

MLS PSYCHOLOGY RESEARCH

<https://www.mlsjournals.com/Psychology-Research-Journal>

ISSN: 2605-5295



Cómo citar este artículo:

Vásquez-Echeverría, A. y Loose, T. (2022). Psychosocial impacts of COVID-19 among university students in Uruguay. *MLS Psychology Research*, 5 (2), 165-181. doi: 10.33000/mlspr.v5i2.897.

PSYCHOSOCIAL IMPACTS OF COVID-19 AMONG UNIVERSITY STUDENTS IN URUGUAY

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Abstract. The new coronavirus has had a catastrophic toll around the world on physical and mental health. In this article, we focus on the psychosocial impact among students in Uruguay, a country relatively protected from the pandemic during 2020. Our study had three main objectives: 1) describe the impact in detail; 2) identify the relationships between the different dimensions and; 3) highlight the determinants of mental health. We designed a multidimensional questionnaire to investigate the perceived impact of students. The questionnaire was administered online to 144 Uruguayan university students while the university was closed. Between 38 and 66% of the students indicated an increase in signs of anxiety, depression or sleep disturbances. Regardless of other related factors, increased substance use, deterioration in social relationships, negative impact of school closings, and personal financial concerns accounted for 41% of the variation in mental health. The findings are discussed in terms of their implications for public health and future directions of research on the effects of the pandemic on mental health.

Keywords: Questionnaire; COVID-19; psychology; mental health; university

IMPACTOS PSICOSOCIALES DEL COVID-19 EN ESTUDIANTES UNIVERSITARIOS DE URUGUAY

Resumen. El nuevo coronavirus ha tenido un costo catastrófico en todo el mundo en la salud física y mental. En este artículo, nos enfocamos en el impacto psicosocial entre los estudiantes de Uruguay, un país relativamente protegido de la pandemia durante 2020. Nuestro estudio tuvo tres objetivos principales: 1) describir en detalle el impacto; 2) identificar las relaciones entre las diferentes dimensiones y; 3) resaltar los factores determinantes de la salud mental. Diseñamos un cuestionario multidimensional para investigar el impacto percibido de los estudiantes. El cuestionario se administró en línea a 144 estudiantes universitarios de Uruguay mientras la universidad estaba cerrada. Entre 38 y 66% de los estudiantes indicaron un aumento en los signos de ansiedad, depresión o alteraciones del sueño. Independientemente de otros factores relacionados, el aumento en el uso de sustancias, el deterioro en las relaciones sociales, el impacto negativo del cierre de las facultades y las preocupaciones económicas personales explicaron el 41% de la variación en la salud mental. Los hallazgos se discuten en términos de sus implicaciones para la salud pública y las direcciones futuras de investigación sobre los efectos de la pandemia en la salud mental.

Palabras clave: Cuestionario; COVID-19; psicología; salud mental; Universidad

Introducción

As of October 21st 2020 when this study was conducted, the novel corona virus (COVID-19) had killed 1,119,431 people worldwide and infected 40,455,651. These tolls continue to climb. In South America, Brazil (154,176), Argentina (26,716) and Peru (33,820) count the highest death tolls, whereas only 51 people had died in Uruguay (World Health Organization, 2020). In response to the outbreak, in March 2020, the Uruguayan government acted swiftly with closures of schools, stores and social gatherings. Citizens were advised to stay home, wear masks, avoid social interactions and wash hands. Unlike many other countries, the government never enforced any recommendations but rather relied on the personal and social responsibility of residents. In April 2020, it was estimated that about 70% of the population respected the stay at home measures but then began re-engaging in social interactions (Herrero, 2020). The country has received widespread praise for its control of the pandemic and low infection rates in 2020. By the end of 2020, most public spaces and businesses were reopened (bars, restaurants, shops, beaches, parks) and social gatherings had resumed (concerts, sports team) or in other words, many of the structures necessary for young people to go about their lives with an air of normalcy. Nonetheless, the University was closed to students and classes were held using online platforms.

In addition to the harm by COVID-19 infections and deaths, the context of the pandemic has caused major disruptions and collateral damage in terms of the psychological, social, physical and economic welfare of populations worldwide (VanderWeele, 2020). For example, a large scale international study found that social activities involving family, friends or entertainment dropped nearly 50% from before to after confinement. Adoption of digital platforms for social connection rose, but life satisfaction fell (Ammar et al., 2020). In terms of physical health, exercise has decreased whereas there was little change in alcohol

consumption (Knell et al., 2020). Alarmingly, mental health problems have increased up to seven fold in general populations. The prevalence of depression is now at 32% and anxiety at 34% (Salari et al., 2020) and higher among young people in comparison to other age groups (Huang & Zhao, 2020). Young people would be bearing the psychosocial brunt of COVID-19 regulations. The American Psychological Association (2020) found this month that young people aged 18-23 (Gen Z adults) were experiencing more anxiety and depression in response to COVID-19 in comparison to any other age groups. 31% reported that their mental health had declined over the last year, 81% reported that the school year was causing them stress and 67% said that planning for the future felt impossible. 31% experienced disrupted sleep patterns, 28% had a less healthy diet and 28% had experienced a change in body weight. In comparison to all other age groups, Gen Z adults were the most likely to agree that they felt “very lonely” (63%) and to report distress in their relationships notably because they felt less close with their family, friends and community. As we can see, the psychosocial impact of switching interactions to virtual platforms does not appear to be curbed by Gen Z being a technological generation. In fact, the group appears to be among the most at risk for pandemic related mental health distress.

The pandemic has caused a mental health crisis and it is critical that researchers investigate the topic immediately (Holmes et al., 2020). Governments, policy makers and researchers need to account for these collateral factors when considering total years of life lost and strategies to implement (VanderWeele, 2020). Only a handful of scattered studies have investigated levels of psychological distress in response to COVID-19 among university students so far, but research on the topic will surely accumulate. In China, a fourth of students had symptoms of generalized anxiety which was related to economic, academic and social stressors (Cao et al., 2020). In India, college students had good knowledge of the disease and followed recommendations (Prasad Singh et al., 2020) as was the case in with undergraduates in the USA. The American undergraduates also reported struggling in their everyday lives and in the academic context specifically. They reported high levels of stress, distress and mental health issues including anxiety and depression. Contributing factors included difficulties concentrating, financial problems due to unemployment, lack of access to hygienic and medical supplies, looking at COVID-19 related information, age (younger) and gender (female) (Kecojevic et al., 2020).

In terms of prevalence and regulations, the COVID-19 situation in Uruguay specifically is not nearly as dire as in most other places around the world (World Health Organization, 2020). Severity of COVID-19 infections and mortality rates increase with age meaning that youth would be the least vulnerable in this regard (Omori et al., 2020). However, youth are the most vulnerable in terms of psychosocial collateral damage which contributes to years of life lost in the long run. We were unable to identify any research conducted on how university students in Uruguay perceived the impact of COVID-19. In fact, research conducted among specific groups (e.g. college students) or among South Americans is beginning to accumulate but lacking. Guidelines in conducting psychosocial research on the pandemic suggest that generalizing results is irreverent. Instead we should conduct contextualized research describing problematic situations and their determinants (Venkatesh, 2020). In this study, our first goal was to highlight the extent to which COVID-19 has impacted various spheres in the lives of Uruguayan University students in a detailed descriptive manner. For example, were students in Uruguay experiencing psychological

distress despite no official lockdown? How was their social and academic life impacted? How has the pandemic impacted their substance use, exercise patterns and healthy eating? Are any students finding benefits or enjoying the experience? In the second part of our study, our goal was to examine how these different spheres were inter-related and determinant of psychological distress.

Methods

Material

Two doctors in clinical psychology with experience in psychometrics designed a questionnaire for the purposes of the study. The questionnaire prompted students to consider how COVID-19 changed aspects of their lives on a scale ranging from (1) *strongly disagree* to (5) *strongly agree*. Spheres included general impact, impact of school closures, social functioning, psychological health, financial issues, socioeconomic worries, health behaviors, and positive benefits. We also assessed adherence to recommendations and the extent to which students enjoyed virtual activities. Vulnerability was assessed with yes/no questions. All items of the questionnaire and reliabilities for scales are presented in the results section.

Population and procedure

144 undergraduate students participated in the study online while in person classes at the University were suspended. We added the COVID-19 questionnaire to another investigation already underway on academic outcomes, motivation, time perspectives and personality. The protocol underwent ethical approval by the board at our university. Professors from various departments put an invitation to the study on the educative online platform associated with their class. Age averaged 22 years old ($SD=3.90$). 101 participants identified as female (70%), 42 as male (29%), and one as other. 98% were born in Uruguay, 85% were white, 11% were mestizo and 3% had another ethnicity. Participants were most often unemployed (76%) and received financial help from their parents (88%) but not from the government (9%). Two students reported that they routinely had trouble meeting basic needs (food, rent), 20% reported that they sometimes had troubles and 79% said they never did. 70% reported having an adequate place to study at home (e.g. desk, quiet), 26% said they somewhat did, and 4% said they did not.

Statistical design

In order to describe the impact of COVID-19 among university students, we provided proportions of students who endorsed single items on the questionnaire. When we described results for the questions using a 5-point Likert type scale, we collapsed the response categories strongly or somewhat agree or disagree into three (*agree, neutral and disagree*) in order to enhance readability.

After describing the situation, we checked the reliability of regrouping items by domains and created corresponding scale scores. These scales were used in correlation analyses to apprehend inter-relationships between factors. Lastly, all factors that showed a significant correlation with psychological distress were carried over as predictors in a hierarchical regression analysis where psychological distress was figured as an outcome. All tests were two-tailed, $p<0.05$ indicated statistical significance and analyses were run with SPSS 20.

Results

Description of impact

Students generally did not indicate high levels of vulnerabilities. 17% reported they had health vulnerabilities (e.g. pre-existing conditions), 33% lived with someone with health vulnerabilities and 67% were living with someone who was working in a job involving contact with people. Almost all students (90%) reported that they had sufficient access to healthcare services. Most students reported that COVID-19 did not impact their employment status. 17% continued working normally with a job that involved contact with people, 6% said they continued working but with less hours or less pay and 8% had lost their job or couldn't work because of COVID-19. 2% were working in health care (hospital, retirement) and one person had come into direct contact with COVID-19. We then calculated the proportions of students who endorsed each of the five response options for each item of the questionnaire (table 1).

Table 1

COVID-19 questionnaire items in Spanish and English: Percentage of endorsement

	1	2	3	4	5
Impacto					
Impact					
COVID-19 ha tenido un gran impacto en mi vida	3.5	4.2	30.6	33.3	28.5
<i>COVID-19 has had a big impact in my life</i>					
Ahora con el COVID-19, todo es totalmente diferente	4.2	6.9	24.3	37.5	27.1
<i>Now with COVID everything is totally different</i>					
Odio el impacto que COVID-19 ha tenido en mi vida	23.6	17.4	32.0	15.3	11.8
<i>I hate the impact that COVID-19 has had in my life</i>					
Me encanta el impacto que COVID-19 ha tenido en mi vida.	44.4	13.9	31.3	6.3	4.2
<i>I love the impact that COVID has had in my life</i>					
Educación					
Education					
La enseñanza virtual tiene un efecto negativo en mi aprendizaje	19.4	18.8	22.2	23.6	16.0
<i>Virtual teaching has a negative effect on my learning</i>					
Me extraño ir a clase	10.4	8.3	14.6	26.4	40.3
<i>I miss going to class</i>					
Estoy menos motivado para hacer el trabajo del curso	19.4	13.9	17.4	22.9	26.4
<i>I am less motivated to do classwork</i>					
Estoy menos motivado para completar mis estudios universitarios	43.8	18.8	13.9	13.2	10.4
<i>I am less motivated to complete my university studies</i>					
Social					
Social					
Ha tenido un impacto negativo en mi vida social	16.7	13.9	18.8	29.2	21.5
<i>There has been a negative impact on my social life</i>					
Me siento más socialmente aislado	13.9	17.4	13.9	33.3	21.5
<i>I feel more socially isolated</i>					
El contacto virtual es suficientemente bueno para mí	20.8	31.9	18.1	19.4	9.7
<i>Virtual contact is good enough for me</i>					
Me extraño compartir actividades con la gente	7.6	6.3	16.7	32.6	36.8
<i>I miss sharing activities with people</i>					
Mundo virtual					
Virtual world					
Me gustan las computadoras y las pantallas	5.6	14.6	29.9	22.9	27.1
<i>I like computers and screens</i>					

Me gustan los videojuegos <i>I like video games</i>	33.3	15.3	16.0	14.6	20.8
Disfruto viendo series o películas <i>I enjoy watching series and movies</i>	.7	7.6	11.8	32.6	47.2
Disfruto de las actividades virtuales <i>I enjoy virtual activities</i>	6.3	19.4	35.4	24.3	14.6
Empleo y finanzas <i>Employment and finances</i>					
Estoy más preocupado por mis propias finanzas <i>I am more worried about my own finances</i>	22.9	14.6	22.9	22.9	16.7
Estoy más preocupado por el desempleo <i>I am more worried about unemployment</i>	21.5	8.3	16.0	31.3	22.9
Estoy más preocupado por mi carrera <i>I am more worried about my career</i>	6.3	6.3	17.4	35.4	34.0
Social y Economía <i>Social and economy</i>					
Estoy más preocupado por el futuro de la economía <i>I am more worried about the future of the economy</i>	2.1	3.5	23.6	40.3	30.6
Estoy más preocupado por la sistema social <i>I am more worried about the social system</i>	6.3	3.5	25.7	36.1	28.5
Estoy más preocupado por las industriales y empresas <i>I am more worried about industries and businesses</i>	6.3	11.8	35.4	30.6	16.0
Psicología <i>Psychology</i>					
Tengo más problemas para concentrarme <i>I have more problems concentrating</i>	13.2	12.5	16.0	27.1	31.3
Siento más estrés y ansiedad <i>I feel more stress and anxiety</i>	10.4	8.3	15.3	34.0	31.9
Tengo más sentimientos de tristeza <i>I have more feelings of sadness</i>	18.8	13.2	23.6	22.2	22.2
Tengo más sentimientos de soledad <i>I have more feelings of loneliness</i>	22.2	17.4	22.2	22.2	16.0
Tengo más sentimientos de desesperanza o impotencia <i>I have more feelings of hopelessness and helplessness</i>	20.8	17.4	22.2	20.1	19.4
Mis ciclos de sueño han cambiados <i>My sleep cycles have changed</i>	20.1	13.2	12.5	22.2	31.9
Comportamientos de salud <i>Health behaviors</i>					
Tomo más alcohol <i>I drink more alcohol</i>	74.3	9.0	6.3	7.6	2.8
Fumo más marihuana <i>I smoke more marijuana</i>	87.5	3.5	4.9	2.1	2.1
Como alimentos más saludables <i>I eat healthier foods</i>	20.8	18.1	29.9	16.7	14.6
Hago más actividad física (p. ej., caminar, yoga ...) <i>I do more physical activity (e.g. walking, yoga)</i>	47.2	16.0	14.6	13.9	8.3
Siguiendo las recomendaciones <i>Following recommendations</i>					
Sigo atentamente todas las recomendaciones de los gobiernos <i>I carefully follow all of the governments recommendations</i>	2.1	9.0	19.4	37.5	31.9
Me lavo las manos con frecuencia <i>I wash my hands frequently</i>	.7	2.8	16.0	27.1	53.5
Evito salir de mi casa <i>I avoid leaving my house</i>	4.9	10.4	16.0	27.1	41.7
Uso una máscara cuando estoy afuera <i>I use a mask when outside</i>	4.2	2.1	10.4	25.0	58.3

Beneficios positivos

Positive benefits

Estoy más agradecido por lo que tengo <i>I am more grateful for what I have</i>	3.5	4.9	22.2	36.1	33.3
Soy más amable y compasivo con la gente <i>I am nicer and more compassionate with people</i>	9.7	16.0	39.6	20.8	13.9
He aprovechado tener más tiempo <i>I have benefited from having more time</i>	17.4	16.0	22.2	21.5	22.9
He crecido mucho <i>I have grown a lot</i>	14.6	15.3	38.2	17.4	14.6

Note. 1= totalmente en desacuerdo (totally disagree), 2=algo en desacuerdo (somewhat disagree), 3=ni de acuerdo ni en desacuerdo (neither agree nor disagree), 4= algo de acuerdo (somewhat agree), 5= totalmente de acuerdo (totally agree)

Most students reported adhering to government recommendations. 69% agreed that they “carefully followed all of the government recommendations” and 69% said they avoided leaving their house. 80% said they were washing their hands more often (4% disagreed) and 83% reported using a mask outside (6% disagreed). As far as the perceived impact of COVID-19 on their lives, 65% of students endorsed the extreme statement “now with COVID-19, everything is totally different.” And only 11% disagreed. About half (52%) of students said that COVID-19 had a big impact on their life (8% disagreed). In terms of the emotional connotation of the impact, 27% of students reported that they “hated it” (41% disagreed) and interestingly, 10% reported that they “loved it” (57% disagreed).

Our indicators of psychological distress in response to the pandemic tapped signs of anxiety, depression and sleep disturbances. We found that 66% of students reported having more stress and anxiety, 58% more trouble concentrating and 54% experienced changes in their sleep cycles. 44% of students reported increased feelings of sadness, 38% feelings of loneliness and 40% feelings of hopelessness or helplessness. Students reported changes in health behaviors in terms of substance use, diet and exercise. 10% of students reported drinking more (83% disagreed) and 4% were consuming more marijuana (91% disagreed). 21% of students reported that they were eating healthier (39% disagreed) and 22% reported that they were exercising more (63% disagreed).

Students’ social relations were disrupted. 50% reported a negative impact on their social lives (20% disagreed) and 55% reported feeling more isolated (31% disagreed). 69% reported that they missed sharing activities with people (15% disagreed) and for 52% of students, virtual contact was not sufficient (29% disagreed).

Students conveyed having difficulties because of closures of in person classes. Most students (67%) reported that they missed going to class and only 19% disagreed. 60% reported that virtual teaching had a negative effect on their learning (38% disagreed), 49% reported being less motivated to do classwork (33% disagreed) and 24% reported they were less motivated to finish their study program at the university (62% disagreed).

Not all students enjoyed activities involving a screen. 59% liked computers and screens (20% disagreed), 35% liked video games and 39% enjoyed virtual activities. Watching series and movies was popular, with 80% of students stating it was enjoyable.

Some students did report positive growth, notably 69% of students agreed that they were now more grateful for what they have and only 8% disagreed. 44% said they took advantage of having more time, but 23% disagreed with the statement. 22% said they grew a lot (29% disagreed) and 34% said they were kinder to others (26% disagreed).

Students were worried about the negative impact of COVID-19 on financial and economic matters. 39% were now more worried about their own finances (37% disagreed), 54% were more worried about unemployment (30% disagreed) and 69% were now more worried about their whole career (12% disagreed). 71% were worried about the future of the economy and only 6 % said they disagreed. In terms of sectors, 47% were worried about

industry and business (18% disagreed) and 65% worried about the social system (10% disagreed).

Dimensions and inter-relationships

Categories of items were then checked in terms of reliability in order to create scale scores and investigate inter-relationships between factors. Reliability coefficients were acceptable for mental health ($\alpha=0.86$; 8 items), positive benefits ($\alpha=0.74$; 4 items), adherence to recommendations ($\alpha=0.73$; 4 items), general socioeconomic worries ($\alpha=0.76$; 3 items) and the impact of school closures ($\alpha=0.80$; 4 items). For the affinity with screens scale, we deleted the item appraising movies and series because the activity was passive and it improved statistics ($\alpha=0.71$; 3 items). Reliability fell below 0.7 for the personal worries about finances and employment scale ($\alpha=0.62$), but was only represented by three items and was conserved in subsequent analyses. Diet and exercise were averaged to create a 2-item scale (inter item correlation $r=0.410$, $p<0.001$) as were cannabis and alcohol use ($r=0.516$, $p<0.001$) because these two health categories were not correlated. Skew and kurtosis for all scales fell below the absolute value of one, except changes in substance use but acceptable normality was maintained (skew=2.28, kurtosis 5.11). Two-tailed person correlations between the 10 scales were calculated (table 2).

Table 2

Correlations between Scales of the COVID-19 Questionnaire

	1	2	3	4	5	6	7	8	9	10	11	12
1. Mental health	1	0.230**	-0.156	0.425**	0.447**	0.245**	-0.022	-0.149	0.053	-0.018	-0.102	-0.117
2. Substance use	0.230**	1	0.064	0.047	0.096	0.191*	0.102	-0.067	0.292**	0.053	0.138	0.109
3. Diet and exercise	-0.156	0.064	1	0.091	-0.144	-0.014	-0.066	0.312**	-0.165*	-0.112	0.189*	-0.135
4. Social distress	0.425**	0.047	0.091	1	0.319**	0.111	0.007	-0.096	-0.031	-0.189*	-0.172*	-0.051
5. School closure	0.447**	0.096	-0.144	0.319**	1	0.230**	-0.077	-0.212*	0.154	-0.020	-0.078	-0.040
6. Personal socioeconomic	0.245**	0.191*	-0.014	0.111	0.230**	1	0.290**	0.174*	0.207*	0.147	0.004	-0.036
7. General socioeconomic	-0.022	0.102	-0.066	0.007	-0.077	0.290**	1	0.171*	0.064	-0.024	0.108	0.068
8. Positive benefits	-0.149	-0.067	0.312**	-0.096	-0.212*	0.174*	0.171*	1	0.103	-0.045	0.148	-0.153
9. Recommendations	0.053	0.292**	-0.165*	-0.031	0.154	0.207*	0.064	0.103	1	0.087	-0.030	-0.176*
10. Virtual appraisal	-0.018	0.053	-0.112	-0.189*	-0.020	0.147	-0.024	-0.045	0.087	1	-0.073	0.344**
11. Age	-0.102	0.138	0.189*	-0.172*	-0.078	0.004	0.108	0.148	-0.030	-0.073	1	-0.029
12. Gender	-0.117	0.109	-0.135	-0.051	-0.040	-0.036	0.068	-0.153	-0.176*	0.344**	-0.029	1

Note. * $p<0.05$, ** $p<0.01$, *** $p<0.001$

To highlight some of these results, psychological distress was correlated with worries about personal socioeconomic status as well as increased substance use, social distress and a negative impact of school closures. Those experiencing negative social impacts were also

negatively impacted by the learning environment, tended to negatively appraise virtual activities and be of a younger age. Higher distress because of school closures was also related to worries about personal socioeconomic status and lower endorsement rates of positive benefits. People who endorsed positive benefits adopted a healthier diet and exercise regimes, but were more worried about personal and societal socioeconomic problems. Personal and general socioeconomic worries were inter-related, but personal socioeconomic worries were more often related to other determinants. Note that positive benefits had no relationship with mental health. Those who followed recommendations were less at risk for increased substance use, but tended to disagree that their diet and exercise had improved. Those who followed recommendations were more worried about their own employment and tended to be female.

Regression analysis

A hierarchical multiple regression analysis was run wherein psychological distress was used as an outcome. Correlation analyses revealed four factors that were significantly correlated with psychological distress: substance use, school closure distress, social distress, and personal socioeconomic worries. These were entered in as predictors in the regression. The correlation analyses showed that the other factors were not correlated with psychological distress, but these factors were correlated among themselves and with predictors. For example, age was not correlated with psychological distress, but was correlated with social distress. Therefore after having noticed that factors such as age could act as confounding factors, we decided to enter them in as controls. All four predictors were significant determinants of psychological distress independently of controls. The model explained 41% of variance in psychological distress (R^2). Curiously diet and exercise appeared to be significantly related to mental health but only in the second step of the regression. Note that the first step of the regression which included control variables did not reach statistical significance (table 3).

Table 3
Determinants of Psychological Distress: Hierarchical Multiple Regression

Step		B	SE	β	t	p	F(df), p
1	Constant	4.532	0.920		4.928	0.000	$F(7,140)=1.425, p=0.200$
	Age	-0.014	0.024	-0.051	-0.586	0.559	
	Sex	-0.351	0.222	-0.148	-1.580	0.117	
	General socioeconomic	0.015	0.109	0.012	0.138	0.891	
	Recommendations	0.067	0.127	0.047	0.528	0.598	
	Positive benefits	-0.122	0.109	-0.103	-1.117	0.266	
	Diet and exercise	-0.143	0.088	-0.152	-1.622	0.107	
	Virtual appraisal	-0.030	0.096	-0.029	-0.315	0.753	
2	Constant	1.001	0.862		1.162	0.248	$F(11,140)=8.293, p<0.001$
	Age	-0.001	0.020	-0.002	-0.031	0.976	
	Sex	-0.287	0.180	-0.121	-1.597	0.113	
	General socioeconomic	-0.062	0.092	-0.049	-0.674	0.502	
	Recommendations	0.093	0.111	0.066	0.843	0.401	
	Positive benefits	-0.013	0.091	-0.011	-0.140	0.889	
	Diet and exercise	-0.182	0.072	-0.194	-2.515	0.013	
	Virtual appraisal	-0.005	0.080	-0.005	-0.067	0.946	
	School closure	0.242	0.075	0.249	3.225	0.002	
	Personal socioeconomic	0.162	0.083	0.151	1.946	0.054	
	Social distress	0.375	0.084	0.338	4.479	0.000	
	Substance use	0.295	0.101	0.220	2.918	0.004	

Discussion

Distress among University students

As COVID-19 runs rampant around the world, Uruguay is an epidemiological exception with low infection rates and death. Nevertheless we found a high prevalence of psychological distress among young people. 38-66% of students had experienced increased stress, anxiety, difficulty concentrating, sadness, loneliness, hopelessness, helplessness or sleep issues. Unfortunately this downturn in mental health converges with a growing body of extent literature (e.g. Solomou & Constantinidou, 2020). Mental distress in response to the pandemic needs to be normalized and policies need to provide care for the students who are suffering (Holmes et al., 2020). For example, we could be administering screening tests for substance abuse, anxiety and depression to identify at risk students and direct them to available mental health services. COVID-19 focused support or therapy groups can be effective and have the added benefit of fostering social bonds (Marmarosh et al., 2020). With the current regulations in Uruguay, these could be done online or in person and health care providers generally cover psychological care.

We found that the collateral psychological damage among Uruguayan students mainly resulted from four factors including closures of schools, social distress and personal worries about economic downturn. Increased substance use was the fourth factor associated with psychological distress and at least one in ten students reported consuming more alcohol or cannabis. Research on pandemic related changes in levels of substance use is inconsistent. For example, some found that harmful alcohol use decreased probably because students could not go out to bars or parties (Callinan et al., 2020), but others reported that substance use

increased because people were turning to substances to cope with boredom, loneliness and distress (Vanderbruggen et al., 2020). Even if we might find a net decrease in the prevalence of substance use because of closures, those who are coping with negative affect by means of substance use are the most at risk for abuse (Kuntsche et al., 2005). The other health behavior we measured was diet and exercise which was not correlated with substance use nor with psychological distress. However, when we ran the regression analysis, the diet and exercise scale showed up as a significant predictor in the second step suggesting that the relationship between these factors and psychological distress could be complex or conditional. More research would be merited on these inter-relationships because of the implication they could have for public policy and communication.

Social distress was the factor the most strongly related to psychological distress. Most students reported a downturn in their social lives, feelings of isolation and that they missed doing activities with people. These changes in social dynamics are observed worldwide with decreases in shared activities and increases in feelings of isolation (e.g. Ammar et al., 2020). Technological solutions have become the new “oxygen” in social contact (Venkatesh, 2020) but not all people find this acceptable. For most students, virtual platforms were not sufficient in fulfilling their social needs. Furthermore, one in five students reported they simply did not like computers and screens which in context becomes a real issue. We found that those who enjoyed virtual worlds were more often male and experienced less social distress. As we were the first to our knowledge to investigate distaste for virtual worlds as a predictor for social distress, more research could be conducted on the topic.

In another virtual shift, in person classes at the university were suspended and replaced with online classes. One might think that students prefer learning from the comfort of their own home and wonder if virtual learning is here to stay, but we found that seven out of 10 students wanted to go back to class. Importantly students reported that their learning was negatively impacted by the switch. They were having trouble maintaining motivation and concentration on school work. This converges with findings about the negative impact of the pandemic on learning among undergraduates (Keckojevic et al., 2020). Professors should be aware of the negative impacts and attempt to make classes more engaging. Another interesting line of research could investigate the negative impact of virtual platforms on teachers’ levels of motivation or well-being.

Though most students were worried about general socioeconomic welfare (economy, social system, industries), it was only when these issues became personal that they negatively impacted mental health. About 70% of students were now more worried about their entire career and about half were worried about their finances and employment. Studies suggest that young people now feel like it is impossible to plan for the future and many are considering alternative paths in light of current events (American Psychological Association, 2020). Researchers have found that COVID-19 induced financial issues rendered populations vulnerable to psychological distress (e.g. Keckojevic et al., 2020). The negative socio-economic impact of COVID-19 on young peoples’ lives needs to be focal when considering the damage done by the pandemic and drafting policy (VanderWeele, 2020).

Sex, age, general economic worries, finding positive benefits, diet and exercise, and the student’s appraisal of virtual activities were not correlated with psychological distress but

were correlated together in some instances. This list of factors could point to some dead ends in terms of mental health care or to more complex conditional relationships that merit further investigation. For example, we found no relationship between psychological distresses and benefit finding. Positive psychology suggests that mental health distress should be curbed by feelings of gratitude, positive growth and acts of interpersonal kindness. However in the wake the pandemic, the term “toxic positivity” is gaining popularity and refers to the denial or minimization of understandable responses to real negative events (Chiu, 2020; Kecojevic et al., 2020). We found that positive benefit finding was related to improved diet and exercise as well as less of a negative impact of school closures, but also to more worries about personal and societal economic issues. A study found that gratitude was unrelated to psychological distress but gratitude lessened the negative impact of the pandemic on academic outcomes (Bono et al., 2020). It would be beneficial to conduct more research on effectiveness or potential harm of public communications encouraging positive psychology techniques as coping mechanisms in the context of the pandemic.

On a positive note, a majority of students were adhering to government regulations and recommendations without these being enforced by law. Students did not report a high level of vulnerability in terms of pre-existing conditions or contact with infected people. For some students, COVID-19 had a positive rather than negative impact. In fact, one in ten students “loved” the impact that COVID-19 had on their lives. 38% of students reported no negative effects on their learning, 19% did not want to go back to class, and 29% said virtual contact was sufficient for their social needs. About one in five were eating healthier or exercising more, and one in three endorsed positive personal growth, increased kindness or benefiting from having more free time. We found that an impressive 69% of students were now more grateful for what they had. Students might feel grateful because they realize that Uruguay is doing relatively well or maybe people are feeling more grateful world-wide because of a newfound appreciation for basic activities that were taken for granted beforehand (e.g. sitting outside). Nevertheless, even if some students have experienced benefits or little psychological damage, we mainly need to adjust policy to take care of the large proportions of the students who are hurting on various psychosocial levels in response to the global tragedy.

Limitations

This study was limited by the cross sectional design and self-report measures. We asked students if they followed government regulations but did not assess knowledge of government regulations. The data collection period spanned a time when government regulations were changing which created contextual heterogeneity. We created a questionnaire specifically for the purposes of this study and verified some psychometric properties, but further validation and adjustment would be merited.

Conclusions and implications

Government recommendations and regulations have been effective in lowering the spread COVID-19 and death toll notably among elderly populations. These recommendations can contribute to keeping people safe physically but do come at a cost. We drew focus to collateral damage among university students in terms of social, psychological, economic and academic well-fare. We found that university students were a vulnerable population in these

respects. Researchers should focus immediately on the toll COVID-19 has taken on mental health and policy makers ought to take action to protect student populations with psychosocial vulnerabilities.

Conflict of interest: The authors have no conflict of interest to declare.

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Fecha de recepción: 23/10/2021
Fecha de revisión: 29/01/2022
Fecha de aceptación: 19/09/2022