Schoolless life and mental health of public-school students in the COVID-19 pandemic

Vida sem escola e saúde mental dos estudantes de escolas públicas na pandemia de Covid-19

Daniel Arias Vazquez[1], Sheila C. Caetano[1], Rogerio Schlegel[1], Elaine Lourenço[1], Ana Nemi[1], Andréa Slemian[1], Zila M. Sanchez[1]

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ABSTRACT This study analyzes the effects of the COVID-19 pandemic on students' mental health during part of the suspension of in-person classes. The study is a cross-sectional survey carried out from October2020 to December 2020. An online self-report questionnaire was answered by thirteen- to twenty-year old students, from the 9th grade (Middle School) to high school, who followed remote school activities in 21 state and municipal public schools located in peripheral areas of the cities of São Paulo and Guarulhos. Two linear regression models were used in the analysis, considering as dependent variables the depression scores as provided by the Child Depression Inventory and anxiety by the SCARED (Screen for Child Anxiety Related Emotional Disorders). The time of exposure to the screens, the inversion of sleep periods and the female gender, along with the difficulties of remote education and other social markers (such as color/race and cases of COVID-19 at home) are associated with symptoms of depression and anxiety during the first wave of the COVID-19 in the Metropolitan area of São Paulo. The findings reinforce the importance of school routine in the lives of those young people and the challenges posed to schools to promote students' mental health in the post-pandemic reality.

KEYWORDS Mental health. COVID-19. Adolescent. Education, primary and secondary.

RESUMO *O presente estudo analisa os efeitos da pandemia de Covid-19 sobre a saúde mental dos estudantes durante parte do período de suspensão das aulas presenciais. Trata-se de estudo transversal, aplicado entre outubro e dezembro de 2020, baseado em questionário on-line de autorrelato respondido por estudantes entre 13 e 20 anos, do 9º ano do Ensino Fundamental e do Ensino Médio, que acompanhavam as atividades escolares remotas em 21 escolas públicas estaduais e municipais, localizadas nas periferias dos municípios de São Paulo e Guarulhos. Para a análise dos dados, utilizaram-se dois modelos de regressão linear múltipla, tendo como variáveis dependentes os escores de depressão pelo Inventário de Depressão Infantil e de ansiedade pelo Scared (Screen for Child Anxiety Related Emotional Disorders). O tempo de exposição às telas, a inversão do sono e o sexo feminino, combinados com as dificuldades do ensino remoto e outros marcadores sociais (como cor/raça e casos de Covid-19 em casa), estão associados a sintomas de depressão e ansiedade durante a primeira onda da Covid-19 na Região Metropolitana de São Paulo, reforçando a importância da rotina escolar na vida desses jovens e os desafios colocados às escolas para a promoção da saúde mental dos estudantes no período pós-pandemia.*

PALAVRAS-CHAVE *Saúde mental. Covid-19. Adolescente. Ensino fundamental e médio.*

[1]Universidade Federal de São Paulo (Unifesp) – São Paulo (SP), Brasil.
dvazquez@unifesp.br

Introduction

What were the effects of the pandemic on both the life and the mental health of young people? Schools closure and in-person classes temporarily dismissed were some of the earliest measures adopted to face the new coronavirus in almost all countries[1]. As this is the main activity for most young people, the long school-less period did significantly affect sociability relations and daily routines, particularly in Brazil[2], where classes were dismissed since early March and were not resumed over the entire school year of 2002 in most public schools, there included the 21 considered in this research.

The social isolation had enduring effects on those students, breaking bonds and interrupting important study and leisure routines, in a stage of their lives when social activities are more intense and when emotional fragilities increase mental health risks[3]. Assigning priority to this populational segment – which, according to the 2010 Census, represents 33% of Brazilian population –, this research did evaluate the effects of the pandemic on both the social life and the mental health of young students inserted in a context of metropolitan peripheral areas. This choice was aimed at going deeper into researches involving the most vulnerable groups, such as the one carried out by the National Council of the Youth that, in the first semester of 2020, which found out that the pandemic:

> [...] was affecting different aspects of the life of adolescents as a whole, such as the sleep quality, the availability of financial resources, family relations and, above all, the mental health[4(69)].

Prior to the pandemic, adolescents' mental health was already a public health concern. Mental disturbances in this youth group are associated to: damages such as reduction of the chances to conclude the basic education, lack of social cohesion and less ability to face future adversities[5]. Such disturbances may affect up to 25% of adolescents[6], and remain stable in more than 50% of all children until adult life[7]. According to Kessler et al.[8], 50% of adults with mental disturbances report such diseases starting earlier than 14 years old.

In Brazil, more than 80% of six- to twelve-year old children with mental disturbances do not receive appropriate treatment[9]. This is in pace with researches, particularly in low- and middle-income countries, which show that adolescents who live in unfavorable social conditions are more affected and get less treatment[10].

According to Panda et al.[11], the mental health of young people was even more affected during the pandemic. In many countries, such as Italy[12] and the United States (USA)[13], researches show the increase of depression and anxiety symptoms, which is ratified by systematic revisions[14,15]. Nevertheless, sociodemographic factors, and those related to the pandemic itself, associated to the increase of those symptoms, vary according to the country. In Brazil, we still do not count on publications that bring details on these associations.

The present study is aimed at evaluating the possible connections and impacts of the pandemic on adolescents' mental health, considering the changes in their way of life that result from restrictions to the social contact, the closure of schools and the difficulties concerned with continuing studies remotely, considering the records of infection cases, lost of employment and reduction of salary at the family level, besides behavior differences according to gender, race and social condition. Which of those factors – behavioral, educational and/or socioeconomic – are associated with the variation in depression and anxiety indices during the pandemic? This is the central question that led to this study.

Material and methods

Design of the study

This is a transversal study, carried out using questionnaire answered online by students from the 9th grade of Middle School through the 3rd grade of High School, in 21 public schools in the cities of São Paulo and Guarulhos, from October to December 2020, during the COVID-19 pandemic. In order to reach the students, the research was supported by the managing teams of participant schools that took part in the Institutional Sponsorship Program for Teaching Initiation (Programa Insitucional de Bolsa de Iniciação à Docência – Pibid) and the collective Brigade for Life (Brigada pela Vida), which involves different sectors of the movement pro-education and health, including the schools' teachers and principals.

Sampling

All students enrolled from the 9th grade of Middle School to the 3rd Grade of High School and who were in contact with the school. In total, 436 answers were obtained, 401 of which were valid cases. The cases that did not fulfill inclusion criteria were not considered (n=35): students older than 21 who were enrolled in the modality Education of Youths and Adults (Educação de Jovens e Adultos – EJA) and under 13 of earlier grades. Although in normal conditions the sample size could have been larger, considering that the schools closure made data collection difficult, it was sufficient for the analysis, yet obliging this stage of the research to be extended.

For the same reasons, the number of answers was different among the schools. At the end, the geographic distribution of students was as follows: 318 subjects from 16 municipal schools and three from state schools located at the East and North regions of São Paulo City; and 83 subjects from two state schools located at the Pimentas region, in the city of Guarulhos.

Data collection

Data were collected online, using the questionnaire in Google Forms, from October 26, 2020, to December 14, 2020. Over this period there were no in-person classes, suspended since March 16, 2020. The students received from their teachers the link for the questionnaire, through the same media used for remote activities, which were different at each school (study platforms such as Google Classroom or Windows Team, Whatsapp and Facebook Groups). The access to the questionnaire was quite simple, using active link, and no filling-up difficulties were reported. A pilot-questionnaire applied suggested that students would take 15 minutes average to answer the questions.

Participation was free: volunteers should previously accept to participate, and adults legally responsible for minors should expressly and anticipatedly agree, using the Term of Free and Informed Consent, and the Term of Acceptance was submitted to all participants. The research is registered in the Platform Brazil (Plataforma Brasil) and was approved by the Committee of Ethics in Research of the Federal University of São Paulo (Opinion Nr. 4,369,526).

The collection tool was organized into five dimensions: a) socioeconomic characteristics, such as age, skin color, gender and the Criterium of Economic Classification Brazil (Critério de Classificação Econômica Brasil – Critério BR), of the Brazilian Association of Research Companies (Associação Brasileira de Empresas de Pesquisa – Abep)[16]; b) effects of the pandemic – for instance, if the interviewee did adhere to the social isolation; if he (she) or someone in the family was infected; if he (she) fears being infected, besides economic impacts, such as loss of employment or reduction of the family income; c) changes in the routine, starting from a general question – did the pandemic affect his (her) daily life? – and following to more specific aspects, such as changing the day for the night and the time he (she) did spends before the screen (in games, social networks, TV); d) relation with the

school, checking if there were remote classes, if he (she) misses being at school, and his (her) evaluation about how important in daily life is the knowledge acquired at school; e) at last, on mental health, sorting out procedures meant to detect depression and anxiety symptoms were realized, using respectively the Inventory of Child Depression[17] and the Scared (Screen for Child Anxiety Related Emotional Disorders), validated for the Portuguese language by Barbosa et al.[18]. Positive results for depression consider scores over 20 points[19]; and for anxiety, over 30[20]. Variables will be presented along with the descriptive analysis in the Outcomes section.

Data analysis

At the take-off, we carried out exploratory analyses using contingency tables with chi-square tests and t-student test with 5% significance level, followed by simple linear regression (univariate). Dependent variables were considered in the regression models to both anxiety and depression, in scores format. The option for one continuous variable (scores), instead of the positive sort-out or the categorization in light, moderate and serious cases, is justified by the absence of clinical evaluation, as there was no direct contact with the interviewees, thus impeding any diagnostic classification. The co-relation between depression and anxiety rates for this sample is moderate (r = 0.607), which points out to the use of two independent models of multiple linear regression, initially with the same independent variables.

The independent variables correspond to the set of the first four dimensions (socioeconomic, effects of the pandemic, changes in the routine and relationship with the school). All interest variables were included in the multiple linear regression, and the option was the model of non-significant variables exclusion by means of stepwise backward. Therefore, each initial model did consider all independent variables, but the final one did include only the significant variables at 5%. In order to check the models adjustment, the Variance Inflation Factor (VIF) was used, so as to make sure there would be no multi-co-linearity other than the graphic and numeric analysis of residues.

The results are presented by means of frequency, proportions (%), coefficient (beta), 95% confidence interval and p values. The software SPSS version 21.0 was used to carry out the analyses.

Outcomes

Table 1 presents the distribution of the variables selected from the questionnaire, grouped into five dimensions.

Table 1. Sample description (N=401), Metropolitan Region of São Paulo City. 2020

Domain	Variable		N	%
General and socio-economic characteristics	Age	13-15	186	46,7
		16-17	167	42
		18-20	45	11,3
	Color/race	White	172	43,2
		Mulatto	156	39,2
		Black	60	15,1
		Yellow	9	2,3
		Indigenous	1	0,3
	Gender	Female	239	59,6
		Male	159	39,7

Table 1. (cont.)

Domain	Variable		N	%
General and socio-economic characteristics	BR Criterium*	Non-binary	2	0,5
		A	26	6,5
		B	181	45,1
		C	178	44,4
		D/E	16	4,0
Effects of the pandemic	Social isolation	Never leave	32	8,0
		Sometimes leave	171	42,8
		Out	197	49,2
	Fears catching the virus	Yes	212	52,9
	Infection cases	Yes	100	24,9
	Loss of employment	Yes	166	41,9
	Salary reduction	Yes	175	44,3
Changes in the routine	Did affect daily life	Yes	345	86,5
	Sleep inversion	Yes	108	27,3
	Time before the screen	Up to 2 h	43	10,9
		From 2h to 4h	86	21,7
		From 4h to 6h	87	22,0
		From 6h to 8h	71	17,9
		More than 8h	109	27,5
Relationship with school	Did continue studies	Yes	307	76,6
	Misses school	Yes	297	74,1
	Knowledge is important in life	Disagree	35	8,8
		Partially	141	35,5
		Agree	221	55,7
Mental health	Sort out for depression	> 20	42	10,5
	Sort out for anxiety	> 30	191	47,5
		Min. - Max.	Average	Std Dev
	Depression score (0-40)	0 – 37	9,37	7,32
	Anxiety score (0-80)	0 – 80	29,97	18,10

Source: Elaborated by the authors.

*Abep = Brazil Criterium Scale, where class A is the highest income, and D and E are the lowest income.

Note: on average, there are two missings per variable (varying from zero to six cases).

Concerning general and socioeconomic characteristics, it was observed that the average represents a quite young public, concentrated in the 14 to 17 year-old range (87.4%), which corresponds to the four school grades selected. As to color/race, according to categories used by the Brazilian Geography and Statistics Institute (Instituto Brasileiro de Geografia e Estatística – IBGE), the majority in the sample included whites and mulattoes. In this case, it was decided that the regressions should aggregate blacks, mulattoes and indigenous into one group, which was composed by 54.5% of the cases; and whites and yellows into another group, with 45.5%. As to gender, women were the majority in the sample (about

60%). Considering that only two subjects self-declared non-binary, they were not considered in the regression analysis. Regarding social class, most students were in classes B and C, thus suggesting the predominance of better-off students in classes offered in remote teaching. For the social stratification, it was decided to use the punctuation obtained by the Brazil Criterium, without categorization, so as to enable better adjustment to the linear regression model, avoiding as well to use the concept of social class, which would exceed the scope of the present article.

Considering the effects of the pandemic, the first step was to bring together those who did remain in social isolation, which corresponded to 50.8% of the cases, adding up the options 'I currently do not leave the house'(8%) or 'I only leave for essential activities'(42.8%), such as market or medical appointments; the other group included the remaining 49.2% who were not in isolation, whatever the reason – some were leaving just occasionally (32.8%), some just to work (9.8%) and some who did not change the same routine as prior to the pandemic (6.8%). The other variables in this dimension are originally dichotomous, meant to identify if is the student or someone in the family did catch the virus (24.9%), if he/she fears catching the virus (52.9%, yes), and the cases when he/she lost the employment or had reduction in his/her salary or the salary of someone in the family, which did happen in 42% to 44% of all cases, respectively.

As to the dimension that had to do with changes in the routine, the research found that for 86.5% of the interviewees there were alterations; 27.3% told they were sleeping during the day instead of the night; and it must be remarked the time of exposure to screens, either in games, series and social networks – in the largest range, for one out of each four students, more than eight hours every day, not included remote teaching activities. As the cases are distributed into the five categories, the option was to keep this variable as ordinal in the models.

The last block of independent variables opens up the subject of the relationship with the school during the pandemic: 76.7% of this sample did succeed continuing studies at home; 74.1% reported missing their classes and/or teachers, while the rest stated not to miss their classes and/or teachers, or missing just being close to colleagues; considering the statement 'knowledges learned at school do add to daily life', 55.7% did agree, 35.5% did agree only partially, and 8.8% did not agree. For the regression analysis, this last variable was transformed into a dichotomous one, highlighting the unrestricted agreement in the remaining cases.

The analysis of both independent variables reveals a positive sorting-out for depression (scores over 20) and for anxiety (over 30 points), comprising 10.5% and 47.5% of the sample respectively. However, the option was to use those scores as dependent variables, whose descriptive statistics reveal average scores of 9.4 for depression and 30 for anxiety, with variation coefficients of 0.8 and 0.6, in this order.

Table 2 presents the results of univariate analyses executed using simple linear regressions for each outcome.

Table 2. Simple Linear Regression Analysis (univariate) of factors associated to depression and anxiety symptoms among students (N = 401), cities of São Paulo and Guarulhos, 2020

	Depression				Anxiety			
Independent variables	**Beta Coef.**	**95%CI**		**p**	**Beta Coef.**	**95% CI**		**p**
Gender	3,489	2,080	4,899	<0,001	12,541	9,119	15,963	<0,001
Age	0,192	-0,336	0,719	0,475	1,114	-0,184	2,412	0,092
BR Criterium (score)	0,026	-0,054	0,107	0,519	0,012	-0,187	0,211	0,909
Color/race (dummy)*	0,490	-0,960	1,940	0,507	4,027	0,463	7,592	0,027
Infection cases	1,826	0,173	3,480	0,030	3,960	-0,135	8,055	0,058
Loss of employment	-0,174	-1,635	1,287	0,815	-0,885	-4,498	2,728	0,630
Salary reduction	-0,217	-1,680	1,245	0,770	0,006	-3,593	3,606	0,997
Social isolation	-1,376	-2,811	0,059	0,060	0,755	-2,810	4,320	0,677
Fears catching the virus	0,018	-1,424	1,459	0,981	2,751	-0,804	6,306	0,129
Did affect daily life	0,084	-2,024	2,193	0,938	9,328	4,185	14,470	<0,001
Time before the screen **	1,581	1,070	2,093	<0,001	2,420	1,124	3,717	<0,001
Sleep inversion	5,860	4,356	7,364	<0,001	8,898	4,964	12,832	<0,001
Knowledge is important in life	-2,659	-4,093	-1,225	<0,001	-3,806	-7,391	-0,221	0,038
Continued studies	-2,825	-4,501	-1,150	0,001	-2,280	-6,474	1,915	0,286
Misses school	-1,345	-2,981	0,291	0,107	0,956	-3,103	5,015	0,644

Source: Elaborated by the authors.

*Colors white/yellow versus black, mulatto and indigenous.

** Ordinal variable, with two-hour interval.

For both outcomes, being a girl is the factor that contributes the most for the increased number of symptoms reported. Color/race is only associated to more anxiety symptoms, but not depression. Cases of infection by coronavirus in the family are associated to more symptoms of depression, and suggest significance for anxiety trend (p=0.058). Time before the screen and inversion of sleep period, changing the day for the night, are associated with more symptoms in both outcomes evaluated. On the other hand, changes in daily life, in general, was only significant for anxiety. Considering educational aspects, agreeing that knowledge is important for life is associated with both situations, while continuing studies was only significant regarding depression.

Tables 3 and 4 present the factors associated with the variation of both depression and anxiety symptoms, according to models of multiple linear regression, which could explain the variation of 26.1 and 20.8 of respective indices.

Table 3. Multiple Linear Regression Analysis (multivariate) of factors associated to depression symptoms among studants (N= 384), São Paulo and Guarulhos cities, 2020

		Beta Coef.	CI 95%			
***Depression score* (R^2 = 0,261)**	**Beta Coef.**	**Std.**	**Min**	**Max**	***p value***	**VIF**
Sleep inversion	4,432	0,28	2,964	5,901	< 0,001	1,086
Females	2,911	0,199	1,586	4,236	< 0,001	1,042
Time before the screen*	0,952	0,183	0,471	1,434	< 0,001	1,079
Knowledge is important in life	-2,444	-0,171	-3,75	-1,139	0,001	1,048
Did continue studies	-1,741	-0,101	-3,333	-0,149	0,032	1,08
Infection cases	1,642	0,1	0,174	3,111	0,028	1,019

Source: Elaborated by the authors.

*Ordinal variable, with two-hour interval.

Table 4. Multiple linear regression analysis (multivariate) of factors associated to anxiety symptoms among students (n= 383), São Paulo and Guarulhos cities, 2020

			CI 95%			
Anxiety score (R^2 = 0,208)	**Beta Coef.**	**Beta Coef. Std.**	**Min**	**Max**	***p value***	**VIF**
Females	10,984	0,298	7,471	14,497	< 0,001	1,072
Time before the screen*	2,405	0,183	1,175	3,635	< 0,001	1,032
Sleep inversion	6,826	0,171	3,051	10,602	< 0,001	1,052
Color/race (dummy)**	5,217	0,144	1,869	8,565	0,002	1,007
Did affect daily life	5,764	0,11	0,818	10,709	0,022	1,045

Source: Elaborated by the authors.

*Ordinal variable, with two-hour interval.

**Colors white/yellow versus black, mulatto and indigenous.

As to the multi-varied model for depression symptoms (*table 3*), the inversion of the sleep period is the most relevant variable, involving a 4.4 point increase to the average depression score. Gender is the second variable that can be more easily explained, with 2.9 additional points for women when compared to men. Next, the time spent before the screen also raises the depression score in almost one point for each two additional hours of daily exposure, not include the time before the screen for remote school activities. In the tests carried out using that variable as category, considering the smallest value as reference, significance was obtained in the two last ranges, when that time before the screen surpasses six hours. However, R^2 was higher in the model presented here, thus justifying our choice for keeping it as ordinal.

Besides those more relevant factors, two independent educational variables emerge that contribute in the opposite direction, that is: on average, the evaluation that studies do help in daily life reduces the score in 2.4 points, while the continuity of studies during the pandemic reduces the depression index in 1.7 point. Finally, the fact that the student or someone in the family did catch the virus – which was reported by one out of each four interviewees – results in 1.6 extra point in the depression score. Among the variables excluded from the final model for depression, there were no variables with significance trend at 10% ($p<0.1$).

In the anxiety model (*table 4*), gender, time before the screen and changing sleep time were maintained as the three main explicative variables, in the same sense, but the association strength was different from that of the depression model. When compared to men, being a woman raised in 11 points, on average, the anxiety score; every two more hours before the screen resulted in 2.4 additional points; and sleep inversion raised anxiety symptoms in 6.8 points.

Besides the three variables present in both models, anxiety symptoms were more frequent among whites and yellows: on average, the score was 5.2 points higher than for the group of black, mulatto and indigenous students, being thus considered the fourth more relevant attribute. Finally, changes in daily routine, reported by almost 90% of the students, also proved to be significant, surpassing in 5.7 points those who declared not to have changed their routine even during the pandemic. Although excluded from the final model, as they proved no significance at 5%, the cases of infection at home and the relevance attached to the knowledge acquired at school – both significant in the depression model – were variables with significance trend for anxiety as well, with *p* values equal to 0.063 and 0.078 respectively.

Discussion

The article suggests that students in the 9th grade of Middle School and High School, in both state and municipal public schools located in peripheral areas of São Paulo and Guarulhos, were sorted positive in 10.5% for serious depressive symptoms, and 47.5% for serious anxiety symptoms. Systematic revisions provided evidences that those conditions did significantly increase during the pandemic[11,14]. Similar results were identified in studies carried out in China, the USA, Canada, Denmark, Germany, Japan, the Philippines and the United Kingdom[15,21]. According to Miranda et al., mental health is a critical concern in a pandemic scenario, where children and adolescents are vulnerable groups that require measures meant to reduce the emotional overburden.

The most important associations with depression and anxiety symptoms were the time before the screen and the inversion of the sleep period (changing the day for the night), besides being female persons. Other authors who did investigate the association with time before the screen reported the same findings[23,24], as well as with sleep alterations[25]. In a systematic revision, Hale and Guan[26] demonstrated a significant association between sleep and time before the screen. Possibly, the light emitted by the screen holds back the production of melatonin, leading to modifications in the circadian cycle, thus making a sleep with quality during the night more difficult[27]. Depression and anxiety are more prevalent among female persons, and that was also observed during the pandemic[25,28].

Besides those three factors, considering important the knowledge acquired and the occurrence of COVID-19 at home were associated to depression symptoms – the first, negatively, the second, positively –, and were variables with significance trend to anxiety. In a meta-analysis, Panda et at.[11] reported as risk factors the existing mental disturbances, being female and concerns about the infection. On the other hand, for elderly persons, education and good economic condition were protective situations.

It is presumed that the absence of routine may have potentialized the time spent before the screen and the sleep inversion, thus contributing for the increase of depression and anxiety symptoms. The routines and habitudes in the school ambiance – which include sociability relations with other students, besides teachers and other education professionals – define the school culture of one specific institution, or yet of a group of institutions[29]. For the youth, the school space represents more than just a location where they go to study: it

is also a location where they will agglutinate and have close relationship with other persons the same age as them. By means of a historical construction, which Vincent et al.[30] have named 'school format', apprenticeship takes place separating a time/space that differs from daily habitudes, splitting childhood and youth journeys into 'time in school' and 'time outside the school'. During the pandemic, life without school has mixed up those times and spaces, affecting both the apprenticeship and the mental health of the students.

Despite the access difficulties to isolated students, particularly those who had no contact with their schools, carrying out the present transversal study by the end of school period in 2020 was important to record that grasp on life during that unusual period, after more than seven months without face-to-face classes following the first wave of the COVID-19 pandemic in the Metropolitan Region of São Paulo, opening room for other studies that might go deeper as to the outcomes registered, though with a retrospective look.

In this discussion, we wish to remark the importance of the school, and to highlight three challenges this institution will face in the post-pandemic scenery. As face-to-face classes were re-opened, public schools did receive teens with new and enlarged demands. The first challenge is the promotion of mental health. For instance, the use of workshops is recommended as work methodology in the school environment, once it enables an important relation with effective and diverse possibilities as to involvement and apprenticeship for all, either teachers or students. This methodology is even more relevant in the post-pandemic process, as the kind of life experienced during the social isolation period was not mediated by the school. Thus, the workshops would be autonomous spaces for the production of knowledge which are not included in the original curriculum.

Considering this scenery, one should strongly support the 'Health in Schools Program' (Programa Saúde nas Escolas – PSE), conjointly organized by the Ministries of Health and of Education: based on education units, tihis program is meant to articulate health and basic education, yet contributing to build a social attention system focused on the promotion of citizenship and human rights[31]. Besides the necessary primary attention, the prospection of cases that require special care is among the basilar purposes of the program. However, the second challenge is to refine this program. The lack of a systematic evaluation of the program and inconsistencies pointed out in case studies by Ataliba and Mourão[32] already shed light on the gap that required investigation even prior to the COVID-19 pandemic.

The partnership established with the collective Brigade for Life (Brigada pela Vida) stressed the importance of acting on the territory. To consider the socioeconomic context the school is inserted in and to come closer and closer to the community is the third challenge, proposed as a means for strengthening attachments that were interrupted for a significant parcel of the students as the schools were closed – as confirmed by the difficulties in data collection for the research. In peripheral areas, both vulnerabilities and opportunities are largely based on the territory. If peripheries cannot be dealt with as if they were homogeneous structures[33], one should not ignore the existence of spatial overlapping of needs, at least as it comes to young people, as already demonstrated in the Index of Juvenile Vulnerability in the city of São Paulo (Índice de Vulnerabilidade Juvenil na cidade de São Paulo)[34], disaggregated at the district level. Either when considering the diagnosis on vulnerability or when discussing the offer of public policies, a more accurate look on the territory calls the attention to the possibility of more effective initiatives by the State[35]. Social role and spatial reach increase the relevance of taking the school as the starting point for observing dynamics involving the youth in researches that consider the complex mosaic of the peripheral areas.

Considering the extraordinary character of the pandemic and of the unique experience of social isolation, a transversal study applied to that public, in this context, has posed challenges for the development of the research. Therefore, its limits must equally be recorded. First, it was positively established that most students, according to their teams, were not following remote activities, and significant parcel of them had no contact with their schools. Therefore, it was difficult to access students isolated in their houses. Second, one may assume that there has been a biased look, as the sample did not include students who were disconnected or had no contact with their schools during the pandemic period. One may suppose that the answers were provided by better-off students, those with better socioeconomic conditions, with family structure and good school performance, suggesting a situation probably even more critical among those excluded from remote activities – and consequently, also from the present study.

In short, this study allowed for identifying some effects of the COVID-19 pandemic on the mental health of youth, related to changes in the juvenile behavior during the period schools remained closed. Lacking the school routine, young students of public schools in the Metropolitan area of the State of São Paulo spent even more time before the screen and changed the day for the night. These two behaviors, besides being female, were the factors more closely associated to symptoms of depression and anxiety. Based on these outcomes, one may highlight the importance of the school in the students' life and the challenges to be faced to succeed in the promotion of the mental health in the school environment: stronger connections will be required between public education and health policies, summed to resources and to the preparatory procedures to be mobilized in order to face this new reality.

And one last important remark: the pro-school defense in this paper should not be taken as a position favorable to returning to school during the pandemic no matter what. Despite the importance of the school in the life of young students, it was mandatory to assure safe conditions for this return to classes, the pandemic under control, the adoption of sanitary protocols and faster vaccination for priority groups, there included education professionals. If by one side the school routine would appease the impacts demonstrated here, on the other side one must keep in mind that the occurrence of COVID-19 cases in the family was also significantly associated in the model of depression and significance trend at 10% for anxiety, risking to become even more important as the pandemic gets worse. Therefore, the article shed lights as well on a false dichotomy between worsening mental health conditions and returning to classes in the course of the pandemic – a theme frequently discussed in the public debate.

Collaborators

Vazquez DA (0000-0002-4467-3392)* and Sanchez ZM (0000-0002-7427-7956)* were in charge of the statistics analysis. Vazquez DA and Caetano SC (0000-0001-8403-7078)* wrote the first version of the article. Schlegel R (0000-0002-1297-0819)*, Lourenço E (0000-0002-2931-0526)*, Slemian A (0000-0002-2745-7073)* and Sanchez ZM took part in the design of the project, in data analysis and also wrote the article. Vazquez DA, Caetano SC, Schlegel R and Lourenço E contributed for interpreting and discussing the results. Nemi A (0000-0002-8452-2660)*, Slemian A and Sanchez ZM were in charge of critically reviewing the manuscript. All the authors did participate in the conception of the study and approved the final version. ■

*Orcid (Open Researcher and Contributor ID).

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