
PHYSICAL EDUCATION TEACHERS OF THE BASIC PUBLIC EDUCATION OF MINAS GERAIS IN THE PANDEMIC OF COVID-19: WORKING CONDITIONS, HEALTH AND LIFESTYLE

PROFESSORES DE EDUCAÇÃO FÍSICA DA EDUCAÇÃO PÚBLICA BÁSICA DE MINAS GERAIS NA PANDEMIA DA COVID-19: CONDIÇÕES DE TRABALHO, SAÚDE E ESTILO DE VIDA

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RESUMO

Este estudo objetivou descrever as condições de trabalho e saúde dos professores de educação física da educação básica pública do estado de Minas Gerais – Brasil durante a pandemia da COVID-19. Estudo transversal, realizado de agosto a setembro de 2020, via formulário digital e contou com o apoio da Secretaria de Estado de Educação de Minas Gerais. O instrumento apresentou variáveis referentes ao perfil sociodemográfico, condições de trabalho e saúde durante a pandemia. Foram apresentadas as prevalências das variáveis. Participaram do estudo 1.016 professores de educação física. Destes, 61,4% eram mulheres, 65,8% com idade de 21 a 40 anos e 15,3% trabalhavam na zona rural. Em relação às condições de trabalho durante a pandemia, 99% realizaram atividades remotas, 35,7% estavam insatisfeitos com o trabalho, 37% trabalharam muito mais que costumavam e 81,2% apresentaram como dificuldade o interesse dos alunos/pais pelas aulas. Quanto às condições de saúde durante a pandemia, 10,3% aumentaram o consumo de bebidas alcoólicas, 26,1% não praticaram exercício físico, 56,5% tiveram aumento de peso corporal e 37,8% relataram muito medo da COVID-19. Os professores de educação física da educação básica do estado de Minas Gerais foram significativamente afetados pela pandemia, portanto é importante implementação de estratégias de apoio.

Palavras-chave: Coronavírus. Educação física. Professores. Saúde do trabalhador. Inquérito epidemiológico.

ABSTRACT

This study aimed to describe the working and health conditions of physical education teachers in public basic education in the state of Minas Gerais – Brazil during the COVID-19 pandemic. Cross-sectional study, carried out from August to September 2020, via digital form and had the support of the Minas Gerais State Department of Education. The instrument presented variables related to the sociodemographic profile, work and health conditions during the pandemic. The prevalences of the variables were presented. 1,016 physical education teachers participated in the study. Of these, 61.4% were female, 65.8% aged 21 to 40 years and 15.3% worked in the countryside. In relation to working conditions during the pandemic, 99% performed remote activities, 35.7% were dissatisfied with their work, 37% worked much more than they used to and 81.2% presented the interest of students/parents in classes as a difficulty. As for health conditions during the pandemic, 10.3% increased their consumption of alcoholic beverages, 26.1% did not practice physical exercise, 56.5% had increased body weight and 37.8% reported a lot of fear of COVID-19. Physical education teachers of basic education in the state of Minas Gerais were significantly affected by the pandemic, so it is important to implement support strategies.

Keywords: Coronavirus. Physical education. Faculty. Occupational health. Health surveys.

Introduction

The disease resulting from infection with the new coronavirus SARS-COV-2, designated COVID-19, by the World Health Organization (WHO), was first identified in humans in December 2019, in the city of Wuhan, China. On January 30, 2020, WHO declared a state of emergency in public health at the international level and, on March 11, it was declared a pandemic.¹ Immediately several measures to control and prevent the disease were taken by health authorities.

Several changes were adopted in the social, economic and educational spheres, directed by the federal, state and municipal governments. The evident need for social isolation and the mandatory use of personal protective equipment were emphasized, as

strategies capable of reducing infections and deaths by COVID-19.² The WHO guideline was that the population should avoid leaving their homes and going to places with a concentration of people. In order to contain agglomerations and contribute to social distance, commercial establishments were temporarily closed, and the face-to-face activities of schools and universities were suspended.

The need for social distancing led to the suspension of face-to-face activities in public and private educational institutions and on April 1, 2020, Provisional Measure 934 was published, which established exceptional standards for the school year of Basic Education resulting from COVID-19 coping measures.³ And on April 17, 2020, the State Department of Education of the State of Minas Gerais published Resolution 4310, which instituted the special teleworking regime in state schools in the public basic education network to meet, in the context of a pandemic, the minimum number of hours required.⁴ Faced with this scenario, the need for a new teaching model became evident, with new strategies and tools aimed at the use of technologies as a way of maintaining the contents programmed for the school year, through remote teaching.

Remote online education differs from distance education due to the emergency nature that proposes uses and appropriations of technologies in specific service circumstances where formerly on-site education used to exist.⁵ Basic education teachers, when faced with the impossibility of conducting face-to-face classes, had to create new methodological paths to continue the contents that were in progress, through remote classes to leverage teaching strategies in the emergency context, when possible.⁶

Challenges and perspectives for pedagogical practices exclusively online have emerged. This impasse highlighted the interventions of physical education teachers in the face of a new scenario of professional performance. The educational practice of school physical education integrated with the school's pedagogical proposal, is a mandatory curricular component of basic education.⁷ However, it is in the school environment that physical education reproduces a discipline linked and applied to precepts and meanings present in the bodily practices of the body culture of movement.^{8,9}

Currently, it is imperative to know the impacts and changes in the work of physical education teachers in the face of the COVID-19 pandemic. Therefore, the objective of the present study was to verify the working and health conditions of physical education teachers in public basic education in the state of Minas Gerais during the COVID-19 pandemic.

Methods

This is an epidemiological and cross-sectional study, carried out with physical education teachers from basic education (elementary and high school) from schools in the state public school system in the state of Minas Gerais, Brazil. The state of Minas Gerais had 3,441 public schools in 2020.¹⁰

Authorization was obtained from the Minas Gerais State Department of Education (SEE-MG) to carry out the research in the entire state of Minas Gerais. A previous pilot study was carried out to test and adjust the data collection instrument. Data collection took place from August 20 to September 11, 2020 using a digital form made available to teachers via the Google Forms[®] platform. The link to the digital form was widely disseminated and sent to the teachers' institutional e-mail with the support of SEE-MG. To avoid automatic filling of the form by computer systems, a reCAPTCHA was used, which presented tests on images, preventing the form from being successfully sent by any robot. All questions on the form were mandatory, minimizing loss of information. The study also guaranteed the teachers' anonymity and the data collection form took approximately 25 minutes to complete.

The study included physical education teachers in exercise of the teaching function in 2020, working in elementary and / or high school (linked to some state public school in Minas Gerais) and those who accepted to participate in the research. Teachers deviating from the teaching function, retirees and those who answered “no” when asked if they agreed to participate in the study did not participate in the research.

The study addressed variables referring to three subject blocks, sociodemographic profile, working conditions and health conditions during the pandemic, presented below.

Sociodemographic profile: sex, age, census area (referring to the location of the state school where the teacher worked), marital status and child (ren).

Working conditions during the pandemic: years of teaching work, weekly hours of teaching work, type of link with the school, if you have a graduate degree, doing remote work, job satisfaction during the pandemic, workload, difficulty in develop work, mastery of virtual technologies, computer available at home, if didactic activities can be performed remotely, participation in training for the use of digital technologies in the classroom, opinion on strategies and tools “*Estude em Casa*”, “*Se liga na Educação*” and “*Conexão Escola*”, digital tools used, difficulties to teach remote classes and students' access to physical education classes. Health and lifestyle conditions during the pandemic: smoking, alcohol consumption, physical exercise or sport (days of the week), physical exercise or sport (minutes per day), watching television (hours per day), use of computer or tablet (hours per day), body weight (pregnant women were disregarded), sleep problems, medical diagnosis of anxiety and / or depression, perception of quality of life (before and during the pandemic), perception of the state health (before and during the pandemic) and “Fear of COVID-19”. The COVID-19 Fear Scale is an instrument that investigates people's fear of COVID-19. The scale has seven items that are answered on a Likert-type scale. The total score was obtained from the sum of the items, categorized from seven to 19 points as “little fear”, from 20 to 26 points “moderate fear” and 27 to 35 points “very fear”.¹¹

The data were organized, audited and analyzed with the aid of the statistical program Statistical Package for Social Sciences (SPSS®) version 22.0. Simple and relative frequency of the studied variables were presented.

The project was submitted to the Research Ethics Committee of the State University of Montes Claros (Unimontes), with consolidated opinion No. 4,200,389/2020 and CAAE: 35982220.0.0000.5146. All participants received a copy of the Free and Informed Consent Form and marked “yes” to the question regarding the agreement to participate in the research. The research also complied with resolution 466/12 of the National Health Council / Ministry of Health, which deals with research with human beings.

Results

Participated in the study 1,016 physical education teachers from the state of Minas Gerais, coming from 369 among the 853 municipalities in Minas Gerais. Of the total number of teachers, 61.4% were female, 65.8% aged 21 to 40 years and 15.3% worked in rural areas (Table 1).

The data in Table 2 show the working conditions of physical education teachers during the COVID-19 pandemic. Among the results, there is a prevalence of 35.7% of dissatisfied with work, 37% who worked much more than they used to and felt exhausted.

Figure 1 shows the digital tools used by teachers to develop remote activities, showing the use of WhatsApp or Telegram (96%), e-mail (74.1%), *Conexão Escola* (73.1%) and Google Meet (68.4%).

Regarding the frequency of students in physical education classes, 14% of teachers surveyed reported attendance of less than a fifth of students in activities developed during the pandemic (Figure 2).

Table 3 shows the results of teachers' health conditions during the COVID-19 pandemic. There is a prevalence of 10.3% of teachers who were consuming alcoholic beverages more than they used to, 26.1% did not practice physical exercise on any day of the week, 87.7% used a computer or tablet for four hours or more a day, 31.4% started to have sleep problems, 20.9% reported medical diagnosis for anxiety and / or depression, 67.7% presented worsening in quality of life, 46% worsened in the perception of health status and 37.8 % reported much fear of COVID-19.

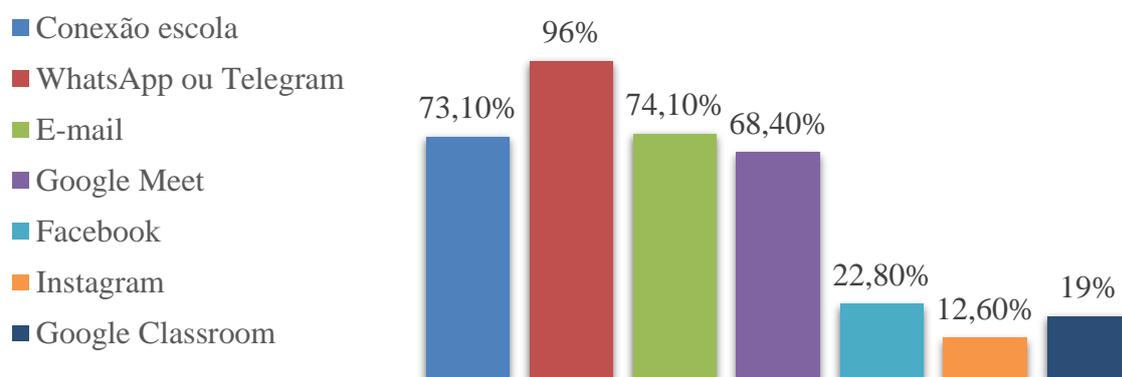


Figure 1. Digital tools used by physical education teachers from the state public school system in the state of Minas Gerais – Brazil during the pandemic. 2020 (n=1.016)

Source: authors

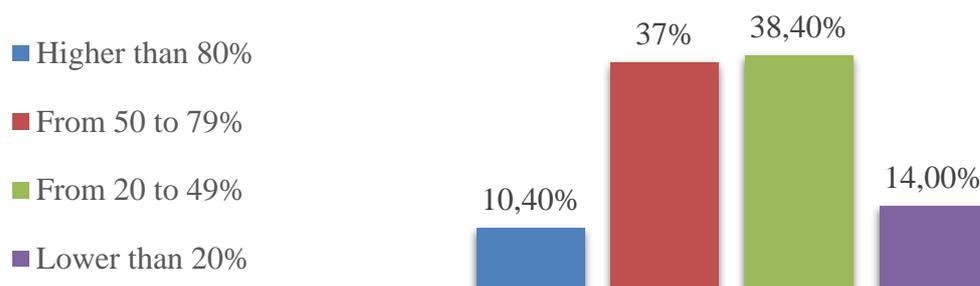


Figure 2. Access of students from the state public school system in the state of Minas Gerais – Brazil to remote activities of the physical education discipline. 2020 (n=1.016)

Source: authors

Table 1. Sociodemographic profile of Physical Education teachers in the state public school system in the state of Minas Gerais – Brazil. 2020 (n=1.016)

VARIÁVEIS	n	%
Sex		
Female	624	61,4
Male	392	38,6
Age (years)		
21 to 40	669	65,8
41 to 60	335	33,0
>60	12	1,2
Census area		
Urban area	861	84,7
Countryside	155	15,3
Marital status		
With spouse	679	66,8
No spouse	337	33,2
Child (ren)		
Yes	657	64,7
No	359	35,3

Source: authors

Table 2. Working conditions of Physical Education teachers from the state public school system in the state of Minas Gerais – Brazil during a pandemic of COVID-19. 2020 (n=1.016)

VARIABLES	n	%
Years of teaching work		
1 to 10	475	46,8
11 to 20	402	39,6
21 or more	139	13,6
Weekly hours of teaching work		
≤19	301	29,6
20 a 39	559	55,0
≥40	156	15,4
Link to the school		
Tender/effective	698	68,7
Hired/appointed	318	31,3
Has a graduated degree		
Master's and/or doctorate	17	1,7
Specialization	680	66,9
No	319	31,4
Carrying out work		
Yes	1006	99,0
No	10	1,0
Job satisfaction		
Satisfied	202	19,9
Neither satisfied nor dissatisfied	451	44,4
Dissatisfied	363	35,7
Work load		
It worked the same as it used to	129	12,7
He worked harder than he used to	421	41,4
Worked less than I used to	90	8,9
He worked a lot more than he used to, he felt exhausted	376	37,0
Difficulty to develop the work		
None	93	9,1
Few	285	28,1
Moderate	432	42,5
Many	206	20,3
Mastery of virtual Technologies		
Excellent/Good	650	64,0
Regular	306	30,1
Bad/Terrible	60	5,9
Computer available at home		
Yes, exclusive use	453	44,6
Yes, use shared with other family members	508	50,0
No	55	5,4
Didactic activities can be performed remotely		
Yes, in full	98	9,6
Yes, partially	743	73,1
No	175	17,2
Participation in training for the use of digital technologies in the classroom		
Yes, receiving via school	300	29,5
Yes, accessing on your own	478	47,0
No	238	23,5
Opinion on strategies and tools "Estude em casa", "Se liga na Educação" and "Conexão Escola"*		
Excellent/good	419	41,2
Regular	451	44,4
Bad/Bad	145	14,4

Note:* Variation in n due to loss of information

Source: authors

Table 3. Lifestyle and health conditions of Physical Education teachers from the state public school system in the state of Minas Gerais – Brazil during a pandemic of COVID-19. 2020 (n=1.016)

VARIABLES	n	%
Smoker		
No	942	92,7
Ex-smoker	32	3,1
Yes	42	4,2
Consumption of alcoholic beverages		
Did not consume before and is not consuming	432	42,5
Not drinking alcohol	77	7,6
Is drinking less than he used to	164	16,1
Keep drinking as often	230	22,6
Is drinking more than he used to	105	10,3
I had stopped drinking, but started drinking again	8	0,9
Physical exercise or sport on weekdays		
5 days or more	149	14,7
3 to 4 days	263	25,8
1 to 2 days	339	33,4
I do not practice	265	26,1
Physical exercise or sport in minutes per day		
60 minutes or more	190	18,7
46 to 49 minutes	163	16,0
30 to 45 minutes	258	25,4
Less than 30 minutes	145	14,3
I do not practice	260	25,6
Watching television (hours per day)		
Does not watch television	74	7,3
≤2	369	36,3
≥3	573	56,4
Use of computer or tablet (hours per day)		
No day	16	1,6
≤3 hours per day	109	10,7
≥4	891	87,7
Body weight[#]		
It remained the same	317	31,9
Decreased	115	11,6
Increased	561	56,5
Sleep problems		
Did not affect, still sleeping well	463	45,6
I already had sleep problems, but they decreased	10	1,0
He continued to have the same sleep problems	130	12,7
I already had sleep problems and they got worse	94	9,3
Started having sleep problems	319	31,4
Medical diagnosis of anxiety and/or depression		
No	804	79,1
Yes	212	20,9
Perception of quality of life BEFORE the pandemic		
Good/Excellent	759	74,7
Moderate	235	23,1
Bad/Terrible	22	2,2
Perception of quality of life DURING the pandemic		
Improved	118	11,6
It was the same	210	20,7
Worsened	688	67,7
Perception of health status BEFORE the pandemic		
Good/Excellent	801	78,8
Moderate	196	19,3
Bad/Terrible	19	1,9
Perception of health status DURING the pandemic		
Improved	66	6,5
It was the same	483	47,5
Worsened	467	46,0
Fear of COVID-19		
Little fear	311	30,6
Moderate fear	321	31,6
Much fear	384	37,8

Note:* Variation in n due to loss of information, # Pregnant women were excluded from the analysis (n=23)

Source: authors

Discussion

This study showed that considerable part of physical education teachers in public basic education in the state of Minas Gerais showed changes in terms of working conditions and lifestyle, due to the problems caused by the pandemic of COVID-19, such as the suspension of face-to-face school activities and the sudden start of remote teaching.

The substitution of face-to-face with remote education, changed the routine of practical and methodological activities adopted by teachers, especially impacting physical education teachers,¹² since face-to-face classes are more dynamic, intense and practices.¹³

Regarding working conditions, this study found that more than a third of teachers were dissatisfied with their work after the start of the pandemic. Similar results, outside the context of the pandemic, were verified in a study carried out in the United Kingdom with professors of universities, which showed dissatisfaction below 33%.¹⁴ A study conducted in the United States, on the other hand, showed dissatisfaction with work among 11% of basic education teachers.¹⁵ Dissatisfaction with work significantly predicts professional performance and its increase can therefore have a negative impact,¹⁶ especially for the exhaustion and burnout of professionals,^{17,18} a situation that is further aggravated by the challenges and problems of online education¹⁹ adopted in the context of the pandemic.

In this study, it was found that most teachers showed an increase in the workload, with more than 1/3 reporting a feeling of exhaustion for that reason. Result that is similar to a study carried out with physical education teachers in schools in Rio Grande do Sul, Brazil, also during the pandemic¹³ and also reported by another study with higher education teachers from Minas Gerais, Brazil.²⁰ This situation may have been favored by the difficulties of the online format of classes required in this period. The increase in workload can have repercussions both for the health of professionals, contributing to the problems of sleep, fatigue, exhaustion and tension, and can interfere with the quality of teaching.¹⁹

As for the way of working and the tools used in this study, the use of WhatsApp and Telegram as a means of conducting the online class predominated, and the use of e-mail, *Conexão Escola* and Google Meet was also important. The predominance of the use of WhatsApp and the importance of Google Meet was found in other studies also conducted in Brazil.^{13,21} It was also found that the attendance of students was considerably reduced in the online format. This result was similar to another study realized with teachers of public high schools at Brazil, and this information is detrimental to the teaching and learning process.²²

Regarding behavioral issues, it was found that part of the teachers surveyed increased the consumption of alcoholic beverages during the pandemic, a result similar to that found in Brazilian adults in the same period.²³ A possible justification for the increase in alcohol consumption is the stressful and challenging nature of teaching work, enhanced by the pandemic.²⁴ If high, alcohol consumption is a significant social problem,²³ which leads to a decrease in productivity, damage to health, development of mental disorders and increasing the risk of accidents.²⁵

More than a quarter of the teachers studied did not practice physical exercise on any day of the week, a result lower than that found in Brazilian adults during the pandemic,²³ but similar to other studies with teachers, which demonstrated a high sedentary rate in a different context of the pandemic.²⁶ The lack of physical exercise can generate several consequences, among them worsening quality of life²⁷ and alteration in the function of the immune system, so important in the context of the pandemic.²⁸ Even during the pandemic, due to its importance, regular physical exercise was recommended, taking due care.²⁹

In the present study, almost all teachers used a computer or tablet for four hours or more a day, a result similar to that found in Brazilian adults, in the context of the pandemic.²³ The high screen time had a contribution from online classes, but despite the imposed

situation, it is necessary to highlight the risk for the occurrence of overweight, obesity, depression, reduced sleep, among others.³⁰ It is necessary to reflect that this is a problem that crosses professions, since the adult population spends a large part of the day in sedentary behavior, such as, mainly, use of computers, televisions, tablets and cell phones,³¹ which was intensified to social distance.

During the pandemic, almost a third of the teachers surveyed started reporting sleep problems. This data draws attention because it is similar to the prevalence found in frontline professionals in the treatment of COVID-19.³² Sleep disorders can be caused by quarantine and the need for social distance³³ as well as the high screen time that remote classes require.³⁰ In addition, this situation can compromise the proper function of the immune system.³⁴

In this study, about a fifth of teachers reported medical diagnosis for anxiety and / or depression. Results similar to that observed in a study conducted with elementary and high school teachers in Japan, outside the context of a pandemic.³⁵ Teachers are at greater risk of having disorders and changes related to mental health, one of the reasons being that it is a profession with a lot of pressure³⁶ which can be enhanced by the challenges presented by the pandemic²⁸ and the remote education adopted.¹⁹

More than two thirds of the teachers in the present study reported worsening quality of life during the pandemic. This result was greater than that found in a survey conducted with higher education teachers in Minas Gerais, Brazil.²⁰ The change from face-to-face teaching to remote classes caused many challenges for teachers, contributing to a worse compromise in the quality of life and work, especially in school physical education teachers,¹⁹ generating greater demand in the workload of them.²⁰

Almost half of the teachers in the present study reported worsening health perceptions during the pandemic. Result superior to that found in adult Brazilians during the pandemic.³⁷ Possible reasons are fear of the disease, changes in mood, as well as socioeconomic and routine changes, as a consequence of social distance.³⁸ It was also found that more than two thirds of the teachers reported moderate or high fear in relation to COVID-19. High rates of fear were also found in a study conducted with high school teachers in Mexico.³⁹ Fear is a strong feeling that can change decision-making and behaviors, as well as impact the quality of the professionals' work.³⁹

Being a physical education teacher in school, by itself, has negative impacts on their health.⁴⁰ The support is even more relevant in the context of the COVID-19 pandemic, which brought several difficulties and challenges,²⁸ placing the physical education teacher in an even greater challenge, when compared with the activities, until then, carried out in person, totally changing the way of working, exchanging the court for the computer.

The COVID-19 pandemic brought with it the requirement of social distancing and, consequently, the performance of remote education, contexts that helped in the significant worsening of the quality of life of elementary and high school physical education teachers. These professionals are particularly affected due to the greater change in teaching dynamics and strategies, which are more intense and practical in face-to-face teaching.

The data of the present study, in general, are negative and indicate the exposure of physical education teachers to various health risks intensified during the pandemic. In order to improve the context of these professionals and also improve the quality of the teaching-learning process, it is important to have support measures, such as training and psychological support.

The study has as main limitations the data collection to be carried out via the internet, generating the possibility of selection bias, the answers being based on the self-report, allowing the occurrence of memory bias. However, the study's strong points are also highlighted, such as the support of SEE-MG, the good distribution of teachers throughout the state of Minas Gerais and methodological rigor.

Conclusion

The results of the study show the effects and changes caused by the pandemic of COVID-19 on the lifestyle and work routine of school physical education teachers, showing dissatisfaction with work, greater workload, use of communication tools for the development of classes, remote teaching, resistance and disinterest of parents and students regarding remote classes, increase in alcohol consumption, physical inactivity, intensification of sedentary behavior, increase in body weight, sleep problems and worsening in the quality of life and the awakening of fear of COVID-19.

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