

47 - CORRELATION BETWEEN SHUTTLE RUN TEST AND 200 METERS RUN TEST IN MILITARY POLICE OF THE PUBLIC SECURITY TECHNICAL COURSE

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INTRODUCTION

The practice of physical activities is essential to the physical and mental welfare, reflecting directly the capability of doing daily and job activities. In the Military Police of Minas Gerais (PMMG), the practice of physical activities receives a greater importance due to the peculiarities of the function of the military police. In his job, the military police needs a good physical condition to, beyond maintaining mental and physical healthiness, execute in the best way his obligations. This peculiarity which refers to the practice of physical activities in military police field made PMMG create systems of physical preparation to its members is characterized specially by physical education classes present in almost all formation courses of the Institution.

Currently, the Military Police Education Instruction 07/2007, of March 15th, 2007, is the document that standardizes and determines how the Tests of Physical Evaluation (TAF) will be performed in the formation courses of PMMG. Moreover, the institution is also responsible to inform how the points attributions to each index obtained in the tests by the police. To evaluate the Physical Education class of PMMG's courses six physical tests are considered to the exercise the function of military police, which are: 2400 meters run, 200 meters run, sit ups, bars pushups (male) and static bar pushup (female), agility (shuttle run) and vertical impulsion (IEPM/APM/PMMG 07, 2007).

According to IEPM (07/2007) the 200 meters and agility – shuttle run – tests are used to evaluate anaerobic resistance and corporal agility, respectively.

Gaya (1979) gave a physiological concept of velocity which is the ability to do motor actions in a few time period. The velocity is dependent of power, nerve processes, elasticity, muscular relaxation, the quality of sport technique, willower e biochemical mechanisms.

Bompa (2002) defined velocity as the physical quality responsible for the capacity of moving fast. To this author, the velocity incorporates three elements: reaction time, frequency of movement/time unit and velocity of migration of a determined distance.

To Weineck (1992) velocity is the main motor requirement, allowing beyond the drive, assimilation of others capacities of conditioning, duration e also coordination. Velocity is a physical performance factor, which suffer lost with age, when aging the loss increases by time period (WEINECK, 1992)

Dantas (2003) say in his study that velocity shows up in two forms: reaction velocity and movement velocity.

About agility, Gobbi et al. (2005) and Guedes (2006) define it as a capacity of doing small movements in a high intensity with direction changes or changes in the gravity center of the body, with acceleration and deceleration. Therefore, as velocity, agility must be developed since childhood, being as important as other physical abilities. The agility performance is influenced by the same factors of velocity, adding acceleration and deceleration, because the consists in changes of direction and ways, consequently the velocity should decrease the latest and the closest to the next change point, followed by the biggest possible acceleration.

To Sheppard and Young (2006) the definition of agility should recognize the following aspects involved in performance: physical capacities, cognitive process (motor learning) and technical abilities (biomechanics).

In the agility tests the acceleration has a basic importance, so high levels of muscle power is needed (REBELO and OLIVEIRA, 2006).

According to the Military Police Education Guidelines (DEPM, 2009) militaries who pass throw the formation period to attend to the corporation courses and obtain promotion, should be able in the troop training which includes the approval in TAF, accomplished in every two years as in article 95 of the document:

Art. 95 PMMG's militaries, to Military Police Education, candidates to courses, stages and exams, or summoned to them, should fill the basics requirements, beyond the specifics ones in each course, intern selection process or exam:

III – being approved in the knowledge test of TPB (Basic police training), practical test with fire arm and in TAF.

To the students of the PMMG's formation course the IEPM 07/2007 is applied. Three resolutions are also applied together with the DEPM, 4023/09 resolution, which predicts specifics aspects pertaining in each one of the situations showed above: troop militaries, candidates to join the corporation and students of the formation courses.

Students of the following PMMG's courses: Official Formation Course, Sergeant Formation Course, Public Security Technical Course and others with hourly load over 30 "times", except for the Official License Course, are evaluated according to the 07/2007 IEPM, with specific table different from 3321 and 3322 resolutions, being Physical Education composed by six physical tests: 2400 meters run, 200 meters run, sit ups, bars pushups (male) and static bar pushup (female), agility (shuttle run) and vertical impulsion, in which the student should achieve the minimum of six to approval, according to 3° paragraph of 07/2007 IEPM:

Art. 3° - each test predicted in the Physical Education evaluation will have the punctuation between 0 to 10, and will be evaluated as the predicted tables in this Instruction.

Art. 4° - to approval in Physical Education the student should obtain 60% minimum of use, or in case of 3321/96 Resolution, the "average" classification in each physical test.

Only Paragraf: the final note in Physical Education will be calculated with a simple mean, considering the points obtained in each test; being considered "capable" or "not capable".

The purpose of this study is establishing the relationship level between the 200 meter and Shuttle Run test which the Military Police of the Public Security Technical Course is submitted.

METHODOLOGY: 89 male military police of the PMMG's Technical Education Center, with age between 19 to 30 were selected.

All the subjects joined the study voluntarily, even with all class' members being evaluated.

The tests were performed in the PMMG ' sports complex. Anthropometrics variables, body mass and height were measured in the evaluation room of the Police Academy to characterize the sample.

Table 1 shows the sample characterization
TABLE 1 – sample characterization

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Age	89	19,00	30,00	24,00	3,11886
Height	89	1,63	1,90	1,7735	0,05737
Mass	89	57	98	71,4494	7,88988

All the volunteers did the 200 meters and the Shuttle Run tests in the morning period in two days with a week period break. Both tests are part of the training routine and evaluation of military police so familiarization was not necessary. Following this order:

- First day: 200 meters test followed by the Shuttle Run;
- Second day: Shuttle Run followed by 200 meters test.

In the Shuttle Run, all volunteers did two repetitions, respecting the 2 minutes break between each set. The best time was used to further analysis. During the tests subjects should wear the same tennis shoes.

To evaluate the 200 meters test, military police ran in the smallest time in a set trial. The performance of the test was expressed by the time spent to run in a determined distance. To that, a precise chronometer, whistle, pen, paper to note and a small flag were used.

To evaluate agility in the military police the Shuttle Run test was used according to 07/2007 IEPM/AMP/PMMG. Two wooden blocks (05cm x 05cm x 10cm), a precise chronometer, measuring tape, pen, paper to note were used.

The evaluation occurred in two days at the same time of the day, to reduce the ambient temperature influences. Subjects were prevented from doing any physical activity before the test, to not influence the results.

STATISTIC ANALYSIS: First, the normal distribution and variances homogeneity were verified by the Shapiro – Wilk test. To analyze the correlation and association level between the 200 meters and Shuttle Run test Pearson correlation was applied ($p < 0,05$)

RESULTS – The correlation between the two tests, $r = 0,300$, was significant ($p < 0,05$) but weak (table 2).

TABELA2 Níveis de correlação entre o desempenho nos testes de 200m e Shuttle Run.

	Mean	Standard deviation	r	R ²	p
200meters (seconds)	27,2099	1,344	0,300	9,0%	0,004
Shuttle run (seconds)	9,7933	0,353			

DISCUSSION

A weak correlation was found between the two tests.

A possible explanation to this result can be the different characteristics of both tests, the Shuttle Run is a test with direction changes which demands acceleration, deceleration, control and balance (LITTLE and WILLIAMS, 2005), whereas the 200 meter test is a velocity run with acceleration and velocity resistance.

No study correlating 200 meter and Shuttle Run test was found. But in the literature studies that correlated different agility and velocity tests.

Rebello and Oliveira (2006) found results which showed a high association ($r=0,86$) between the 15 meters velocity test and 20 meters agility test in soccer players. The authors related the relationship between the tests with the fact that the tests shared some common factors, as step amplitude, step frequency and muscular power. In this same study, the correlation between 35 meters velocity test and 15 meters agility test was smaller than the others two tests. The explanation to this result can be a bigger difference between the functional requirement.

Little and Williams (2005) found a weak correlation between the two variables. They applied three tests in soccer players, 10 meters sprint (acceleration), 20 meters sprint (maximal velocity) and zig zag test (agility), to evaluate the existing correlation between these three variables. The results indicated that the three variables are correlated, but the values were low, the biggest correlation ($r=0,46$) was with agility and maximal velocity, agility and acceleration was $r=0,35$. The authors concluded that agility and maximal velocity share only 21% of the common variance, agility and acceleration have only 12%. When the variance of the variables is less than 50%, means that they are specific or that they have something independent. (THOMAS and NELSON, apud LITTLE and WILLIAMS, 2005).

CONCLUSION

There is a weak correlation ($r=0,300$) between the two tests. The results indicate that these variables are distinct, so the training used to improve the performance in 200 meters test is not applicable to improve the results in Shuttle Run test, a specific training to each ability should be used.

This result allow a scientific direction in the physical preparation programs to TAF, and being the students directly benefit with the improvement of physical qualities, contributing to an improve in the technical training level.

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CORRELATION BETWEEN SHUTTLE RUN TEST AND 200 METERS RUN TEST IN MILITARY POLICE OF THE PUBLIC SECURITY TECHNICAL COURSE

INTRODUCTION: In the Military Police of Minas Gerais (PMMG), the practice of physical activities receives a greater importance due to the peculiarities of the function of the military police. In his job, the military police needs a good physical condition to, beyond maintaining mental and physical healthiness; execute in the best way his obligations. The students of the formation courses of PMMG are evaluated in 200 meters run (velocity) and shuttle run (agility). **OBJECTIVE:** The purpose of this study is establishing the relationship level between the 200 meter and Shuttle Run test which the Military Police of the Public Security Technical Course is submitted. **METHODOLOGY:** 89 male military police of the PMMG's Technical Education Center, with age between 19 to 30 were selected. The 200 meters run were applied in a track and field track and the shuttle run test were applied in a specific place, and both places are part of the PMMG's sport complex. **STATISTICAL ANALYSIS:** To analyze the correlation and association level between the 200 meters and Shuttle Run test Pearson correlation was applied ($p < 0,05$). **RESULTS:** The correlation between the two tests, 200 meter run and shuttle run, $r = 0,300$, was significant ($p < 0,05$) but weak.

KEY WORDS: shuttle run, 200 meter run, military police

RELATION ENTRE TEST 200 METRES ET LE SHUTTLE RUN TEST DE LA POLICE MILITAIRE DE LA SECURITE PUBLIQUE COURS TECHNIQUES

CONTEXTE: La police militaire de Minas Gerais (PMMG), l'activité physique prend une importance encore plus grande en raison des particularités de la fonction de police militaire. Dans l'exercice de sa fonction, la police militaire doit présenter une bonne condition physique afin que, en plus de maintenir leur bon état de santé physique et mentale, peut effectuer le meilleur de leurs affectations. Les élèves des cours de formation sont évalués sur des tests en cours d'exécution PMMG 200 mètres (vitesse) et Shuttle run (SR- agilité). **OBJECTIF:** Cette étude visait à examiner la relation entre la performance aux tests de 200 mètres et SR et les compétences navette essai dans la police militaire de la sécurité publique cours technique Gerais. **METHODOLOGIE:** L'échantillon était composé de 89 agents avec l'âge entre 19 et 30 ans. Le test a été appliqué dans la piste d'athlétisme et 200m et SR a été effectué à un endroit approprié, puisque les deux environnements font partie du complexe sportif de l'Académie de police des Minas Gerais. **ANALYSE STATISTIQUES:** Pour étudier les relations possibles entre les résultats aux tests, nous avons appliqué le coefficient de Pearson avec le niveau de signification de $p < 0,05$. **RÉSULTATS:** Nous avons trouvé des corrélations significatives entre la performance dans l'épreuve Course navette et course du 200m, mais faible ($r = 0.300$).

MOTS-CLÉS: course-navette, à 200m de l'exécution, la police militaire

CORRELACIÓN ENTRE LA PRUEBA SHUTTLE RUN Y 200 METROS EN LA POLICÍA MILITAR DEL CURSO TÉCNICO DE LA SEGURIDAD PÚBLICA

INTRODUCCIÓN: En la Policía Militar de Minas Gerais (PMMG), la práctica de actividades físicas recibe una mayor importancia debido a las peculiaridades de la función de la policía militar. En su trabajo, la policía militar necesita una buena condición física para, más allá de mantener la sanidad mental y física, ejecutar de la mejor manera con sus obligaciones. Los alumnos de los cursos de formación de PMMG se evalúan en prueba 200 metros (velocidad) y el shuttle run (agilidad). **OBJETIVO:** El objetivo de este estudio es establecer el nivel de relación entre los 200 metros y shuttle run (SR) prueba realizados por Policía Militar de lo Curso Técnico de Seguridad Pública. **METODOLOGÍA:** 89 policías militares del sexo masculino de Curso Técnico de Seguridad Pública de PMMG, con edad entre 19 y 30 fueron seleccionados. La carrera de 200 metros se aplicaron en una pista de atletismo y el SR se aplicaron en un lugar específico, y ambos lugares son parte del complejo deportivo de la PMMG. **Análisis estadístico:** Para analizar el nivel de correlación y asociación entre los 200 metros y SR, aplicó la correlación de Pearson ($p < 0,05$). **RESULTADOS:** La correlación entre ambas pruebas, 200 metros de ejecución y SR, $r = 0.300$, fue significativa ($p < 0,05$), pero baja.

PALABRAS CLAVE: SR, 200 metros, la policía militar

RELAÇÃO ENTRE O TESTE DE SHUTTLE RUN E O TESTE DE 200 METROS EM POLICIAIS MILITARES DO CURSO TÉCNICO EM SEGURANÇA PÚBLICA

INTRODUÇÃO: Na Polícia Militar de Minas Gerais (PMMG), a prática de atividades físicas recebe importância ainda maior devido às peculiaridades da função policial militar. No exercício de sua função, o policial militar precisa apresentar uma boa condição física para que, além de manter sua higidez física e mental, possa executar da melhor maneira possível suas atribuições. Os alunos dos cursos de formação da PMMG são avaliados nos testes de corrida de 200 metros (velocidade) e Shuttle run (agilidade). **OBJETIVO:** Este estudo teve como objetivo analisar a relação entre o desempenho nos testes de corrida de 200 metros e teste de agilidade Shuttle Run em policiais militares do curso técnico de segurança pública de Minas Gerais. **METODOLOGIA:** A amostra foi constituída por 89 policiais com idade entre 19 e 30 anos. O teste de 200m foi aplicado em pista de atletismo e o teste de Shuttle Run foi realizado em local apropriado sendo que os dois ambientes fazem parte do complexo esportivo da Academia de Polícia de Minas Gerais. **ANÁLISE ESTATÍSTICA:** Para verificar possíveis relações entre os desempenhos nos testes, foi aplicado o coeficiente de Pearson com nível de significância de $p < 0,05$. **RESULTADOS:** Foram encontradas correlações significativas entre o desempenho no teste de Shuttle Run e o teste de corrida de 200m, porém fraca ($r = 0,300$).

PALAVRAS CHAVE: Shuttle Run, corrida de 200m, policial militar