COVID-19 Pandemic and the Second Lockdown: The 3rd Wave of the Disease Through the Voice of Youth

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Abstract

Around the beginning of the 2021 new year, Europe's COVID-19 third wave led many leaders to implement a new lockdown period, with the teaching–learning system returning to the online method once more. The present study aimed to understand the health consequences for adolescents and young adults (AYA) during the third wave's lockdown. This mixed-method study included 592 participants between 16 and 24 years old ($M=19.01$, $SD=2.32$), with the majority being female (70.9%) and students (82.3%) at high school (55.1%) or university (44.9%). Negative impacts are highlighted in the categories: relationships, physical activity (as well as sexual impacts), screen time and academic stress; and no impacts in health and well-being, leisure activities, sleep, diet, academic performance and relationships with teachers and peers. Overall, when compared to the opposite gender, girls report more negative impacts on leisure activities and diet, although more positive impacts on diet, as well as on academic stress; boys stand out in the negative consequences on substance use. At the academic level, students in higher education show more negative impacts on relationships, leisure activities, sleep, diet, screen time and relationships with teachers and peers. Enlightened about the impacts of the second lockdown on their lives, and showing signs of “pandemic fatigue”, this study draws attention to the need to associate psychological support measures with those implemented to contain the COVID-19 pandemic.

Keywords Portugal · Pandemic · COVID-19 · 3rd Wave · Participation of AYA

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1 Introduction

The pandemic declared in March 2020 and the measures implemented in order to reduce the spread of the SARS-CoV-2 virus included a second general lockdown (DGS, 2020; WHO, 2020) affecting directly the younger population with negative consequences in academic, social, familial, physical and psychological areas (Almeida et al., 2020; AUTHORS et al., 2020; Kecojevic et al., 2020; Singh et al., 2020; The Lancet Child Adolescent Health, 2020; UNICEF, 2020; AUTHORS, 2021a, 2021b).

In a systematic review of the literature, Loades et al. (2020) showed that the COVID-19 virus had an impact on the mental health of adolescents and young adults (AYA), and was particularly associated with depressive and anxious symptoms, a finding confirmed by other authors (Magson et al., 2021). Magson and colleagues (2021) also highlighted that these consequences contribute to a decrease in life satisfaction, reinforcing authors Parola et al. (2020) and Schwinger et al. (2020), the negative effects on AYA's psychological strengths and psychological well-being, respectively. Based on the adolescent well-being model, the domains: (i) good health and optimal nutrition; (ii) connectedness, positive values and contribution to society; (iii) safety and supportive environment; (iv) learning, competence, education, skills and employability; (v) agency and resilience, should be covered (Ross et al., 2020), and in the course of COVID-19 many of the areas were affected.

Once more deprived of the face-to-face teaching model, AYA were again forced to adopt online learning. After identifying the barriers of this methodology in the first general lockdown, arising from economic conditions such as the inability to ensure that all students and teachers had the necessary resources for online education (Dias & Pinto, 2020; Di Pietro, Biagi, Costa, Karpiński, & Mazza, 2020; Schleicher, 2020); and conditions related to family life, work space, and time dedicated to teaching, some students could perceive an impact on their learning and academic performance (Dias & Pinto, 2020).

Time and space sharing with the family increased, but decrease with the peer group, leading to the AYA perceive various changes in these relationships (AUTHORS et al., 2020b; Rogers, Ha, Ockeya, 2021). A qualitative study on AYA health and wellbeing during the first confinement showed that most of them reported more conflicts and disagreements with their families, the loss of important social life moments and a decrease in interpersonal skills (AUTHORS et al., 2020a). Orben et al., (2020) stated, that AYA may suffer more (than children or adults) with social deprivation since peer interaction is a vital aspect of development during adolescence. Though the consequences may be tackled with the widespread access to digital forms of social interaction.

AYA also believed that this time allowed them to make a better selection of friends (Authors et al., 2020a).

A higher level of stress, associated with changes in routine and inability to maintain some effective coping strategies, contributed during lockdown to the adoption of risk behaviours, such as increased food intake, poorer sleep quality

and (Abbas et al., 2020) increased screen time (Schmidt et al., 2020; Xiang et al., 2020). The detriment of health behaviours, such as the practice of physical activity (Abbas et al., 2020; Schmidt et al., 2020; Xiang et al., 2020) were also reported. Resilience and coping strategies during the pandemic supported a better psychological health status (Almeida et al., 2020; Deslandes & Coutinho, 2020; Zhang et al., 2020) and subjective well-being (Pigaiani et al., 2020) of AYA, and consequently contributed to better physical health status. Thus, it is crucial to understand and reinforce the adoption of strategies such as the establishment of routines and schedules (Almeida et al., 2020; Deslandes & Coutinho, 2020).

Considering the principle that AYA have important inputs regarding the issues of their lives and their physical and mental health (Ozer & Piatt, 2017), listening to their voice and experience becomes essential to a better understanding of the true impact of the pandemic on this age group (Cammarota & Fine, 2008; Kim, 2016; Livingstone et al., 2014). This study aims to give a voice to AYA in order for them to express their problems, needs and experiences related to the impact of COVID-19 on their health, well-being, relationships, health and risk behaviors and their coping strategies, bringing a comparison based on gender (self-identity, APA, 2018) and level of education (high school and university).

2 Method

This work is part of the study “Dream Teens: The Youth Voice in direct speech” (AUTHORS et al., 2020b; AUTHORS, 2019; AUTHORS et al., 2015), approved by the Ethics Committee of the Lisbon Academic Medical Center. The data collection instrument included an informed consent for adults and children under 18 years old (parental guardians), which presupposed mandatory acceptance to proceed with the response. For eventual clarification of doubts, the contact details of the research team were included.

2.1 Design and Participants

This study was designed and conducted exclusively online, considering the period of mandatory lockdown that was experienced at the time of data collection. Its dissemination was carried out through the social networks of the research team, institutions and entities linked to youth work and Jovem Cascais/ Cascais Municipality. The data collection process took place from February 2 to March 22, 2021.

A total of 723 responses were collected (non-representative sample), of which 592 were considered valid after exclusion of duplicate or incomplete responses. The participants had a mean age of 19.01 years ($SD=2.32$ years; $Min=16$ and $Max=24$); 70.9% were female, 82.3% students and 69.6% residents in the Lisbon district. Participants were attending or had completed high school (55.1%) or university (44.9%).

Although we followed the definition of youth maintained by the United Nations (UN, 1989) (15 to 24 years old), this study did not include 15 year olds in order to avoid AYA who were not yet in high school.

2.2 Instrument

The online instrument applied was directed to adolescents and young adults aged between 16 and 24 years old. The questionnaire included sociodemographic questions such as age, gender, work status, academic level, district of residence); and 16 questions related to the impact of second lockdown on health and well-being, relationships, health and risk behaviors (leisure activities, sleep, physical activity, diet, substance use, screen time), academic (academic performance, academic stress, relationships with teachers and peers). All questions had the following response options: no impact, positive, negative, or not applicable impact, and each category had a non-mandatory open response to describe the impacts felt. In the end, two open-ended questions allowed us to study what they felt was worst and what helped them to cope with the lockdown.

The response time ranged from 7 to 10 min.

2.3 Data Analysis

In this work, a multi-method methodology was used. The qualitative data, after a first analysis based on Bardain's method (2011), was transported and studied using the qualitative analysis software MAXQDA 2019, believing that it enhances more reliable results (Souza et al., 2015) and a more transparent process (Woods et al., 2016).

Following the first content analysis, the rule of thumb principle (line-by-line procedure) was used. Thematic areas (categories=C) were created according to the impacts (positive and negative) on the several life areas: (C1) health and well-being; (C2) relationships; (C3) health and risk behaviors; (C4) academic; (C5) what they felt as most negative; (C6) coping strategies.

All procedures were recorded in a memo to ensure greater and better detail in the presentation of the results.

The above coding was also used in the quantitative component, excluding the open-ended questions and adding the subcategories: (SC3.1) leisure activities; (SC3.2) sleep; (SC3.3) physical activity; (SC3.4) diet; (SC3.5) substance use; (SC3.6) screen time in category (C3) health and risk behaviors; and (SC4.1) academic performance; (SC4.2) academic stress; (SC4.3) relationship with teachers; (SC4.4) relationship with peers in (C4) academic category.

The quantitative data were moved and analyzed using the quantitative analysis software SPSS v. 26.

A Chi-square test allowed the analysis of variables by gender and academic level.

3 Results

3.1 Qualitative Study of the Impacts of the Third Wave of the COVID-19 Pandemic

The positive and negative impacts presented by AYA in the categories and subcategories under study will be analyzed. Predominantly negative in their responses, AYA highlighted:

(C1) health and well-being—reported symptoms similar to the first lockdown, as an increase in psychological symptoms related to anxiety, including social phobia, feelings of sadness and depression, feelings of loneliness, demotivation, stress, concentration difficulties, negative changes in sleep patterns; physical symptoms such as body aches, sedentarism and headaches. The reference to positive impacts is essentially related to more time for physical activity at home.

(C2) relationships—even though an improvement in family relationships is reported, adolescents and young adults state an increase in episodes of family discussions and the withdrawal of people from at-risk groups, such as grandparents; the loss of some friendships increased when their mental health has been affected; and deterioration or termination of romantic relationships.

(C3) health and risk behaviors—excessive screen time for studying, doing homework and to communicate with friends, a fact that has led to sedentary lifestyles and altered sleep patterns; less physical activity. Although AYA are not unanimous about diet, since some consider that it is easier to maintain a healthy diet at home, weight gain is also reported. The impossibility to practice physical exercise outdoors and in group activities is another issue pointed out, even though some youngsters practice physical exercise indoors. In leisure activities, they mostly spend time on their cellphones or watching TV series.

(C4) academic—increased academic stress with the greater load of homework and projects; difficulties in concentration and demotivation; relationships with peers are practically non-existent for university students who have recently entered higher education. In contrast, students who lost more time in commuting home-school/university, report the positive impacts of having more time to study and perform school tasks.

(C5) felt as worst—decreased socialization and loss of freedom were at the origin of most comments, followed by the impossibility to play sports. Mental health effects were also highlighted.

(C6) coping strategies—family support; online contacts with friends; sleeping; indoor leisure activities, mainly on screen, such as watching series, listening to music, reading and playing games, and outside, such as running.

In a summary table, explanatory excerpts from each category/sub-category are presented (Table 1).

3.2 Quantitative Study of the Impacts of the Third Wave of the COVID-19 Pandemic

In the study of the impact of the second lockdown derived from the COVID-19 pandemic, the majority of AYA report that it had no impacts (40.5%) or negative

Table 1 Explanatory excerpts from each category/sub-category

(C1) Health and well-being	<p><i>"I got in better shape by exercising more, but I felt isolated from my friends and frustrated about some aspects of life". (M, HS); "I feel very discouraged, with little motivation in general, bored, very anxious, insecure about myself and my friendships." (F, U); "Temperamental problems, loneliness and extreme tiredness due to online classes." (F, HS)</i></p>
(C2) Relations	<p><i>"My relationship with my immediate family has been greatly damaged. None of the family members were used to spending much time together because of the schedule differences. Now we are forced to do the same tasks with overlapping schedules and deal with each other 24 h a day. The arguments have increased and the atmosphere is increasingly tense." (F, U); "Being constantly with my immediate family has generated negative situations of tension, conflict, etc.; the lack of conviviality (non-immediate family/friends) provided some distancing and made it difficult to create stronger connections." (F, HS); "... In terms of friendships, I feel that it has improved because I was able to distance myself from people with whom I was no longer able to establish a healthy relationship. On a romantic level, it has improved because I was able to spend more time with my boyfriend, get to know him even better and strengthen our relationship in a very substantial way." (F, U)</i></p>
(C3) Health and risk behaviors	<p>(C3.1) Leisure activities <i>"Restricted leisure activities, limited to activities I do at home (gaming, streaming platforms, etc.) and one small hygienic walk a day. I miss going to the movies, looking at stores, taking walks outside my county, going to the coffee shop with friends, etc." (F, U); "I can't reconcile school time and doing so much school work with leisure time." (F, HS); "Regarding leisure activities, as I have more free time, I have been able to implement new habits and try new activities, which has done me a lot of good." (F, HS)</i></p> <p>(SC3.2) Sleep <i>"I feel that sleep is irregular and it is difficult to establish a routine with online classes." (F, U); "So much time spent looking at a screen influences my sleep." (F, HS); "I think the lockdown has helped me in the sleep hours aspect, since I have classes a little later than I did in face-to-face classes, which gives me a little more time to sleep." (M, HS)</i></p> <p>(SC3.3) Physical activity <i>"Physical education classes are being strange and complicated due to safety distances so we don't have classes with as good performance as the time before the COVID." (M, HS); "I stopped playing the sport I used to play because it is a team sport and carries a lot of risks." (F, HS); "With this extra time, I started exercising." (F, U)</i></p> <p>(SC3.4) Diet <i>"Not leaving the house makes you want to eat more and do nothing, so your attention goes to junk food." (F, U); "Being home 24/7 makes me eat more." (M, U); "The lack of physical activity encourages better eating habits." (F, U)</i></p> <p>(SC3.5) Substance use <i>"I have started smoking due to stress infringed by the amount of work I am given." (M, U); "The stress inherent to the situation has contributed greatly to an increased consumption of alcohol tobacco and cannabinoids." (M, U); "I stopped going out at night, so I stopped drinking alcohol." (M, HS)</i></p> <p>(SC3.6) Screen time <i>"With lockdown, physical activity has decreased significantly, increasing a sedentary lifestyle and more screen time, these being cell phones, television and computers, also as a result of distance learning." (M, HS); "Because of school I spend twice as much time as I would in front of the monitor." (M, HS); "Screen time has increased significantly due to distance learning, so fatigue has never been greater as well eye, back and head pain." (F, HS)</i></p>

Table 1 (continued)

(C4) Academic	<p>(SC4.1) Academic performance <i>"Although my grades remain positive, my performance is not the same; I feel much more distant from academic reality."</i> (M, U); <i>"Online classes seriously harm my academic performance."</i> (M, HS); <i>"Autonomy was a benefit; I managed my study time better."</i> (F, HS)</p> <p>(SC4.2) Academic stress <i>"With distance learning, the workload has increased significantly. We have more and more work to do in a short period of time which causes a lot of stress."</i> (F, HS); <i>"Major difficulties in maintaining internships ... which cause stress and anxiety."</i> (F, U); <i>"Better academic results and less stress due to more time to invest in studies."</i> (F, U)</p> <p>(SC4.3) Relationship with teachers <i>"I noted that the teacher-student relationship became much more impersonal and distant."</i> (F, HS); <i>"Distance learning causes more stress and does not allow you to establish a relationship with the teacher."</i> (F, U); <i>"Face-to-face learning contributes to a better teacher-student relationship and communication."</i> (F, U)</p> <p>(SC4.4) Relationship with peers <i>"It is my first year of the master's degree at a new college and I don't know anything or anyone; it is very difficult to have a relationship with anyone in my class."</i> (F, U); <i>"There are friends who turn off their camera or don't even come to class, which disconnects us from each other."</i> (F, HS); <i>"Now I have more time to help colleagues who have difficulties at school."</i> (F, HS)</p>
(C5) felt as worst	<p><i>"Not being able to see my family and friends."</i> (F, HS); <i>"The lack of motivation to exercise and loss of physical fitness."</i> (F, HS); <i>"Lack of contact with friends and the number of daily deaths in Portugal."</i> (M, U)</p>
(C6) coping strategies	<p><i>"Building sport routines and a healthier diet."</i> (F, HS); <i>"Setting schedules, creating to-do lists, trying to keep active and busy."</i> (M, U); <i>"Not watching the news about COVID on a regular basis."</i> (F, HS)</p>

C Categories, SC Subcategories; Italics = AYA quotes

(35.6%) impacts on their (C1) health and well-being; and negative (55.9%) impacts on their (C2) relationships.

At the level of (C3) health and risk behaviors, the results diverge. If on the one hand, in (SC3.1) leisure activities the majority points out no impacts (44.9%) and positive (33.6%) impacts; in sleep, the absence of impacts is maintained (53%), followed by negative impacts (31.1%). In turn, in (SC3.3) physical activity, negative consequences are highlighted (35.8%), followed by no impact (34%). In the (SC3.4) diet pattern, no impacts predominate once again, as well as positive ones (29.9%). As for risk behaviors, even if they do not consider applicable impacts (48.8%) at the level of (SC3.5) substance use, or that there are no impacts (26.7%), they are certain of the negative impacts on (SC3.6) screen time (70.4%).

Finally, in the (C4) academic category, in the subcategory (SC4.1) academic performance, no impact (38.9%) and negative (28.9%) impacts are highlighted; negative (46.5%) on (SC4.2) academic stress; no impact (51.9%) on (SC4.3) relationships with teachers, as well as on (SC4.4) relationships with peers (47.8%) (See Table 2).

3.2.1 Gender: Health and Well-being, Relationships, Health and Risk Behaviors and Academic Impacts

A Chi-square test for independence was used to examine the association between gender and impacts on health behaviors and well-being, relationships, health and risk behaviors, and academic level (Table 3).

In the study between gender and the category (C1) health and well-being, and gender and (C2) relationships, no statistically significant differences were found.

On the other hand, in (C3) health and risk behaviors, statistically significant differences are found between gender and (SC3.1) leisure activities, $X^2(2)=15.847$, $p=\leq 0.001$; $N=592$, highlighting males with no impacts (57%) and positive (25.6%) impacts, as well as girls (no impact=10% and positive=36.9%). In both, boys show a higher percentage. Statistically significant differences are also found between gender and (SC3.4) diet, $X^2(3)=12.612$, $p=\leq 0.01$; $N=592$, with boys once again identifying more frequently no impacts (56.4%) and positive (22.7%) impacts, as do girls (no impact=41% and positive=32.9%). In this, although boys show a higher value of no impacts when compared to girls, girls excel in the positive consequences of the second lockdown on diet. In the associative study between gender and (SC3.5) substance use, statistically significant differences are also found, $X^2(3)=43.496$, $p=\leq 0.001$; $N=592$, with mostly boys responding that it had no impacts (40.1%) or not applicable (31.4%). In girls, the results are reversed, with not applicable being more frequent (56%), followed by no impacts (21.2%). No differences are found between gender and (SC3.2) sleep, (SC3.3) physical activity, and (SC3.6) screen time.

In the study between gender and (C4) academic level, only statistically significant differences are seen in (SC4.2) academic stress, $X^2(3)=19.258$, $p=\leq 0.001$; $N=592$, highlighting no impacts (40.1%) and negative (37.2%) impacts in boys, and negative (50.2%) and no impacts in girls (22.6%).

3.2.2 School level: Health and Well-being, Relationships, Health and Risk Behaviors and Academic Impacts

In the study between level of education and impacts on (C1) health and well-being, no statistically significant differences are found. Statistically significant differences are found between academic level and (C2) relationships, $X^2(3)=13.151$, $p=\leq 0.01$; $N=592$, with high school AYA reporting more negative (51.8%) and no (38.7%) impacts, as do college students (negative=60.5% and no impacts 34.6%). While college students stand out in reporting negative impacts, high school students stand out in stating no impacts.

Between academic level and (C3) health and risk behaviors, statistically significant differences are evident in (SC3.1) leisure activities, $X^2(3)=21.385$, $p=\leq 0.001$; $N=592$, with no impacts (44.8%) and positive (39.9%) impacts being more reported by high school as well as college students (no impact=45.1% and positive=25.9%). When compared, high school students show a higher percentage of positive consequences and lower percentage of no impacts. In (SC3.2) sleep, statistically significant differences are also seen, $X^2(3)=12.213$, $p=\leq 0.01$; $N=592$, with high school

Table 2 Impact on living areas

Variables		No impact	Impacts on living areas		
			Positive	Negative	Not applicable
Health and risk behaviors	Health and well-being	40.5	20.9	35.6	2.9
	Relationships	36.8	5.9	55.9	1.5
	Leisure activities	44.9	33.6	19.3	2.2
	Sleep	53	14.2	31.1	1.7
	Physical activity	34	11	35.8	19.3
	Diet	45.4	29.9	23.3	1.4
	Substance use	26.7	7.4	17.1	48.8
	Screen time	16.4	12.5	70.4	.7
Academic	Academic performance	38.9	22	28.9	10.3
	Academic stress	27.7	15	46.5	10.8
	Relationship with teachers	51.9	17.9	18.6	11.7
	Relationship with peers	47.8	15.9	24.7	11.7

Bold = higher percentages

and college students again showing a majority of no impacts ($S=50\%$; $U=56.8\%$), followed by negative ($S=29.4\%$; $U=33.1\%$). In both, students in higher education stand out. Also in (SC3.4) diet, statistically differences are observed, $X^2(3)=11.346$, $p=\leq 0.01$; $N=592$, maintaining the previous pattern of higher levels of no impacts ($S=44.5\%$; $U=46.6\%$), but followed by more positive impacts ($S=33.7\%$) in high school students and negative ones in higher education (27.8%). In (SC3.6) screen time, statistically negative differences are also found, $X^2(3)=11.559$, $p=\leq 0.01$; $N=592$, with the vast majority of high school students revealing negative impacts (65.3%), as well as those in higher education (76.7%), the latter standing out. In the study of the association between schooling level and (SC3.3) physical activity and (SC3.5) substance use, no statistically significant differences were found.

Finally, in the academic (C4), statistically significant differences were found only in relationships with teachers, $X^2(3)=41.191$, $p=\leq 0.001$; $N=592$, with high school students stating mostly that they didn't feel the impact (54.3%) and positive (24.5%) impacts and college students, no impacts (48.9%) and negative (27.4%) impacts. Also in the relationship with peers, statistically significant differences are evident, $X^2(3)=38.994$, $p=\leq 0.001$; $N=592$, maintaining the same pattern of a higher percentage of no impacts in both levels ($S=51.2\%$; $U=43.6\%$), but more positive consequences in younger students (21.8%) and more negative ones (35%) in the older.

4 Discussion and Conclusions

The present study analyzed AYA perspective (non-representative sample) on various life areas impacts of the second lockdown, which occurred during the third wave of COVID-19 in Europe. The impacts of the second lockdown were grouped into four

Table 3 Comparison by gender and school level

		Gender <i>N</i> (%)				School level <i>N</i> (%)				<i>df</i>	<i>p</i>		
		M	F	<i>N</i>	χ^2	HS	U	<i>N</i>	χ^2				
Health and well-being	No impact	40.1	35.2	592	4.787	3	n.s.	42	38.7	592	7.930	3	n.s.
	Positive	9.3	8.6					23.6	17.7				
	Negative	47.1	54.8					31	41.4				
	Not applicable	3.5	1.4					3.4	2.3				
Relationships	No impact	35.5	37.4	592	3.951	3	n.s.	38.7	34.6	592	12.151	3	p<.01
	Positive	3.5	6.9					8.6	2.6				
	Negative	58.7	54.5					51.8	60.5				
	Not applicable	2.3	1.2					.9	2.3				
Leisure activities	No impact	57	40	592	15.847	3	p≤.001	44.8	45.1	592	21.385	3	p≤.001
	Positive	25.6	36.9					39.9	25.9				
	Negative	14.5	21.2					13.5	26.3				
	Not applicable	2.9	1.9					1.8	2.6				
Sleep	No impact	50	54.3	592	3.948	3	n.s.	50	56.8	592	12.213	3	p≤.001
	Positive	11.6	15.2					18.1	9.4				
	Negative	26.6	28.8					29.4	33.1				
	Not applicable	1.7	1.7					2.5	.8				
Physical activity	No impact	30.8	35.2	592	5.607	3	n.s.	32.5	35.7	592	3.763	3	n.s.
	Positive	9.9	11.4					10.7	11.3				
	Negative	43	32.9					34.7	37.2				
	Not applicable	16.3	20.5					22.1	15.8				
Diet	No impact	56.4	41	592	12.612	3	p≤.01	44.5	46.4	592	11.346	3	p≤.01
	Positive	22.7	32.9					33.7	25.2				
	Negative	20.3	24.5					19.6	27.8				
	Not applicable	.6	1.7					2.1	.4				

Table 3 (continued)

Substance use	No impact	40.1	21.2	592	43.496	3	p<.001	26.7	26.7	592	.420	3	n.s.
	Positive	13.4	5					7.7	7.1				
	Negative	15.1	17.9					17.8	16.2				
Screen time	Not applicable	31.4	56					47.9	50				
	No impact	19.2	15.2	592	6.501	3	n.s.	19.6	12.4	592	11.599	3	p<.01
	Positive	16.3	11					13.8	10.9				
	Negative	63.4	73.3					65.3	76.7				
	Not applicable	1.2	.5					1.2	0				
Academic performance	No impact	40.1	38.3	592	.763	3	n.s.	42.9	33.8	592	7.392	3	n.s.
	Positive	19.8	22.9					21.2	22.9				
	Negative	29.1	28.8					27.9	30.1				
	Not applicable	11	10					8	13.2				
Academic stress	No impact	40.1	22.6	592	19.258	3	p<.001	30.7	24.1	592	4.203	3	n.s.
	Positive	12.2	16.2					15.6	14.3				
	Negative	37.2	50.2					43.9	49.6				
	Not applicable	10.5	11					9.8	12				
Relationship with teachers	No impact	53.5	51.2	592	3.437	3	n.s.	54.3	48.9	592	41.191	3	p<.001
	Positive	14	19.5					24.5	9.8				
	Negative	21.5	17.4					11.3	27.4				
	Not applicable	11	11.9					9.8	13.9				
Relationship with peers	No impact	50.6	46.7	592	2.225	3	n.s.	51.2	43.6	592	38.994	3	p<.001
	Positive	13.4	16.9					21.8	8.6				
	Negative	26.2	24					16.3	35				
	Not applicable	9.9	12.4					10.7	12.8				

n.s. non-significant

Bold = higher percentages and statistically significant differences

main categories, namely health and well-being, relationships, health and risk behaviours and academic. Also, the coping strategies used by AYA were investigated.

Overall, the findings of the present study, even though collected in a different moment, have no distinctions from what has been reported in the literature regarding the first confinement (AUTHORS et al., 2020b). The lockdown seems to be a good measure for decreasing the virus spread but has many negative impacts on other health domains of AYA, especially in their mental health. This should be seen as a great danger for AYA health worldwide since COVID-19 pandemic does not seem near the end, and if the current impacts are not yet being measured, it is impossible to predict the future.

In addition to the majority of AYA reporting mainly negative impacts of lockdown, it was possible to understand a decrease in aspects considered positive, in relation to the first lockdown (e.g. family relationships; AUTHORS et al., 2020a). This negative perspective was also more manifested in comparison to the back to school period (AUTHORS et al., 2021 submitted). This finding may be related to what has been called as “pandemic fatigue”. The feeling that the pandemic extends beyond what was initially anticipated and that the containment measures may be restored at any time may also increase symptoms of hopelessness and negativity.

In health and well-being, relationships and academic areas, most of the information collected was coded as negative. Regarding health, AYA reported both physical (e.g., headaches, back pain, sedentarism) and psychological symptoms (e.g., anxiety, loneliness, sadness, stress, demotivation, concentration difficulties, changes in sleep pattern), which is in line with previous studies and reviews (AUTHORS, 2021a, 2021b; Kecojevic et al., 2020; Lee et al., 2020; Loades et al., 2020; Singh et al., 2020). These health and mental health symptoms may also be triggered by exposure to unsupervised social news and social media information about COVID-19 (i.e., information on number of new cases, deaths, consequential economic crises) (Brooks et al., 2020; Deslandes & Coutinho, 2020; The Lancet Child Adolescent Health, 2020) and should be accounted by parents and AYA supportive services. Moreover, by having more screen time, less exercise and isolation from peers, feelings of loneliness and consequent anxiety and depression symptoms increase (Lee et al., 2020; Loades et al., 2020).

In relationships, although some young people continue to point to an improvement in family relationships, they highlight more episodes of conflict with the family, arguments, and the estrangement with family members at greater risk of contracting the virus. Even if more episodes of family conflict are noted, the author Janssen et al. (2020) argues that in relatively healthy families, coping is facilitated.

In relationships with peers they emphasise the loss of some friendships when their mental health was affected, and the deterioration or end of their romantic relationships.

Regarding health and risk behaviours, the excessive screen time associated with academic and leisure tasks is strongly highlighted by most young people, as well as the decrease in physical activity. The authors Schmidt et al., 2020 and Xiang et al., 2020 presented congruent results in their studies. In the academic area, negative discourses were also the majority, with students reporting increased academic stress, a more significant load of coursework, concentration difficulties and disruption of

relationships with peers, especially for those who are new at school/university. Young people who have recently entered university are those who most report this difficulty, many of whom have never returned to the face-to-face regime or have maintained a mixed regime (face-to-face + online), in which the virus containment measures also make the relationship difficult. Di Pietro and colleagues (2020) study supports our findings by arguing that the closure of educational establishments and online methodology may affect learning through four means: less time devoted to learning, more symptoms of stress, changes in relational patterns, and low motivation. Others have also analyzed the disadvantages of the online teaching method, highlighting the impact in learning quality in performance and difficulties in teacher-student and student-student relationships (Di Pietro, et al., 2020; Dias & Pinto, 2020; Schleicher, 2020).

In all subcategories but one (i.e. diet) on health and risk behaviours negative impacts were found. Regarding diet patterns, there are mixed findings, with some reporting weight gain and others stating that it is easier to eat healthier at home.

Knowing that females are at greater risk of experiencing mental health difficulties related to COVID-19 (Kowal et al., 2020), analyses were made to understand gender differences better. Though, no differences were observed in health and well-being, relationships, sleep, physical activity and screen time. Regarding academic stress, girls reported more stress than boys, which was also found by Song et al. (2020). On the contrary, boys reported more often no impacts for leisure activities and diet, and girls reported more positive consequences. One may hypothesize that, in the face of adversity and having higher feelings of stress, girls started to show more protective and coping behaviours by engaging in more positive activities during leisure time and by taking better care with themselves. Future studies should account for this, by investigating if girls have shown more post-traumatic growth than boys by having more positive core beliefs (Vazquez et al., 2021) and experiencing a significant amount of positive affect during leisure time.

In respect to school-level differences, similar responses were observed in health and well-being. Also, no differences in physical activity or substance use. Though, differences were found for relationships and academic, with college students reporting more negative impacts, while high school students reported more often no impacts or positive impacts. The same pattern was observed for leisure time, with high school students showing a higher percentage of positive consequences than university students. In our previous study during the back to school period (AUTHORS et al., 2021b), the higher vulnerability of university students in comparison to high school students was already described. This should be accounted for in future studies and in practice by parents and school counsellors. Also, some students may not have the opportunity to have internet access and the appropriate space to study at family home, which can impact students' quality of learning and academic performance (Dias & Pinto, 2020). As far as relationships are concerned, family conflicts and arguments are often associated with the difficulties of managing space and time with the rest of the family they cohabit with.

A positive impact of the lockdown on the academic level was observed with those at the university that spent a lot of week time in commuting trips shared that they were able to use this time as an extra moment for academic-related work.

Finally, regarding the coping strategies, the present study shows that AYA used some of the strategies indicated in the literature, such as establishing routines and schedules, asking for family support, being in contact with friends, and engaging in indoor leisure activities. Reinforcing the establishment of routines for the promotion of better mental health during lockdown, authors highlighted the establishment of schedules for bedtime and wake-up, meals, school-related tasks, leisure activities, and household chores (Almeida et al., 2020; Deslandes & Coutinho, 2020).

Summing up, AYA point out that what they felt as the worst were the impacts on their mental health, caused by the mandatory confinement and consequent loss of freedom, inability to maintain socialization and sports practice. Deprived of some of their resources to cope with the effects of the pandemic, they emphasise the role of the family, contacts with friends, restricted to online contacts by mobile phone and social networks during confinement (Beaunoyer et al., 2020), and leisure activities on screen as coping strategies.

5 Strengths and Limitations

Regarding strengths, as far as we know, this is the first study to analyze AYA perspective on the third wave of COVID-19. Nevertheless, it is possible to compare the observed results with previous research on lockdown impact on health and relationships. Also, participants of different ages and levels of education were included, allowing us to analyze different perspectives about a common area of life. Third, the high response rate of AYA permits some confidence in the generalization of the results to the population. Finally, this research uses a mixed-method analysis, enabling a more robust understanding and interpretation of the findings.

Despite the outlined strengths, some limitations were listed. First, as the previous studies by the team (AUTHORS et al., 2020a; AUTHORS et al., 2021a submitted) data was collected through an open-questionnaire disseminated via social networks. Although this method is not preferable in a qualitative analysis, it grants the possibility of obtaining information despite social contact restrictions, in addition it allows to reach a more diverse audience. Second, most of the participants were female. This aspect was also previously reported and, despite the investment in dissemination, it was not possible to improve at this level.

6 Key-messages

- Overall, the impacts on health and well-being, relationships, health and risk behaviours, and academic level are congruent with the literature and similar to those of the first lockdown in a study conducted by the same research team in the country (AUTHORS et al., 2020a).
- Regarding the reporting of impacts, the negative ones stand out, particularly in the categories: relationships, physical activity (together with no impacts), screen time and academic stress; along with no impacts: health and well-being, leisure

activities, sleep, diet, academic performance, and relationships with teachers and peers. With regard to substance use, they reported that it was not applicable, which means that most of them do not engage in consumption behaviours.

- In the study of gender differences which revealed statistically significant differences, girls stand out when compared to boys, with higher reports of negative impacts on leisure activities, as well as on diet, although they report more positive impacts than boys. In substance consumption, boys stand out, as well as in the reporting of negative impacts. At an academic level, it is the girls who highlight more negative consequences on academic stress.
- As for the level of education, in the study of the differences between secondary school and university level, university students showed a higher report of negative impacts on relationships, leisure activities, sleep, diet, screen time and relationships with teachers and peers.
- These results reveal that alongside measures to contain and protect against the SARS-CoV-2 virus, it is essential to develop public, institutional, local and national policies that support this generation in coping with the negative effects of the pandemic, giving special attention to mental health, an area which according to AYA was no longer a priority before the pandemic.
- AYA are in need of sustainable, organized, medium and long term educational and health promotion measures, preferably including their voices and their identification of needs, so that return to “life as usual” can occur without undermining sequels. This is an up most important message for public policies in the area of health and well-being, and education.

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