# 10 - NEUROMOTOR PROFILE AND LIFESTYLE OF YOUNG PEOPLE WITH DISABILITIES IN DIFFERENT CLASSES OF INTELLECTUAL EDUCATION.

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## INTRODUCTION

The relationship between society and people with intellectual disabilities (ID) has gone through different ways throughout history marked by segregation, exclusion and invisibility. However new paradigms such as school enrollment, appear to boost the development of this population.

From the earliest concepts of education for the disabled in 1700 until the Declaration of Salamanca (World Conference on special educational need, which occurred in June of 1994) walked the education to be an "axis" articulating the development of inclusive actions confirming the commitment of "Education for All "(1.2). However although there are laws and documents that allow the inclusion of students with ID in mainstream classes, on the other hand there is the special classes and special education centers (3,4,5) that based on decrees and resolutions arise as a process intermediary or an alternative to inclusion that often does not occur.

The DI defined by disability characterized by significant limitations in intellectual functioning and adaptive behavior (6), has a prevalence of approximately 1% (7), with up to 2% of school age (8). In Brazil, about 1.6% of the population has this condition according to the IBGE (9). Studies show low levels of physical activity in this population when compared with individuals without ID (10), poor adherence to physical activity and not unusually high rates of physical inactivity and related diseases are common (10,11,12).

The study of lifestyle becomes paramount, since it relates to health and social indicators to improve the quality of life for gains in physical fitness (13). The school, in this scenario, physical education and school discipline, within this perspective, is an important opportunity to promote more active lifestyles and healthy (14), because the movements are a key access routes to the experiences of the human being, and can develop the perception of self, others and the objects that make up the environment in which we live (15). The result is that the guy gets to adapt aspects of fitness-oriented health and positive lifestyle, which will be useful in various aspects of your life.

Thus academic studies, over decades, answered many questions about the fitness of DI (16,17,18), still leave gaps in the influence of pedagogical action proposal.

Therefore, the purpose of this study was to evaluate and compare variables of lifestyle and physical fitness among youth with intellectual disabilities from the perspective of school inclusion.

## METHODS

The study was voluntary and non-invasive, and is conducted during school hours, after accepting a term of informed consent for school principals and responsible students.

Students enrolled in the study were enrolled in four different schools in the city of Ceilândia DF and obeyed the following criteria for participation: Welfare duly enrolled at the educational institution studied, b-Demonstrate ability to respond to commands; c-Medical Certificate and practicing regular physical education; d-The consent form signed by the heads, and-mild or moderate mental handicap.

The non-participation in any of the steps of measuring data or student with syndromic was a criterion for exclusion from the study.

At baseline the sample consisted of 120 students, but was reduced because of the criteria for participation which reduced the sample of 41 students. The sample was completed by 79 students aged between 11 and 16 years (24 in the inclusion, in grades 30 and 25 integration in special education).

This study is characterized as a cross, cause and effect simultaneously detected, where school children from four schools (2 and 2 special education inclusion and special classes) were evaluated at two different times. The first with the responsibility to fill the questionnaire on lifestyle and timing of the second battery of tests of physical fitness.

Students and their parents were called to school to complete the questionnaire (19), which has six items divided into two behaviors, namely, nutrition, physical activity. In this self-administered questionnaire responses range from 0 to 3 which means the absence of behavior, sometimes present, and almost always present in your lifestyle. So the score determines the behavior of the individual.

The physical fitness tests followed the criteria suggested by PROESP (20), and performed the following tests:

BMI: weight divided by height squared;
Explosive strength of upper limbs: medicine ball toss
Explosive strength of lower limbs: horizontal jump
Speed: 20 meters
Flexibility (sit and reach);
Abdominal strength (abdominal) and
General endurance test (running and walking for 9 minutes).

In this descriptive study was calculated and the average standard deviation of lifestyle and physical fitness (variable indirect) in relation to type of education: inclusive, special class and special education (direct variable). To verify the similarity between the types of education according to age and gender, was used beyond the basic statistics (mean, standard deviation and error) the chi-square. The analysis of variance (ANOVA) was used for comparison between groups and gender, on items of fitness and lifestyle, and the difference between the groups means the technique of Scheffé. In all tests were adopted(p.0.05)significance level less than or equal to 5%.

**RESULTS**

Table 2 shows the data of physical fitness of the boys group, is observed statistically significant results for BMI, flexibility and aerobic endurance, P =. 04, .05, .05, respectively and according to the Scheffé test score difference was mainly among a group of students when compared with the inclusion of special education.

For girls (Table 3) in the mean BMI showed significant differences p <.05 between groups. In throwing and horizontal jumping score is one standard deviation, range of scores compared to the average increase for the group of special education. Data from the abdominal and aerobic endurance was significant P.05 and .04 in that order.

Table 4 shows that 60% of special education students from not eating five servings of fruits and vegetables per day while only 29.1% of students claim the same inclusion (p.0.07). According to the data of physical activity there is a significant difference of p <0.05 among the students. The number of individuals who exercise the inclusion is two times higher than the group of special education (80% -40%).

Table1: Data on age, gender in different types of education.

| | Total N=79(%) | Inclusion (%) | Class Especial(%) | Ensino Especial(%) | p |
|---|---|---|---|---|---|
| **age (years)** | - | 14,3;2,1(11-15) | 15,4;2,4(12-15) | 15,8;2,8(12-16) | 0,52 |
| **Gender** | | | | | |
| **Male** | 37(46.8) | 11(45.8) | 14(46.6) | 12(48) | 0,55 |
| **Female** | 42(53.1) | 13(54.1) | 16(53.3) | 13(52) | |

Table 2: Data of physical fitness (male).

| Physical fitness /Ensino | Inclusão n=11 Média(DP) | C. Especial n=14 Média(DP) | E. Especial n=12 Média(DP) | p |
|---|---|---|---|---|
| BMI | **21,8(1,8)**** | **22,5(2,1)** | **22,7(1,8)**** | **0,04*** |
| Pitching | **530(57)** | **480(34)** | **450(29)** | **0,20** |
| Horizontal jump | **190(28)** | **170(26)** | **165(15)** | **0,08** |
| 20 metres | **3,17(0,30)**** | **3,18(0,32)** | **3,75(0,28)**** | **0,25** |
| Flexibility | **22,1(9,1)**** | **18,5(11)** | **18,6(16)**** | **0,05*** |
| Abdominal | **25(7)** | **23(4)** | **21(7)** | **0,08** |
| Resist. Aerobics | **1700(230)** | **1500(160)** | **1120(220)** | **0,05*** |

Table 3: Data of physical fitness (female).

| Physical fitness /Ensino | Inclusão n=13 Média(DP) | C. Especial n=16 Média(DP) | E. Especial n=13 Média(DP) | p |
|---|---|---|---|---|
| BMI | **23,1(1.4)**** | **22,9(2.1)** | **25,1(1.8)**** | **0,05*** |
| Pitching | **310(47)** | **308(27)** | **270(59)** | **0,08** |
| Horizontal jump | **130(27)**** | **130(47)** | **127(57)**** | **0,07** |
| 20 metres | **3,78(0,30)** | **3,79(0,43)** | **4,01(0,21)** | **0,19** |
| Flexibility | **23,8(7,2)** | **24,2(5,3)** | **24,1(5,7)** | **0,56** |
| Abdominal | **22(5)**** | **18(5)** | **14(4)**** | **0,05*** |
| Resist. Aerobics | **1400(300)** | **1200(230)** | **980(130)** | **0,04*** |

Table 4: Details of lifestyle.

| Physical fitness/Ensino | **Total N:79(%)** | Inclusão N=24(%) | C. Especial N=30(%) | E.Especial N=25(%) | p |
|---|---|---|---|---|---|
| Physical activities | | | | | |
| D)30' de atividades físicas | | | | | **0,05*** |
| 5 or more days week. | **2(2.5)** | **0** | **0** | **2(8)** | |
| (0)never | **23(29.1)** | **4(16.6)** | **6(20)** | **13(52)** | |
| (1)sometimes | **23(29.1)** | **8(33.3)** | **12(40)** | **3(12)** | |
| (2)almost always | **31(39.2)** | **12(50)** | **12(40)** | **7(28)** | |
| (3)always | | | | | |
| F)Walk or cicle as a way of | | | | | **0,05*** |
| transport. | **18(22.7)** | **3(12.5)** | **6(20)** | **10(40)** | |
| (0)never | **20(25.3)** | **5(20.8)** | **7(23.3)** | **8(32)** | |
| (1)sometimes | **21(26.5)** | **8(33.3)** | **10(33.3)** | **3(12)** | |
| (2)almost always | **20(25.3)** | **8(33.3)** | **7(23.3)** | **4(16)** | |
| (3)always | | | | | |

**DISCUSSION**

The regular programs of physical activity for people with intellectual disabilities are being studied more carefully in recent years. However, different studies, which showed that this population does not reach minimum levels of physical activity and, moreover, also has negative components in their lifestyle have not observed this issue from the perspective of inclusion.

Neurological reasons may explain the difficulty of this population in some aspects of physical fitness when compared with people without disabilities, but it is worth noting that the physiologic changes, because of metabolic adaptations generated during the training process, simply by virtue of offering the Physical activity may be an important parameter to be investigated mainly at this stage of life where I recognize the importance of active behavior (21,22).

This study, although a small number of participants, showed that students in the inclusion process with the same diagnosis of the others in all parameters, is on leave on their colleagues. Even if some data is not statistically valid to observe a strong trend toward a sedentary lifestyle which in turn is a global trend that leads to the emergence of numerous non-communicable chronic diseases such as obesity (21), hypertension, type II diabetes among others

**BIBLIOGRAPHY**

1-Mantoan, M. et al. The integration of people with disabilities: contributions to a reflection on the subject. Sao Paulo, Brazil: Memnon / Senac, 1997.

2-Stainback S. Include a guide for educators. Philadelphia: Saunders, 1999 (Reprinted 2008). 3-Distrito Federal. Plan will guide the actions of Special Education in public schools in the District Federal.Brasília: Education Department of the Federal District Secretariat of Public Education of the Federal District, 2006.

4-Brazil. Inclusive Education: A Philosophical Justification. SEESP / MEC v.1, 2004. 5-National Guidelines for Special Education in Basic Education. Brasilia: Ministry of Education, Office of Special Education. 2001.Luckasson 6-R, Coulter DL, Polloway EA, et al. Mental retardation: definition, classification and systems of support. Washington, DC: American Association of Mental Retardation, 2002.

7-DSM-IV-TR. Diagnostic and Statistical Manual of Mental Disorders. Trad. Claudia Dornelles, 4th ed. Rev. Philadelphia: Saunders, 2006.

8-Currey CJ, Cassidy S, et al. Evaluation of mental retardation: recommendations of a consensus conference. J Med Genet 1997; 72:468-77.

9-IBGE. Brazilian Institute of Geography and Statistics. 2000 Census. Available at: http://www.ibge.gov.br. Accessed March 2010.

10-KA Kochersperger. A Comparative study of physical activity levels of students with Disabilities to students without Disabilities. 158p. Doctor of Philosophy University of Kansas, 2005.

11-U.S. Public Health Service. Closing the gap: A national blueprint for Improving the health of Individuals with mental retardation. USDHHS 2002.

12-Stanish HI, Frey GC. Promotion of physical activity in Individuals with intellectual disability. Salud Publica Mex 2008, 50 suppl 2: S178-S184.

13-Lorenzini, M. Playing the game with a disabled child. São Paulo: Manole, 2002.

14-Nahas, MV. Physical activity and quality of life: concepts and suggestions for an active lifestyle. 4. Ed London: Midiograf, 2006.

15-Carriconde AM. The profile of the lifestyle of people with Down syndrome and standards for evaluation of physical fitness. 162p. Doctoral degree in Physical Education. Rio Grande do Sul, UFRGS, 2008.

16-Baynard T, Pitetti KH, Guerra M, Unnithan VB, Fernhall B. Age-Related Changes in Aerobic Capacity in Individuals with Mental Retardation: A 20-yr Review. Med Sci Sports Exercise 2008, 40:1984-1989.

16-Baynard T, Pitetti KH, Guerra M, Unnithan VB, Fernhall B. Age-Related Changes in Aerobic Capacity in Individuals with Mental Retardation: A 20-yr Review. Med Sci Sports Exercise 2008, 40:1984-1989.

17-Barros, JF. Comparative study of the indexes of physical fitness in individuals with mental disabilities. 122p. Doctorate in science. São Paulo, UNIFESP, 1998.

18 - Ozmen T, et al. Effects of School-Based Cardiovascular-Fitness Training in Children With Mental Retardation. Pediatric Exercise Science, 2007, 19.171-178.

19-Nahas, MV, MGV and Francalacci Barros, VL. The pentacle of the well-being: Conceptual basis for evaluating the lifestyle of individuals or groups. Journal of Physical Activity, 2000, 5 (2) ,4-59.

20-Gaya, A., Silva, G., Marques, AC; Garlipp, D.; Gaya, D. BRAZIL SPORTS DESIGN: Patterns of Growth in Body Mass of the Brazilian population between 10 and 15 years of chronological age. Proceedings of the Second International Congress of Sports Coaching Network CENESP. Profile. Year VII, n.8, 2005.

21-C. The 21-Melville, et al. The prevalence and determinants of obesity in adults with i-ntellectual Disabilities. Obesity Reviews 2007; 8.223 to 230.

22-J.T Foley, et al. The Relationships Among Basic Motor Skills, Health-Related Physical Fitness-, and Body Fatness in South Korean Adolescents With Mental Retardation. Research Quarterly for Exercise and Sport; Jun 2008 vol.79, No. 2, pp149-157.

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**NEUROMOTOR PROFILE AND LIFESTYLE OF YOUNG PEOPLE WITH DISABILITIES IN DIFFERENT CLASSES OF INTELLECTUAL EDUCATION.**

**ABSTRACT:**

The relationship between society and people with intellectual disabilities (ID) has gone through different ways throughout history. Objective: To evaluate the lifestyle and health-related physical fitness in students with learning disabilities enrolled in different grades of education. Methods: The sample comprised 79 students of both genders aged between 11 and 16 years. This is a cross-sectional study, which evaluated the lifestyle by questionnaire and physical fitness through the criteria suggested by PROESP-BR. Results: The inclusion of students had higher levels of physical fitness as well as 60% of pupils with special education not eating five servings of fruits and vegetables per day while only 29.1% of students claim the same inclusion (p.0.07) . According to the data of physical activity there is a significant difference of p <0.05 among the students. The number of individuals who exercise the inclusion is two times higher than the group of special education (80% -40%). Conclusion: Studies with larger samples should be performed, yet it may be noted that students participating in the system of inclusion are more physically fit and add less negative behavior when compared to other education systems and the sedentary lifestyle which in turn is a global trend which leads to the emergence of numerous non-communicable chronic diseases such as obesity (21), hypertension, type II diabetes among others.

**KEYWORDS:** Lifestyle, Physical Fitness, School inclusion.

**PROFIL NEUROMOTRICES ET MODE DE VIE DES JEUNOS HANDICAPÉS DANS DIFFÉRENTES CLASS DE L'EDUCATION INTELLECTUELLE**

**RÉSUMÉ:**

La relation entre la société et les personnes ayant une déficience intellectuelle (DI) est passé par différentes façons à travers l'histoire. Objectif: évaluer le mode de vie et de santé liés à la condition physique des élèves en difficulté d'apprentissage inscrits dans les différents grades de l'enseignement. Méthodes: L'échantillon comprenait 79 élèves des deux sexes âgés de 11 et 16 ans. Il s'agit d'une étude transversale qui a évalué le mode de vie par questionnaire et la condition physique à travers les critères proposés par PROESP-BR. Résultats: L'inclusion des élèves avaient des niveaux plus élevés de la condition physique ainsi que 60% des élèves ayant des besoins particuliers ne mangent pas cinq portions de fruits et légumes par jour alors que seulement 29,1% des étudiants prétendent la même inclusion (p.0.07) . Selon les données de l'activité physique, il ya une différence significative de p <0,05 chez les étudiants. Le nombre de personnes qui exercent l'inclusion est deux fois plus élevé que le groupe de l'éducation spéciale (80% -40%). Conclusion: Des études avec des échantillons plus importants doivent être réalisés, mais il convient de noter que les étudiants participant au système d'inscription sont en meilleure forme physique et ajouter un comportement moins négative par rapport aux autres systèmes d'éducation et de la sédentarité qui à son tour est une tendance mondiale ce qui conduit à l'émergence de nombreuses maladies non transmissibles chroniques comme l'obésité (21), l'hypertension, le diabète de type II chez les autres.

**MOTS-CLÉS:** Style de vie, la condition physique, de l'inclusion scolaire.

**NEUROMOTOR PERFIL Y ESTILO DE VIDA DE LOS JÓVENES CON DISCAPACIDAD EN DIFERENTES CLASES DE EDUCACIÓN INTELECTUAL.**

**RESUMEN:**

La relación entre la sociedad y las personas con discapacidad intelectual (DI) ha pasado por diferentes formas a lo largo de la historia. Objetivo: Evaluar el estilo de vida y la condición física relacionada con la salud en los estudiantes con dificultades de aprendizaje matriculados en los grados diferentes de la educación. Métodos: La muestra está compuesta por 79 estudiantes de ambos sexos con edades comprendidas entre 11 y 16 años. Se trata de un estudio transversal, que evaluó la forma de vida mediante un cuestionario y de la aptitud física a través de los criterios sugeridos por PROESP-BR. Resultados: La inclusión de los estudiantes tenían mayores niveles de aptitud física, así como el 60% de los alumnos con la educación especial no comer cinco porciones de frutas y verduras por día mientras que sólo el 29,1% de los estudiantes de la demanda la inclusión mismo (p.0.07) . Según los datos de la actividad física hay una diferencia significativa de p <0,05 entre los estudiantes. El número de personas que ejercen la inclusión es dos veces mayor que el grupo de educación especial (80% -40%). Conclusión: Los estudios con muestras más grandes se debe realizar, sin embargo, cabe señalar que los estudiantes que participan en el sistema de inclusión son más físicamente en forma y añadir un comportamiento menos negativo en comparación con otros sistemas educativos y el estilo de vida sedentario que a su vez es una tendencia mundial lo que conduce a la aparición de numerosas enfermedades crónicas no transmisibles como la obesidad (21), la hipertensión, la diabetes tipo II entre otros.

**PALABRAS CLAVE:** Estilos de vida, estado físico, la inclusión escolar.

**PERFIL NEUROMOTOR E ESTILO DE VIDA DE JOVENS COM DEFICIÊNCIA INTELECTUAL EM DIFERENTES CLASSES DE ENSINO.**

Resumo: A relação entre a sociedade e as pessoas com deficiência intelectual (DI) passou por diferentes caminhos ao longo da história. Objetivo: Avaliar e comparar o estilo de vida e aptidão física relacionada à saúde em escolares com deficiência mental matriculados em diferentes classes de ensino. Métodos: A amostra foi composta por 79 alunos de ambos os gêneros com idades entre 11 e 16 anos. Trata-se de um estudo transversal, no qual foi avaliado o estilo de vida por meio de questionário e aptidão física através dos critérios sugeridos pelo Proesp-BR. Resultados: Os alunos da inclusão apresentaram níveis maiores de aptidão física bem como 60% dos alunos oriundos da educação especial não se alimentam com 5 porções de frutas e hortaliças por dia enquanto apenas 29.1% dos alunos da inclusão alegam o mesmo (p.0.07). De acordo com os dados da atividade física existe uma diferença significativa de p<0.05 entre os alunos. O número de indivíduos da inclusão que se exercitam é duas vezes maior que o grupo do ensino especial (80%-40%). Conclusão: Estudos com amostras maiores devem ser realizados, contudo pode-se observar que alunos inseridos no sistema de inclusão estão mais aptos fisicamente e agregam menos comportamentos negativos quando comparados aos outros sistemas de ensino e para o sedentarismo que por sua vez é uma tendência mundial que leva ao aparecimento de inúmeras doenças crônico não transmissível como a obesidade (21), hipertensão, diabetes tipo II entre outras.

**PALAVRAS-CHAVE**: Estilo de vida, Aptidão Física, Inclusão escolar.