

# Military Physical Preparation for The Category B/2021 Jungle Operations Course: An Experience Report

**Julio Ildefonso Damasceno Ferreira, Kilber Emanuel da Costa Ramos, Adenilza Moraes Alves  
Pinheiro, Dilson dos Santos Campos Junior, Ithatiele Viana Macieira,**

## **Abstract**

*This work is an experience report about the Physical Training Program developed with officers of the Military Police of Pará (PMPA), belonging to specialized commands of the corporation. The objective was to describe the specific training for the Physical Aptitude Test developed with the lieutenants indicated to participate in the Jungle Operations Course (COS) category B. Two combatant officers (lieutenants) of PMPA, aged 30 years male, participated in the experiment. As a result, substantial gains were obtained in both physical conditioning, due mainly to the improvement in their body measurements. It was concluded that physical fitness results from regular physical activity, based on the observation that the instructors had not been practicing physical exercises frequently.*

**Keywords:** Physical activity. Physical Fitness. Military Physical Training.

## **1. Introduction**

Physical fitness is essential for the military police officer to perform his tasks satisfactorily, considering that the conditions of his work often lead to a high load of physical effort, besides the inherent stress of the profession.

The Brazilian Army periodically offers the Jungle Operations Course (COS), Category B. Two vacancies were made for the COS/2021 held at the Jungle Warfare Instruction Center (CIGS) in the state of Amazonas-AM between 08/02/2021 and 10/05/2021, available for the Military Police of Pará (PMPA). This course requires the candidate to take the Preliminary Physical Aptitude Exam (EAFP) applied by the Application and Supervision Commission (CAF), in Manaus, under the responsibility of the Amazon Military Command.

The Pará Military Police, aiming at the participation of two officers of the corporation, edited the Instruction Note 01/2021 - Military Police Training Center (CTPM), published in the Addendum to the General Bulletin (BG) II no. 073 of April 16, 2021/DGEC (General Department of Education and Culture), containing the necessary rules for the Military Physical Preparation routine, developed by the Lieutenants of PMPA, with the activities being designed mainly at the CTPM, between April and July 2021 (PARÁ, 2021).

Therefore, the justification for this training is the application of the Preliminary Physical Aptitude Exam to the candidates in a preliminary selection by the Application and Supervision Commission, in Manaus,

under the responsibility of the Amazon Military Command, where it will already indicate if the Officer will be qualified to attend the course if he is approved in this TAF.

And after this phase, during the mobilization week, the CIGS will apply for the Final Physical Aptitude Exam (EAFD), which is eliminatory, and the candidates who do not reach the minimum levels of approval will not be enrolled and must return to their Military Organizations (OM).

In this sense, as a way to give the Officers training directed towards Military Physical Preparation, it was conceived by Physical Education professionals from the Pará Military Police, divided between officers and enlisted men, besides other health professionals, such as doctors, nutritionists, physical therapists, and psychologists, according to the military's individual training needs.

The following objectives were determined: a) describe the specific training for the Physical Aptitude Test developed with the lieutenants indicated to participate in the Jungle Operations Course (COS) category B; b) improve the physical conditioning of the instructors; c) enable the approval in the Jungle Operations Course category "B" - COS.

To achieve the objectives, the trainees must be available full time for physical activities because they will be intensively tested during all the stages of physical preparation to avoid injuries resulting from lack of material, motor, and technical capacity, besides survival in the jungle.

## **2. Methodology**

The experiment was carried out in the period from April 06 to June 03, 2021, during the days from Monday to Saturday, according to the Weekly Work Schedule, being developed in the following spaces: Military Police Training Center (CTPM) and Officers Club (COPM), both belonging to the Military Police of Pará (PMPA). At the CTPM, activities were developed in open areas (soccer and sand fields) and closed areas (weight-training gym and tatami). The COPM was used for aquatic activities.

Regarding the subjects of the experiment, two combatant officers (lieutenants) of the Pará Military Police were chosen, both from specialized commands, one from the Environmental Police Battalion (BPA) and the other from the Special Operations Battalion (BOPE). The latter was identified as Oficial 01 and Oficial 02.

Considering the pandemic moment of Covid-19, some precautions were added, according to the guidelines established by the Government of the State of Pará, through Decree No. 800 of May 31, 2020 (PARÁ, 2020), observing the risks, and respecting the measures for dealing with the pandemic, such as sanitation and individual protection, for example.

The activities were prepared jointly by the instructors and other professionals involved in the mission, based on the concept that, before any physical training, it is essential to evaluate the general physical and health conditions of those who were submitted to the activities, which presupposes the need for adjustments, made during the training period. It is essential to point out that besides the principles of general physical training and respecting the human body's physiological principles, the activity for military development was explicitly observed.

With this, the preparation was divided into stages, starting with several physical and specific tests to evaluate them preliminarily, reiterating that the training aims at activities that will demand, besides the gain

of particular techniques and strength gain, also the resistance to intense and prolonged physical efforts, in this way, the physical preparation should also aim at the realization of the course.

The following stages were adopted:

Stage 01: Preliminary performance of simple physical evaluation; aerobic exercises of strength, agility, endurance; liquid medium, and bioimpedance verification. Thus, a 5Km run without time was applied to verify the individual's cardiorespiratory conditions, aerobic resistance, and helpful swimming to confirm the survival conditions in a risky situation involving water. This is the main goal of the training in utilitarian swimming, whose main objective is to make police officers capable, in a case involving water, of swimming in uniform and saving work equipment, floating for at least 10 minutes, and climbing a 4m rope, using only their upper limbs.

Stage 02: Planning of activities according to the training prescription, being adjusted during execution;

Stage 03: Development of the training, when the physical qualities of strength, muscle group resistance, and aerobic, speed, and agility were worked on;

Stage 04: Development of specific activities, such as improving movement mechanics in running, push-ups, fixed bar, suspension on a rope, floating, and swimming;

Stage 05: Performing diagnostic evaluations, observing the sensitive points to be improved and intensified.

Below is an example of the Training Chart adopted in this experiment.

Chart 1 - Military physical fitness monitoring guide - Training Worksheet

MILITARY PHYSICAL FITNESS TRACKING GUIDE - TRAINING WORKSHEET		
Student:		Year: 2021
Week: 12 to 18		Month: APRIL
		Guide n°: 01
DAYS OF THE WEEK	TRAINING SAMPLE	LOCAL
MONDAY	Delivery of the instruction note to the DGEC	DGEC
TUESDAY	Military physical preparation meeting	CTPM
WEDNESDAY	Running test - 12min (1 rep. max.) / shuttle run (9.14m) (3 reps) / horizontal push (3 reps) / vertical push (3 reps) / 50m run (3 reps) / barbell - maximum of runs (1 rep. max.) / abdominal - maximum of runs (1 rep. max.) / handstand - maximum of runs (1 rep. max.)	CTPM
THURSDAY	Run 5Km / walk 5Km	CTPM
FRIDAY	Load stretching for resistance training	CTPM
SATURDAY		
SUNDAY		
Student's signature:		

Instructor Ass:
Date:
Must be filled out according to the training, indicating its faithful compliance or not, difficulties in performing exercises, whether due to conditioning, health problems, etc.
NOTES: WEEK OF TESTS AND ADAPTATION

At the end of the training period, a new evaluation was performed, comparing the initial and final data.

### **3. Theoretical Framework**

The military policeman must not only know his equipment or instructions for action against disturbances, but he must also be aware of physical activity as a fundamental artifice in the fight against the public disorder. In this context, physical activity should be understood not only from an institutional viewpoint, which requires its practice for the adequate provision of services to the community but as an essential element for the policeman to achieve a better quality of life (PARÁ, 2018, p. 9).

Based on this understanding that physical activity practice in the military environment is important for police officers to achieve both improvements in their quality of life and adequate service performance, the experience reported here was based on the Renewed Health or Renewed Biological Approach, denomination given by Darido (2003), highlighting themes such as stress, sedentarism, cardiovascular problems and diseases of hypokinetic nature.

This approach, when proposing the deepening of the discussion about health and physical activity, evidence, in the same way, the social and cultural aspects besides the biological one, corroborates the studies of Nahas (1997) and Guedes and Guedes (1996), which emphasize that healthy habits propitiate the improvement of people's quality of life and well-being.

Thus, the authors, as mentioned above, when highlighting the ideas related to "promoting the practice and maintenance of physical activity; active lifestyle; knowledge; physical exercises; health improvement (...) substantiate the choice of the approach (...) given the studies that serve as a basis. ) because of the studies that serve as a basis, showing to be relevant from the theoretical-conceptual guidance for the chosen theme, which is physical fitness, having as "backdrop" the issue of health as an essential element for the military police citizen to perform his institutional mission (FERREIRA & DA SILVA, 2021, p.33 ).

For Guedes & Guedes (1995), having physical fitness means the possibility of performing physical efforts, including vigorous ones, without reaching exhaustion:

[...] a dynamic state of energy and vitality that allows everyone not only to perform the tasks of everyday life, the active occupations of leisure hours, and face unforeseen emergencies without excessive fatigue but also to avoid the appearance of hypokinetic functions while functioning at the peak of intellectual capacity and feeling the joy of living.(GUEDES; GUEDES, 1995, p. 22)

In the same sense, Nahas (2010, p. 48) relates physical fitness with the ability to perform physical activities, stating that this ability can be derived from family customs related to health care, nutrition, and regularity in the practice of physical activity.

In relation to military police work, the studies of Marcineiro (1993); Simões (1999); Bezerra Filha (2004); Minayo, Assis, and Oliveira (2011) stand out. The authors reinforce the need for physical vigor, physical conditioning, and physical fitness, whose purpose is to enable these professionals, besides preserving physical and mental health, to act effectively to preserve public order and safety.

Marcineiro (1993, p.2) shows that a military policeman must base his qualification on the combination of "professional technical preparation, sound moral values, and physical and mental hygiene," a concept reinforced by Minayo, Assis, Oliveira (2011, p. 2202) when they state that "the sedentary life of these agents plays a decisive role in their illness since it damages their energy, steals their vitality and their professional efficiency."

#### **4. Results and Discussion**

Before the application of preliminary tests, physical evaluation, and bioimpedance, the two military men were submitted to the evaluation of health conditions for promotion in the military career when the necessary exams were presented, which guaranteed them "fit" for participation in the Training Program.

The Training Program started with a Simple Physical Evaluation (Table 1); Bioimpedance calculation (Table 2), excluding from this Table the values referring to perimeters, which originated the WHR calculation (hip-hip ratio) because they were in Table 1. Besides these evaluations, the Officers were submitted to other exercises, according to Stage 1, described in the Methodology Section.

Table 1 - Simple Physical Evaluation, April and June 2021

<b>Indicators/Periods</b>	<b>Officer 1</b>		<b>Officer 2</b>	
	<b>April/2021</b>	<b>June/2021</b>	<b>April/2021</b>	<b>June/2021</b>
Basal metabolic rate (Kcal)	1804	1742	1919	1899
<b>Skinfolds</b>				
Subscapular	25,66	14,66	25,33	21,66
Tricipital	25,33	9,66	18,33	25
Pectoral	21,33	12	20	10,66
Axillary-middle	22	15	16	7,33

Suprailiac	21	16	20,66	21
Abdominal	21,33	27,66	19,66	29
Thigh	28,66	21,33	21	31
<b>Some of the folds</b>	165,31	116,31	140,98	145,65
<b>Perimeter (cm)</b>				
Shoulder	101	113	105	116
Thorax	93,5	99	99	103
Waist	92	85,5	96,5	91
Abdomen	91	88	94	93
Hip	99	94	104	103
Right Arm	34	31,5	34	32,5
Left Arm	34,5	31,5	34	33
Right forearm	27	27,5	27,5	29,5
Left forearm	27,5	27	29	29
Right Thigh	56	56	57	60,5
Left Thigh	55	56	61	61,5
Right Calf	38	38,5	39	40
Left Calf	37,5	38	41	40
<b>Results</b>				
Current fat (%)	23,5	17,4	20,9	21,5
Fat mass (Kg)	18,9	13,2	18,4	18,5
Fat-free mass (Kg)	61,5	62,7	69,5	67,9
Muscle Mass (Kg)	42,1	44,4	48,4	47
Residual mass (Kg)	19,4	18,3	21,2	20,8
Bone mass (Kg)	0,0	0,0	0,0	0,0

Source: Authors, 2021

**Table 2 - Bioimpedance, April and June 2021**

Indicators/Periods	Officer 1		Officer 2	
	April/2021	June/2021	April/2021	June/2021
HR at rest (bpm)	72	72	59	59
Weight (Kg)	80,4	75,9	87,9	86,4
Height (m)	1,72	1,72	1,77	1,77
Fat	26,2	20,6	23,3	22,8
Muscle mass	35,1	39,1	37	37,3
Body age	50	40	54	52
Visceral fat	11	8	11	10

Bioimpedance BMI	27,2 (poor)	25,7 (medium)	28,1 (medium)	27,6 (medium)
WHR	0,93 (high)	0,91 (moderate)	0,93 (alto)	0,88 (moderate)

Source: Authors, 2021

During the preliminary tests, it was found that besides not having adequate physical conditioning, they had micro-injuries that needed to be treated so as not to compromise their health and the continuity of the training. Although both were unable to perform the abdominal exercises with arms crossed over the chest, it should be noted the significant difference between the results, and Officer 2, perhaps because he belongs to BOPE, where there is a greater load of routine physical exercises, was the one who achieved the best indexes, which corroborates the studies of Marcineiro (1983); Simões (1999); Bezerra Filha (2004); Minayo, Assis, Oliveira (2011), when highlighting the need for adequate physical fitness for the exercise of the military police profession.

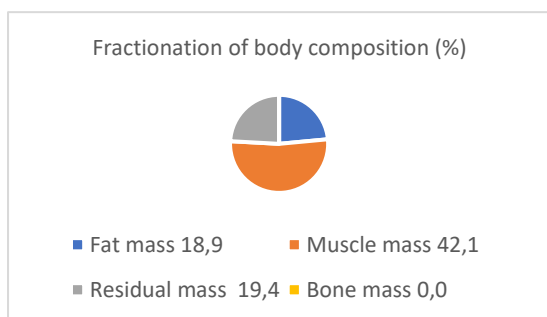
However, there was no utility swimming due to technical problems with pool availability.

Regarding Officer 01:

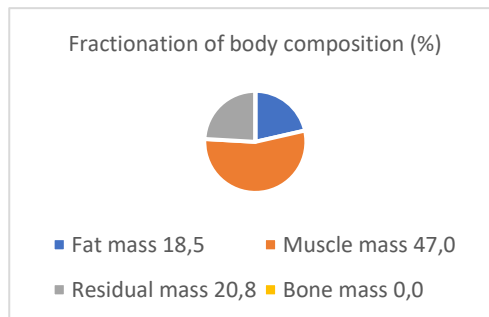
- Ran 3Km in 27 min;
- The maximum time to float in the water was 10 minutes;
- In the fixed bar exercises, reached the maximum of 04 push-ups;
- Could not complete the 4m rope climb test;
- Even though there was no utility swimming, the Officer reported that he was unable to swim for more than 10 min, both due to lack of specific preparation and poor aerobic endurance.

From the result of BMI Bioimpedance of 27.2, considered bad, and the initial weight of 80.4 kg, the goal of 75 kg was established until the 6th week of training, when the decrease should be 5.4 kg. At the end of the training, Officer 1 reached 75.9 kg.

Figure 1-Simple evaluation, Officer 1, April 2021      Figure 2 - Simple evaluation, Officer 1, June 2021



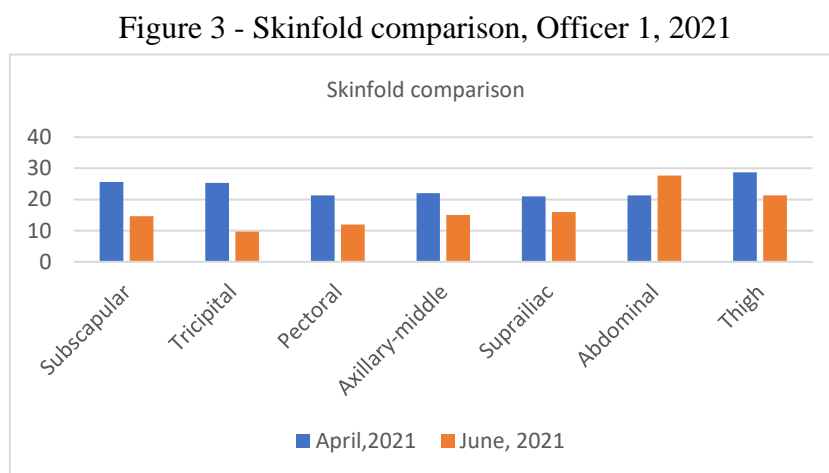
Source: Authors, 2021



Source: Authors, 2021

In relation to the simple evaluations, one can verify the "exchange" of fat mass for muscle mass, showing that the regular practice of physical activity contributes to body strengthening, as observed in the measurements of skinfolds (FIGURES 1 and 2).

Concerning the cutaneous folds, obtained according to the Jackson and Pollock Protocol, seven-folds for men between 18 and 61 years of age refer to the measurement of the thickness of two layers of skin and the adjacent subcutaneous fat, to estimate the level of body fat (FIGURE 3).



Source: Authors, 2021

During the Program, we could see the physical evolution of this Officer when compared to the initial data, emphasizing that this Officer, as he reported to the team, was affected by the disease caused by the coronavirus one month before the beginning of the training, staying in this period without practicing any physical activity.

Although it is suggested that he decrease his running time, he managed to run the requested 8 km; concerning floating, he went from the 10 minutes presented in the beginning to more than an hour; he started exercising utility swimming, staying for more than an hour in continuous activity, doing countless improvement exercises; about the push-up practice on the fixed bar, he increased from four to eight push-ups; with the evolution work, he started doing the 4 m rope climbing test, using only his upper limbs and performing the exercise correctly.

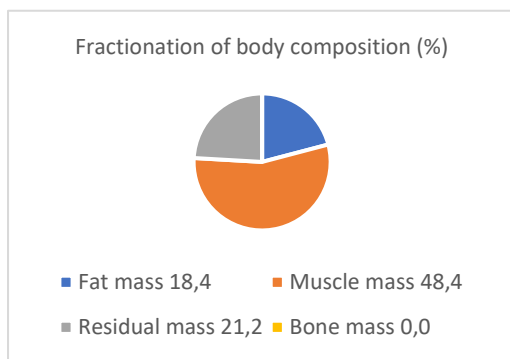
The results presented by Officer 1 were significant and considered excellent, especially about cardiovascular activity, considering what he explained in the exercises performed in water-floating.

Concerning Officer 2, it can be seen that he showed better results. Although he didn't finish the race in the required time, he managed to reach 8km. And about the other preliminary exercises, they were performed in the requested time.

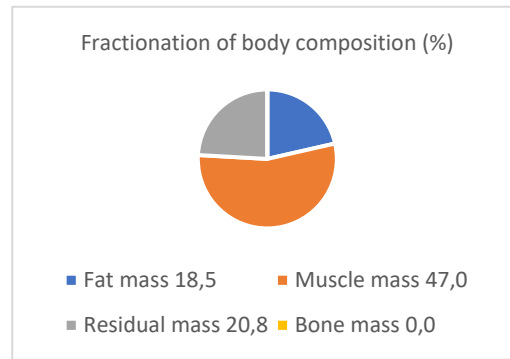
From the result of BMI Bioimpedance of 28.1, considered average, and the initial weight of 87.9 kg, a goal of 80 kg was established by the 6th week of training, when the decrease should be 7.9 kg. At the end of the training, Officer 2 reached 86.4 kilograms.



Figure 4 - Simple evaluation, Officer 2, April 2021 Figure 5 - Simple evaluation, Officer 2, June 2021



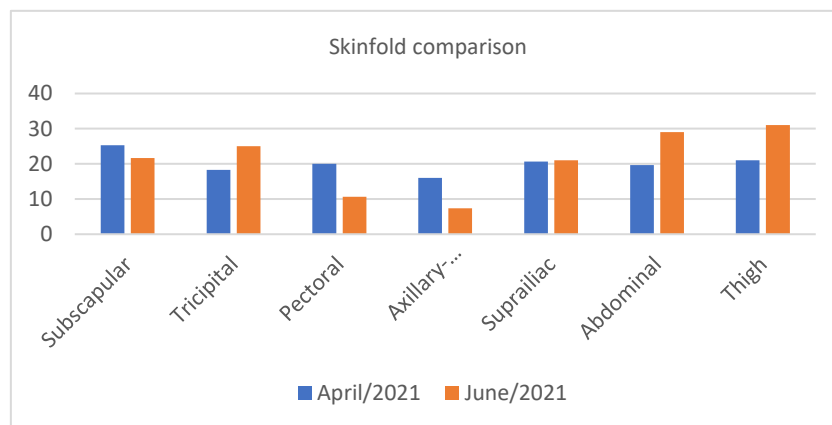
Source: Authors, 2021



Source: Authors, 2021

Regarding the skinfolds related to Officer 2, it can be seen in Figure 6 that four of the seven measurements had an increase, especially the abdominal and thigh folds, around 10%.

Figure 6 - Skinfold comparison, Officer 2, 2021



Source: Authors, 2021

In a general view, it can be observed that, with the development of the training, after four weeks, it was possible to notice a significant improvement in the development of physical qualities, the gain of muscle mass, and the disposition itself during physical training, according to daily observations. After the 6th week of training, it was possible to verify the significant evolution in the physical improvement of both soldiers, considering the physical characteristics of each one. At the end of the training, among the progress achieved, the one that stands out is the one that occurred in the mechanics of the race due to the gains obtained in speed.

It is noteworthy that among the difficulties encountered during the effectiveness of the training, the fact that the two military policemen did not present a minimum and necessary physical conditioning, it was not possible to move more quickly from light to intermediate training, including not reaching the advanced phase, as planned for the activities.

Another point observed is about the care that must be followed by the instructors' team and other professionals, as well as by the trainees themselves, since there is always the risk of lesions in any physical training, in its several phases, demanding, therefore, the daily contact of the instructors with the officers in

training, following them and orientating them in the necessary cares. The student's commitment must be faithful to his objectives.

In training presented in this Report, meetings were held almost daily, according to the needs, having in mind its purpose, which was to enable better physical conditioning to the military officers of the Pará Military Police, aiming the participation in the selection for the Jungle Operation Course, Category B - COS/2021.

## **5. Final Considerations**

After the training phase, it can be seen that the time allocated for the training of a course of this level, considered extremely difficult in a jungle area, is relatively slight, especially if we believe that it started almost from "zero" in some aspects.

It is essential to point out that after the physical tests applied before the beginning of the physical preparation, a significant difference was observed between the officers in their physical conditioning. Officer 2 was better conditioned, having already had experiences in operational courses and familiarity with water and weight training. Officer 1 was in low physical condition; this training was his first experience with weight and water training.

Finally, it can be seen that any physical training is a process of evolution, where all phases must be respected and adjusted when necessary.

## **6. References**

- BEZERRA FILHA, M<sup>a</sup> José Alves. Levels of Physical Fitness Related to Health of Military Police Officers Working in the Radio Patrol Service of the 5th Battalion of João Pessoa. Monograph of Specialization in Security. João Pessoa, 2004
- DARIDO, S.C. Educação Física na escola: questões e reflexões. Rio de Janeiro: Guanabara - Koogan, 2003.
- FERREIRA, J.I.D.; DA SILVA, F.A.B. Avaliação da aptidão física e a incapacidade temporária para o serviço na Polícia Militar do Pará: necessidade de uma cultura preventiva In: FERREIRA, H.L.D. (Org). Multidisciplinary reflections on Public Safety. Belém: RFB, 2021, p. 27-46
- GUEDES, D. P.; GUEDES, J. E. R. P. Physical exercise in health promotion. Londrina: Midiograf, 1995.
- GUEDES, D. P. e GUEDES, J.E.R.P. Controle do Peso Corporal: Composição Corporal Atividade Física e Nutrição, Londrina, Midiograf, 1996.
- MARCINEIRO, N. Susceptibility of Military Policemen from SC to Risk Factors for Coronary Diseases. Monografia de Especialização. Florianópolis, UDESC, 1993.
- MINAYO, M. C. de S.; ASSIS, S. G. de; OLIVEIRA, R. V. C. de. Impacto das atividades profissionais na saúde física e mental dos policiais civis e militares do Rio de Janeiro (RJ, Brasil). Ciênc. saúde coletiva [online]. 2011, vol.16, n.4, pp. 2199-2209.
- NAHAS, M. V. Atividade Física, Aptidão Física & Saúde. Florianópolis/SC: Material Didático, 1989.
- NAHAS, M. V. Educação Física no Ensino Médio: educação para um estilo de vida activo no terceiro milênio. Anais do IV Seminário de Educação Física Escolar / Escola de Educação Física e Esporte, p. 17-20, 1997.

NAHAS, M. V. Change in the modus vivendi of the human being. In: Atividade física, saúde e qualidade de vida: conceitos e sugestões para um estilo de vida ativo. 5 ed. Londrina: Midiograf, 2010, p. 35-46.

PARÁ. Decree No. 800, of May 31, 2020. Institutes the RETOMAPARÁ Project, providing for the safe economic and social resumption, in the State of Pará, through the application of controlled distance measures and specific protocols for the gradual reopening and operation of segments of economic and social activities. Available at <https://www.legisweb.com.br/legislacao/?id=397091>.

PARÁ, Military Police. Addition to Boletim Geral nº 195, November 05, 2018. PMPA Physical Education Manual: guidance for good physical conditioning. Available at: [HTTPS://www.pm.pa.gov.br/sites/default/files/files/2018/2018\\_05\\_18-adit195.pdf](HTTPS://www.pm.pa.gov.br/sites/default/files/files/2018/2018_05_18-adit195.pdf)

PARÁ, Military Police. Addition to Boletim Geral nº 073, April 16, 2021. Instruction Note No. 01/2021 - CTPM. Available at [HTTPS://www.pm.pa.gov.br/sites/default/files/files/2021/2021\\_16\\_04\\_21-adit073.pdf](HTTPS://www.pm.pa.gov.br/sites/default/files/files/2021/2021_16_04_21-adit073.pdf)

SIMÕES, M. C. Composição corporal das policiais femininas de Florianópolis. Monograph presented for obtaining the degree of Master in Production Engineering. Florianópolis: UFSC, 1999.