

# The Health and Well-Being of Portuguese Military Academy Cadets During the COVID-19 Pandemic

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## Abstract

This study aims to analyse the health and well-being of cadets from the Portuguese Military Academy during the outbreak caused by COVID-19, using data from a survey applied to all students who attended the institution in June 2020 and in January 2021. It puts forward the question of whether the health and well-being of future military leaders reveal a pattern of convergence with the remaining students of higher education, or whether they depart from it, in terms of living conditions, workload, levels of stress, mental health, and behaviours during the COVID-19 pandemic. The investigation presents a portrait and the evolution of the cadets and compares it with the known results, identifying similarities and divergences. The data suggest that the measures implemented at the Portuguese Military Academy can be considered successful due to the student's perception and comparison with other realities. The absence of positive cases of COVID-19 (from March to July 2020), the promotion of some factors inherent to healthy lifestyles, and the maintenance of workload and stress levels are evidence of this. However, during the second wave (January 2021), the deterioration in all indicators related to well-being and mental health, suggests the necessity to monitoring the students in more fragile psychosocial and well-being conditions.

**Keywords:** Military Academy; cadets; COVID-19; health, well-being.

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## INTRODUCTION

The reality that the world is going through will serve as a point of reference, as were the great wars and other diseases with significant global impact. COVID-19 pandemic is demonstrating that despite technological and scientific developments, as well as in other different dimensions, such as politics, economic and social, the world that tended to appear more stable and controlled by human beings, now reveals high weaknesses. An event that supposedly got its start at the local level (Wuhan / China) quickly went global, with complex impacts on different dimensions, generating uncertainties and increasing the notion of risk. In response to the situation, global fundraising efforts have been made for scientific research on vaccine development, which, in record time, emerged at the end of 2020, when Portugal began to face the second wave of COVID-19. Despite all the effort, the pandemic has further highlighted existing inequalities, both locally and globally. COVID-19 affected most sectors of activity, especially hospitality, catering, and support services (Mamede, Pereira, & Simões, 2020).

The spread of COVID-19 has forced a rapid adaptation on education, but the impact and the repercussions of these changes in teaching, and especially on students, are not yet fully known and predictable.

Following some studies, related to the impact on the well-being of higher education students resulting from the COVID-19 pandemic (Van De Velde, 2020), the investigation, carried out at the Military Academy (MA), shows that the students understand the measures adopted by the institution. However, some deterioration in part of the well-being and mental health indicators is revealed (Alberto & Malheiro, 2020). Given the relevance of the topic to guide the measures adopted at MA, it was considered pertinent to carry out the second wave of the questionnaire, maintaining the main objective: analysing the health and well-being of cadets during the outbreak caused by COVID-19.

## MILITARY ACADEMY AND COVID-19

Being aware that the risk of spreading the disease could interfere with the health of all who serve in MA, concrete measures were defined to be carried out by all teachers and students present at the facilities in Lisbon and Amadora, allowing the normal functioning of MA.

Initially, these measures were registered in the MA COVID-19 Contingency Plan of March 9, 2020. This plan aimed at mitigating severe illness and, in turn, the impact on students, staff, teachers, and military personnel of MA, reducing the spread of infection through the application of COVID-19 prevention, control, and surveillance procedures in the Academy, permanently monitoring the situation, ensuring the timely collection and communication of information and, ensuring the regular functioning of the Academy (Academia Militar, 2020a).

This plan was elaborated during the pandemic containment phase, forcing all those who serve in MA to comply with the rules issued by the health authorities in their face-to-face activity. Also, it required creating isolation spaces if a suspected case was detected, preparing the military to react to the detection of these cases. Implementing these standards obliged the Military Academy to purchase sanitary material, as is the case with antiseptic solutions and surgical masks, to take more care in cleaning and disinfecting classrooms and sports venues, and post informational posters on transmission prevention measures of the virus. Subsequently, on March 14, due to the evolution of the pandemic, the Academy's Commander ordered the suspension of all classroom activities, foreseeing to resume regular activity on April 14, after the Easter holidays, which did not happen, because there were no conditions within Portuguese society to resume face-to-face teaching.

This fact required the application of the measures of the digital technological program to support distance learning provided for in the COVID-19 Contingency Plan, (Academia Militar, 2020a), which ordered students and teachers to:

1. Compliance with the theoretical classes provided for in the annual activity calendar and the school-work plan, using the Colibri Zoom application, not dispensing with the use of e-mail and Moodle;
2. The elaboration of works of an academic nature;
3. The development of research activities;
4. The study of the matters contained in the respective Study Plans;
5. The accomplishment, by the professors (and other actors involved), of the work related to the revision of the new Study Cycles;

6. The maintenance, by the students, of a minimally regular physical activity, according to the specific training plan disclosed: quarantine Workout 19.

Looking ahead to the end of the State of Emergency on April 30, the *MA 2020 Return Plan* was disseminated, which aimed at the progressive lifting of the containment measures motivated by the pandemic COVID-19, in order to guarantee, successfully, the end of the year academic year 2019 / 2020, safeguarding the health, hygiene, and safety conditions of the military and civilians (Academia Militar, 2020b).

This plan aimed at progressively returning to teaching, training, physical, and administrative support, through the chronological implementation of measures divided into four phases, from May 3 to October 12.

- In the first phase, the intention was to maintain distance learning and prepare MA for the progressive return of those providing teleworking services.
- In the second phase, which took place from 1 to 30 June, it was decided to end the school year by maintaining distance learning and progressively increasing military and civil servants who provide service in MA.
- In the third phase, which ran from 1 to 31 July, the activities planned after the school year (exams and Councils) were carried out, and the Lion 2020 Exercise was carried out in the Command Post Exercise (CPX) modality. Despite being foreseen, it was not possible to complete Military Training Blocks 2 and 3.
- In the last phase of this plan, MA prepared the beginning of the new academic year and provided Cadets with a set of internships complementary to military training. In this phase, the necessary conditions were met to proceed with the presentation of the Applied Research Work and carry out the Military Aptitude Test necessary for the preparation and selection of Cadets who would enter the academic year 2020 / 2021.

At the launch of the academic year 2020 / 2021, there was a need to implement a new plan, the Contingency Plan Resume MA 2020 / 21, of September 23, in order to resume classroom activities, teaching, military training, physical, administrative, and support, maximizing the presence of students and teachers, in safety (Academia Militar, 2020c).

This document defined the rules to be adopted to resume classroom teaching activities, without neglecting the possibility of adopting other modalities because of the evolution of the pandemic, such as the creation of a student rotation regime so that 50% could follow the

teaching activities in a telematic way, always favouring classroom teaching for 1st-year students.

While in the academic year 2019 / 2020, MA did not register any case of COVID-19 in the universe of its students, in the academic year 2020 / 2021, several dozens of cases were registered, spread throughout the 1st semester with greater incidence in the period after the Christmas holidays, coinciding with the most critical phase of the disease nationwide.

The Military Academy adopted measures that allowed that the detected cases were not propagated internally to the remaining students. Noteworthy are the measures related to the immediate isolation of students with a positive test to COVID-19, as well as all those who deprived them. Given the specificity of the mandatory boarding school, daily activities were organised so that cadets sharing the same room were always together in their day-to-day lives, limiting contact with the rest. In this way, whenever a positive case was detected, it was enough to isolate this nucleus of cadets to stop the spread of the disease, instead of isolating a class or a company, thus allowing a minimum interference in classroom activities, at the same time, protecting the remaining students.

## METHODOLOGY

The purpose of international research was to recognise the relationship between the pandemic caused by COVID-19 and the well-being of higher education students. These objectives were disaggregated in the assessment of living conditions and workload; changes in stress levels, well-being, mental health, and health behaviour and variations between institutions and between countries (Van De Velde, 2020).

The previous purposes were adapted to the institution's reality, because some questions did not make sense in the reality of the Academy, and because it was intended to go further in other areas and deepen the motivations/causes. However, it had preserved the integrity of the instrument.

The questionnaire was applied using Google Forms (with email validation by the respondents) at two different times. The questionnaire was first applied in June 2020, and the results have already been released and analysed (Alberto & Malheiro, 2020). The second

moment of the application of the questionnaire survey occurred in the first half of January 2021, obtaining 366 responses (93% of the universe), so it is considered that the response rate is representative of the main tendencies of the students of MA.

The application of the same survey by questionnaire at two different times guarantees the reliability of the data and an analysis of its evolution. However, it should be noted that the universe, despite being constituted in two moments by all students of the institution, had a variation of students from 2020 to 2021 - the fourth year left, and new students were admitted in October 2021 for the first year academic.

The analysis and debate of the standards that result from the application of the instrument are contained in the section of the text that follows, stressing that such information was made available on February 19, 2021, to all relevant actors for the design and implementation of measures (and monitoring students) at MA.

## RESULTS

Concerning the characterization of the sample, it appears that 13.1% of respondents are women and that the age of the majority of respondents is between 18 and 23 years old, a characterisation in line with the age limits for accessing the institution and the total feminisation rate (14%). It is also noted that 48.6% were not in a stable relationship; 95.6% were born in Portugal. In regard to the item "What importance do you attach to your studies compared to other activities?" it was found that for 33.6% of the respondents they are "more important," for 62% they are "equally important" and for 4.4% they are "less important." One last reference on the 44% percentage of "higher education" responses to the question "What is the highest level of education your mother has completed?" being one of the determinants of school success.

The characterisation is consistent with previous studies (Carreiras et al., 2020), however, the deterioration of the indicators related to the financial condition stands out. While in June 2020, only 1% replied that they could not resort to friends and family for financial situations ("borrowing 300 euros"), a semester later, this percentage increased to 9.3%. Responses to the statement "I had enough financial resources to cover my monthly expenses" also suggest a deterioration in the students'

financial situation. Three students even mentioned that they contacted "the student support service or the social service of their university/college/school" to "discuss problems or financial difficulties." This deterioration of economic indicators, being a negative aspect, corresponds to the international standard in this variable (Van de Velde et al., 2020).

Concerning teaching activities, only 29% of students "agree" that "academic work has increased significantly since the outbreak of COVID-19;" 24% say they know "less what is expected of me in the different courses / disciplines since the outbreak of COVID-19" and 19% agree that "the change in teaching methods resulting from the outbreak of COVID-19 has caused them much stress."

These results help to understand that 29% agree that "the educational quality of my institution of higher education is inferior to the educational quality that is provided before the outbreak of COVID-19," in addition to only 16% saying they are "concerned with the possibility of not being able to complete the school year due to the outbreak of COVID-19". Of course, the students' perception of possible degradation of education is not favourable. However, the pattern already identified at the international level follows, where a significant group of students stressed the decrease in the quality of education. (Van de Velde et al., 2020).

The analysis of the data allows affirming that there was an improvement in the habits related to tobacco consumption. However, the improvements are less significant in January 2021 than they were in June 2020. This pattern was also verified in answers to the question "During the last week, on average how many cigarettes you smoked per day?" because the answer "zero cigarettes" had an increase of 0.4% (from 76.2% to 76.8%), well below the evolution that occurred in June (where the increase was 4.5% in this response when compared to the period before the COVID-19 outbreak). On the other hand, the average daily consumption of cigarettes (before and after the outbreak of COVID-19) had dropped in June from 2.5 cigarettes to 1.8 cigarettes, respectively. In January, we saw an increase in the average daily consumption of cigarettes by 1.75 to 1.77.

Regarding alcohol consumption behaviours, the data indicate a more marked improvement. The answer "never (almost never)" to the question "how often did

you drink six or more glasses of alcohol on a single occasion” evolved further during this pandemic phase.

The trend is also corroborated by the study of the results to the question “In the last week, on average, how many glasses of alcohol you drank (number of glasses - for example, a glass of wine, a shot, a glass of beer between 25 to 33 cl)?” since the average consumption decreased from 2.84 to 0.84, and in June it had reduced from 3.3 to 2.9 glasses of alcohol.

With the “daily (almost daily)” practice of physical activity, a decrease from 70% to 52% is observed. This behaviour had already been noted in the previous study, although slightly decreased from 78% to 67.9%. A new fact is that 7% also answered “never, (almost never)” to the question “On average, how often did you practice intense physical activity such as lifting weights, running, aerobics or cycling, at least about 30 minutes during the last week?” These data must be framed by the fact that in January, there were a high number of students in isolation - with the obligation to stay at home / in the institution - and that there were institutional indications for carrying out a period of adaptation to physical effort after confirmation and recovery from the disease. This procedure is in line with recently published studies that support the need to assess risk before resuming physical activity, according to the severity of the disease presented, and a return to physical activity from at least seven days without symptoms of infection, with an initial adaptation period of at least two weeks of minimal effort, with adequate monitoring of the progress of the physical condition (Salman et al., 2021).

Regardless of the apparent degradation of some components linked to healthy lifestyles, serious health problems are not to be expected. Many students (95.9%) do not suffer from any of the conditions that were asked to list (heart disease; kidney disease; diabetes; high blood pressure; recent cancer diagnosis; obesity).

Regarding the question “Did you have any of the following symptoms such as coughing, sneezing, or nasal congestion in the last month?” it appears that 43.7% answered “no”, 51.6% answered “yes”, and 4.6% “I am not sure.” These results are very different from those obtained in June 2020 and are in line with the evolution of the pandemic in global terms. It was also found that 5.7% answered “yes” to the question “Was there an

occasion when you tried to hide these symptoms from other people (for example, in a store or on the street)?”.

Regarding students “infected by COVID-19 (confirmed by laboratory test)”, 50 cases (13.7%) were reported, but 62% stressed that “they have already been in isolation due to contact with a suspected COVID-19 case” and 51% “has already been in isolation from contact with a COVID-19 positive patient.” The results for the question “Indicate the number of days that you have been in isolation (at MA, at home, or elsewhere) since the beginning of the academic year 2020 / 2021” also appear to be pertinent) since the average was 13 days for one total of 272 students who were in isolation.

The average answer to the question “In your opinion, what is the probability of being infected / reinfected with COVID-19” was 6.1 (with a scale from 1 to 10 where 1 = “Very unlikely” and 10 = “Very likely”), in June it was only 4.1. Regarding the “level of concern about becoming infected with COVID-19”, the measure was 7 (with a scale from 1 to 10 where 1 = “Not at all concerned” and 10 = “Very concerned”), when in June 2020, the average was 6.

The main concern of the students remains that someone in their relationship could be infected; 54.1% say they are “very worried” while in June, only 36% said so. The average answer to the question “How worried are you that someone in your relationship could be infected with COVID-19?” is 8.8 (with a scale equal to the previous one). This concern is also noted with the results of the question about “How concerned are you that doctors and hospitals will not have the appropriate medical equipment to deal with the outbreak of COVID-19?”, which reveals the average of 8.7 (scale equal to the previously mentioned) when in June it was an average of 6.3.

The average response of students to the question “To what extent did you adhere to the measures implemented by the government vis-à-vis COVID-19?” remains high at 8.7; in June it was 8.5 (with a scale of 1 to 10 where 1 = “I didn’t adhere at all” and 10 = “I strictly follow”, and most still consider that the information they received was timely and perceptible.

In addition, all students chose the options “always” or “most of the time” in the question “During the performance of the selected activities (e.g., taking a walk or having a drink) - how many times do you think you have fulfilled the measures proposed by the General

Director of Health for personal protection (wearing a mask) and social distance?”. In any case, the average answer in the question “What is the number of people with whom you had contact on December 24 and 25, 2020, without wearing the protection mask or without fulfilling the social distance?” was 5.4.

It was found that 30 students (8.2%) reported that during the last week, they did not perform any of the activities indicated (e.g., taking a walk, talking with friends or family, participating in recreational activities, or having a drink with friends) when in June this percentage was only 3.6%. In this sense, it was found that 4.6% answered “no” to the question “Do you have someone with whom you can discuss intimate or personal matters?”.

It seems that it still deserves a special emphasis and need for future investigations, the percentage that during the last week, “with some frequency” or “very often” (June 2020 / January 2021): they felt depressed (5.7% / 12%); they felt that everything they did was with effort (28.4% / 35%); slept badly (13.4% / 27%); they felt alone (10.2% / 14%); they felt sad (6.1% / 13%); they felt lack of energy (12.6% / 20%); felt bored (21.5% / 21%); felt frustrated with life in general (10.1% / 14%); they felt anxious (15.9% / 19%); they felt lack of company and coexistence (36.6% / 47%) and; they felt isolated from other people (22.4% / 34%).

Knowing that these results are not exclusive to the cadets of the Military Academy, as other studies suggest that students experienced intense feelings of loneliness during the COVID-19 pandemic, and there are many reports of symptoms compatible with depressive conditions (Van de Velde et al., 2020). The degradation of almost all the indicators previously analysed will indeed have to continue to deserve the institution’s best attention.

The rate of infection with COVID-19 within the sample of the respondents was 13.7% (from the beginning of the pandemic to the date of response) and therefore higher than the rate observed in the general population. In addition, 77.9% of students affirm “to know someone in my relationship network who has been or is currently infected with COVID-19,” when in June it was only 12.6%, of which 3.5% died. Despite a high-

er infection rate in this subpopulation, it is essential to note that there were no deaths in the students and that the majority had no symptoms or only mild symptoms.

## CONCLUSIONS

The Military Academy guided its plans and measures adopted in compliance with the guidelines disseminated by the Health Authorities, knowing how to adjust the commitment to the real pandemic situation. Despite the current record of positive cases of COVID-19 being higher than the national average, the measures adopted by MA, given its internship regime, proved to be quite effective, namely in the speed in detecting and controlling contagions avoiding outbreaks within your community.

This study demonstrates the impact that the COVID-19 pandemic had on the health and well-being of military academy students. Despite being part of the international standard, it was possible to observe a slight deterioration in the cadets’ financial situation and their perception about the quality of the education received.

It is still possible to identify a promotion of factors linked to healthy lifestyles (tobacco and alcohol consumption). However, there has also been a decrease in the practice of physical exercise, conditioned by situations of prevention and recovery of COVID-19 and compliance with the guidelines from public health entities. There was an increase in concern about contracting the virus and the perception of risk and probability of being infected compared to the first study. The results related to well-being and emotional health proved to be worrying because there was an increase compared to the first study in several indicators (depression, tiredness, difficulties in sleeping, sadness, frustration, anxiety, loneliness), which require greater attention on the part of MA in future studies.

The results of this study were made known to the Command of Academy to be able to implement actions on time and draw attention to the identification/ signalling of students who are more fragile at the social and psychosocial level. These results also allow us to realise the importance of carrying out new studies to perceive the evolution of health and the well-being of future military commanders.

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