, 56% of the students entered the course regularly, but there was a high percentage of students who entered through quotas and showed a lower academic performance. 50% of the openings of the institution analyzed are for the general public, and 50% for the quota system. On August 29, 2012, Law No. 12.711 was enacted, which allows universities to save half their openings for ingress via quotas. These openings are distributed for students who finished high school in public schools; have an income of 1.5 or less minimum wages per capita; self-declare as black, brown, or native; and for people with disabilities[19]. Due to these policies to increase access, a number of students with heterogeneous experiences and from different learning contexts were able to enter universities in the last decades.

These students go through a period of academic adaptation, due to the demands of higher education. Students from the general public and those from quotas are believed to go through this adaptation differently. Students are understood to be capable of integrating into higher education and adapt to its cognitive, social, and affective processes, which leads to a good development in the new context, making it possible for them to bring additional knowledge into their professional formation[20]. The process of adaptation does not always happen as expected and was made more difficult by the challenges in the context of the COVID-19 pandemic, including the transition into remote teaching. This period also limits the opportunities the students have for personal, social, and professional development.

There are limits to the emergency remote teaching which are related, for example, to the development of basic social skills, such as empathy and assertive communication. It is also impossible to teach technical abilities, such as the procedures health professionals need to learn, not to mention the lack of opportunities to learn during one's coexistence with colleagues and professors in the university. That relation can be beneficial because, in addition to encouraging the development of professional and interpersonal abilities, also has an effect on the physical and mental health of these students[21].

It was found that 80.1% of the students lived with relatives during the suspension of in-person graduation activities. This result can be seen as positive, since the family is perceived as a protective factor for the student, providing them with affective and financial support[22]. On the other hand, some repercussions of the pandemic in the family context, such as unemployment and/or lowered wages[23], need to care for elders and children, and the nonexistence of an adequate environment for study make the educational process more difficult[24]. This may justify the percentage of students (49.3%) who lived with relatives but self-evaluated their academic performance as insufficient.

In regard to COVID-19 prevention care, the students were following the recommendations of the Ministry of Health (MH), including respect for social distancing and the use of safety equipment in daily activities. This can be related to the fact that these are future health workers, who, in their formation, have the benefit of receiving new information about the disease daily. Therefore, they are committed to incorporate, in their routine, all the necessary actions to prevent against the virus and help flattening the curve of infections[25–26].

The recommendations include: washing hands frequently, up to the wrists, with water and soap; sanitizing hands with alcohol 70%; covering the mouth and nose with a

handkerchief or with the inside of the elbow; not touching the eyes, nose, mouth, or mask, and, in the case a touch occurs, sanitizing hands immediately; keeping at least one meter distant from others in public places; keeping environments clean and ventilated; frequently sanitizing cellphones and toys; avoiding unnecessary circulation; using mask in all locations; and, when sick, avoiding close contact with others[1,27].

When the students were asked about their academic performance, 49.5% reported that it was insufficient. This self-assessment may be related to the ability of students and professors with Information and Communication Technologies (ICT)[28].

The use of ICTs in teaching to soften the impact of in-person class suspensions has been discussed. It includes the use of electronic and technological devices such as computers, the Internet, smartphones and tablets[28]. Although they aid in the educational process, students and professors have limitations when it comes to the use of the ICTs. A study in Spanish public universities found that students who are older, from rural areas, who have work and family responsibilities and few electronic resources had more difficulty with remote teaching[29].

Therefore, it is clear that one of the main issues related to remote teaching is the lack of access to ICTs. As a result, the social vulnerability of the students should be taken into account, since the greatest challenge today is to build an education where students of different levels, degrees, and conditions to learn can be on a level playing field[29].

Another factor that can be related to the self-evaluation of academic performance as "insufficient" is the lack of practical activities for the students. Remote teaching allowed for the teaching of theory; however, practical clinics have been shown to be indispensable for the formation of students[29]. It is in the practical field that they develop many abilities that are essential for their education, elaborating their clinical expertise and achieving a quality formation. These experiences make it possible to widen the environment of the classroom, allowing the student to have a concrete perception of the health system with its complexities. They can also make students able, at the end of their formation, not only carry out their work with safety, but also to have autonomy in their professional practice[30].

Therefore, although emergency remote teaching is an alternative in times of the COVID-19 pandemic, it has shortcomings in regard to the formation process, due to the fact that it is a modality of teaching where the student is not in settings of practice[31]. A research in from India mentioned, as limitations of remote teaching, the impossibility of face-to-face interactions, of having quality student discussions, as well as the lack of personal attention[32]. From this perspective, Chinese authors have emphasized that, although virtual teaching environments are an option so the classes in schools and universities are not entirely suspended, they must be only complementary[33].

The self-evaluation of the academic performance of the students may also be related to the lack of motivation. Long social distancing periods, not being able to be with colleagues and friends, and the fear of infection are demotivating factors that can damage academic performance, especially when a more autonomous learning process is considered. Motivated individuals can consciously manage their own learning, putting themselves in a position of control, where they can regulate and evaluate their own formative processes[34].

In this study, variables such as course, type of enrollment in the institution, and work activities during the COVID-19 pandemic were associated with academic performance. The occupational therapy students who entered in the university through the system of quotas and work in addition to studying had an inferior academic performance. This result is relevant for considering any strategies to improve the education process. Knowing the factors that interfere in the performance and how they are related makes it possible to create public policies targeted at improving the quality of the formation of university students, who, consequently, will become better prepared professionals, contributing for a greater social and economic development.

CONCLUSION

The academic performance of many students during the suspension of in-person classes has been insufficient. Variables such as course, type of enrollment in the institution, and work activities during the COVID-19 pandemic may be influencing their performance. In this study, the occupational therapy students who entered in the university through the system of quotas and work in addition to studying had an inferior academic performance during the COVID-19 pandemic.

Considering the data collected and all the theoretical framework that structured the elaboration of this study, it can be concluded that, for courses in the health field, replacing in-person classes with remote ones, even in a period of emergency, had limited results, considering the peculiarities of these courses and the characteristics of these students.

Limitations of this study include the fact that the research was carried out in a single institution. Furthermore, the instrument used to measure academic performance has not been validated nor applied in other studies. However, this investigation contributes to the field of nursing, health, and education, as it points out the fragilities in remote emergency teaching and their repercussions on academic performance.

Therefore, it is possible to come up with strategies that can contribute for the teaching-learning process, such as increasing the access to ICTs and using creative and problematizing methodologies, in an effort to deal with the gap created between theory and practice by social distancing.

REFERENCES

1. Ministério da Saúde (BR). Brasília, DF; 2020 [cited 2020 May 10]. Coronavírus Brasil. Painel Coronavírus [about 1 screen]. Available from: https://covid.saude.gov.br/
2. Wang Y, Wang Y, Chen Y, Qin Q. Unique epidemiological and clinical features of the emerging 2019 novel coronavirus pneumonia (COVID-19) implicate special control measures. J Med Virol. 2020:92(6):568-76. doi: https://doi.org/10.1002/jmv.25748
3. Aquino EML, Silveira IH, Pescarini, JM, Aquino R, Souza-Filho JA, Rocha AS, et al. Medidas de distanciamento social no controle da pandemia de COVID-19: potenciais impactos e desafios no Brasil. Ciênc Saúde Coletiva. 2020;25(Supl 1):2423-46. doi: https://doi.org/10.1590/1413-81232020256.1.10502020
4. Oliveira ES, Freitas TC, Souza MR, Mendes MCSGM, Almeida TR, Dias LC, et al. A educação a distância (EaD) e os novos caminhos da educação após a pandemia ocasionada pela Covid-19. Braz J of Develop. 2020;6(7):52860-7. doi: https://doi.org/10.34117/bjdv6n7-799
5. Gusso HL, Archer AB, Luiz FB, Sahão FT, Luca GG, Henklain MHO, et al. Ensino superior em tempos de pandemia: diretrizes à gestão universitária. Educ Soc. 2020;41,e238957. doi: https://doi.org/10.1590/ES.238957
6. Gasparotto GS, Szeremeta TP, Vagetti GC, Stoltz T, Oliveira V. O autoconceito de estudantes de ensino médio e sua relação com desempenho acadêmico: Uma revisão sistemática. RPE. 2018;31(1):21–37. doi: https://doi.org/10.21814/rpe.13013
7. Oliveira PR, Oesterreich SA, Almeida VL. Evasão na pós-graduação a distância: evidências de um estudo no interior do Brasil. Educ Pesqui. 2018;44:e165786-e165786. doi: https://doi.org/10.1590/s1678-4634201708165786
8. Caliatto SG, Almeida LS. Learning and academic achievement in higher education. RIAEE. 2020;15(4):1855-76. doi: https://doi.org/10.21723/riaee.v15i4.12670
9. Kassarnig V, Bjerre-Nielsen A, Mones E, Lehmann S, Lassen DD. Class attendance, peer similarity, and academic performance in a large field study. PLoS One. 2017;12(11):e0187078. doi: https://doi.org/10.1371/journal.pone.0187078
10. Chambel MJ, Curral L. Stress in academic life: Work characteristics as predictors of student well-being and performance. Appl Psychol. 2005;54(1):135–47. doi: https://doi.org/10.1111/j.1464-0597.2005.00200.x
11. Miller K, Danner F, Staten R. Relationship of work hours with selected health behaviors and academic progress among a college student cohort. J Am Coll Health. 2008;56(6):675-9. doi: https://doi.org/10.3200/JACH.56.6.675-679
12. Salamonson Y, Everett B, Koch J, Andrew S, Davidson PM. O impacto do trabalho remunerado por tempo integral no desempenho acadêmico de estudantes de enfermagem: um estudo longitudinal. Int J Nurs Stud. 2012;49(5):579-85. doi: https://doi.org/10.1016/j.ijnurstu.2011.10.012
13. Nagai-manelli R, Lowden A, Castro Moreno CR, Teixeira LR, Luz AA, Mussi MH, et al. Sleep length, working hours and socio-demographic variables are associated with time attending evening classes among working college students. Sleep Biol Rhythms. 2012;10(1):53-60. doi: https://doi.org/10.1111/j.1479-8425.2011.00519.x
14. Durán Santomil P, Maside Sanfiz JM, Rodeiro Pazos D, Cantorna Agra S. Determinantes del rendimiento académico del alumnado de una asignatura de contabilidad: el caso de la USC. REDU. 2016;14(1):151-78. doi: https://doi.org/10.4995/redu.2016.5803
15. Von Elm E, Altman DG, Egger M, Pocock SJ, Gotzsche PC, Vandenbroucke JP. STROBE Iniciative. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. J Clin Epidemiol. 2008;61(4):344-9. doi: https://doi.org/10.1016/j.jclinepi.2007.11.008
16. Câmara dos Deputados (BR). Lei n. 12.711, de 29 de agosto de 2012. Dispõe sobre o ingresso nas universidades federais e nas instituições federais de ensino técnico de nível médio e dá outras providências Diário Oficial União. 2012 ago 30 [cited 2021 Feb 04];149(169 Seção 1):1-2. Available from: https://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?data=30/08/2012&jornal=1&pagina=1&totalArquivos=120
17. Fontana RT, Brigo L. Estudar e trabalhar: percepções de técnicos de enfermagem sobre esta escolha. Esc Anna Nery. 2011;16(1):128-33. doi: http://doi.org/10.1590/S1414-81452012000100017
18. Maier SRO, Mattos M. O trabalhar e o estudar no contexto universitário: uma abordagem com trabalhadores-estudantes. Saúde (Santa Maria). 2016;42(1),179-85. doi: https://doi.org/10.5902/2236583420477
19. Nardelli GG, Gaudenci EM, Garcia BB, Carleto CC, Gontijo LM, Pedrosa LAK. Perfil dos alunos ingressantes dos cursos da área da saúde de uma niversidade federal. REAS. 2013 [cited 2021 Feb 04];2(1): 3-12. Available from: http://seer.uftm.edu.br/revistaeletronica/index.php/enfer/article/view/405/383.
20. Soares AB, Mourão L, Santos AAA, Mello TVS. Habilidades sociais e vivência acadêmica de estudantes universitários. Interação Psicol. 2016;19(2):211-23. doi: http://doi.org/10.5380/psi.v19i2.31663.
21. Matta CMB, Lebrão SMG, Heleno MGV. Adaptação, rendimento, evasão e vivências acadêmicas no ensino superior: revisão da literatura. Psicol Esc Educ. 2017;21(3):583-91. doi: http://doi.org/10.1590/2175-353920170213111118
22. Karnal CL, Monteiro JK, Santos AS, Santos GO. Fatores de proteção em estudantes bolsistas do Programa Universidade para Todos. Psicol Esc Educ. 2017;21(3):437-46. doi: http://doi.org/10.1590/2175-35392017021311169
23. Fiocruz [Internet]. Brasil: Fundação Oswaldo Cruz; 2020 Convid: pesquisa de comportamentos; [cited 2021 Mar 01]; [about 1 screen]. Available from: https://convid.fiocruz.br/index.php?pag=principal
24. Universidade Federal do Rio Grande do Sul (UFRGS). Educação a distância no contexto universitário [Internet]. Porto Alegre: UFRGS; 2020 [cited 2021 Mar 06]. Available from: https://www.ufrgs.br/coronavirus/base/artigo-educacao-a-distancia-no-contexto-universitario/.
25. Garcia LP, Duarte E. Nonpharmaceutical interventions for tackling the COVID-19 epidemic in Brazil [editorial]. Epidemiol Serv Saúde. 2020;29(2). doi https://doi.org/10.5123/S1679-49742020000200009
26. Khan S, Khan M, Maqsood K, Hussain T, Noor-Ul-Huda, Zeeshan M. Is Pakistan prepared for the COVID-19 epidemic? a questionnaire-based survey. J Med Virol. 2020;92(7):824-32. doi: https://doi.org/10.1002/jmv.25814
27. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical characteristics of Coronavirus disease 2019 in China. N Engl J Med. 2020;382(18):1708-20. doi: https://doi.org/10.1056/NEJMoa2002032
28. Costa SRS, Duqueviz BC, Pedroza RLS. Tecnologias digitais como instrumentos mediadores da aprendizagem dos nativos digitais. Psicol Esc Educ. 2015;19(3):603-10. doi: https://doi.org/10.1590/2175-3539/2015/0193912
29. Ramos-Morcillo AJ, Leal-Costa C, Moral-García JE, Ruzafa-Martínez M. Experiences of nursing students during the abrupt change from face-to-face to e-learning education during the first month of confinement due to COVID-19 in Spain. Int J Environ Res Public Health. 2020;17(5519):1-15. doi: https://doi.org/10.3390/ijerph17155519

30. Palheta AMS, Cecagno D, Marques VA, Biana CB, Braga LR, Cecagno S, et al. Formação do enfermeiro por meio de metodologias ativas de ensino e aprendizado: influências no exercício professional. Interface. 2020;24:e190368. doi: https://doi.org/10.1590/interface.190368
31. Costa R, Lino MM, Souza AIJ, Lorenzini E, Fernandes GCM, Brehmer LCF, et al. Nursing teaching in covid-19 times: how to reinvent it in this context? Texto Contexto – Enferm. 2020;29:e20200202. doi: https://doi.org/10.1590/1980-265x-tce-2020-0002-0002
32. Khattar A, Jain PR, Quadri SMK. Effects of the disastrous pandemic COVID 19 on learning styles, activities and mental health of young indian students – a machine learning approach. 4th International Conference on Intelligent Computing and Control Systems (ICICCS). 2020;1190-5. doi: https://doi.org/10.1109/ICICCS48265.2020.9120955
33. Chen J, Wang Y, Yang Y, Online teaching design of university computer course based on BOPPPS Mode. IEEE 2nd International Conference on Computer Science and Educational Informatization (CSEI). 2020;322-5. doi: https://doi.org/10.1109/CSEI50228.2020.9142522
34. Herrera RY, Lucendo CM, García AS, Yaulema CCE. Estilos de aprendizaje y metas de logro enestudiantes universitarios durante la pandemiade COVID-19. Texto Livre. 2021;14(2):e33988. doi: https://doi.org/10.35699/1983-3652.2021.33988

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Authorship contribution:
Conceptualization: Etiane de Oliveira Freitas, Daiana Foggiato de Siqueira, Nicolle Rampelotto da Silva.
Data selection: Etiane de Oliveira Freitas, Daiana Foggiato de Siqueira, Nicolle Rampelotto da Silva.
Formal analysis: Etiane de Oliveira Freitas, Daiana Foggiato de Siqueira, Nicolle Rampelotto da Silva, Rosângela Marion da Silva.
Acquisition of funding: Daiana Foggiato de Siqueira, Etiane de Oliveira Freitas.
Investigation: Nicolle Rampelotto da Silva, Camila Pinno, Valquíria Toledo Souto.
Methodology: Etiane de Oliveira Freitas, Nicolle Rampelotto da Silva, Rosângela Marion da Silva.
Project administration: Daiana Foggiato de Siqueira
Supervision: Etiane de Oliveira Freitas, Daiana Foggiato de Siqueira
Writing – original draft: Nicolle Rampelotto da Silva, Valquíria Toledo Souto, Camila Pinno.
Writing – revision and editing: Etiane de Oliveira Freitas, Daiana Foggiato de Siqueira.

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Corresponding author:
Daiana Foggiato de Siqueira.
E-mail: daiana.siqueira@ufsm.br

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