

Article

Resilience and COVID-19. An Analysis in University Students during Confinement

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Abstract: The COVID-19 pandemic has changed life for millions of people. The social-emotional consequences of the confinement need to be analysed urgently. This study examines self-perceived resilience and its most important determining factors in a sample of university students facing COVID confinement. The measuring instrument used is the Connor-Davidson Resilience Scale, divided into four factors and applied to a sample of 253 graduate and postgraduate students. Different methods of descriptive statistics and statistical hypothesis testing were used to calculate the results with the statistical program SPSS-22. The results showed generally high levels of resilience among the university students analysed, irrespective of socio-demographic variables. Factor analysis shows resilience to be highest among male students and those over 25. Self-perceived resilience was also higher among students who lived alone or with people other than their parents. Finally, students of the health sciences were more likely to adapt to change, deal with today's challenges, and think of themselves as people capable of bouncing back after hardship.

Keywords: resilience; university students; COVID-19; confinement



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1. Introduction

The COVID-pandemic has changed the lives of millions of people all over the world [1]. The health crisis and situations of confinement are leading to socio-economic, humanitarian, psycho-emotional and educational effects. Regarding education and the socio-emotional effects of the confinement, the United Nations Educational, Scientific and Cultural Organization (UNESCO) [2] (p. 1) warns of a possible “global learning crisis at all levels of the education system”, which includes universities.

This learning crisis comprises both a reduction in the amount of content students are exposed to and the competencies they develop, and also affects emotional and mental-health depending on their ability to deal with the challenges posed by the pandemic [3,4]. Resilience in teachers [5,6], students [7] and the education system [8] is going to be an important factor in the measures dealing with the effects of the pandemic. It is, therefore, necessary to reassess the relationship between students and teachers, on the one hand, and students and learning, on the other, with due consideration for the social and family circumstances under which students faced the confinement. Considering all of the above, we ask the following questions: what have been the effects on university students, what strengths do they highlight in themselves, and how much resilience can they draw on to deal with this challenge?

COVID-19 has forced 1.57 billion students of all educational levels out of school. According to UNESCO [8] (p. 1), this crisis “will have long-lasting consequences for education systems in terms of access, quality, equity and management, which are likely to persist beyond the pandemic.” These consequences will also be stronger for students from

low-income families [9] and/or those with special educational needs. The impact will be especially strong, however, on those students who cannot cope with the confinement emotionally. Save the Children [10] divides the pedagogical effects of the confinement into four main groups: (1) loss of competencies and knowledge; (2) difficulty individualising learning; (3) loss of interest in learning; and (4) lack of direct assistance from teachers. Other education-related effects are an increase in the amount of hours dedicated to studying and to chores, which leads students to feel “overwhelmed and saturated”, and increased worrying about evaluation methods, which in turn causes increased feelings of uncertainty [11]. Also described are the psycho-emotional effects on student learning. On the one hand, we see emotional detachment from school or university, teachers, subjects, and classmates, while on the other, post-traumatic stress, confusion, anger, anxiety, boredom, frustration, and loneliness [12], which may create health problems [13].

In response to this situation, an online education system known as “emergency remote teaching” was set up [14] (p. 2). It was designed to meet the challenge of the worldwide school and university closures. These socio-political and educational efforts were aimed at providing distance teaching that would guarantee access to all content for all students, with a distinct concern for equity and inclusion [15]. This attempt, however, created three big gaps among students, depending on different variables [16]. First, an access gap affecting students’ access to computers, adequate study spaces, and reliable internet connections, thus, a gap caused by socio-economic factors. Second, a usage gap, for example, in the amount of hours students spend using these technologies and the quality and suitability of the pages they visit. This gap, too, is related to the socio-cultural level of students’ families, with the data showing students from low-income families spend more hours online, but of lower quality. Thirdly, there is also a pedagogical competence gap related to the pedagogical skills of teaching staff, and the quantity and quality of educational resources and e-learning platforms available.

2. Literature Review

2.1. Definition of Resilience

The concept of resilience comes from physics, where it is defined as the ability of a body to recover its shape and size after being deformed. In the social sciences, resilience is a recurring construct in studies on academic achievement in the face of difficult situations or contexts [17]. This concept has been approached from different angles [18], as shown by Bonanno’s studies [19], which define resilience as the result of the interaction of protective factors on traumatic situations, as contrasted with other studies that define it as a process that grows in the face of adversity [20]. According to the latter, resilience as a process that is constructed based on the skills that the individual puts into practice to overcome a trauma [21]. Therefore, they consider resilience as the ability to overcome traumatic situations that is based on the interaction between the subject and their coping strategies.

In the same vein, Vanistendael’s proposal [22], supported by Cyrulnick [23], further refines the concept of resilience as a person’s ability to resist possible psychological trauma caused by a problematic and harmful environment. It is, therefore, the result of an internal drive to heal, of the human resistance to a condition, resistance which leads one to reject resigning oneself to suffering or to reality itself. This is, thus, an acquired ability [24] resulting from a person’s adaptability to traumatic situations.

2.2. Resilience in Young People in Situations of Captivity

Adaptability and coping are two terms linked to the study of the concept of resilience [25]. Although any person can develop resilience, recent studies on positive adaptation in response to extreme adversity propose that resilience is relatively more common among children and adolescents who have been exposed to adversity, trauma, and misfortune [26].

Richardson’s research [27] shows the relevance of coping with traumatic situations and the importance of having been through difficult situations for the development of resilience.

His studies establish that having previously adapted to other difficult life situations allows individuals to adjust more quickly to new difficult situations. This conclusion is supported by other studies [28–32]. COVID-19 has been a traumatic experience for many people. The pandemic is a threat not only to people's physical health but also their mental well-being [4]. Many people feel fear, sadness, and anxiety [12]. In fact, fear of the virus is spreading faster than the virus itself because of people's fear of becoming ill, dying, losing one's livelihood or loved ones, or being socially excluded and separated from one's family [33].

This article focuses on the impact of COVID-19 on university students, who are at a vital stage in their social and affective development. According to Erickson [34], people between 18 and 30 years of age are at a point in their lives where they either end up achieving intimacy or isolating themselves from the world. Young people need to relate with others similar to themselves in order to establish deeper relationships and look for mutual commitment, for intimacy that fosters a sense of security, company, and trust, because they need this to feel motivated to take decisions based in independence and self-determination. Viewed from this perspective, the current situation with confinement, its forced isolation, and the changes it causes in learned social habits can have significant effects. Thus, some studies have pointed out how people's losing or having to change certain habits and routines has affected their physical and psychological well-being, in addition to creating psychosocial stress [1,3,11]. These studies show how the confinement modified the eating, sleeping, and physical-exercising habits of a large part of the population, which led to significant changes in many people's daily behaviours. The messages emanating from governments and the mass media have also had a profound impact on people's behaviours and feelings. The excess information (some of which is unconfirmed and contradictory), exaggerations, doomsday scenarios, and overly specialised content have given rise to feelings of fear, frustration, and discouragement [35], as well as dysphoric mood states. Politicians' statements have not reassured people, raised awareness, nor provided adequate information, as Yasir et al. [36] would have liked. Rather, they have generated negative and contradictory emotions among the population. Some platforms are being used by users to disseminate rumors and fake news [37]. For this reason, this study aims to gauge how much resilience university students perceived in themselves in a situation of confinement.

According to many studies on resilience among young people [25,38,39], active coping (doing something to get out of the predicament) and positive reframing (looking for the positive and favourable in the predicament) correlate positively with the building of resilience. However, very few studies have been conducted on the relationship between resilience and forced confinement. The few studies that have been conducted on this subject analyse the relation between resilient processes and situations of kidnapping or illegal detention, showing how people who go through such situations have many different ways of building resilience; most of them related with the length of the isolation, the conditions, and the relationships they established with the people they had contact with.

There have been some studies on COVID-19 and university students, and they have highlighted the strong psychological [4] and academic impact of the pandemic [17]. According to the authors of these studies, the quantity and quality of a person's physical bonds and social networks (life capital) are a protective factor, since successful coping is more positively related with offline social capital (physical relationships) than with online social capital (virtual relationships). The variables that these studies have found to be important in building resilience are family cohesion [40], breaking isolation through sustained virtual communication, and finding motivational tasks that create funny situations through one's sense of humour [41].

However, other studies related with extreme stress caused by illnesses similar to COVID-19 maintain that building resilience in such situations is more complex than under less stressful circumstances that are not chronic [20]. Other risk factors associated with building resilience would thus need to be identified. In any case, these conclusions require prospective studies to better clarify this matter.

2.3. Previous Studies on University Students, COVID-19 and Resilience

Since the start of the COVID pandemic, much research has been conducted in the field of education. Some focuses on the impact of COVID-19 on learning in university students in different countries.

2.3.1. Resilience and Education

The relationship between resilience and education has received a lot of attention in the social sciences in recent years. Numerous studies in student populations have analysed the impact of problematic situations on academic development and how the appearance of resilience tutors [6] or specific events can lead to the development of resilience. Thus, personal satisfaction, classroom climate, personal relations between teachers and students, and other factors can develop resilience in students, becoming real protective factors and improving academic and educational performance [42].

Nambiar [43], Sujarwo et al. [44] and Fatoni et al. [45] all found a high level of satisfaction, both among faculty and students, with the experience of online learning. They also highlighted the quality of the teaching, the two-way interaction, and the methods adapted to the situation of confinement. Having more time available for other activities was also viewed positively. Conversely, Quintiliani et al. [46] found difficulties related with adapting to the new situation, maintaining attention during class, performing evaluations, coping with increased stress, and worrying about academic performance. Zhou and Zhang [47] mentioned the importance of students' mental health in the learning process and found the main obstacle to this during the lockdown to have been the lack of interaction with teachers and fellow students. Apolloni et al. [48] highlighted good communication in online education as a protective factor generating resilience in situations of confinement. In the same vein, Eva et al. [49] and Dewantoro and Rachmawati [50], having analysed the correlation between academic resilience and students' subjective well-being, pointed to negative emotions as an important risk factor that needs to be dealt with in similar situations.

2.3.2. Resilience and COVID

Other studies have brought to light the relation between COVID-19 and the emotional problems university students experience when coping with it [51–53]. For example, Olmos-Gómez [54] found frustration, malaise, and decreased resilience to be the main problems in students who either did not engage in physical activity or frequently watched pandemic-related news [55]. Liu et al. [56] reached similar conclusions regarding the importance of physical health, emotional support, and resilience as factors promoting psychological well-being among students. Similarly, Eva et al. [49] found that students who were able to regulate their emotions during the confinement obtained greater personal satisfaction and better academic results. As for Zhou and Zhang [47], they found the greatest problem facing students during the lockdown was the lack of personal relations with teachers and fellow students, while Ferreira et al. [57] highlighted the importance of family and neighbours as resilience-promoting factors during the confinement. These studies are in line with Yu and Yu [58], who report significant differences in how students deal with emotional problems depending on their sex and academic degree. Furthermore, Oducado et al. [59] found an increase in fear, anxiety, and stress among postgraduate students during the lockdown, which matches Kaparounaki et al.'s findings [60].

The studies conducted on resilience, coping, and COVID-19 reveal sex-related differences. Labrague [61] reported higher levels of fatigue and malaise among females than among males during the lockdown. In the same vein, Karasar and Canli [62] found females, university students, and people with mental-health problems to be more vulnerable and also more prone to suffer depression in situations of confinement. Conversely, Liu et al. [56] did not find any differences related with students' age, sex, or educational level. Other studies, such as Ye et al. [63], highlight the differences in adapting to the lockdown according to social context, support received, or situations of disability.

San Román-Mata et al. [64], in a study similar to the present one that also applied the Connor-Davidson Resilience Scale but in a non-university population, concluded that employed people, those with higher education, people working in emergency services and those with dependents presented higher rates of resilience.

In the same way that these studies describe the effects they found and emphasise that the inequalities and challenges facing students should be tackled by focusing on the social, contextual, and cultural differences deriving from the lockdown, Peimani and Kamalipour [65] maintain that the challenges they detected have nothing to do with the type of teaching offered—online or offline—but are directly related with the way in which the differences and inequalities in the education process are dealt with pedagogically.

3. Materials and Methods

The aim of this research was to measure the perception of resilience of university students, both undergraduate and graduate, studying different degrees in different universities in the city of Valencia (Spain), to the COVID-19 lockdown using the Connor-Davidson Resilience Scale (CD-RISC 23) [21]. The research hypothesis is that the higher the score on any of the factors describing the construct of resilience, the higher the score on general resilience, and vice versa. Therefore, the aim is to identify whether self-perceived resilience during confinement is more influenced by one factor than others.

This study uses the Connor-Davidson Resilience Scale (CD-RISC 23) to measure resilience among university students during the COVID-19 confinement. The participants were 253 university students, both graduate and postgraduate, with ages ranging from 17 to 42 years. Recruitment and testing were conducted online during April and May 2020. The participating students accessed the scale through the Google Forms platform, where they were also asked to provide informed consent, thereby confirming they knew their participation was voluntary and anonymous.

3.1. Instrument

The Connor-Davidson Resilience Scale (CD-RISC 23) is a 23-item, five-point Likert scale originally divided into five factors measuring resilience. This study used the Spanish version by Crespo, Fernández-Lansac and Soberón [66], which is divided into four factors. The data were analysed using the parameters set out by Connor-Davidson using a scale on which higher scores indicate higher resilience. This scale was chosen for its reliability, which has been proven in various studies in the social sciences. The Spanish version groups the items into the following four factors.

To establish the criteria for each factor, its standard deviation from the mean was calculated in order to determine its variance. Variability was observed in the responses of students with high resilience, so the decision was made to differentiate top-ranking scores from high ones. Accordingly, to make the study's results easier to understand, a distinction is made between subjects showing high resilience and those presenting the highest resilience scores, which are referred to as solid resilience (Table 1). The cut-off values for resilience are: low < 7.45; high between 7.45–11.67; and solid > 11.67.

3.2. Procedure

The scale's reliability was assessed with Cronbach's alpha, which measures internal consistency through the average correlation between items. The result was 0.84, which shows the scale to be well adjusted to the construct. The adequacy of the factors of the scale has been contrasted using the KMO sample adequacy measure and Bartlett's test. The KMO coefficient is 0.828, showing a high level of factor consistency. The significance level of Bartlett's Sphericity is 0.000. Data processing was performed using descriptive analyses in order to determine the sample's profile: principal component factor analysis to establish the factors, checking the adequacy of the scale's factorization, KMO sample adequacy and Bartlett's test, and dispersion measures such as standard deviation and analysis of variance. To test the hypothesis, a chi-squared test and the Pearson correlation coefficient

were used, with $p < 0.05$ as the indicator of significance. The factors were ranked based on their standard deviation from the mean. As the answers from students with high resilience were found to be variable, the decision was made to differentiate top-ranking scores from high ones. Consequently, the results distinguish between students with “high” resilience scores and those at the top, who have “solid” resilience.

Table 1. Cuts separating the Factors.

FACTORS	VALUES		
	Low	High	Solid
F1. Persistence/tenacity/self-efficacy Items 10–12, 16, 17, 23–25	<15.03	15.03–19.90	>19.90
F2. Control under pressure Items 6, 7, 14, 15, 18, 19, 20	<15.20	15.20–20.29	>20.29
F3. Adaptability and support networks Items 1, 2, 4, 5 y 8	<14,48	14.48–18.16	>18.16
F4. Control and purpose Items 13, 21 y 22	<21.29	21.29–27.09	>27.09

3.3. Participants

The sample consisted of 253 university students, both graduate and postgraduate, studying for different degrees at different universities in the city of Valencia (Spain), such as the Catholic University of Valencia, the Universitat de València, Florida Universitaria, and CEU San Pablo. Participants were selected using intentional non-probabilistic sampling. Female students made up 88.1% of the sample and male students the remaining 11.9%. Female students made up the vast majority because the participants were overwhelmingly from the learning sciences. As to age, 39.9% were in the 17–20 range, 45.1% were 21–24 years old, and 15% were over 25. The average age was approximately 22 years. Regarding students’ level of study, 34.8% were in the first year of their Bachelor’s degree, 25.3% in the second, 11.1% in the third, and 20.2% in the fourth, with 8.7% pursuing a postgraduate degree. The breakdown by field of knowledge was as follows: 10.3% were students in the social sciences, 5.6% in the health sciences, 63.9% in the learning sciences, 11.5% in engineering or the exact sciences, and 8.7% were doing postgraduate studies. Since this is a very heterogeneous sample in terms of the number of participants, caution should be exercised in interpreting the results (for example, in the case of health sciences students). Finally, during the confinement the students were either living alone (2%), with their parents (86.2%) or with other people (11.9%) (Table 2).

Table 2. Description of socio-demographic variables.

	Age	
	Frequency	Percentage
Age 17–20	100	39.9
Age 21–24	116	45.1
+25	37	15
Total	253	100.0
	Sex	
	Frequency	Percentage
Men	30	11.9
Women	223	88.1
Total	253	100.0

Table 2. *Cont.*

Degrees		
	Frequency	Percentage
Social Sciences	26	10.3
Health Sciences	14	5.6
Education/Learning Sciences	162	63.9
Engineering or Exact Sciences	29	11.5
Postgraduate	22	8.7
Total	253	100.0
Course		
	Frequency	Percentage
First Year	88	34.8
Second Year	64	25.3
Third Year	28	11.1
Fourth Year	51	20.2
Postgraduate	22	8.7
Total	253	100.0
Living arrangements		
	Frequency	Percentage
Alone	5	2.0
With my parents	218	86.2
With another person	30	11.9
Total	253	100.0

4. Results

4.1. Resilience and Socio-Demographic Variables

Generally speaking, the university students analysed presented high or solid levels of resilience under confinement conditions. To be exact, 57.7% presented high resilience, 14% solid resilience, and only the remaining 30% presented low levels of resilience. An analysis by socio-demographic variable showed the following variations.

Regarding sex, there is no significant relation between this variable (0.345) and high resilience scores: 73% of male and 72% of female students had high or solid resilience (Figure 1).

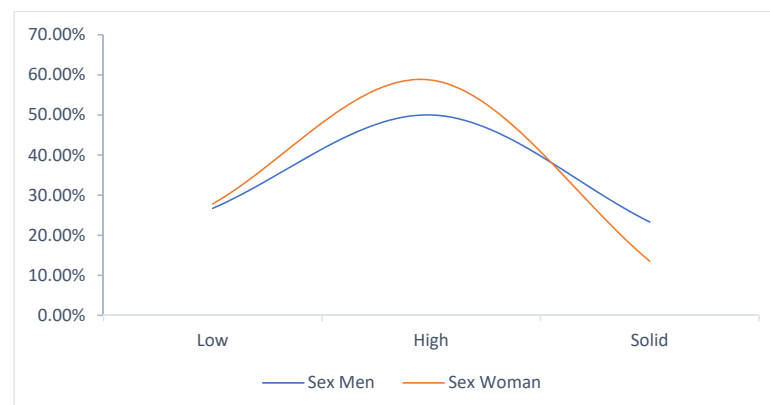


Figure 1. Relationship between Sex and Resilience.

Regarding living arrangements, there was again no significant relationship (0.204) with resilience. Still, the university students that lived together with people other than their parents presented a higher percentage of high and solid resilience (83%) than those living alone (80%) or with their parents (70%) (Figure 2).

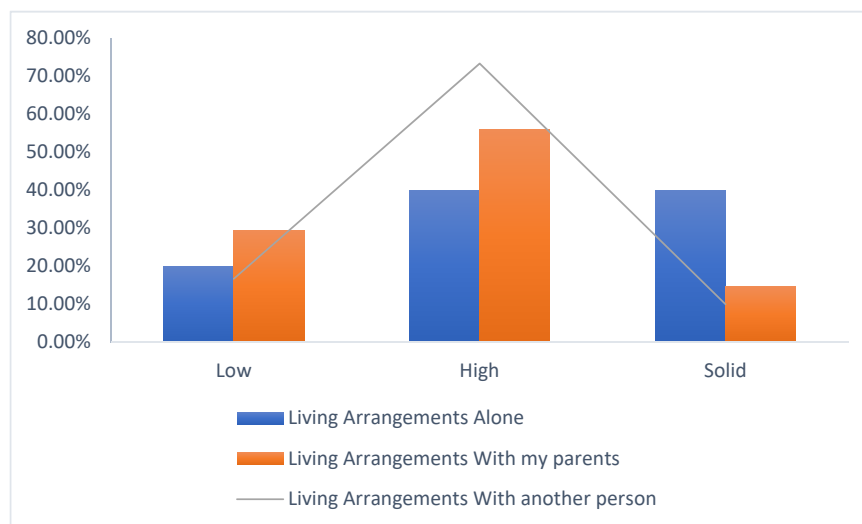


Figure 2. Relationship between Living arrangements and Resilience.

In relation to age, the highest rate of high and solid resilience was found in students between 17 and 20 years (79%) of age, followed by those aged 21–24 (66%). Students over 25 years presented a rate of high and solid resilience of 73%. Here, again, there is no significant relation between age and level of resilience (0.349) (Figure 3).

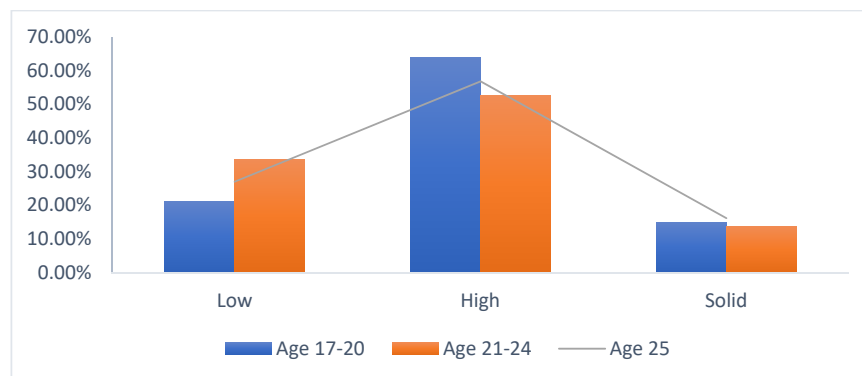


Figure 3. Relationship between Age and Resilience.

As for the type of degree being pursued, the highest rates of both high and solid resilience (85%) were found among students of the health sciences (nursing, optics and optometry, psychology, biology, and biotechnology), followed by those in the learning sciences (primary education, early-childhood education, combined early-childhood and primary education, physical activity and sports sciences, social work and pedagogy), at 73%. The same percentage (73%) was found among postgraduate students, followed by those in the social sciences (69%) and, finally, those studying engineering and exact sciences (architecture, industrial engineering, chemical engineering, telecommunications, and business administration), with 58%. Conspicuous for their low resilience were the students from the sciences (41%). Again, there is no significant relationship between the variables (0.514) (Figure 4).

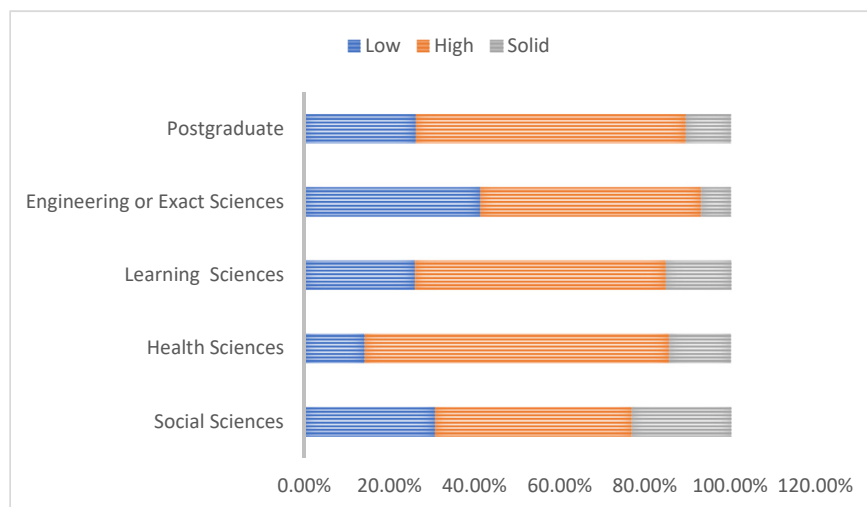


Figure 4. Relationship between Degree and Resilience.

With respect to the academic year students are in, the analyses indicate that the highest percentage of low resilience was to be found among second-year (32.8%) and fourth-year students (31.3%). The highest percentage of high resilience was to be found among first-year (66%) and postgraduate students (68%), and third-year students showed the highest rate of solid resilience (25%). As with the other socio-demographic variables, no significant relation with resilience was found (0.430) (Figure 5).

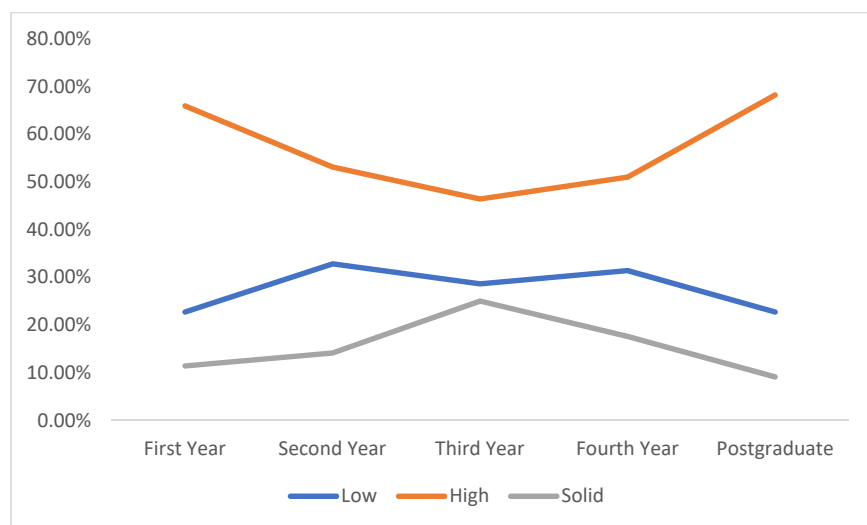


Figure 5. Relationship between Course and Resilience.

4.2. Analysis of the Factors Associated with Resilience

This section examines each factor’s influence on and relation with the general resilience result in order to confirm or disprove the hypothesis stated at the start of this study.

4.2.1. Persistence/Tenacity/Self-Efficacy (Factor 1)

An analysis of persistence/tenacity/self-efficacy and resilience reveals a relation of dependence between these two variables (0.000). Interestingly, there were 55 cases of low persistence that also have low resilience. The same type of relation exists with high resilience, i.e., students with high or solid persistence also have high or solid resilience. However, a striking reverse relation was found among the 74 students with low persistence, 19 of whom had high resilience (Table 3).

Table 3. Persistence/tenacity/self-efficacy and Resilience level.

		Resilience		
		Low	High	Solid
Persistence/tenacity/self-efficacy	Low	21.8%	7.5%	0%
	High	5.1%	34.4%	3.1%
	Solid	0.8%	15.8%	11.5%
Total		27.7%	57.7%	14.6%

With reference to the age and persistence, the data show that the highest rate of low persistence was found among students aged 17 to 20 years (33%), while those over 25 stood out because of their high level of persistence (78%). The variable “age”, therefore, showed no significant relation with persistence (0.939).

Regarding sex and persistence, male students showed a slightly higher rate of high and solid persistence (73.3%) than female students (70.5%), although both sexes had high rates of high and solid persistence. There does not appear to be any relation between these two variables (0.39).

Regarding the degree students were pursuing, the highest percentages of high and solid persistence occurred among students in the health sciences (85%) and those doing a postgraduate degree (84%), who were also the ones with the lowest rates of low persistence. Conversely, students in engineering and the exact sciences had the highest rate of low persistence (44%). There appeared to be no significant relation between the two variables (0.417).

As for academic year, the highest rate of high and solid persistence was found among postgraduate students (81.8%), while second-year students presented the highest rate of low persistence (37.5%). There was a significant relation between the two variables (0.003).

Regarding living arrangements, students living with people other than their parents (83%) and living alone (80%) showed the highest rates of high and solid persistence, while low persistence was highest among those living with their parents (31%) followed by those living with people other than their parents (23%) and those living alone (20%). There was a significant relationship between these two variables (0.257).

4.2.2. Control under Pressure (Factor 2)

With respect to control under pressure and its relation with resilience, students with low control under pressure also presented low resilience (76.5%) and those with high and solid resilience had high and solid control under pressure (100%). The majority of students in this study presented high control under pressure (52.2%). This correlation was reflected by the chi-squared test, which indicates the existence of a significant association (0.000) between these two variables, i.e., the higher the variable “control under pressure”, the stronger the variable “resilience” is (Table 4).

Table 4. Control under pressure and Resilience level.

		Resilience		
		Low	High	Solid
Control under pressure	Low	76.5%	23.5%	0.0%
	High	13.6%	81.8%	4.5%
	Solid	0.0%	41.5%	58.5%
Total		27.7%	57.7%	14.6%

Regarding age, students over 25 years showed the highest rate of high and solid control under pressure (75.7%), followed by the 17–20 age group (74%) and, finally, the

students aged 21 to 24, who had the lowest rate of high and solid control under pressure (71.5%). The group aged 17 to 20 scored highest (24%) on solid control under pressure. No significant relation was observed between these two variables (0.865).

Regarding sex, both female and male students showed similar rates of control under pressure in all three categories, i.e., low, high, and solid. Men had slightly higher rates of high (53.3%) and solid (26.7%) control under pressure than women (52% high and 20% solid). No statistically significant relation was found between these two variables (0.566).

Concerning degree, students from the learning sciences presented the highest rate of low control under pressure (29.1%), followed by postgraduate students (26.3%). Students from the health sciences had the highest rate of high control under pressure (64.3%), and students from the social sciences the highest rate of solid control under pressure (38.5%). There does not appear to be any significant relation between these variables (0.451).

With regard to academic year, second-course students presented the highest rate of low control under pressure (35.9%), first-year students the highest rate of high control under pressure (56%), and postgraduate students the highest rate of solid control under pressure (27.3%). No significant relationship was observed between these two variables (0.711).

As for living arrangements, students living alone or with people other than their parents presented higher rates of high control under pressure (60% in both groups) than those living with their parents (50%). Also, students living alone had a higher rate of solid control under pressure (40%) than the other groups. No significant relation was observed between these variables (0.364).

4.2.3. Adaptability and Support Networks (Factor 3)

The factor “adaptability and support networks” and resilience are highly dependent (0.000). The data indicate that the lower the rate of adaptability, the lower the rate of high resilience. In the same way, low adaptability correlates with low resilience. Furthermore, students with high and solid scores on this factor also show high and solid levels of resilience (Table 5).

Table 5. Adaptability and support networks and Resilience level.

		Resilience		
		Low	High	Solid
Adaptability and support networks	Low	77.2%	22.8%	0.0%
	High	17.4%	72.9%	9.7%
	Solid	1.9%	53.8%	44.2%
Total		27.7%	57.7%	14.6%

Regarding the relation between age and adaptability, older students had a higher percentage of low adaptability and support networks than the youngest age group (17–20 years). On the other hand, the 17–20 age group and those over 25 had markedly higher rates of high adaptability (61% and 59% respectively) than those aged 21 to 24 (52.6%). There is a significant relation between these two variables (0.617).

As to the relation between sex and adaptability, the data show male students lead in high (60%) and low (26.7%) adaptability, while female students scored higher on solid (21.5%) adaptability. There was no apparent relation between these two variables (0.555).

The data on the relation between the degree students are studying for and the factor “adaptability” showed that students from the social sciences presented the highest rate of low adaptability (38.8%), while those from the learning sciences (26%) had the highest score for solid adaptability. Finally, students from engineering and exact sciences were ahead of the others on high adaptability (72%). There is no apparent relation between these two variables (0.200).

Regarding the relation between the academic year students were in and adaptability, postgraduate students were the highest scorers on low adaptability (27.3%), while first-year students had the highest rate of high adaptability (62%) and fourth-year students the highest rate of solid adaptability (25.5%). There appears to be no relation between these variables (0.821).

Finally, regarding the relation between living arrangements and adaptability, the students living alone had the highest rate of high/solid adaptability (100%) compared with those living with people other than their parents (80%) and those living with their parents (76.6%). Students living with their parents were also those with the highest rate of low resilience (23.4%). No significant relation is apparent between the two variables (0.516).

4.2.4. Control and Purpose (Factor 4)

With respect to the relation between the factor “control and purpose” and resilience, students with low control and purpose also had low resilience (91.5%). Conversely, students with high and solid control and purpose had higher levels of high and solid resilience. Furthermore, the chi-squared test revealed a better fit with the construct. No relation is observed between these variables (0.000) (Table 6).

Table 6. Control and purpose and level of Resilience.

		Resilience		
		Low	High	Solid
Control and purpose	Low	91.5%	8.5%	0.0%
	High	10.9%	85.7%	3.4%
	Solid	0.0%	31.9%	68.1%
Total		27.7%	57.7%	14.6%

The relation between age and control and purpose stands out because of its variability. On the one hand, students aged 21–24 showed a higher rate of low control and purpose (25.9%) than those aged 17–20 (20%) and those over 25 (24.3%). On the other hand, the youngest age group (17–20 years) showed better rates of high and solid control and purpose (80%). There is no significant relation between the two variables (0.72).

Regarding sex and its relation with control and purpose, female students showed a higher rate (58%) of high control and purpose than male students (53.3%). However, male students had a higher rate of solid control and purpose (23.35%) than female students (17.9%). There is no detectable relation between these variables (0.76).

As to degree and how it relates with control and purpose, engineering and postgraduate students presented the highest rates of low control and purpose (27.6% and 26.3% respectively), as opposed to students from the health sciences, who had the highest rate of high control and purpose (64.3%). The leaders in solid control and purpose were the students from the social sciences (26.9%). No relation between these two variables is observed (0.896).

Concerning the academic year students are in and the factor “control and purpose”, the data indicated that first-year and postgraduate students had the lowest rates (18.2% in both groups) of low control and purpose and, at the same time, the highest of high control and purpose (65.9% and 63.6% respectively). On the other hand, fourth-year students showed a higher rate of solid control and purpose (18.2%). There is no observable relation between these variables (0.697).

Finally, regarding students’ living arrangements and control and purpose, students living alone or with people other than their parents had the lowest rates of low control and purpose (0.0 and 16.7% respectively) as well as the highest rates of high control and purpose (60% and 66.7%). Students living alone were also those scoring highest on solid

control and purpose (40%). Strikingly, students living alone showed no low control and purpose at all. There appears to be no significant relation between the two variables (0.452).

As for the four factors analysed—“persistence/tenacity/self-efficacy”, “control under pressure”, “adaptability and support networks”, and “control and purpose”—they showed that students over 25 and male students had higher resilience than the rest of the students. Students who lived alone or with people other than their parents also showed higher self-perceived resilience, as did students from the health sciences.

5. Discussion

The university students in COVID-19 confinement who were analysed in this study showed generally high rates of high and solid resilience. The measuring instrument used was a self-report scale, so the data collected showed that students viewed themselves as highly capable of surmounting obstacles and overcoming the hardships imposed by their circumstances. The majority of students participating in this study adapted to confinement without showing any evidence of psychological harm, regardless of their sex, age, living arrangements, the degree they were pursuing, or the academic year they were in. This is consistent with Fínez and Morán-Astorga [26], who state that children and adolescents have a more positive and more resilient response to adversity.

These results might be attributed to the short duration of the confinement, which lasted barely two months. However, this explanation is difficult to check because what few studies have been conducted on the relationship between the building of resilience and length of isolation have found very diverging data on the subject. The study by Hawryluck et al. [67] demonstrates that the post-traumatic effect of a confinement situation does depend on the length of said confinement. Consequently, one would be justified in deducing that there would have been negative emotional effects among the students analysed if the confinement had lasted longer, or that there might eventually be in case of a new confinement. Hence the importance of implementing educational policies geared towards maintaining in-class teaching.

The students who showed the highest rates of resilience as a function of the socio-demographic variables analysed presented the following profile: students, both male and female, aged between 17 and 21 years, who were living with people other than their parents, who were studying for degrees in the health sciences (although these data are not generalizable due to the small sample of health sciences students participating in this study). The data obtained do not show any consistent indication that the socio-demographic variables analysed can be used to define the construct of resilience. These results match those of Crespo, Fernández and Soberón [66], which show that socio-demographic variables have no significant relation with the construct of resilience.

The data obtained on the factors shaping the definition of resilience showed these factors to be significantly and directly related with the concept of resilience. In other words, the higher a factor, the higher the level of resilience among the students analysed, and vice versa. This fact proves how well adjusted the factors are to the construct.

Factor 1, “persistence/tenacity/self-efficacy”, can be defined as the ability to handle the challenges of a situation, to look on the bright side, and to perceive oneself as a strong person. Thus, higher rates of persistence/tenacity/self-efficacy are found among older students, most of them male, who were pursuing health-related or postgraduate degrees, and who spent the confinement either living alone or with people other than their parents. Students with high and solid levels of persistence also possessed high and solid resilience, but there is also an important percentage of students with low persistence who still had high resilience. This suggests—as do Seligman [28]; White, Driver and Warren [29]; and Liu, Li, Ling and Cai [31]—that when people have traumatic experiences, they adapt to these new situations and view themselves as capable individuals, and this, in turn, allows them to subsequently adapt more quickly to new adverse situations. Therefore, the fact that some students with low persistence still presented high resilience [68] might be explained by their having been through similar situations previously.

Factor 2, “control under pressure”, can be defined as the ability to be in control of adverse or stressful situations by taking decisions, turning problems into opportunities, and regulating one’s emotions. In the present context, those showing higher control under pressure were the oldest (over 25) and the youngest students (17–20 years), males, who are pursuing health-related degrees, and were living alone. As with the previous factor, higher control under pressure equals higher resilience. Indeed, no student with low control under pressure had high resilience. Likewise, no student with solid control under pressure showed low resilience. This factor, therefore, appears to correlate with the ability to self-regulate and to control situations in order to take decisions. It is all the more surprising, then, that some students have low control under pressure and, at the same time, high resilience. A possible explanation could be that health-care students were more accustomed to stressful situations. This made them better adapted to the confinement in spite of not perceiving themselves as possessing strong control under pressure. This would be in line with Jackson and Usher [69], who maintain that nursing and health-care professionals are continuously working in stressful environments, which makes them more likely to be able to respond to the pandemic in a more resilient way. The fact that students who are living alone showed high rates of control under pressure and resilience in this study contradicts the results presented by Ballverka et al. [11], which show that students who lived with family during the confinement adapted better to face the stressful situations it generated.

Factor 3, “adaptability and support networks”, is the ability to cope with and adapt to change that stems from possessing a will to succeed and having supportive relationships. In the context of this study, the highest rates of adaptability and support networks were found in the youngest age group, first-year female students pursuing health-care or postgraduate degrees, and living alone. The majority of students who participated in this study showed a significant relation between the factor “adaptability” and the construct of resilience, which is in line with the research conducted by González-Méndez, Ramírez-Santana and Hamby [70] and Feeney and Collins [71]. Other studies also found support networks and resilience to be directly related [72,73]. It is possible that the students with high adaptability and support networks maintained certain habits from their daily lives, albeit with light adaptations to the new reality. This high adaptation to the new reality of the confinement exerts a positive effect on physical and psychological well-being [1,3]. Also, being able to take classes online and to preserve certain studying habits as well as maintain social relations with classmates (perceived social support) may explain the high adaptability shown by the participants in this study [11]. Curiously, there was once more a percentage of students who simultaneously had low adaptability and high resilience. Conversely, some students had high adaptability and low resilience. These two contradictory situations could be explained by these students not meeting the criteria for adaptability (prior positive experiences, supportive relationships, and the ability to adapt and cope) but, as some studies show, obtaining high resilience scores on other variables contained in the other factors.

Factor 4, “control and purpose”, can be defined as a person’s ability to act with balance, decision, and a clear sense of purpose in spite of unfavourable circumstances. Here the highest rates of control and purpose appeared in students from the youngest age group, both male and female students, who were studying for degrees related to health care, and who were living alone. It is worthy of note that the students who were living alone showed no low control and purpose at all, which would indicate that they perceived themselves as balanced, purposeful people in the face of confinement. This contradicts Cao, Fang, Hou, Han, Xu, Dong and Zheng [7], who found students who were living alone to have higher rates of anxiety and post-traumatic stress caused by COVID-19. It would be interesting to examine the contextual variables to find an explanation for this difference. A possible explanation could be that people living alone have no one else to continuously discuss their situation with and fuel each other’s feelings of frustration and fear [35]. Not having other people around also prevents conflicts and/or arguments with them. In short, living alone helps to ease certain tensions that cause negative feelings [11]. Another interesting

finding to emerge from this study is that the students with the highest rates of control and purpose and resilience were the youngest ones. This could be directly related with how fear is perceived. According to some studies on evolutionary psychology, young people have fewer cognitive tools for assessing threatening situations, which allows them to view the confinement with less fear. Since fear is a prime contributor to emotional problems [12], young people's lower fear leads them to score higher on resilience.

6. Conclusions

Foremost among the conclusions of this study is the generally high level of resilience among its sample of university students in a situation of confinement. This high level is independent of sex, age, living arrangements, academic year and/or degree.

The results obtained from the answers provided by the university students during the COVID-19 confinement showed a significant relationship between the four factors analysed and the construct of resilience. According to the data, students over 25 years, for almost all factors, and males, with a not very significant difference with female students, had higher scores on the construct of resilience. Students living alone or with people other than their parents also perceived themselves as more resilient. The students from the health sciences evinced a higher ability to adapt to change, to deal with the challenges posed by the confinement, to see the bright side of things, and to perceive themselves as capable of rebounding from difficult situations. This last conclusion should be confirmed by further studies with larger sample sizes.

The answers to the questions asked by this study show that the majority of the participating students considered themselves to possess high or solid resilience. Their most salient strengths were the ones associated with factors 1 and 4. In other words, they viewed themselves as strong individuals capable of dealing with the challenges posed by the confinement and of seeing the bright side of things. Most of them also felt capable of acting with balance, decision, and a clear sense of purpose in spite of any unfavourable situations they might have been going through.

Finally, socio-demographic variables have proven not to contribute in any significant way to the building of resilience during confinement. However, there were two variables that throughout the study obtained higher scores on all factors—degree and living arrangements—but these results cannot be generalised because of the limited size of the sample.

This study demonstrated the importance of social contact as a protective factor against the increases in stress, anxiety, fear, loneliness and other negative feelings experienced by university students during the forced confinement (COVID-19), as also described by other studies. Therefore, all parties involved need to re-examine educational policies and restrictive measures pertaining to school and university closures. Situations similar to the past confinement may occur in the future, so policies should be put in place to meet the needs that have been detected and thus limit the learning difficulties and the social and emotional effects that such situations can cause. More particularly, educational policies should tackle the learning gap, lack of resources, and absence of emotional support revealed by the different studies conducted on the subject at hand.

Future research should correct the confinement-related limitations which affected this study. First, larger samples should be used that can be extrapolated to the rest of the university population. Second, this study was not able to make a comparison with students who were not in a situation of confinement. This limitation should be addressed in the future. Third, samples should test for certain psychological and psychiatric criteria. Future research should look into the role of these criteria, determine the impact of isolation duration on self-perceived resilience, and broaden its scope to examine other stakeholders as well, such as basic education students.

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