19 - LEVEL OF PHYSICAL FITNESS FOR BUS DRIVERS IN CAMPO GRANDE-MS

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INTRODUCTION

The human being was created for movement. However, it has been observed that the man is become more and more sedentary. What comes as a result of this tendency is the rise of numerous problems throughout life, particularly, the alarming incidence of chronic degenerative diseases.

Along with a more and more sedentary lifestyle, one can also notice a significant increase in the amount of hours a man works daily. The combination of these factors has significantly reduced the level of physical fitness and health, resulting in stress and predisposition to chronic degenerative diseases.

For the American College of Sports Medicine (ACSM, 2000), physical fitness is "a set of attributes that people have or acquire that relate to the ability to perform physical activity."

The reduction in functional capacity or hypokinesia can be compensated by adopting a healthy lifestyle. Previously, health was defined as the absence of disease, but nowadays this concept has become more comprehensive, according to Niemann (1999, p.4), "health is defined as a state of complete physical, mental, social and spiritual well being, and not merely the absence of disease. "

One group of workers who suffers from the action of the factors above is the bus companies' workers, mainly drivers and conductors. Both spend their workday sitting, performing repetitive movements, a situation which coupled with reduced physical activity daily decreases their level of fitness, and can trigger the onset of chronic diseases, reducing drastically their life quality.

The objective of this study is to evaluate the components of physical fitness for the health of bus companies' workers in the city of Campo Grande - MS.

METHODOLOGY

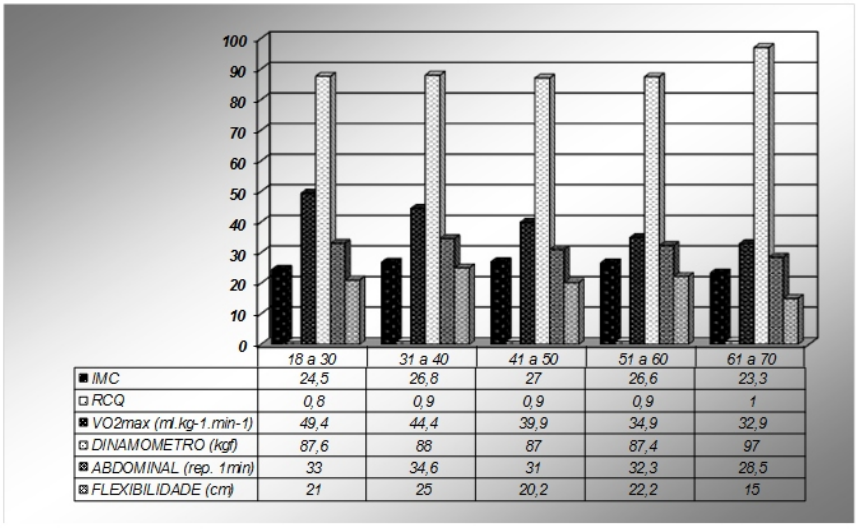
This study is a field description, according to Thomas and Nelson (2002). With regard to the statistical processing of information, we used the descriptive statistics for grouping the results in the median values, standard deviation, in order to characterize the sample in terms of the variables selected.

The sample was chosen intentionally, consisting of 150 males between 18 and 70 years, who were divided into five distinct age groups, 18 to 30 years (24.5 ± 3.1), 31 to 40 years (26,8 ± 3.3), 41 to 50 years (27 ± 3.7), 51 to 60 years (26.6 ± 4.3) and 61 to 70 years (23.3 ± 1.6), all bus companies' workers in the city of Campo Grande - MS. Initially all workers who agreed to participate in the study signed a consent form, as prescribed in Resolution 96/96 of the National Health Council (CNS), which deals with the ethical requirements for conducting research with human subjects and they subsequently responded to an interview, which served to check the health history of each one of them, in order to detect possible limitations to their participation in the tests.

The test battery was composed as follows: body composition assessed by body mass index (BMI) and waist-hip ratio (WHR), to assess maximal oxygen consumption (VO ² max) the test used was Mile (Rockport Walking Institute apud Fernandes Filho, 2003), for handgrip strength the test was dynamometry (Johnson and Nelson, 1979), for muscular endurance of the abdomen the test performed was the one minute Abdominal Test (Johnson and Nelson, 1979) and for hip flexibility the test was the sit and reach - "Bank of Wells" (JOHNSON AND NELSON, 1979).

RESULTS AND DISCUSSION

The results of this study are presented below:



	18 a 30	31 a 40	41 a 50	51 a 60	61 a 70
IMC	24,5	26,8	27	26,6	23,3
RCQ	0,8	0,9	0,9	0,9	1
VO2max (ml.kg-1.min-1)	49,4	44,4	39,9	34,9	32,9
DINAMOMETRO (kgf)	87,6	88	87	87,4	97
ABDOMINAL (rep. 1min)	33	34,6	31	32,3	28,5
FLEXIBILIDADE (cm)	21	25	20,2	22,2	15

Figure 1 - Level of physical fitness, by age group, males, bus company's workers of Campo Grande-MS - 2006.

According to the results observed in Figure 1 and with reference to the classification proposed by the World Health Organization (WHO, 1995), median values of BMI (body mass index) of groups of individuals were classified as: aged 18 and 30 years old - "ideal", in the age groups between 31 and 40 years old, 41 and 50 years of age and 51 to 60 years old - "mildly obese", and finally, aged between 61 and 70 years old - "ideal".

It can be observed that there was a gradual increase in BMI between ages 18-30 years, 31-40 years and 41-50 years, and a further reduction, between the ages of 51 to 60 years and 61 to 70 years of age.

The observed behavior in relation to BMI groups divided by age groups corroborates with the evidence reported by Shephard (1995), Nieman (1999) and Okuma (1998), because according to these authors, from the age of 25 there a tendency to an increased BMI, mainly due to a higher amount of body fat, among other factors, caused by poor living habits. However, it is possible to observe in Figure 1 that after 50 years there is a tendency to start reducing BMI, especially for steeper loss of lean body mass, and BMI reduction was further accentuated in the ages of 60 years old or more. These facts can be observed in these results.

Based on the results of the WHI, it can be observed that individuals aged between 18 and 30 years old had a smaller circumference than the other groups, and especially, as the group of individuals aged between 61 and 70 years old. This picture shows that younger subjects presented in this study a less pronounced distribution of body fat in the abdominal region, which is less harmful to health than those of individuals of other age groups, which had a higher concentration of fat in the abdominal region.

According to the results and with reference to the classification proposed by the American Heart Association (AHA) apud Fernandes Filho (2003) the median values of the maximum volume of oxygen from the bus company workers were ranked, in almost all age groups, as good results.

These results are consistent with scientific findings, which verified that there is a reduction of VO ² max starting from 31 years of age, due mainly to physical inactivity associated with aging.

Wilmore and Costill (2001) reported that "as we age, the maximum performance both in the events of hardening as those of strength decreases approximately 1% to 2% per year, starting between 20 and 30 years old."

Analyzing the ratio VO ² max, according to Heyward (2000) the big breathing resistance of workers from 18 to 30 years of age is notorious, being ranked as the top level, which is an athletes' classification, as well as that of the 61 to 70 years old workers, which surprisingly reached a good level, and unlike the group aged 51 to 60 years old, which reached only a regular level.

As for handgrip strength (dynamometer), it is important to mention that despite a reduction in muscle strength due to the aging process, as stated by Wilmore and Costill (2001), "the loss of muscle strength related to age is mainly due to the substantial loss of muscle mass that accompanies aging or decreased physical activity ", what was observed in this study was that individuals aged between 61 and 70 years of age had a higher level of force than those of other ages.

Regarding abdominal muscle strength it was observed that all individuals, regardless of age, had low levels of muscular endurance. This is alarming because the abdominal muscles are the ones primarily responsible for maintaining proper posture, also influencing the burden imposed on the spine (ACSM, 2003).

The results observed in the hip flexibility test showed that all individuals, regardless of age, showed a low level of this physical capacity. It should be noted that low levels of flexibility can contribute significantly to the emergence of various ailments, including: posture problems, muscle aches and back pains, reducing the amplitude of steps during walking and shortening skeletal muscles (OKUMA, 1998; NIEMAN, 1999; Shephard, 1995).

CONCLUSION

Based on the results of this study it is concluded that the BMI showed similar behavior to that described by Shepard (1995), Nieman (1999) and Okuma (1998), with a gradual increase in BMI from 18 to 50 years of age and a subsequent reduction from 51 to 70, due to the decreased metabolic rate, especially the reduction of muscle mass.

In the WHR, the younger group showed a less pronounced body fat distribution in the abdominal region, which is less harmful to health than that of older groups. It is important to emphasize that ACSM (2003) considers the WHR index the one that best represents the relationship between the distribution of body fat and predisposition to the development of chronic degenerative diseases.

In maximal oxygen consumption (VO ² max), a reduction was observed over the years, which means that as we get older we get poorer oxygen absorption, which makes the bus drivers' decrease in this factor normal.

The handgrip strength had a result outside normal standards, because although there was a reduction in levels of muscle strength with advancing age, the group aged between 61 and 70 years showed a higher rate than other groups, which may be due, primarily, to the specificities of their work, as individuals this age play are mostly drivers, who spend most of their working time exercising grip strength to hold the wheels to maneuver the vehicles.

The values obtained for abdominal muscular endurance and hip flexibility were low for all ages, which can be caused by having a poor posture and overloading the vertebra column (NIEMANN, 1999).

Finally, this study recommends conducting other researches, to address not only drivers and collectors, but also tax agents, mechanics and helpers, because it is clear that over the years humans have drastically reduced physical activity daily and also increased working time. The combination of these two factors, aggregated to inadequate lifestyles has contributed significantly to the spread of chronic degenerative diseases.

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LEVEL OF PHYSICAL FITNESS FOR BUS DRIVERS IN CAMPO GRANDE-MS

ABSTRACT

The present study aimed to evaluate the components of physical fitness for the health of bus company workers in the city of Campo Grande-MS. The sample consisted of 150 males, aged between 18 and 70 years, who were divided into five distinct age groups. Body composition was assessed using the Body Mass Index (BMI) and waist-hip ratio (WHR), to assess maximal oxygen consumption (VO ² max) the test used was Mile (Rockport Walking Institute apud Fernandes Filho, 2003), for handgrip strength the test was dynamometry (Johnson and Nelson, 1979), for muscular endurance of the abdomen the test performed was the one minute Abdominal Test (Johnson and Nelson, 1979) and for hip flexibility the test was the sit and reach - "Bank of Wells" (JOHNSON AND NELSON, 1979).. From the results it can be seen that both the IMC and the maximal oxygen uptake (VO2max) showed a behavior that corroborates those cited in studies described by Nieman (1999), Shephard (1995) and ACSM (2003). Regarding other components evaluated (WHR, handgrip strength, abdominal muscular endurance, flexibility hip), it was showed that all groups, regardless of age, had low to moderate fitness levels, requiring, therefore, a proper orientation to the practice of regular physical activity. This fact combined with bad habits and a journey of intense work, helped to raise the risk of the emergence of chronic diseases in individuals of the sample.

KEYWORDS: Physical Fitness, Health, Life Quality.

NIVEAU DE FORME PHYSIQUE DES CHAUFFEURS D'AUTOBUS DE CAMPO GRANDE – MS

RÉSUMÉ

Cette étude visait à évaluer les composants de conditionnement physique pour la santé des travailleurs d'autocar d'une compagnie à ville de Campo Grande – MS. L'échantillon était composé de 150 sujets de sexe masculin, âgés de 18 et 70 ans, qui ont été divisés en cinq groupes d'âge distincts. La composition du corps a été évaluée à l'aide de l'Indice de Masse Corporelle (IMC) et de la Raison Taille-Hanches (RTH); pour évaluer le maximum la consommation d'oxygène (VO m² max) on a utilisé le test de Mile (Rockport Walking Institut apud FERNANDES FILS, 2003); pour la Force de Préhension a eu lieu la Dynamométrie (JOHNSON ET NELSON, 1979); pour la Résistance Musculaire Localisé de l'Abdomen a été effectuée le Test des Abdominaux pendant une minute (JOHNSON ET NELSON, 1979) et la Souplesse de la Hanche a été évaluée à l'aide de la Banque de Wells (JOHNSON ET NELSON, 1979). A travers du biais des résultats vous pouvez voir que les deux : l'IMC et le maximale et consommation d'oxygène (VO2max), ont été présentés un comportement qui corrobore avec les cités dans les études décrites par Nieman (1999), Shephard (1995) et ACSM (2003). En effet les autres composantes évaluées (RTH, Force de Préhension, Résistance Musculaire de l'Abdomen, la Souplesse de la Hanche), on a été observé que tous les groupes, indépendamment de l'âge, montrait les niveaux d'aptitude classées comme étant à faible à modérée ; par conséquent, ils ont besoin des conseils pour la pratique régulière d'une activité physique. Ce fait couplé avec les mauvaises habitudes de vie et une journée de travail intense a contribué à augmenter le risque d'apparition de maladies dégénératives chroniques dans les individus constituants de l'échantillon.

MOTS CLÉS: Forme physique ; Santé ; Qualité de la vie.

NIVEL DE APTITUD FÍSICA PARA CONDUCTORES DE AUTOBUSES CAMPO GRANDE-MS

RESUMEN

El presente estudio tuvo como objetivo evaluar los componentes de la aptitud física de los trabajadores de la salud a la compañía de autobuses en la ciudad de Campo Grande-MS. La muestra constaba de 150 hombres, con edades comprendidas entre 18 y 70 años, que fueron divididos en cinco grupos de edad distintos. La composición corporal se evaluó mediante el índice de masa corporal (IMC) y la relación cintura-cadera (WHR) para evaluar el consumo máximo de oxígeno (VO ² max) se utilizó la prueba Mile (Rockport Walking Instituto apud HIJO FERNANDES, 2003) , por la fuerza de prensión se celebró el dinamometría (Johnson y Nelson, 1979), Resistencia a Abdomen muscular en la prueba se realizó abdominal de un minuto (Johnson y Nelson, 1979) y Hip flexibilidad se evaluó mediante el "Banco Wells" (Johnson y Nelson, 1979). De los resultados se

puede observar que tanto el IMC, como el consumo máximo de oxígeno (VO2max), mostraron un comportamiento que corrobora los citados en los estudios descritos por Nieman (1999), Shephard (1995) y ACSM (2003). En cuanto a otros componentes evaluados (WHR, la fuerza de prensión, la resistencia muscular abdominal, cadera flexibilidad), mostró que todos los grupos, independientemente de su edad, estado físico había clasificado como de baja a moderada, requiriendo por lo tanto, una orientación apropiada para la práctica de la actividad física regular. Este hecho combinado con los malos hábitos y un viaje de intenso trabajo, contribuyó a aumentar el riesgo de la aparición de enfermedades crónicas en las personas de los componentes de la muestra.

PALABRAS CLAVE: Aptitud Física, Salud, Calidad de Vida.

NÍVEL DE APTIDÃO FÍSICA DOS MOTORISTAS DE ÔNIBUS DE CAMPO GRANDE-MS

RESUMO

O presente estudo teve por objetivo avaliar os componentes de aptidão física para a saúde de trabalhadores de empresa de ônibus da cidade de Campo Grande-MS. A amostra foi composta por 150 indivíduos do sexo masculino, com idade entre 18 e 70 anos, que foram divididos em cinco faixas etárias distintas. A composição corporal foi avaliada através do Índice de Massa Corporal (IMC) e da Razão Cintura-Quadril (RCQ); para avaliar o consumo máximo de oxigênio ($VO^2máx$) foi utilizado o Teste da Milha (Rockport Walking Institute apud FERNANDES FILHO, 2003); para a Força de Preensão Manual realizou-se a Dinamometria (JOHNSON E NELSON, 1979); para a Resistência Muscular Localizada de Abdômen foi realizado o Teste de Abdominal de um minuto (Johnson e Nelson, 1979) e a Flexibilidade de Quadril foi avaliada através do "Banco de Wells" (JOHNSON E NELSON, 1979). Através dos resultados pode-se constatar que tanto o IMC, quanto o consumo máximo de oxigênio (VO2máx), apresentaram um comportamento que corrobora com os citados em estudos descritos por Nieman (1999), Shephard (1995) e ACSM (2003). Em relação aos demais componentes avaliados (RCQ, força de preensão manual, resistência muscular localizada de abdômen, flexibilidade do quadril), observou-se que todos os grupos, independentemente da faixa etária, apresentaram níveis de aptidão classificados como baixo a moderado, necessitando, portanto, de uma orientação adequada para a prática de atividade física regular. Este fato associado a maus hábitos de vida e uma jornada de trabalho intensa, contribuiu para elevar os riscos do surgimento de doenças crônico-degenerativas nos indivíduos constituintes da amostra.

PALAVRAS-CHAVE: Aptidão Física; Saúde; Qualidade de Vida.