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ASSOCIATIONS BETWEEN LEISURE ACTIVITIES AND PRESSURE AND GLUCOSE LEVELS OF BLIND ADULTS

ASSOCIAÇÕES ENTRE AS ATIVIDADES DE LAZER E NÍVEIS PRESSÓRICOS E GLICÊMICOS DE ADULTOS CEGOS

ASOCIACIONES ENTRE LAS ACTIVIDADES DE OCIO Y NIVELES DE PRESIÓN Y GLUCOSA EN ADULTOS CIEGOS

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ABSTRACT

Objective: to investigate the association between leisure activities and levels of blood pressure and glycemic in blind adults. ***Method***: cross sectional study with quantitative approach, performed in 2010 at the Institute of Education and Assistance for the Blind in the Northeast, located in Campina Grande / Paraiba, Brazil. The census of adults enrolled in this institution identified 39 blind who took place in the sampled census. Data were analyzed using SPSS, and made the chi-square test, Fisher and Contingency Coefficient. The project was approved by the Ethics Committee of the State University of Paraiba (CAAE in 0491.0.133.000-08). ***Results***: The frequency of subjects with altered glucose and blood pressure levels were, respectively, 12.8% and 33.3%. The activities in which the individuals reported greater dependence were: shopping, access newspapers and magazines, traveling, going to games and play. ***Conclusion***: the ability to perform leisure activities can alter blood pressure and glycemic levels blind adults. ***Descriptores***: Nursing; Persons with Visual Deficiency; Leisure Activities.

RESUMO

Objetivo: verificar a associação entre as atividades de lazer e os níveis pressóricos e glicêmicos de adultos cegos. ***Método:*** estudo transversal, com abordagem quantitativa, realizado em 2010 no Instituto de Educação e Assistência aos Cegos do Nordeste, localizado em Campina Grande/PB, Brasil. O censo dos adultos matriculados nessa instituição identificou 39 cegos que compuseram a amostra censitária. Os dados foram analisados por meio do Programa SPSS, sendo efetuados os testes de Qui-quadrado, Fisher e Coeficiente de Contingência. O projeto foi aprovado pelo Comitê de Ética da Universidade Estadual da Paraíba (CAAE nº 0491.0.133.000-08). ***Resultados:*** a frequência de sujeitos com os níveis pressóricos e glicêmicos alterados foram, respectivamente, 33,3% e 12,8%. As atividades nas quais os sujeitos referiram maior dependência foram: fazer compras, acessar jornais e revistas, viajar, ir a jogos e jogar. ***Conclusão:*** a capacidade para realizar atividades de lazer pode alterar os níveis pressóricos e glicêmicos de adultos cegos.

Descritores: Enfermagem; Pessoas com Deficiência Visual; Atividades de Lazer.

RESUMEN

Objetivo: investigar la asociación entre el ocio y los niveles de presión arterial y glucemia en adultos ciegos. ***Métodos***: estudio transversal con abordaje cuantitativo, realizado en 2010 en el Instituto de Formación y Asistencia para Ciegos en el Noreste, ubicada en Campina Grande/Paraiba, Brasil. El censo de adultos matriculados en esta institución ha identificado 39 ciegos que compusieron la muestra del censo. Los datos fueron analizados con el programa SPSS, e hizo la prueba de chi-cuadrado, Fisher y el Coeficiente de Contingencia. El proyecto fue aprobado por el Comité de Ética de la Universidad del Estado de Paraíba (CAAE en 0491.0.133.000-08). ***Resultados***: la frecuencia de pacientes con glucosa y niveles de presión arterial alterados fueron, respectivamente, 12,8% y 33,3%. Las actividades en las que los sujetos reportaron una mayor dependencia fueron: compras, acceso a periódicos y revistas, viajar, ir a los juegos y el juego. ***Conclusión***: La capacidad de realizar actividades de ocio pueden alterar los niveles de presión arterial y glucemia en adultos ciegos. ***Descriptores***: Enfermería; Personas con Discapacidad Visual; Actividades de Ocio.

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INTRODUCTION

Blindness is understood as a health condition in which the patient has bilateral and total loss of vision or luminous perception. [1] This issue constitutes a major public health problem, because the prevalence of cases is high and there is a tendency growth of quantitative affected. In Brazil, more than 35 million people have some visual impairment, and about 528,624 are unable to see anything.

This considerable demand of the blind people ends up struggling for social integration, due to architectural and attitudinal barriers.[3] These individuals need generally aid to perform daily activities such as leisure activities, but the access to culture, sport and tourism is still limited. Furthermore, blind people are a vulnerable group because they face barriers for accessing health services.[4]

Studies indicate that leisure activities provide ability to generate well-being and to modify various aspects of people's life.[5-6] These activities can and should be a good time regardless of socioeconomic status, age group or any other outside influence. Additionally, it identifies that even being considered as an important element of people's lives, leisure yet takes up little space in the routine of most individuals.[5]

The theme of leisure activities has been the subject of attention of some scholars that examine the relationship between these actions and the quality of life in various stages of human development.[5,7] However, it is identified that there are gaps in the research on associations between leisure activities such as going out, shopping, dancing, playing cards or chess, and blood pressure levels and glucose in the population, which are usually related to physical activity practice.[7]

The difficulty in identifying recent studies that investigate associations between leisure activities, blood pressure (BP) and fasting capillary glucose (FCG) is enhanced, especially when you want to investigate these variables in vulnerable population groups and even excluded by society. [4]

There are reports about people with disabilities, since childhood, have little access to physical activity in regular schools, which facilitates the occurrence of adults are physically inactive and sedentary lifestyle. Furthermore, it is argued that these factors are directly reflected in the level of physical fitness and health of these individuals.[8] However, it is unknown whether the vulnerability of this group in relation to the development of changes in the normal range of blood pressure levels and GCJ and the association of these variables with leisure activities.

Assuming that leisure activities influence blood pressure levels and glucose, whereas the change in these levels is related to the development of chronic diseases and the physical and leisure activities have the potential to improve the health status of individuals in addition to treating other ailments,[9] objective of this study was to investigate the association between leisure activities and levels of blood pressure and glycemic blind adults.

The motivation for this study refers to immaturity, literature, publications focusing on this theme. The study is relevant because its results offer subsidies for the development of human resources in the area, for public policy on disability and for managers and professionals working in the health system. The study is also important for the subjects studied because the return of results to the institution that attends will provide modifications and / or adjustments in educational practices developed for education, social inclusion and rehabilitation of these people.

METHOD

A cross-sectional study, of analytical and quantitative approach, conducted in 2010, the Institute of Education and Assistance for the Blind in the Northeast (IEACN), Campina Grande / Paraiba, Brazil. This institution aims to provide education, rehabilitation and social inclusion for blind people. The work is seeking to promote the emancipation of these ones, contributing to the process of inclusion in school, at work and in society. From this perspective, are offered courses on information technology and communication, Braille, artistic, cultural and Paralympic sports.

We carried out the census of adults enrolled in IEACN. The 39 blind who composed the target population also comprised the sample census. The option is not to perform sampling due to the small universe of people, making the inclusion of all actions viable financial, temporal and logistically. The eligibility criteria were: being 18 or older, self-refer bilateral blindness specialist and certified by agreeing to participate in research.

To collect the data we used a form with questions concerning sociodemographic characteristics, ability to perform activities of leisure and blood pressure levels and glucose. BP was measured by auscultation (phases I and V of Korotkoff sounds), using a sphygmomanometer after 10 minutes of rest, with the subject seated. It was considered the average of three BP checks, made with 10-minute intervals, and that changed PA ≥ 140x90 mmHg.[10]

For the test the subject capillary blood glucose was subjected to fasting for at least eight hours. Then held up thumb prick using a lancet, being made to collect a drop of blood was added to pre-tape placed on the glucometer Performance Advantage, Roche®. GCJ was considered altered when values ≥ 100 mg/dL.[11]

The collected data were entered in an electronic database and analyzed using the Statistical Package for the Social Sciences (SPSS) version 15.0 for Windows. Regarding the association tests to compare the proportions of frequency we performed the chi-square test, however, the blanks below five considered the Fisher exact test. To check the magnitude of association between variables was performed Coefficient of Contingency and the following parameter settings: c ≥ 0.750 = strong association; 0.500 to 0.749 = moderate association; ≤ 0.499 = loose association. Investigated the associations found confidence intervals at 95%, and the data presentation made by means of tables.

The project was approved by the Ethics Committee of the State University of Paraiba, under the CAAE 0491.0.133.000-08. In accordance with Resolution 196/96 of the National Health Council, the subjects were informed about the objectives of the study, signed a consent form (ICF), and had secured the rights to confidentiality, privacy, anonymity and freedom of not to participate or withdraw from the study without any burden. Participants who could not sign his name inserted fingerprinting the thumb of his right hand in IC.[12]

RESULTS

• Sociodemographic profile

With respect to sociodemographic data, it was found that participated in the study 20 men and 19 women. The average age was 35.69 (± 10.85; xmin = 18, xmax = 56). Regarding race, 64.2% reported they were white, 17.9% black, and 17.9%, mulatto. With regard to education, 79.5% had no college degree and 20.5% have completed a course of secondary degree. Regarding marital status, 64.1% were living without a partner, while 35.9% lived with a partner. On per capita income, it was found that 92.3% survived up to two minimum wages, and 7.7% with three or more.

• Pressure and glucose levels

As shown in Table 1, it was found that the mean BP and GCJ participants are nearby the recommended normal, though in the aforementioned variables two standard deviations were high. The frequency of individuals with altered glucose and blood pressure levels were, respectively, 12.8% and 33.3%.

Table 1. Values of blood pressure and fasting blood glucose of blind adults. Institute of Education and Assistance for the Blind in the Northeast. Campina Grande / Paraiba, Brazil, 2010.

Measurements	BP*		GCJ†
	S‡	D§	
Central Tendency			
Medium	122,05	80,51	88,64
Median	120,00	80,00	85,00
Sets	120,00	80,00	85,00
Dispersion			
Minimum	100,00	60,00	70,00
Maximum	170,00	120,00	196,00
Standard Deviation	17,49	12,703	19,78
Percentile 25	110,00	70,00	79,00
Percentile 50	120,00	80,00	85,00
Percentile 75	130,00	90,00	92,00

Source: Research data. * BP = blood pressure; † = GCJ fasting capillary glycemia; ‡ S = systolic, D = diastolic §.

• Associations between leisure activities and blood pressure levels

Table 2 shows that the activities in which blind adults reported greater dependence were on shopping (n = 37), access newspapers and magazines (n = 37), travel (n = 36), going to games (n = 36) and play (n = 36). The only leisure activity that was associated with the BP of blind adults was the ability to practice sports (p = 0.033). However, the magnitude relationship between these variables was low (c = 0.060).

Table 2. Associations between leisure activities and pressure levels in blind adults. Institute of Education and Assistance for the Blind in the Northeast. Campina Grande / Paraiba, Brazil, 2010.

Leisure activities	Blood pressure Changed		Normal				
	n	%	n	%	X^{2*}	p†	c‡
To go shopping							
Independent	01	50	01	50	0,264	0,561	0,608
Dependent	25	67,6	12	32,4			
Listening to radio							
Independent	21	65,6	11	34,4	0,087	0,571	0,768
Dependent	05	71,4	02	28,6			
Visiting friends							
Independent	12	60	08	40	0,821	0,286	0,365
Dependent	14	73,7	05	26,3			
Visiting relatives							
Independent	09	60	06	40	0,488	0,361	0,485
Dependent	17	70,8	07	29,2			
To play§							
Independent	02	66,7	01	33,3	1,054	0,439	0,305
Dependent	24	66,7	12	33,3			
Siteseeing							
Independent	03	75	01	25	0,139	0,593	0,709
Dependent	23	65,7	12	34,3			
Accessing newspapers							
Independent	01	50	01	50	0,260	0,561	0,667
Dependent	25	67,6	12	32,4			
Accessing magazines							
Independent	03	60	02	40	0,115	0,548	0,735
Dependent	23	67,7	11	32,3			
Religious meetings							
Independent	12	63,2	07	36,8	0,205	0,651	0,651
Dependent	14	70	06	30			
Travelling							
Independent	02	66,7	01	33,3	0,001	0,716	0,999
Dependent	24	66,7	12	33,3			
Playing games							
Independent	02	66,7	01	33,3	1,054	0,439	0,305
Dependent	24	66,7	12	33,3			
Practising sports							
Independent	05	83,3	01	16,7	1,390	0,033	0,060
Dependent	21	63,6	12	36,4			

Source: Research data; * In small houses below five, it was considered the Fisher test, † p = significance value (0.05); ‡ c = coefficient of contingency; § Playing cards and / or chess.

• Associations between leisure activities and glucose levels

In Table 3, the only leisure activity that were significantly associated with GCJ of blind adults was the ability to play cards and / or chess (p = 0.003). However, the level of relationship between these variables was low (c = 0.106).

Table 3. Associations between leisure activities and glucose levels in blind adults. Institute of Education and Assistance for the Blind Northeast. Campina Grande / PB, Brazil, 2010.

Leisure activities	Blood Glucose Changed		Normal				
	n	%	n	%	X2*	p†	c‡
To go shopping							
Independent	01	50	01	50	2,610	0,106	0,578
Dependent	33	89,2	04	10,8			
Listening to radio							
Independent	28	87,1	04	12,9	0,020	0,650	0,177
Dependent	06	87,5	01	12,5			
Visiting friends							
Independent	19	95	01	5	2,246	0,155	0,134
Dependent	15	78,9	04	21,1			
Visiting relatives							
Independent	14	93,3	01	6,7	0,826	0,351	0,363
Dependent	20	83,3	04	16,7			
Playing*							
Independent	01	33,3	02	66,7	8,430	0,003	0,106
Dependent	33	89,2	03	10,8			
Siteseeing							
Independent	03	75	01	25	0,592	0,436	0,442
Dependent	31	88,6	04	11,4			
Accessing newspapers							
Independent	01	50	01	50	2,610	0,242	0,698
Dependent	33	89,2	04	10,8			
Accessing magazines							
Independent	04	80	01	20	0,260	0,516	0,483
Dependent	30	88,2	04	11,8			
Religious meetings							
Independent	18	94,7	01	5,3	1,893	0,187	0,169
Dependent	16	80	04	20			
Traveling							
Independent	02	66,7	01	33,3	1,220	0,345	0,489
Dependent	32	88,9	04	11,1			
Going to games							
Independent	02	66,7	01	33,3	1,220	0,268	0,578
Dependent	32	88,9	04	11,1			
Practising sports							
Independent	05	83,3	01	16,7	0,094	0,588	0,759
Dependent	29	87,8	04	12,2			

Source: Research data; * In small houses below five, it was considered the Fisher test, † p = significance value (0.05); ‡ c = coefficient of contingency; § Playing cards and / or chess.

DISCUSSION

From the analysis of demographic data presented, we found the prevalence of blind adults of working age, the fact that predisposes these individuals entering the labor market. However, it appears in the current Brazilian scenario the absence of the implementation of inclusive public policies that favor the admission of these individuals in laboral activities.[4]

The exclusion of these individuals from the labor market is because, in Brazil, people with disabilities, even though the legislation that ensures their rights, suffer the most varied forms of neglect and oppression, as well as living with barriers to access to health services, education, leisure and work.[13]

This reality was confirmed in another study, in which, through home visits to a teenager of 19 years old, diabetic and visually impaired, it was found that the development of work and leisure activities have become restricted over the years, in because of blindness and lack of effectiveness of inclusive public policies for people with disabilities, which has allowed the appearance of intolerance to these activities.[14]

In the present study, the lack of admission of blind adults in universities constitutes a particular social demographic that may be related to the employability of this population group. But a survey conducted at the Federal University of Parana found that, despite the advances of admission policies for students with disabilities, implemented nearly two decades ago, there is still the difficulty of this process evaluation inclusive.[15]

This difficulty, in turn, directly reflects the poor socioeconomic these individuals, as also observed in this profile of the participants of this research. Consistent with reports in the literature,[4] it is believed that the barrier to achieving higher education directly impacts the integration of these individuals into the labor market and in their quality of life, since education is an important means to career advancement and financial anyone.

This situation opens space for reflection on the vulnerability of these individuals to the educational difficulties. And predisposes to the resumption of the joints between "see" and "know", in which the justification of social exclusion for individuals is based on blind

prejudice that have some intellectual limitation.[1]

The data regarding the gender of the participants are similar to those found in other research, which showed a larger trend in the percentage of blindness in males than in females. [16] However, other studies identified a higher frequency of female individuals in the studied population. [17-18]

There were detected in the literature, two studies in which the female population was higher than the male. In one of these studies, between 26 blind people, two had altered glucose levels and two were diagnosed with systemic hypertension.[17] In another study, diabetic retinopathy was reported as the main cause of visual impairment by 13.2% of the participants. Development a study in England also indicated retinopathy as an important cause of blindness, besides pointing out diabetes as a disease that generates high costs for treatment and increases the loss of years of life per premature death.[19]

In a case study developed in Fortaleza / Ceara, Brazil, with a blind teenager, identified himself, physical examination, an index of BP 140X90 mm Hg was considered high by the standards of normality established. In such an investigation was not checked the value of blood glucose at the time of the home visits, however the young selfreferred have been diagnosed as diabetic by a specialist and was under monitoring.[14]

The appearance of high levels of PA and GCJ was also identified in the study participants. Thus, it is conjectured that the encouragement of regular physical activity and the acquisition of adequate food attitudes are essential for health promotion in this population group, as it can prevent the onset of chronic diseases such as hypertension and diabetes, as well as treat them. Furthermore, these activities increase caloric expenditure and improve transport and insulin uptake.[14]

However, a challenge to be faced is that the practice of regular exercise for blind people becomes a difficult task, since there are no incentives for normally such nor suitable locations and easily accessible. This difficulty may predispose these individuals to the development of sedentary lifestyle and weight gain weight above the standard of normality.[17]

A survey conducted with 40 individuals enrolled in the Association of the Blind of the State of Ceara, Fortaleza, showed that 20 of them did not practice any physical activity and weight four showed above normal standards. It is understood that blind people with this profile have characteristics that predispose to the development of chronic diseases. [17] These data corroborate the findings of this research, which examined the association between participation in sports and PA index.

Another study, conducted by researchers at Sao Paulo State University and the State University of Londrina, Parana, attended by 32 young adults, found that the sum of the activities performed during the hours of sport and free time is statistically associated with GCJ and PA diastolic (r = -0.36). [20] Nevertheless, beyond the physical activities and sports, other leisure activities are important in the establishment of health promotion in this population, considering that, in the present study, the ability to play cards and / or chess was associated with GCJ.

The detection of this phenomenon highlights the need to create healthy spaces for blind people in order to enable the development of the practice of leisure activities and the consequent prevention of diabetes and hypertension, as well as the promotion of health and quality of life. In this case, multidisciplinary and intersectoral work must be present and advocate a commitment of society in the composition of the actual health system.[21]

Accordingly, nursing has an important role with regard to persons with disabilities, research the vulnerability of blind adults to the development of hypertension and diabetes, as well as with the structural difficulties encountered in physical activity and leisure. Therefore, early identification of risk factors and chronic diseases would have the purpose of direct nursing actions for the promotion of health and prevention of complications.[22]

The success of these actions was highlighted in another study, which demonstrates that after nursing interventions focusing on health promotion, we managed to establish the maintenance of healthy habits for a blind person. The participant reported feeling more prepared, now walk three times a week for thirty minutes and also got family support for the development of these activities, by buying new clothes for fitness. In this context, it is noted although it is important to consider the family during nursing care because relatives are usually the people in charge of giving the basic support needed for the blind individual.[23]

CONCLUSION

Based on the results, we found that the ability to practice and the ability to play sports are associated with blood pressure and fasting blood glucose, respectively. Thus, the survey provides information to conclude that the ability to perform leisure activities can alter blood pressure levels and glucose for blind adults.

Thus, the contribution that the study is meant to provide insight to (re) formulation of health policies for the blind and indicates the need for health professionals and nursing actions strengthen health promotion and prevention of chronic diseases through encouragement to carry out leisure activities for blind adults.

Limitations of this study relate to a small sample size, which reduces the generalization of findings, as well as the risk of reverse causality, because the exposure variables and outcome were recorded concurrently. From this perspective, it is suggested the development of longitudinal studies to investigate the differences in the prevalence of chronic diseases among groups of blind people with capacity for leisure activities and groups with little access to such activities.

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