

COVID-19 pandemic effects on the mental health of an academic community

Efeitos da pandemia de COVID-19 na saúde mental de uma comunidade acadêmica
Efectos de la pandemia de COVID-19 en la salud mental de una comunidad académica

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Abstract

Objective: To identify COVID-19 pandemic effects on mental health in an academic community from a federal university.

Methods: Transversal study carried out with 586 individuals from the academic community from the Universidade Federal de Ciências da Saúde de Porto Alegre. We elaborated an online multiple-choice questionnaire hosted in the *RedCap* platform. We elaborated the questionnaire based on a guide content, which addresses the main considerations of mental health during the pandemic. Aspects of mental health, such as anguish, irritability, among others, were the outcome evaluated. We carried out the statistical analysis in the *Statistical Package for Social Sciences* software and the association between variables was evaluated through the Chi-square test and the student T-test. The significance level adopted was 5%.

Results: 586 individuals participated: 81% women, 72,8% Exploratory, transversal, and quantitative study, where the scenario was the Universidade Federal de Ciência da Saúde de Porto Alegre (UFCSIPA), located in Porto Alegre, Rio Grande do Sul, Brazil. The transversal study is characterized by the direct observation of a sample of individuals in a single moment, 58,2% with per capita income of minimum 5 salaries, and 90,3% white. The most prevalent feelings were: Impotence (93,5%), anguish (90,8%), fear of losing relatives, friends or familiars (90,1%), irritability (85,3%) and sadness (89,9%). We found that female sex is a factor of risk to present most of the feelings, except irritability and boredom.

Conclusion: The COVID-19 pandemic affected the mental health of the academic community, reinforcing the necessity of establishing psychological intervention protocols in the pandemic. We found a significant statistical difference between the sexes, in which the psychological effects are more severe in the female sex.

Resumo

Objetivo: Identificar os efeitos da pandemia de COVID-19 na saúde mental da comunidade acadêmica de uma universidade federal.

Métodos: Estudo transversal com 586 indivíduos da comunidade acadêmica da Universidade Federal de Ciências da Saúde de Porto Alegre. Um questionário *online* com questões de múltipla escolha foi disponibilizado na plataforma virtual *RedCap*. O questionário foi elaborado com base no conteúdo de um guia, o qual trata das principais considerações sobre saúde mental durante a pandemia. Os desfechos avaliados foram aspectos da saúde mental, como angústia, irritabilidade, entre outros. A análise estatística foi realizada no software *Statistical Package for Social Sciences* e a associação entre as variáveis foi avaliada através do Teste Qui-quadrado e Teste T de Student. O nível de significância adotado foi de 5%.

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Conflicts to interest: none.

Resultados: Participaram 586 indivíduos: 81% mulheres, 72,8% alunos de graduação e pós-graduação, 58,2% com renda *per capita* de até 5 salários mínimos e 90,3% brancos. Os sentimentos mais prevalentes foram: impotência (93,5%), angústia (90,8%), medo de perder familiares, amigos ou conhecidos (90,1%), irritabilidade (85,3%) e tristeza (89,9%). Constatou-se que ser do sexo feminino foi fator de risco para apresentar a maioria dos sentimentos, com exceção da irritabilidade e do tédio.

Conclusão: A pandemia de COVID-19 exerceu efeitos na saúde mental da comunidade acadêmica, reforçando a necessidade de instituir protocolos de intervenção psicológica na pandemia. Verificou-se diferença estatística significativa entre os sexos, em que os efeitos psicológicos mostraram-se mais acentuados na população do sexo feminino.

Resumen

Objetivo: Identificar los efectos de la pandemia de COVID-19 en la salud mental de una comunidad académica de una universidad nacional.

Métodos: Estudio transversal con 586 individuos de la comunidad académica de la Universidade Federal de Ciências da Saúde de Porto Alegre. Se puso a disposición un cuestionario digital con preguntas de selección múltiple en la plataforma virtual *RedCap*. El cuestionario fue elaborado con base en el contenido de una guía que aborda las principales consideraciones sobre salud mental durante la pandemia. Los parámetros evaluados fueron aspectos de salud mental, como angustia, irritabilidad, entre otros. El análisis estadístico se realizó en el software *Statistical Package for Social Sciences* y la relación entre las variables fue evaluada a través de la prueba χ^2 de Pearson y test-T de Student. El nivel de significación adoptado fue de 5 %.

Resultados: Participaron 586 individuos: 81 % mujeres, 72,8 % alumnos de grado y de posgrado, 58,2 % con renta *per cápita* de hasta 5 salarios mínimos y 90,3 % blancos. Los sentimientos más prevalentes fueron: impotencia (93,5 %), angustia (90,8 %), miedo de perder familiares, amigos o conocidos (90,1 %), irritabilidad (85,3 %) y tristeza (89,9 %). Se constató que ser de sexo femenino fue factor de riesgo para presentar la mayoría de los sentimientos, a excepción de la irritabilidad y el aburrimiento.

Conclusión: La pandemia de COVID-19 produjo efectos en la salud mental de la comunidad académica, lo que refuerza la necesidad de instituir protocolos de intervención psicológica durante la pandemia. Se verificó diferencia estadística significativa entre los sexos, en la que los efectos psicológicos se mostraron más acentuados en la población de sexo femenino.

Introduction

In December of 2019, the first case of pneumonia without a defined etiology was reported in Wuhan, China. On January 7th, 2020, the cause of the disease was nominated SARS-CoV-2.⁽¹⁾ On January 30th, the World Health Organization decreed a state of emergency for the scope of international public health, and on March 11th, the organization declared the COVID-2019 as a pandemic.⁽²⁾

Pandemics present a high complexity, causing an important impact in the different spheres of public health, including the psychosocial scope.⁽³⁻⁵⁾ A pandemic such as the COVID-19 may cause a psycho-social perturbation that can exceed the capacity of confronting the affected individuals. We believe that every population inserted in the pandemic scenario may suffer psychosocial impacts in different levels of intensity and severity. We estimate that approximately a third or half of the exposed population may develop some psycho-pathological manifestation in case any intervention of mental health care does not occur.⁽⁶⁾

Similar previous events to the COVID-19 demonstrated a greater prevalence and duration of the implications for mental health in comparison to the epidemic itself.⁽⁷⁾ We noted that during the

Ebola outbreak, suffering and psychiatry symptoms rates of the population increased, contributing to the increase of indirect mortality by other causes.⁽⁸⁾

The adopted measures for the current pandemic control interfere in different aspects of the everyday life of the population and cause feelings of helplessness, abandonment, and insecurity.⁽⁹⁾ A study showed that post-traumatic stress symptoms, confusion, and rage were recurrent during quarantine, which was potentialized by stress factors related to the period of isolation, fear of contamination, frustration, boredom, and concern about the financial status.⁽¹⁰⁾

In the academic community, the pandemic brings consequences to individuals and also to its own organizational structure that seeks for means to reinvent itself and keep its social mission.⁽¹¹⁾ Besides the risk of contagion by the coronavirus, there is the emergence of psychological problems as a result of the uncertainties and insecurities, and also by the workload associated with the time of isolation.⁽¹²⁾

There are gaps in the literature about mental health in periods of pandemics that need to be filled by studies that explore the current context. The literature has pointed out that there are some reports about local strategies for mental health care, even though general guidelines of emergency were not

defined given this pandemic scenario.⁽¹³⁻¹⁵⁾ Hence, the objective of this study is to identify the effects of the COVID-19 pandemic on the mental health of a federal university academic community.

Methods

Exploratory, transversal, and quantitative study, where the scenario was the Universidade Federal de Ciência da Saúde de Porto Alegre (UFCSPA), located in Porto Alegre, Rio Grande do Sul, Brazil. The transversal study is characterized by the direct observation of a sample of individuals in a single moment.⁽¹⁶⁾

Individuals from the academic community of UFCSPA participated in the study comprised: undergraduate and postgraduate students, faculty members, administrative technicians, trainees with complete higher secondary education and complete higher tertiary education, and research and technician scholarship holders. The criteria utilized was individuals who were over 18 years old that had a bond with the UFCSPA. Regarding the sample, the research aimed to reach out to the entire university community composed of 5.735 people, we did not do the sample calculation, the sampling was constituted by convenience.

The data collection occurred in July 2020 through an online self-administered questionnaire in the *RedCap* virtual platform. The first part of the questionnaire was constituted by multiple-choice sociodemographic questions and the second part by 27 questions about mental health that could be responded to in two alternatives: “yes” and “no”. The elaborated questions were based on the content of the guide: “How to deal with the psychosocial and mental health aspects related to the outbreak of Covid-19” developed by IASC: *Inter-Agency Standing Committee* in March 2020.⁽¹⁷⁾ This document addresses the main considerations of mental health and psychosocial care during the COVID-19 pandemic, including the effects caused in the affected population, and actions that can be implemented

to prevail against a worsening of mental health. We previously tested the instrument in *RedCap* aiming to verify its performance.

We filled the database directly in the *RedCap* program, and its variables were analyzed in the *Software Statistical Package for Social Sciences* version 25.0 (SPSS) through descriptive statistic, we used the relative and absolute frequency, measures of central tendency (medium), and measures of dispersion (standard deviation, maximum value, minimum value). We did the raw analysis involving each feeling related to mental health and gender through the chi-square test. The level of significance adopted was 5%. We did the adjusted analysis through the Poisson regression with the robust variance between each outcome and sociodemographic variables. The statistical analysis aimed to test the null hypothesis of non-association among variables.

This study was approved by the Research Ethics Committee from the Universidade Federal de Ciências da Saúde de Porto Alegre under the number nº 31352920.4.0000.5345, complying with all the bioethics prerogatives of the research with human beings. Besides, there was an online agreement with the Consent Form by the participants.

Results

We obtained 586 participants: 81% women, 72,8% undergraduate and post-graduate students, 58,2% with per capita income of 5 minimum wages per month*, and 90,3% were white. Regarding the education level, the majority (53,1%) had incomplete higher education. 76,4% of the population was not married. Besides that, more than half of the sample (57,3%) declared religiousness. The complete description of this study sample is represented in table 1. The average age of participants was 30,02 (DP 12,05), varying from 18 to 71 years old.

In table 2, we have the raw analysis of the feelings according to gender. We found that all the feelings were more present in women, except boredom, which resulted in equality for both genders.

*The minimum wage per month in Brazil corresponds to R\$ 1.100,00 reais or US\$ 196,42 American dollars according to the Central Bank of Brazil on March 1st, 2021

Table 1. Sociodemographic characteristics of study participants

Variables	Men (n=110) n(%)	Women (n=476) n(%)	Total (n=586) n(%)
Race			
White	94(85,5)	435(91,4)	529(90,3)
Non-white	16(14,5)	41(8,6)	57(9,7)
Educational level			
Complete high school	13(11,8)	31(6,5)	44(7,5)
Incomplete higher education	51(46,4)	260(54,6)	311(53,1)
Complete higher education	46(41,8)	185(38,9)	231(39,4)
Marital status			
Not married	82(74,5)	365(76,7)	447(76,3)
Married	28(25,5)	111(23,3)	139(23,7)
Occupation at UFCSPA			
Undergraduate and postgraduate student	70(63,0)	355(74,9)	425(72,8)
Scholarship holder and trainee	1(0,9)	6(1,3)	7(1,2)
Administrative technician	12(10,9)	29(6,1)	41(7)
Faculty member	27(24,5)	84(17,7)	111(19)
Per capita income			
Until 5 minimum wages per month	60(54,5)	281(59)	341(58,2)
5 to 10 minimum wages per month	30(27,3)	121(25,4)	151(25,8)
10 or more minimum wages per month	20(18,2)	74(15,5)	94(16)
Religion			
Religious	54(49,1)	282(59,2)	336(57,3)
Non-religious	56(50,9)	194(40,8)	250(42,7)

In the adjusted analysis of the presented feelings, the results showed that being female is a risk factor in order to present the majority of feelings, except for boredom, according to table 3. We presented the variables with statistically significance or with a tendency p-value.

Discussion

The findings highlight that the COVID-19 pandemic affected the mental health of participants, in which feelings of impotence, anguish, fear of losing relatives, friends, or acquaintances, irritability, sadness were widely present. These results are similar to other studies that analyzed the psychological effect of COVID-19. (10,17-19)

An important study carried out in China about the impacts in mental health caused by the pandemic verified that 53,8% of individuals classified the psychological impact of the pandemic as moderate or grave. (18) Moderate to severe symptoms of anxiety, depression, and stress were present in 28,8%, 16,5%, and 8,1% of participants, respectively. Besides that, 75,2% of the sample indicated fear

Table 3. Adjusted analysis of feelings presented during the period of pandemic according to gender

Variabel	Prevalence ratio	Confidence interval 95%	p-value
Fear of dying*			
Female gender	1,21	1,007-1,248	=0,03
Fear of losing relatives, friends or acquaintances***			
Recurrent thoughts about the health of family members, friends and acquaintances	1,34	1,215-1,478	<0,001
Female gender	1,09	1,005-1,183	=0,03
Undergraduate student	0,93	0,89-0,97	=0,003
Impotence*			
Faculty member	0,87	0,783-0,983	=0,02
Undergraduate student	0,94	0,907-0,983	=0,006
Female gender	1,11	1,033-1,2	=0,005
Irritability**			
White	1,11	1,002-1,250	=0,04
Violent thoughts regarding other people	1,11	1,050-1,179	<0,001
Increase of interpersonal conflicts	1,09	1,026-1,163	=0,005
Anguish*			
Female gender	1,14	1,057-1,250	<0,001
Undergraduate student	0,92	0,87-0,978	0,007
Increase of age	0,99	0,994-0,998	0,007
Sadness*			
Female gender	1,20	1,099-1,310	<0,001
Increase of age	0,996	0,991-1,000	=0,06
Helplessness*			
Female gender	1,31	1,189-1,463	<0,001
Not married	1,14	1,016-1,282	=0,02
White	0,86	0,749-0,995	=0,04
Religious	0,92	0,846-1,004	=0,06
Loneliness*			
Female gender	1,14	1,031-1,266	=0,01
Not married	1,19	1,073-1,328	=0,01
Boredom*			
Increase of age	0,98	0,982-0,993	<0,001
Despair*			
Female	1,12	1,075-1,342	=0,001
Religious	0,89	0,822-0,967	=0,006

* Adjusted analysis for gender, age, religion, occupation, color, marital status, per capita income. ** Adjusted analysis for gender, religion, occupation, color, marital status, per capita income, violent thoughts related to other people and increase of interpersonal conflicts. ***Adjusted analysis for gender, age, religion, occupation, color, marital status, per capita income, recurrent thoughts about the health of family, friends and acquaintances

for the contamination of relatives. This data corroborates the fact that individuals of the academic community of this study had fear of losing relatives, friends, and acquaintances during the pandemic, and presented depressive and anxious symptoms, such as sadness, anguish, despair, loneliness and despair. We can attribute these effects to the fact that education was one of the fields that had been most affected by the COVID-19 in Brazil, especially because of the teaching migration from in-person education to online, which unleash the fear of the pandemic situation and influence the mental health of the academic community.

According to studies about the theme, social isolation and the quarantine period have affected the university students' mental health. A Portuguese research compared anxiety, depression, and stress levels of university students during the normal school term and during the suspension of the class period, highlighting the significant increase of mental perturbation rate.⁽²⁰⁾ These results coincide with a study carried out in Greece that noted an increase in anxiety (42,5%), depression (74,3%), suicidal thoughts (93,5%), and loss of the value of life (67,5%),⁽²¹⁾ as well as the increase of incidence of post-traumatic stress disorder.⁽²²⁾

In the study above, the undergraduate academics presented a higher score of depression, anxiety, and stress in comparison to employees and post-graduate students. We attribute that to anguishes and uncertainties in front of the continuity of the school term and the negative impacts in their professional lives.⁽²³⁾ Another study showed that besides worrying with study, the increase of anxiety levels was related to the place of residence, with living with parents, and with relative contamination.⁽²⁴⁾

Although worldwide studies carried out have demonstrated the worsening of anxiety, depression, and anguish levels, in this research the results were distinct, once that being an undergraduate student is a factor of protection to the fear of losing relatives, and to the feeling anguish. Besides that, faculty members and undergraduate students are less exposed to the risk of feeling impotence in face of the events. We can associate these results to the fact that university students have access to information related to COVID-19, allowing comprehension of the preventive measures and actions that maintain their mental health integrity.⁽²⁴⁾

In this study, feelings such as impotence, anguish, and sadness were more reported by women, which may be a risk factor for the development of anxiety, depression, and stress, ratifying other studies in which the majority of psychological rates are among women.^(18,25,26)

Yet, we have identified that being a woman indicates the presence of the majority of the feelings, except irritability and boredom. In that sense, a similar study showed that being female, student

and present physical symptoms associated with COVID-19 or previous health problems were significant factors associated with greater anxiety, depression, and stress levels, besides that women suffer greater influence by the tension and by the environment that they are inserted into.^(18,24) Therefore, we reaffirm that women's mental health is more affected by the COVID-19 pandemic when compared with men and requires differentiated attention that seeks the promotion of access to mental health services to this group.

The fact that some individuals were religious showed a factor of protection for feelings of helplessness and despair given the COVID-19 pandemic. Studies demonstrate that there is a positive association between religion and mental health,⁽²⁷⁾ once that the presence of religiousness may provide greater life satisfaction, less prevalence of anxiety, depression, and suicide tendencies, substance usage, and better cognitive functionality.⁽²⁸⁾

Spiritual practices, including religious practices, operate as a support in the confrontation of painful situations.⁽²⁹⁾ This is because religion is seen as a process of signification and resignification of events⁽³⁰⁾ which helps to overcome the pandemic reality and awakens feelings of solidarity and compassion.⁽³¹⁾ Hence, in the academic community, religion and spirituality positively influenced the COVID-19 confrontation according to results.

This study confined itself to the transversal design, in which outcome and exhibition are measured simultaneously, besides not allowing the population analysis in a period of time. However, the findings of this study bring significant practical contributions by substantiating strategies and protocols of mental health care, objecting to contemplate the necessities of the academic community in emergencies, once it was able to identify the related feelings to the pandemic period.

Conclusion

Given the statements made in this paper, we conclude that the COVID-19 pandemic have affected

the academic community's mental health, in which feelings of: impotence; anguish; fear of losing relatives, friends, and acquaintances; irritability; and sadness, have prevailed. We verified significant statistical differences between genders. As psychological effects were more severe for the female population. These findings reinforce the necessity of establishing prevention and intervention programs in mental health and instituting psychological intervention protocols in pandemic periods.

Collaborations

Ribeiro LS, Bragé EG, Ramos DB, Fialho IR, Vinholes DB, and Lacchini AJB collaborated with the conception of the study, analysis and data interpretation, also writing the article, and critically revising and approving relevant intellectual content for the final version to be published.

References

- World Health Organization (WHO). Novel coronavirus (2019-ncov). Situation report - 1: 21 January 2020. Geneva: WHO; 2020 [cited 2020 Oct 10]. Available from: <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf>
- World Health Organization (WHO). Novel coronavirus (2019-ncov). Situation report - 51:11 March 2020. Geneva: WHO; 2020 [cited 2020 Oct 10]. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200311-sitrep-51-covid-19.pdf?sfvrsn=1ba62e57_10
- Bloom DE, Cadarette D. Infectious disease threats in the twenty-first century: Strengthening the global response. *Front Immunol.* 2019;10:549.
- Malta M, Rimoin AW, Strathdee SA. The coronavirus 2019-nCoV epidemic: is hindsight 20/20?. *EclinicalMedicine.* 2020;20:100289.
- Morens D, Fauci A. Emerging infectious diseases: threats to human health and global stability. *PLoS Pathog.* 2013;9(3):1-3.
- Fundação Oswaldo Cruz. Saúde Mental e Atenção Psicossocial na Pandemia de COVID-19: recomendações gerais. Rio de Janeiro: FIOCRUZ; 2020. p.1-8.
- Reardon S. Ebola's mental-health wounds linger in Africa. *Nature.* 2015;519:13-14.
- Shultz J, Cooper J, Baingana F, Oquendo M, Espinel Z, Althous e B, et al. The role of fear-related behaviors in the 2013–2016 West Africa ebola virus disease outbreak. *Curr Psychiatry Rep.* 2016;18(11):104.
- Ornell F, Schuch JB, Sordi AO, Kessler FHP. "Pandemic fear" and COVID-19: mental health burden and strategies. *Braz J Psychiatry.* 2020;42(3):232-235.
- Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet.* 2020;395(10227):912-20.
- Morales VJ, Lopez YAF. Impactos da pandemia na vida acadêmica dos estudantes universitários. *Rev Angolana Extensão Univ.* 2020;2(3):53-67.
- Faro A, Bahiano MA, Nakano TC, Reis C, Silva BF, Vitti LS. COVID-19 e saúde mental: a emergência do cuidado. *Estud Psicol.* 2020;37:e200074.
- Tucci V, Moukaddam N, Meadows J, Shah S, Galwankar SC, Kapur GB. The forgotten plague: psychiatric manifestations of ebola, zika, and emerging infectious diseases. *J Glob Infect Dis.* 2017;9(4):151-6.
- Park S, Park YC. Mental Health Care Measures in Response to the 2019 Novel Coronavirus Outbreak in Korea. *Psychiatry Investig.* 2020;17(2):85-6.
- Medronho RA, Bloch KV, Luiz RR, Werneck GL, organizadores. *Epidemiologia.* 2a ed. Rio de Janeiro: Atheneu; 2009.
- Xiang Y, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry.* 2020;7(3):228-9.
- Inter-Agency Standing Committee. Guia preliminar: como lidar com os aspectos psicossociais e de saúde mental referentes ao surto de COVID-19. Inter-Agency Standing Committee; 2020 [cited 2020 Oct 10]. Available from: <https://interagencystandingcommittee.org/system/files/2020-03/IASC%20Interim%20Briefing%20Note%20on%20COVID-19%20Outbreak%20Readiness%20and%20Response%20Operations%20-%20MHPSS%20%28Portuguese%29.pdf>
- Wang C, Pan R, Wan X, Tan Y, Xu L, Ho C. Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus Disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health.* 2020;17(5):1729.
- Zwielewski G, Oltramari G, Santos AR, Nicolazzi EM, Moura JA, Sant'Ana VL, et al. Protocolos para tratamento psicológico em pandemias: as demandas em saúde mental produzidas pela COVID-19. *Rev Debates Psychiatry.* 2020; 1-9.
- Maia BR, Dias PC. Anxiety, depression and stress in university students: the impact of COVID-19. *Estud Psicol.* 2020;37:1-8.
- Kaparounaki CK, Patsali EM, Mousa DPV, Papadopoulou EVK, Papadopoulou KK, Fountoulakis KN. University students' mental health amidst the COVID-19 quarantine in Greece. *Psychiatry Res.* 2020;290:113111.
- Chi X, Becker B, Yu Q, Willeit P, Jiao C, Huang L, et al. Prevalence and psychosocial correlates of mental health outcomes among Chinese College Students during the coronavirus disease (COVID-19) Pandemic. *Front Psychiatry.* 2020;11:803.
- Odrizola-González P, Planchuelo-Gómez A, Iruñia MJ, Luis-García R. Psychological effects of the COVID-19 outbreak and lockdown among students and workers of a Spanish university. *Psychiatry Res.* 2020;290:113108.
- Chang W, Yuan Y, Wang D. Mental health status and its influencing factors among college students during the epidemic of COVID-19. *Journal of Southern Medical University.* 2020;40(2):171-176.
- Velde VS, Bracke P, Levecque K. Gender differences in depression in 23 European countries. Cross-national variation in the gender gap in depression. *Soc Sci Med.* 2010;71(2):305-313.

26. Liu X, Siqing P, Wenjuan G. Changes in Undergraduate Students' Psychological Well-Being as They Experience University Life. *International Journal of Environmental Research and Public Health*. 2019;16 (16):2864.
27. Oliveira MR, Junges JR. Mental health and spirituality/religiosity: psychologists' understandings. *Estud Psicol*. 2012;17:469-76.
28. Malinakova K, Tavel P, Meier Z, Dijk JPV, Reijneveld SA. Religiosity and Mental Health: A Contribution to Understanding the Heterogeneity of Research Findings. *Int J Environ Res Public Health*. 2020;17(2):1-11.
29. Thiengo PCS, Gomes AMT, Mercês MC, Couto PLS, França LCM, Silva AN. Espiritualidade e religiosidade no cuidado em saúde: revisão integrativa. *Cogitare Enferm*. 2019;24:1-12.
30. Tavares CQ. Dimensions of care from the perspective of spirituality during the new coronavirus pandemic (COVID-19). *J Health NPEPS*. 2020;5:1-4.
31. Porreca W. Espiritualidade/Religiosidade: possíveis companhias nos desafios pandêmicos - Covid-19. *Cad Adm*. 2020;28:141-6.