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Original Article

COMPARISON OF HEALTH-RELATED PHYSICAL FITNESS AND ITS ASSOCIATION WITH THE LENGTH OF SERVICE BETWEEN SPECIAL OPERATIONS AND TRAFFIC MILITARY POLICE OFFICERS

COMPARAÇÃO DA APTIDÃO FÍSICA RELACIONADA À SAÚDE E SUA ASSOCIAÇÃO COM O TEMPO DE SERVIÇO ENTRE POLICIAIS MILITARES DE OPERAÇÕES ESPECIAIS E DE TRÂNSITO

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RESUMO
O estudo comparou a aptidão física relacionada à saúde (AFRS) entre policiais militares (PM's) do Batalhão de Operações Policiais Especiais (BOPE) e do Batalhão de Policiamento de Trânsito (BPTRAN) e relacionou o tempo de serviço dos militares com as variáveis da AFRS. A amostra foi composta por 47 MPs da cidade de Patos-PB, com idade de 26 a 49 anos e tempo de serviço de 3 a 30 anos (BOPE, n= 25; BPTRAN, n= 22). Foi realizada uma bateria de testes: medidas antropométricas, teste de sentar-e-alcançar no banco de Wells, de abdominal de 1 min, de flexão dos cotovelos e o teste vai-e-vem de 20 m. Constatou-se que o BOPE e o BPTRAN não são diferentes em relação à AFRS, exceto na flexibilidade que foi maior no BOPE (p= 0,026). Adicionalmente, os achados demonstraram que o tempo de serviço interfere negativamente na aptidão morfológica, neuromuscular e cardiorrespiratória dos militares.
Palavras-chave: Aptidão física. Militares. Saúde do Trabalhador.

ABSTRACT
This study compared health-related physical fitness (HRPF) between military policemen (MP) from the Special Police Operations Battalion (BOPE) and from the Traffic Police Battalion (BPTRAN) and related the military time of service with the variables of HRPF. The sample was composed of 47 MPs from the city of Patos, state of Paraíba, Brazil, aged between 26 and 49 years old and who had served for 3 to 30 years (BOPE, n=25; BPTRAN, n=22). A battery of tests was performed: anthropometric assessment, Wells sit-and-reach test, 1 min sit-up test, elbow flexion and 20 m shuttle run test. The BOPE and the BPTRAN did not differ regarding HRPF, except for flexibility, which was higher for the BOPE (p=0.026). In addition, the findings showed that the time of service negatively affected the morphological, neuromuscular and cardiorespiratory fitness of the MP officers.

Keywords: Physical fitness. Military personnel. Occupational health.

Introduction

The Military Police (MP) is a public safety agency that aims to preserve public order and citizen rights, combat crime and apply the laws. Thus, there are several types of police forces in the state of Paraíba, including the Transit Police Battalion (Batalhão de Policiamento de Trânsito - BPTRAN), which is responsible for enforcing traffic regulations at the state level, and the Special Police Operations Battalion (Batalhão de Operações Policiais Especiais – BOPE), which constitutes a highly specialized segment and can be considered the elite of the MP.

The professionals who join the military must be in good physical condition for performing the tasks that are required daily; however, even if the daily work alone demands

physical activity, it does not meet the needs for optimal physical exercise[1]. According to Glaner[2], performance at work is directly linked to the well-being of the individual, and weak physical fitness can negatively affect the ability to perform work-related tasks. Therefore, it is important to test, measure and assess health parameters for prescribing exercises in this population and to identify how to incorporate the practice of monitored physical activity.

In this sense, the practice of physical exercise improves health-related physical fitness (HRPF), which according to Bohme[3] is composed of components such as morphological, neuromuscular and cardiorespiratory fitness, which are of great relevance to the MP officers. Over time, individuals tend to increase their levels of body mass index (BMI), with a consequent decrease in flexibility, muscle mass and aerobic power (maximum oxygen consumption – VO_{2max}), which has a negative impact on their ability to work[4,5].

Additionally, improvements in HRPF help with disease prevention and health promotion, resulting in reduced peripheral vascular resistance, cholesterol levels, risk of diabetes and percent fat, as well as increased physical (muscle strength, endurance and flexibility), psychological and professional abilities[6,7].

In this sense, several studies have assessed the HRPF of population groups, such as the elderly[8], students and teenagers[9-11], college students[12] and futsal athletes[13]. In military personnel, Silva et al.[14] observed that the MPs of the state of Santa Catarina, Brazil have morphological fitness levels within the recommended range, and Araújo Junior et al.[15] found the MPs of Paraíba, Brazil to have good cardiorespiratory fitness. Additionally, Nogueira et al.[16] demonstrated that there is a strong association between the morphological fitness and cardiorespiratory fitness of MPs in the Federal District, Brazil. Regarding neuromuscular fitness, Delgado et al.[17] showed that most MPs presented ideal strength to prevent muscle injuries. However, studies that investigated military personnel usually separately analysed the morphological/physical[14,16], cardiorespiratory[15,16] or neuromuscular fitness[17].

No study was found that compared HRPF between the MP corporations nor that investigated the relationship between time of service and HRPF components. Therefore, the aim of the present study was to compare HRPF between MPs of the BOPE and BPTRAN from the city of Patos, state of Paraíba-PB, Brazil. The secondary objective was to relate the time of military service with morphological, neuromuscular and cardiorespiratory variables. Our hypothesis was that BOPE MPs report higher HRPF values than BPTRAN MPs and that the time of service interferes with the HRPF of the MPs.

Materials and Methods

Sample and Ethical Aspects

This study has a descriptive, cross-sectional design. This project was approved by the Research Ethics Committee of Patos Integrated College (CEP/FIP), under protocol number 205/2012, according to the standards Resolution 196/96 of the National Health Council. All of the subjects signed an informed consent form.

The MP population of the city of Patos-PB comprises 473 policemen, of whom 33 belong to the 6th Company of BOPE and 30 belong to the 4th Company of BPTRAN. Thus, the sample of this study was composed of 47 subjects aged 26 to 49 years old who have served 3 to 30 years; the sample was divided into 2 groups: BOPE (n=25) and BPTRAN (n=22), all of whom were assigned to the municipalities of Patos, state of Paraíba. The sample represented 75.75% and 73.33% of the populations of the BOPE and BPTRAN, respectively.

The sample included physically active and active-duty BOPE and BPTRAN police officers. The physical activity level was classified using the short version of the International Physical Activity Questionnaire (IPAQ), which has been previously validated[18,19]. The subjects were classified as physically active if they performed at least 30 min/moderate physical activity session for 5 days (≥150 min/week), 20 min/vigorous physical activity session for 3 days (≥60 min/week) or the combination of moderate and vigorous physical activity[18,20,21]. Individuals excluded included those who had consumed drugs, food supplements, alcohol or tobacco within 48 hours before or during the study; had any musculoskeletal or cardiovascular conditions; or inadequately performed the physical tests.

Data Collection Procedures

The individuals arrived at the collection site in the morning period in a 2-3 hour postabsorptive state; they completed a medical history questionnaire, the IPAQ and the Brazilian Criteria of Economic Classification (Critério de Classificação Econômico Brasil – CCEB) scale. After completing the questionnaires, the individuals underwent HRPF measurements. First, the anthropometric assessments were performed, followed by the physical tests: Wells sit-and-reach, abdominal 1-min sit-up test, elbow flexion and 20 m shuttle run; a 5-min interval was taken between the tests.

Sociodemographic Variables

The medical history questionnaire was used to collect data on age, rank or position in the corporation, time of service, marital status, education level, smoking habit and alcohol consumption. Additionally, the CCEB scale was used; this scale seeks to estimate the purchasing power of individuals through a point system and then divides them into economic classes, classifying the subjects as A1 (42 to 46 points), A2 (35 to 41 points), B1 (29 to 34 points), B2 (23 to 28 points), C1 (18 to 22 points), C2 (14 to 17 points), D (8 to 13 points) and E (0 to 7 points)[22].

Morphological Variables

For the morphological assessment, a 100 g-precision Filizola® scale was used to measure body mass (kg); a wall-mounted wood stadiometer, with 0.05 mm precision, was used for obtaining height (m); body mass index (BMI) was calculated by dividing the body mass by the squared height (kg/m^2); an inelastic measuring tape (Sanny®), with 0.1 cm precision, was used for the measurement of waist circumference (WC, cm); and a skinfold calliper (Sanny®) with 0.5 mm precision and 1 mm resolution was used for the measurement of skin folds (chest, abdominal and mid-thigh) and for obtaining the body density following the Jackson and Pollock protocol[23], after which the percent fat (PF) was determined using Siri's equation[24]. All measures were made by a single experienced evaluator following the recommendations of the International Society for the Advancement of Kinanthropometry[25]. PF was classified as established by Lohman[26], and BMI was classified according to the World Health Organization[27].

Neuromuscular Variables

Flexibility was measured through the Wells sit-and-reach test, according to the protocol of Bertolla et al.[28]. In the procedure, the MPs were instructed to extend their arms forward with one hand over the other and then to flex their torso and progress slowly until

they reached their maximum point. They made 3 attempts, and the value obtained was expressed in centimetres (cm) and immediately recorded by the evaluator; the largest value among the 3 attempts was selected for analysis.

Localized muscle endurance (LME) was assessed using the 1-min sit-up test, according to the protocol described by Pollock and Wilmore[29]. The subjects received standardized instructions on how to perform the procedure, and their feet were held in place with help from the evaluator. The distance between the back of the feet and the buttocks was standardized at between 30 and 46 centimetres. The test began with raising the torso until the elbows contacted the knees and, at the verbal command, the timer was started and the individual had 1 min to do the maximum possible repetitions; the number of sit-ups correctly performed was recorded.

For dynamic muscle strength, the elbow flexion test was performed according to the protocol described by Pollock and Wilmore[29]. Before beginning the test, the individual was instructed as to the correct way to perform the movement. After assuming the traditional elbow flexion and extension position on the ground, with a straight and aligned body, the individual had to perform the maximum possible number of repetitions until exhaustion, and the total number of repetitions performed was recorded.

Each neuromuscular test was applied by a single experienced evaluator. The classification of flexibility and dynamic strength was performed according to the Canadian Society for Exercise Physiology[30] and that of LME according to Pollock and Wilmore[29]. The nomenclatures of these classifications were changed to follow a single standardization for all tests: very low, below average, average, above average and very high.

Cardiorespiratory Variable

For the cardiorespiratory fitness assessment, the 20 m shuttle run test was used, which is a progressive, maximal and indirect test in which the individual runs between 2 points, back and forward, for a distance of 20 metres guided by a sound stimulus[31]. Before beginning the test, the procedures for performing it were explained in detail to the participants, clarifying all doubts; the test was later performed in groups of 6 to 8 subjects. To obtain VO_{2max} in mL/kg/min, the equation of Léger et al.[32] was used: Y=-24.4 + 6.0*X, where Y represents VO_{2max} in mL/kg/min and X represents the speed in km/h in the stage reached. VO_{2max} was classified according to Heyward[33]. The nomenclature of VO_{2max} classification was modified to follow a single standardization for all tests: very low, below average, average, above average and very high.

Statistical Analysis

The normality and homogeneity of the data were confirmed by the Kolmogorov-Smirnov and Levene tests, respectively. Next, the independent Student's t-test was used to compare the morphological, neuromuscular and cardiorespiratory variables between the BOPE and BPTRAN. Pearson's correlation was applied to investigate the association between the time of military service and the aforementioned variables. The categorical data are presented as absolute and relative frequency, and the quantitative data are presented as the mean and standard deviation. The analyses were performed in SPSS 16.0 software, and a significance level of $p \leq 0.05$ was adopted.

Results

After the announcement of the study, 50 individuals volunteered to participate; however, 3 did not meet the inclusion criteria because they were physically inactive. Thus, the present study used a sample of 47 MPs, all male, with no significant difference between the groups in relation to age (BOPE: 37.00±6.70 years and BPTRAN: 38.72±8.14 years; p=0.515) and time of service (BOPE: 15.29±7.20 years and BPTRAN: 16.21±9.44 years; p=0.898). Table 1 shows that the sample was predominantly composed of soldiers (n=20; 42.6%) and that most of the police officers had completed high school (n=29, 61.7%). In regards to the socioeconomic level, more than half of the study subjects (n=33; 70.1%) belonged to economic class B1 and B2, and no individual was classified as class A1. Additionally, no subjects were smokers; however, 29 officers (61.7%) consumed alcoholic beverages.

Table 1. Sociodemographic characteristics of military police officers in the city of Patos-PB (n=47).

Categories/Variables	Absolute Frequency (n)	Relative Frequency (%)
Position/Rank		
Captain	1	2.1
Lieutenant	1	2.1
Sub-lieutenant	1	2.1
Sergeant	7	14.9
Corporal	17	36.2
Soldier	20	42.6
Education level		
Complete elementary education	6	12.8
Complete high school	29	61.7
Complete graduate education	12	25.5
Socioeconomic level		
A2	2	4.3
B1 and B2	33	70.1
C1 and C2	12	25.6
Smoking habit		
No	47	100.0
Yes	-	-
Alcohol consumption		
No	18	38.3
Yes	29	61.7

Source: The authors

Table 2 presents a comparison of morphological variables, showing no significant differences between the BOPE and BPTRAN groups. The data indicate that the police officers were overweight in both groups, according to both BMI and PF.

Table 2. Comparison of the morphological variables between military officers of BOPE and BPTRAN in the city of Patos-PB.

	Groups		
Variables	**BOPE (n=25)**	**BPTRAN (n=22)**	***p***
Body mass (kg)	84.32±11.43	81.73±12.99	0.471
Height (m)	1.72±0.04	1.72±0.05	0.951
BMI (kg/m^2)	28.23±3.14	27.30±3.50	0.341
WC (cm)	92.52±7.53	92.89±10.55	0.891
LBM (kg)	67.68±8.31	63.75±7.71	0.101
FBM (kg)	16.63±5.11	17.98±6.18	0.419
PF (%)	19.51±4.30	21.45±4.82	0.152
∑SF (mm)	63.17±14.87	69.59±16.41	0.166

BOPE – Special Police Operations Battalion; BPTRAN – Traffic Police Battalion; BMI – body mass index; WC – waist circumference; LBM – lean body mass; FBM – fat body mass; PF – percent fat; ∑SF – sum of skin folds.
Source: The authors

Regarding the comparison of neuromuscular and cardiorespiratory variables, the data showed that only flexibility was significantly different between groups (p=0.026) and was higher in the MPs of the BOPE (29.23±6.95 cm) than in the MPs of the BPTRAN (23.96±8.70 cm) (Table 3).

Table 3. Comparison of neuromuscular and cardiorespiratory variables between military police officers of BOPE and BPTRAN in the city of Patos-PB.

	Groups		
Variables	**BOPE (n=25)**	**BPTRAN (n=22)**	***p***
Flexibility (cm)	29.23±6.95	23.96±8.70	0.026
Dynamic strength (reps)	23.80±11.42	19.04±14.23	0.211
LME (reps)	38.64±10.25	33.22±12.01	0.103
20 m shuttle run speed (km/h)	11.66±1.19	11.20±1.23	0.205
VO_{2max} (mL/kg/min)	45.56±7.17	42.82±7.38	0.205

BOPE – Special Police Operations Battalion; BPTRAN – Traffic Police Battalion; VO_{2max} – maximum oxygen consumption, LME – localized muscle endurance.
Source: The authors

When classifying the components of HRPF, Table 4 demonstrates that most of the MP officers of the BOPE (n=15; 60.0%) and BPTRAN (n=12; 54.5%) had a PF above average and were also overweight according to BMI (BOPE: 76.0%; BPTRAN: 50.0%). In regards to neuromuscular and cardiorespiratory fitness, most MP officers of the BOPE presented satisfactory levels of flexibility, dynamic strength, LME and VO_{2max}, with 36.0% above average, 40.0% very high, 68.0% very high and 40.0% average, respectively. Similarly, most MP officers of the BPTRAN presented satisfactory values for dynamic strength (36.4% average) and LME (36.4% very high), although they obtained unsatisfactory values for flexibility (40.9% very low) and VO_{2max} (36.4% very low).

Table 4. Classification of morphological, neuromuscular and cardiorespiratory fitness components of military police officers of the BOPE and BPTRAN in the city of Patos-PB.

Variables	Levels*				
	Very low	**Below average**	**Average**	**Above average**	**Very high**
BOPE (n=25)					
PF (%)	-	5 (20.0)	2 (8.0)	15 (60.0)	3 (12.0)
Flexibility (cm)	3 (12.0)	7 (28.0)	4 (16.0)	9 (36.0)	2 (8.0)
DS (reps)	3 (12.0)	3 (12.0)	4 (16.0)	5 (20.0)	10 (40.0)
LME (reps)	-	2 (8.0)	3 (12.0)	3 (12.0)	17 (68.0)
VO_{2max} (mL/kg/min)	6 (24.0)	3 (12.0)	10 (40.0)	3 (12.0)	3 (12.0)
BPTRAN (n=22)					
PG (%)	-	3 (13.6)	1 (4.5)	12 (54.5)	6 (27.3)
Flexibility (cm)	9 (40.9)	3 (13.6)	3 (13.6)	7 (31.8)	-
DS (reps)	5 (22.7)	2 (9.1)	8 (36.4)	4 (18.2)	3 (13.6)
LME (reps)	-	5 (22.7)	4 (18.2)	5 (22.7)	8 (36.4)
VO_{2max} (mL/kg/min)	8 (36.4)	3 (13.6)	4 (18.2)	7 (31.8)	-

BOPE – Special Police Operations Battalion; BPTRAN – Traffic Police Battalion; PF – percent fat; DS – dynamic strength; LME – localized muscle endurance; VO_{2max} – maximum oxygen consumption; *Values expressed in absolute and relative frequency (n (%)).
Source: The authors

When relating the morphological, neuromuscular and cardiorespiratory variables with time of service of the MPs (Table 5), the results showed that there was a positive correlation of WC with the time of service in both groups; this correlation was higher in the BPTRAN (r=0.51, p=0.015) than in the BOPE (r=0.40, p=0.048). Similarly, BMI (r=0.30, p=0.039) and PF (r=0.36, p=0.012) presented a positive correlation with the time of service, but only when the groups were analysed together (overall). The variables dynamic strength, LME and VO_{2max} showed a negative correlation with the time of service in both groups and were larger in the BPTRAN (r=-0.51, p=0.014; r=-0.54, p=0.008; r=-0.66, p=0.001, respectively) than in the BOPE (r=-0.47, p=0.018; r=-0.46, p=0.019; r=-0.36, p=0.073, respectively).

Table 5. Correlation between morphological, neuromuscular and cardiorespiratory variables and the time of service of military police officers of the BOPE and BPTRAN in the city of Patos-PB.

Variables	Time of service (years)*		
	BOPE (n=25)	**BPTRAN (n=22)**	**General (n=47)**
BMI (kg/m_2)	0.21 (0.306)	0.39 (0.070)	0.30 (0.039)
WC (cm)	0.40 (0.048)	0.51 (0.015)	0.46 (0.001)
PF (%)	0.35 (0.079)	0.36 (0.094)	0.36 (0.012)
Flexibility (cm)	-0.11 (0.594)	-0.10 (0.646)	-0.11 (0.425)
Dynamic strength (reps)	-0.47 (0.018)	-0.51 (0.014)	-0.49 (<0.001)
LME (reps)	-0.46 (0.019)	-0.54 (0.008)	-0.51 (<0.001)
VO_{2max} (mL/kg/min)	-0.36 (0.073)	-0.66 (0.001)	-0.52 (<0.001)

BOPE – Special Police Operations Battalion; BPTRAN – Traffic Police Battalion; BMI – body mass index; WC – waist circumference; PF – percent fat; LME – localized muscle endurance; VO_{2max} – maximum oxygen consumption; *Pearson's correlation coefficient (level of significance).
Source: The authors

Discussion

The present study compared HRPF between the MPs of the BOPE and BPTRAN and related the time of military service with morphological, neuromuscular and cardiorespiratory variables. The main findings demonstrated that the BOPE and BPTRAN did not differ in regards to HRPF, except for flexibility, which was higher in the BOPE group. In addition, the results showed that the time of service related positively with WC and negatively with dynamic strength and LME, in both groups together and separately. However, VO_{2max} presented only negative relationships with the BPTRAN group and when all MP officers were analysed together. Additionally, BMI and PF were positively associated with the time of service only when all MP officers were grouped together.

Most MP officers of the BOPE and BPTRAN displayed poor levels of morphological fitness, both according to BMI and PF. Regarding the neuromuscular and cardiorespiratory fitness, most MP officers of BOPE had satisfactory levels of flexibility, dynamic strength, LME and VO_{2max}. Similarly, the MP officers of the BPTRAN presented satisfactory values for dynamic strength and LME and unsatisfactory values for flexibility and VO_{2max}.

A study by Añes[34] found that MPs presented adequate HRPF, except in flexibility. These results corroborate the findings of the present study because the MP officers of the BPTRAN corporation spend a significant amount of time sitting, which can influence their flexibility, leading to worse results in this parameter compared to BOPE. Ueno et al.[35] examined the effect of flexibility in a quantitative-qualitative analysis and found that flexibility is associated with pain from sitting too long. Therefore, improvements in flexibility must be encouraged to MP officers of the BPTRAN corporation because poor flexibility is associated with health and is linked to problems such as lower back pain, sciatic pain and scoliosis as well as to decreased functional capacity, musculoskeletal balance, headaches and poor quality of life[36].

In regards to the morphological results of the sample, most MP officers of both groups had a BMI in the overweight category[27] and showed poor levels of PF[26]. These results were similar to the study by Pontes, Macêdo and Macêdo[37], who evaluated 18 correctional agents, of whom 44.4% were categorized as overweight according to BMI. Another study that corroborates our results is the study by Crawley et al.[38], who evaluated 68 police officers, including 61 men and 7 women, with a mean BMI in the overweight range. Irlbeck et al.[39] note that obesity is an autonomic risk factor that causes morbidity and mortality in men and women. Furthermore, Kaess et al.[40] demonstrated that obesity has a positive association with cardiovascular risk factors, increased blood pressure, insulin resistance and metabolic syndrome.

Despite these findings and the association of PF with the development of cardiometabolic diseases and psychological disorders, the unsatisfactory values for BMI and PF do not appear to influence the performance of the MP officers of the BOPE, given that most of these individuals presented high levels of flexibility, dynamic strength and LME and satisfactory levels of $VO_{2max.}$ Perhaps this phenomenon occurred because these military officers present a quantity of muscle mass capable of promoting good results in neuromuscular and cardiorespiratory fitness and because they are physically active. Additionally, the BOPE requires more dynamic work compared to the MPs, who participate in courses and training that require agility in performing the activities, completing each step of training with greater efficiency.

This phenomenon did not occur in the BPTRAN group because although both battalions are located in the same city, the MP officers of the BPTRAN undergo less intense professional activity than do MP officers of the BOPE; in addition, the physical training of

each group has different purposes. Although the MP officers of the BPTRAN are physically active, they appear to participate in a considerable amount of sedentary behaviour, and this may have resulted in poor values for flexibility and VO_{2max}[41,42].

Interesting data were found when relating the time of service with the HRPF variables. The findings demonstrated that in the MP officers over time, the morphological fitness variables (BMI, WC and PF) increased and the neuromuscular (dynamic strength and LME) and cardiorespiratory (VO_{2max}) fitness variables decreased. Flexibility was the only variable that had no relationship with time of service. Theoretically, over time, the rate of decline of flexibility increases significantly, although it depends on inter-individual variability; therefore, even with ageing, it is common to find people with high levels of flexibility given that ageing is only one of the factors that influences flexibility[35]. In addition, Falsarella et al.[43] showed that there is an association of ageing with decreased bone mass and muscle mass and with increased fat mass, but the rate and intensity of these variations is not known. Lisman et al.[44] state that a low capacity of functional movement and flexibility, combined with a weak cardiorespiratory capacity, are predictors of injuries in military personnel in training.

Brill et al.[45] noted that the risk of developing functional impairment is related to low levels of muscle strength and endurance and that these low levels are associated with age: older individuals present lower functional capacity due to loss of muscle strength and endurance with increased age. Additionally, Carvalho and Soares[6] clarify that the adaptations acquired during training, be it morphological, neuromuscular or metabolic/cardiorespiratory, may decline after short periods without training. A possible explanation for the results of this study is that the military entrants must undergo a greater amount of training and physical activity to reach the levels necessary to join the corporation. However, those levels are not required for their continuity in the corporation; only 6.3% of the sample consisted of high-ranking officers, who are less keen of initiatives related to physical activity. In agreement with our results, the study by Pontes, Macêdo and Macêdo[37] confirms the prevalence of inadequacy in safety officers, which can compromise their efficiency and professional performance.

One of the limitations of our study was the absence of measurements of biochemical and hormonal variables, which are associated with changes in body composition and physical performance. Thus, we suggest that new studies investigate other factors that might be associated with the HRPF of military personnel, as well as HRPF changes over time of service.

Conclusion

The MPs of the BOPE and BPTRAN do not differ regarding HRPF, except in flexibility, which was higher in the BOPE group. However, most MP officers of both groups presented unsatisfactory levels of health-related morphological fitness, and only the BOPE reported satisfactory predominance in all neuromuscular and cardiorespiratory fitness variables. Additionally, the findings demonstrated that time of service negatively affects morphological (BMI, WC and PF), neuromuscular (dynamic strength and LME) and cardiorespiratory (VO_{2max}) fitness.

The findings of this study bring new evidence to the literature, reporting the importance of public policies for this population, who has a fundamental role in the safety of the general population. This study recommends the implementation of a physical training programme in MPs that seeks to improve HRPF components and, consequently, increase the performance of the MPs in corporations in the state of Paraíba.

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