120 - HEALTH INIDCATORS FOR 13 AND 14 YEAR OLD RURAL AND URBAN ADOLESCENTS: A STUDY IN STATE SCHOOLS IN DE SANTA CRUZ DO SUL - RS

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1 INTRODUCTION

Whe it comes to promoting the health of the population, it is important to seek information on children and adolescent health and physical aptitude, because of the facilities of today's world and because the lack of regular physical activities (sedentarism) is directly linked to several hypokinetic disturbances, which decidedly contribute toward the so-called chronic-degenerative diseases, including cardiovascular problems, like high blood pressure, coronary cardiopathies, besides obesity and mellitus diabetes.. Authors state that the increase in chronic degenerative diseases has a lot to do with the increasingly more sedentary lifestyle of the people, which determines a significant reduction in energy spending, a fact that is keeping pace with technological advances and ever-increasing automation and mechanization in present society. (GUEDES E GUEDES, 1995, 1998: DÂSMASO, 2001; NAHAS 2003; PELLANDA, L.C. ET ALL., 2002). This reality seems to be present not only in the urban regions, but it also affects rural areas, particularly the ones that have access to mass communication. In the rural zone, particularly, we find the paradoxical aggravating factor of how the matter of child labor is interpreted, because mainly in the regions settled by German and Italian immigrants, the culture of apprenticeship and helping the parents with field and house chores has always existed. Such activities, were normally appropriate to age, impregnated in the symbolic play, which imitates adult life in theatrical representations of everyday life. On the other hand, now that “child labor” has been banned, according to observations of this reality, children and adolescent end up sedentary, once they watch TV, when they are not in school, they stay at home alone and begin to lose respect for the parents, since the idea they are incorporating is “to do nothing”, and challenge the parents on that score.

On the other hand, it has to be considered that the Brazilian population, up until the 1960s, according to Campanhola and Da Silva (2002), was predominantly rural. In 1970, the rural population was as high as 44% of the total population in the country. However, over the following decades, there was intense rural drift, contributing toward a shrinking rural population. The authors further comment that the biggest transformation occurred in the rural environment no longer identified exclusively with agricultural production, with traditional habits and ways of life, equally turning into an environment of consumption, with “needs” mainly created by the media. Meanwhile, the need to keep equal relations between rural and urban populations is perceived, ensuring better social equity.

Within this sense, it is relevant to carry out studies that relate aspects that characterize human health and development in all their dimensions, which, in turn, result from the surrounding conditions and their cultural, educational, physical and social involvement. We perceive that every human being, whether from the rural or urban area, should move toward their well-being, once, according uncle Pestan (2000), health is the capacity of every man, woman and child in fighting for their personal and original life project, seeking full satisfaction of the body's requirements. The school and society cannot ignore the source of human behavior, which determines the constitution and construction of every person, including the somatomotor capacity or physical aptitude.

Therefore, Gaya et al. (2002), conceptualizes the somatomotor service capacity as the understanding from the following characterization: morphological capacities and corporal composition, functional capacities and cultural intervenients. Thus, this study is aimed at investigating the health indicators, which are expressed, according to PROESP-BR (2002), through the corporal mass rating tests, flexibility, upper muscles strength/resistance, abdominal strength/resistance and aerobic resistance. Toward this direction, the **objective** of this study is to describe and compare the physical aptitude profile related to the health of 13 and 14 year old schoolchildren, from public schools, of urban and rural areas in Santa Cruz do Sul.

2 INVESTIGATION METHOD

The explorative-descriptive study, according to Mattos; Rossetto Jr. and Blecher (2004), is characterized by observation, register, analysis, facts or phenomena correlation and description, without manipulating them, with the chance of a new perception with regard to the subject, thus discovering new ideals regarding the case study.

The present research will comprise 597 subjects, aged between 13 and 14, from both sexes, students of the municipal and state school network, from rural and urban schools in Santa Cruz do Sul RS.

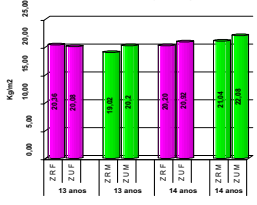
Table 1 Characterization of the subjects discriminated by sex, residential zone and age.

Age	Urban Zone				Rural Zone				TOTAL	
	Male		Female		Female		Male			
	f	%	f	%	f	%	f	%	f	%
13 years	119	19,9	117	19,6	38	6,4	38	6,4	312	52,3
14 years	106	17,8	109	18,3	41	6,8	29	4,8	285	47,7
TOTAL	225	37,7	226	37,9	79	13,2	67	11,2	597	100

For data collection we applied the package of Brazil Sports Project somatomotor tests, in the variables related to health (corporal mass rating, upper muscles strength/ resistance, abdominal strength/resistance, and aerobic resistance). The statistical analysis is descriptive (average and standard deviation), ANOVA and *Post Hoc Test* by Scheffé*Hoc Test* de Scheffé. The analysis was performed through the SPSS statistical program for Windows, considering the $p< 0,05$ level of significance.

3 RESULTS

Observing picture 1, we can see the data related to the Corporal Mass Rating (CMR) of the subjects and we perceive that among the subjects of the female sex, the 13 year old students of the rural zone have a higher CMR than the ones from the urban zone, while the 14-year olds show the opposite result. Meanwhile, the males, both the 13 and 14-year olds of the rural zone present a higher CMR than the urban zone students who were interviewed. However, we can verify, in picture 2, that the differences are not statistically significant between the rural and urban zone, both for males and females.



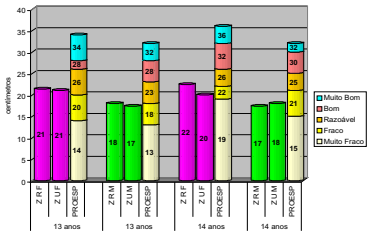
Picture 1 – Corporal Mass Rating Chart

	13 years				14 years			
	ZRF	ZUF	ZRM	ZUM	ZRF	ZUF	ZRM	ZUM
X	20,36	20,09	19,02	20,23	20,20	20,92	21,04	22,08
S	±3,74	±3,11	±2,52	±11,49	±2,62	±5,28	±3,27	±12,43

ZRF – female rural zone
ZUF – female urban zone
ZRM – male rural zone
ZUM – male urban zone

Picture 2 – Average and CMR standard deviation

With regard to flexibility, data expressed in picture 2 and picture 3, show that the ratings are the same for 13-year old female students, however, in the male students of this age group and female 14-year olds, the frequencies of the rural zone are higher, however, flexibility is higher in14-year old male individuals of the urban zone. These differences again stand out as non-significant at p< 0,05 level. When comparing these results to the PROESP BR classification, we see that only in the 13-year old females flexibility enjoys a good classification, once the other categories are classified as reasonable.



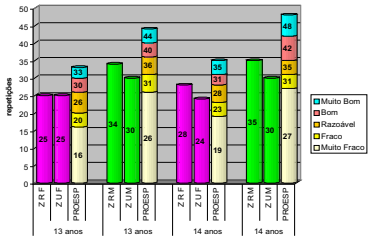
Picture 2: Flexibility Chart

	13 years				14 years			
	ZRF	ZUF	ZRM	ZUM	ZRF	ZUF	ZRM	ZUM
X	21,39	21,10	18,03	17,48	22,41	20,02	17,44	18,03
S	±6,74	±8,23	±7,36	±7,33	±8,05	±8,08	±8,16	±8,09

ZRF – female rural zone
ZUF – female urban zone
ZRM –male rural zone
ZUM – male urban zone

Picture 3 – Flexibility average and standard deviation

Are to strength and abdominal resistance (figure 3), we noticed that in 13-year old females the rating of abdominal repetitions per minute is equal in both dwelling zones, but in all others, the rural zone shows higher frequencies than the urban zone, however, without presenting statistical differences (picture 4). Nevertheless, comparing with the PROESP, only the males from the urban zone are in the weak zone, once all other classify as reasonable.



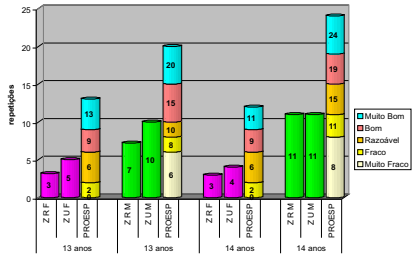
Picture 3: Abdominal Resistance/Strength Chart

	13 years				14 years			
	ZRF	ZUF	ZRM	ZUM	ZRF	ZUF	ZRM	ZUM
X	25,18	24,91	33,68	29,61	28,41	24,19	34,54	30,17
S	±6,35	±7,43	±7,70	±7,85	±11,77	±6,42	±10,16	±7,43

ZRF – female rural zone
ZUF – female urban zone
ZRM – male rural zone
ZUM – male urban zone

Picture 4 – Average and standard deviation of Abdominal Resistance/Strength

Data expressed in picture 4, upper limb strength/resistance, show us that the subjects from the urban zone have higher average frequencies in almost every category, as only the male 14-year old subjects show equal frequencies, both in the rural and urban zone, and their classification is weak, while the other categories classify with reasonable performance, according to PROESP. Such differences did not show statistically significant, and they should only be considered as a trend, which could be related to great result variability of this sample, mirrored in the standard deviation values (picture 5).



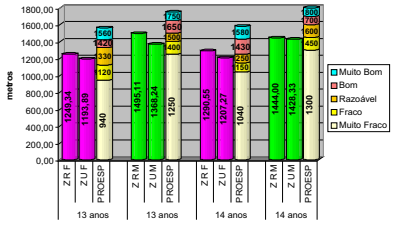
Picture 4: Upper Limbs Strength/Resistance Chart

	13 years				14 years			
	ZRF	ZUF	ZRM	ZUM	ZRF	ZUF	ZRM	ZUM
X	3,11	5,34	6,74	9,92	3,28	4,25	11,12	11,03
S	±3,11	±4,66	±4,15	±5,60	±4,26	±3,77	±6,42	±5,81

ZRF – female rural zone
ZUF – female urban zone
ZRM – male rural zone
ZUM – male urban zone

Picture 5 – Average and standard deviation of Upper Limbs Strength /Resistance

With regard to aerobic resistance (picture 5 and picture 6), we observed that the subjects from the rural zone have a better performance than the subjects from the urban zone, although when comparing the results obtained from PROESP data, we can see that the investigated subjects have a lower classification than expected, that is, weak and reasonable, and they did not present any statistically significant difference at the p < 0,05 level when comparing the urban and rural dwelling zone.



Picture 5: Aerobic Resistance Chart

	13 years				14 years			
	ZRF	ZUF	ZRM	ZUM	ZRF	ZUF	ZRM	ZUM
X	1249,34	1193,89	1495,11	212,61	1290,55	1207	1444,00	1428,33
S	±210,98	±169,34	±212,61	±239,11	±220,70	±165,73	±257,53	±232,21

ZRF – female rural zone
ZUF – female urban zone
ZRM – male rural zone
ZUM – male urban zone

Picture 6 – Aerobic Resistance Average and Standard Deviation

The analyzed variables did not show differences as to the physical aptitude ratings of the 13 and 14-year old school-children's health, in the rural and urban dwelling zone of the municipality of Santa Cruz do Sul, however, on extrapolating beyond the central object of this case study, and while observing the results with regard to the sex and age variable, some affirmations can be highlighted. The flexibility and CMR variables of the research subjects did not show differences with regard to sex and age, but in the tests of abdominal resistance/strength, aerobic resistance (9 minutes) and upper limbs strength/resistance (bar test), the male students had a better performance than the female students, and so did the 14 year olds as compared to the 13 year olds, which, in a way, is in conformity with the maturational process of the students of that age group.

CONCLUSION

The data show us that in the analyzed variables, the averages of the subjects from the rural area are higher than the averages of the subjects from the urban area, but there are no significant differences between the rural and urban zone in the health-related physical aptitude ratings. The flexibility and CMR variables do not show any differences with regard to age and

sex; however, in the abdominal tests, 9 minutes, and bar tests, the male students had better results than the female students, and so had the 14 year olds as compared to the 13 year olds, living up to expectations, once it is in conformity with the natural development differences. With regard to the PROESP normative tables, we perceived that at flexibility, abdominal strength/resistance, aerobic resistance, the ratings oscillate from weak to reasonable, and at the upper limbs strength/resistance, the ratings are good. We concluded differently from what we had expected, once in the investigated group, the health-related aptitude ratings of adolescents from the rural and urban area are the same, which makes us believe that in the context of life, surrounding conditions and influences should be similar in the two environments, moreover because the mass communication means, the proximity of the environments, ease of locomotion and access to educational and cultural means are similar in the investigated contexts.

REFERENCES

CAMPANHOLA, C.; DA SILVA, J. G. O lazer e o novo rural. In: BRUHNS, H. T.; GUTIERREZ, G. L. (orgs). *Enfoques contemporâneos do lúdico:* III ciclo de debates lazer e motricidade. Campinas: Autores Associados, Comissão de Pós-graduação da Faculdade de Educação Física da UNICAMP, 2002. ISBN 85-7496-055-1.

DÂMASO, A. *Nutrição e exercício na prevenção de doenças.* Rio de Janeiro: MEDSI, 2001.

PESTANA, C. Prefacio. In: MATOS, M. G. et al (orgs). *Saúde e estilos de vida nos jovens portugueses*: estudo nacional da rede européia HBSC/ OMS. Lisboa: FMH edições, 2000. ISBN: 972-735-077-1.

GAYA, A. *As Ciências do desporto:* introdução ao estudo da epistemologia e metodologia da investigação científica referenciadas ao desporto. Porto Alegre: UFRGS, 1996.

GAYA, A. et. al. Aptidão física relacionada à saúde: um estudo piloto sobre o perfil de escolares de 7 a 17 anos na região Sul do Brasil. In: *Revista Perfil*. Publicação do Programa de Pós-graduação em Ciências do Movimento Humano Mestrado/ Doutorado ESEF/ UFRGS. Dossiê Projeto Esporte Brasil. Porto Alegre:UFRGS, n. 6, p. 50-60, 2002. Ano VI.

IBGE - *Dados.* Disponível em: <http://www.ibge.gov.br> . Acessado em 11 fev. 2005.

MATTOS, M. G.; ROSSETTO JÚNIOR, A. J.; BLECHER, S. *Teoria e prática da metodologia da pesquisa em educação física:* construindo sua monografia, artigo e projeto de ação. São Paulo: Phorte, 2004.

DÂMASO, A. *Nutrição e exercício na prevenção de doenças*. Rio de Janeiro: MEDSI, 2001.

NAHAS, M. V. *Atividade física, saúde e qualidade de vida:* conceitos e sugestões para um estilo de vida ativo. Londrina: Midiograf, 2003.

PELLANDA, L.C. et all. *Doença cardíaca isquêmica:* a prevenção inicia na infância. Jornal de Pediatria: v.78, n.2, mar/abr. 2002.

PROESP-BR. Projeto Esporte Brasil Indicadores de saúde e fatores de prestação esportiva em crianças e jovens. Manual de aplicação de medidas d testes somatomotores. Setor de Pedagogia do esporte do CENESP UFRGS. In: *Revista Perfil.*Publicação do programa de Pós-Graduação em Ciências do Movimento Humano Mestrado/Doutorado ESEF/UFRGS.

HEALTH INIDCATORS FOR 13 AND 14 YEAR OLD RURAL AND URBAN ADOLESCENTS: a study in State Schools in de Santa Cruz do Sul RS

ABSTRACT

This study of explorative-descriptive character, is aimed at comparing the health-related physical aptitude profile of 13 and 14 year old schoolchildren from public schools, in the rural and urban zone of Santa Cruz do Sul. The 597 subjects of both sexes, are students from the municipal and state educational network, of rural and urban schools in Santa Cruz do Sul RS

For data collection we applied the package of Brazil Sports Project somatomotor tests (Corporal Mass, IMC, flexibility, abdonminal strength/resistance, upper limb strength/resistance and aerobic resistance). The statistical analysis is descriptive (average and standard deviation), ANOVA and *Post Hoc Test* by Scheffé. Data shows us that at the analyzed variables, the average of subjects from the rural area is higher than from the urban area, however, there is no significant difference in health-related physical aptitude ratings between the rural and urban zones. With regard to PROESP normative tables, we perceived that at flexibility, abdominal strength/resistance, aerobic resistance the ratings oscillate between weak and reasonable, and at upper limb strength/resistance, the ratings are good. Differently from what we had expected, we concluded that at the investigated group, the health-related aptitude of adolescents from the rural and urban area is similar, which makes us believe that the life context, surrounding conditions and influences should be similar in the two contexts, moreover because the mass communication means, the proximity of the environments, ease of locomotion and access to educational and cultural means are similar in the investigated contexts.

Key words: health-related physical aptitude of adolescents; urban and rural environment; public schools.

BARÈMES DE SANTÉ DES ADOLESCENTS AGEÉS ENTRE 13 ET 14 ANS DU MILIEU URBAIN ET RURAL: un étude dans les écoles publiques de Santa Cruz do Sul- RS

RÉSUMÉ

Cet essai de caractère descriptif et exploratoire a pour objectif de comparer le perfil de

l'aptitude physique en relation à la santé des écoliers ageés entre 13 (treize) et 14 (quatorze) ans, des écoles publiques du milieu urbain et rural de Santa Cruz do Sul. On a pris en compte 597 (cinq cents quatrevingt dix-sept) individus des deux sexes, élèves du réseau d'enseignement municipal et de l'état y compris, dans des écoles du réseau urbain et rural de Santa Cruz do Sul-RS. Pour rassembler les donnés nous avons utilisé un ensemble des tests “somatomoteurs” du Projet Sport Brésil (masse corporel, IMC, flexibilité, force/résistance abdominal, force/résistance des membres supérieurs et résistance aérobic). L'analyse statistique est descriptive (moyenne et en déviation standard), ANOVA et Post Hoc Test de Scheffé. Les donnés nous montrent que dans les variantes analysées, les moyennes des sujets du milieu rural sont plus significatives que celles du milieu urbain, toutefois ne presentent pas des differences significatives entre ces deux zones dans les indices d'aptitude physique en relation avec la santé. En ce qui concerne les normes du tableau PROESP, on aperçoit qu'en relation à la flexibilité, force/résistance abdominal, résistance aerobic les indices variant entre le faible et le raisonnable et dans la force/résistance des membres superieurs sont bons. En conclusion, et malgré nos expectatives, dans le groupe analysé les indices d'aptitudes relationnés à la santé des jeunes du milieu urbain et rural sont semblables,ceci nous ammène à croire que le contexte de vie, les conditions de l'environnement doivent être similaires dans les deux contexts, puisque les moyens de comunication de masse, la proximité des environnements, les facilités de locomotion et l'accès aux moyens d'éducation et culturels sont similaires dans les contextes analyses.

Mots clefs: l'aptitude physique en relation à la santé des adolescents; milieu urbain et rural; écoles publiques.

INDICADORES DE SALUD DE ADOLESCENTES DE 13 Y 14 AÑOS DEL MEDIO URBANO Y RURAL: un estudio en escuelas públicas de Santa Cruz do Sul - RS

RESUMEN

Este estudio de carácter descriptivo-exploratorio objetiva comparar el perfil de aptitud física relacionada a la salud de escolares con 13 y 14 años, de escuelas públicas, de zona urbana y rural de Santa Cruz do Sul. Son sujetos 597 individuos de ambos los sexos, alumnos de la red municipal y estatal de enseñanza, de las escuelas de las zonas urbana y rural de Santa Cruz do Sul RS. Para colecta de datos, aplicamos la batería de testes somatomotores del Proyecto Deporte Brasil (Masa Corporal, IMC, flexibilidad, fuerza/resistencia abdominal, fuerza/resistencia de miembros superiores y resistencia aeróbica). El análisis estadístico es la descriptiva (media y desvío patrón), ANOVA y *Post Hoc Test* de Scheffé. Los datos nos muestran que, en las variables analisadas, las medias de sujetos del medio rural son mayores que el urbano, pero no presentan diferencias significativas entre la zona urbana y rural en los índices de aptitud física relacionados a la salud. Con relación a las tablas normativas del PROESP, percibimos que en flexibilidad, fuerza/resistencia abdominal y resistencia aeróbica los índices oscilan entre débil y moderado y en fuerza/resistencia de los miembros superiores, los índices son buenos. Concluimos, diferente de lo que se esperaba, que en el grupo investigado los índices de aptitud realacionada a la salud de adolescentes del medio urbano y rural son similares, lo que nos lleva a creer que el contexto de vida, condiciones e influencias del entorno deben ser similares en los dos contextos, aun porque los medios de comunicación de masa, las proximidades de ambientes, las facilidades de locomoción y acceso a los medios educacionales y culturales son similares en los contextos investigados.

Palabras- clave: Aptitud física realcionada a la salud de adolescentes; medio urbano y rural; escuelas públicas

INDICADORES DE SAÚDE DE ADOLESCENTES DE 13 E 14 ANOS DO MEIO URBANO E RURAL: um estudo em escolas públicas de Santa Cruz do Sul RS

RESUMO

Este estudo de caráter descritivo-exploratório, objetiva comparar o perfil de aptidão física relacionada à saúde de escolares com 13 e 14 anos, de escolas públicas, da zona urbana e rural de Santa Cruz do Sul. São sujeitos 597 indivíduos de ambos os sexos, alunos da rede municipal e estadual de ensino, das escolas das zonas urbana e rural de Santa Cruz do Sul RS. Para coleta de dados aplicamos a bateria de testes somatomotores do Projeto Esporte Brasil (Massa Corporal, IMC, flexibilidade, força/resistência abdominal, força/ resistência de membros superiores e resistência aeróbica). A análise estatística é a descritiva (média e desvio padrão), ANOVA e *Post Hoc Test* de Scheffé. Os dados nos mostram que nas variáveis analisadas, as médias de sujeitos do meio rural são maiores do que o urbano, porém não apresentam diferenças significativas entre a zona urbana e rural nos índices de aptidão física relacionados à saúde. Com relação às tabelas normativas do PROESP percebemos que na flexibilidade, força/resistência abdominal, resistência aeróbica, os índices oscilam entre o fraco e o razoável e na força/resistência dos membros superiores, os índices são bons. Concluímos, diferente do que se esperava, que no grupo investigado, os índices de aptidão relacionada à saúde de adolescentes do meio urbano e rural são semelhantes, o que nos leva a crer que o contexto de vida, condições e influências de entorno devem ser semelhantes nos dois contextos, até porque os meios de comunicação de massa, as proximidades de ambientes, as facilidades de locomoção e acesso aos meios educacionais e culturais são semelhantes nos contextos investigados.

Palavras chaves: aptidão física relacionada à saúde de adolescentes; meio urbano e rural; escolas públicas.