

Perfil sociodemográfico da População Pantaneira do Paiaguás

A sociodemographic profile of rural residents of the South Pantanal floodplain

(Paiaguás sub-region) in Brazil

Un perfil sociodemográfico de los residentes rurales de la llanura de inundación del

Pantanal del Sur (subregión de Paiaguás) en Brasil

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Resumo

Grande parte da bacia pantaneira está geograficamente localizada no estado do Mato Grosso do Sul, Brasil. Sendo a maior planície inundável do planeta, declarada Patrimônio Nacional pela Constituição Federal Brasileira de 1988, localizada no centro da América do Sul, considerado ainda Reserva da Biosfera, inúmeras pessoas vivem nessas regiões, conhecer seus moradores, o modo como vivem e como se comportam possibilita a descoberta de inúmeros fatores associados a sua qualidade de vida, saúde, educação e demais serviços que podem culminar na harmonia do meio rural com os bens e serviços necessários para a permanência do homem nesses campos. Este trabalho traça o perfil sócio demográfico da população do Pantanal do Paiaguás, neste pantanal não houve até então, pesquisas relacionadas a população residente, o que torna este trabalho inédito. O material desta pesquisa foi extraído de uma pesquisa que avaliou o sono e a qualidade de vida dos moradores, dentre os 789 participantes dessa amostra foi levantado dados para a descoberta de

suas características através de um formulário sócio demográfico contendo suas variáveis; sexo; Idade (em anos e por faixa etária); Escolaridade; Religião; Tempo de residência (em anos e categorizada); Renda pessoal em salários mínimos; Renda familiar em salários mínimos; Horas de trabalho; Estado civil; Filhos (ter ou não); Número de filhos; Com quem reside; Moradia (imóvel no qual reside); Cor; Aposentado (sim ou não); Ingestão de bebida alcoólica; Fumo; Ingestão de café; Ingestão de tereré; Ingestão de chimarrão; Prática de exercício ou atividade física. Os dados foram inseridos numa tabela Excel e posteriormente transferidos para o programa estatístico IBM-SPSS v. 21. Foram utilizados métodos de estatística descritiva, com a estimativa de proporções e correspondente erro padrão da média, e média e erro padrão da média das variáveis quantitativas. Foi adotado o nível de 5% ($p < 0,05$) para a declaração de existência de significância no teste aplicado. Os resultados apresentam um perfil de pessoas jovens, com escolaridade baixa, em maior número na cor parda, sem diferença significativa numérica entre solteiros e casados, em sua maioria, possui filhos, moram com seus familiares e possuem moradia própria. Dados também apontam que tanto o estado civil quanto a inatividade (aposentado) e uso de álcool não atingiram um nível de significância.

Palavras-chave: Pantanal; Residentes; Rural; Perfil sociodemográfico; Hábitos.

Abstract

Most of the Pantanal basin, the largest floodplain on the planet, lies in Mato Grosso do Sul state, Midwest Brazil. Located in the center of South America, designated biosphere reserve, the area has long been inhabited, albeit sparsely. Investigating the ways of life of the region's rural population can shed light on factors associated with quality of life, health status, education, and access to services which, in combination, can provide a balance between rural environment and the goods and services required for inhabiting this landscape. For the first time, a sociodemographic profile of residents of the Paiaguás sub-region of the Pantanal is being reported. These data are feeding a wider investigation of sleep patterns and quality of life of 789 Pantanal residents, to whom a sociodemographic questionnaire was applied collecting information on the following variables: sex; age; educational level; religion; time residing in the region; personal income; household income; daily working hours; marital status, parenthood status, number of children, living arrangement, dwelling ownership, skin color, labor inactivity (retirement), intake of alcohol, coffee, and maté grass infusions, smoking, and engagement in physical activities. Descriptive statistical methods (IBM-SPSS software) were applied to calculate proportions, means, and standard errors of the means for

quantitative variables. Significance was defined as $p < 0.05$ (5%). Most respondents were young, brown, and had little formal education. Most had children, lived with relatives, and were homeowners. Marital status, labor inactivity (retirement), and intake of alcohol, coffee, or maté grass infusions failed to reach significance.

Keywords: Pantanal; Residents; Rural; Sociodemographic profile; Habits.

Resumen

Gran parte de la cuenca del Pantanal está ubicada geográficamente en el estado de Mato Grosso do Sul, Brasil. Siendo la llanura de inundación más grande del planeta, declarada Patrimonio Nacional por la Constitución Federal de Brasil de 1988, ubicada en el centro de América del Sur, todavía considerada una Reserva de la Biosfera, innumerables personas viven en estas regiones, se encuentran con sus residentes, La forma en que viven y cómo se comportan permite descubrir numerosos factores asociados con su calidad de vida, salud, educación y otros servicios que pueden culminar en la armonía del medio rural con los bienes y servicios necesarios para la permanencia del hombre en estos campos. Este trabajo traza el perfil sociodemográfico de la población del Pantanal do Paiaguás, en este humedal no se han realizado investigaciones relacionadas con la población residente, lo que hace que este trabajo no tenga precedentes. El material de esta investigación se extrajo de una investigación que evaluó el sueño y la calidad de vida de los residentes. Entre los 789 participantes en esta muestra, se recopilaron datos para descubrir sus características a través de una forma sociodemográfica que contiene sus variables; sexo; Edad (en años y por grupo de edad); Educación; Religión; Tiempo de residencia (en años y categorizado); Ingresos personales en salarios mínimos; Ingresos familiares en salarios mínimos; Horas de trabajo; Estado civil; Niños (tener o no); Numero de niños; Con quien vives; Casa (propiedad en la que reside); Color; Retirado (sí o no); Ingestión de bebidas alcohólicas; Fumar; Ingesta de café; Ingesta de tereré; Ingestión de chimarrão; Ejercicio o actividad física. Los datos se insertaron en una tabla de Excel y luego se transfirieron al programa estadístico IBM-SPSS v. 21. Se utilizaron métodos estadísticos descriptivos, con la estimación de proporciones y el correspondiente error estándar de la media, y la media y el error estándar de la media de las variables cuantitativas. Se adoptó el nivel del 5% ($p < 0.05$) para declarar la existencia de significancia en la prueba aplicada. Los resultados muestran un perfil de jóvenes, con baja escolaridad, en mayor número en color marrón, sin diferencias numéricas significativas entre las personas solteras y casadas, la mayoría de las cuales tienen hijos, viven con sus familias y poseen sus

proprios hogares. Los datos también señalan que tanto el estado civil como la inactividad (retirada) y el consumo de alcohol no han alcanzado un nivel de importancia.

Palabras clave: Pantanal; Residentes; Rural; Perfil sociodemográfico; Hábitos.

1. Introduction

This article reports a stratification of sociodemographic data collected for a wider study on sleep habits and disorders and on the relationship between these factors and the quality of life among rural residents of the Pantanal basin, the largest floodplain on the planet. Accessing the inner territories of Southern Pantanal, in Mato Grosso do Sul, is typically strenuous and time-consuming, with a consequent relative isolation that further preserves conservative, long-lasting habits in the local culture – *e.g.*, wariness of urban contacts, low education among adults, and mixed feelings about the need for resources available in urban centers versus the perceived comfort and safety afforded by isolation.

Studies on rural populations from isolated cultures have revealed similarities in lifestyles, economy, environment management, social rules, dilemmas, and religious paradigms, while identifying unexpected differences in the lifestyles of populations that share cultural traits (Costa, Dimenstein & Leite, 2014, Reimão, Souza & Gaudioso, 1999, Brasil, 2013, Mioto, Paranhos Filho & Albrez, 2012, Fontoura & Guimarães, 2015).

In rural Brazil, the rates of illiteracy, endemic diseases, and unhealthy living conditions are the highest in the country, and these are assignable to limited access to essential goods and services (Lebrão & Duarte, 2003). Although public health has shown advances in rural regions in recent decades, social – resource –, and health-related deficiencies continue to affect many residents (Harris et al., 2005).

2. Method and Subjects

This is a quantitative, descriptive, analytical, cross-sectional and comparative study.

For this work, the indications of Pereira A.S. *et al* (2018) were used as a reference, for studies and works with these methodological characteristics.

The population profile described drew on a stratification of sociodemographic data (independent variables) for a wider study on sleep habits and disorders and on quality of life of rural residents of the South Pantanal basin.

The subjects were adolescents and adults living in the area under the jurisdiction of a

district of the government-run Family Healthcare Strategy Program in Coxim county (comprising urban area, rural districts, farms, and ranches) who were at their places of abode or work at the time of the survey. Age ranged from 15 to 99 years. The subjects agreed to participate by providing written informed consent or, for minors (under 18), written approval from parents or guardians. Individuals who had never worked in the Pantanal region were excluded.

The sample comprised 789 subjects (25% from rural and 75% from urban areas). Data collection took place from September 2017 to October 2018, weather (heavy rainfall, flooding) permitting.

Guidelines for research on humans laid down by the Brazilian Health Council and by the Brazilian Committee on Ethics in Research (Resolution 466, issued December 12, 2012) were strictly observed. The project was approved by the Ethics Committee of the Universidade Estadual de Campinas (permit 2029.112, issued April 24, 2017; submission certificate 64654817.9.0000.5404). All personal data that might identify respondents were kept confidential.

The variables investigated included age, educational level, religion; time residing in the region, personal income, household income, daily working hours, marital status, parenthood status, number of children, living arrangements, dwelling ownership, skin color, labor inactivity (retirement), smoking, intakes of alcohol, coffee, *tereré*, and *chimarrão*, and engagement in physical activities.

2.1 Place of Study

Most of the Pantanal basin (62%) is located in Mato Grosso do Sul state. The majority of the Pantanal floodplain, which gained National Heritage status in the 1988 Brazilian Constitution and has been designated a World Natural Heritage Site and Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization, is located in the states of Mato Grosso do Sul (62%) and Mato Grosso (32%) in Brazil, with smaller portions in Paraguayan and Bolivian territories (6% in total) (Brasil, 2013, Mioto et al., 2012).

Coxim, one of a few counties situated in the Pantanal region, lies between the Coxim and Taquari rivers. In its mid-course, upstream of the BR 163 road bridge at km 727, the Taquari has calmer waters, forming sand banks, islands, and temporary ponds characteristic of Pantanal rivers. Coxim has been termed “Portal to the Pantanal” for its unique features: entirely situated just outside the floodplain, its territory constitutes a crucial migratory

ecological corridor of biodiversity connecting the Pantanal and Cerrado biomes.

The county is also home to a rural population that has ties with the region's beef cattle ranches, some of which have their own schools, childcare centers, and primary healthcare units. Covering a vast rural area, the county has a number of agricultural districts and communities of small-scale producers: Jauru (population 600), 60 km away; São Romão (500) 12 km; Vale do Taquari (1000) 4 km; and Silviolândia (1100) 5 km away (estimated populations) (Fontoura & Guimarães, 2015).

The county's economy is centered on crop growing and cattle raising, but remarkable natural features abound, including the Salto and Palmeiras waterfalls and the Taquari and Coxim rivers (Fontoura & Guimarães, 2015).

Paiaguás, the sub-region investigated for the present study, extends from the right bank of the Taquari river to the left bank of the Piquiri, continuing as far as the Paraguay and Cuiabá - São Lourenço rivers. Reliable population estimates are lacking, as the region covers 2132 km² and residents often move across counties to the many dispersed cattle ranches in response to job availability. Ranches pursue seasonal activities, with some concentrating on cattle fattening and trade, while others also offer services related to the cattle-raising industry, such as equipment and pasture maintenance. Seasonal workers, however, typically have little formal education and move with family members fit to work in the fields (Fontoura & Guimarães, 2015).

Ensuring a sufficiently large number of subjects for this investigation was further complicated by weather conditions: isolation is heightened in the wet season (owing to flooding) and when temperatures are high - periods when groups and whole families tend to settle on so-called "model" farms.

The Paiaguás sub-region was selected for displaying features typical of the Pantanal region.

Covering 27 082 km² and partially occupying the counties of Sonora, Coxim, and Corumbá in Mato Grosso do Sul, the Paiaguás sub-region is situated in central Pantanal, bordered to the west by the Cuiabá river, the seasonally flooded portion of the Paraguayan Pantanal, and the Paraguai-Mirim river; to the south, by the Taquari river; to the east, by the adjacent plateau; and to the north by the Correntes and Itiquira rivers (Harris, 2005).

2.2 Study Population

Pantaneiros is the Portuguese term that designates not only individuals born in the

region, but also those who have adopted the way of life and habits of the local population (Abdon & Silva, 2006).

Pantanal and Pantaneiro go hand in hand. They interact and need one another to survive. Only the true cowhand, who is acquainted with the land and breaks new ground in the Pantanal daily, is fully aware of the local nature: he knows the place inside out and has his own peculiar traits, from beliefs to way of life. He is the one who can decipher the Pantanal. His garb, his patois peppered with neologisms and colloquialisms, the communal gatherings, the *tereré* - a typical beverage of the region - and a further array of unique features make up the vast universe of the Pantanal man (Delamo, Eddine & Cunha, 2010).

An amalgamation of a number of cultures, from different corners of Brazil and neighboring countries - migrants who have long ventured into Brazilian lands in search of job opportunities - has yielded a rich mixture out of which the Pantaneiro way of life has emerged - and never ceased to change (Finocchio, 1998).

Cattle raising, the principal economic activity of this population, has forced Pantaneiros to adapt to climate and natural resources. They sleep early and wake up at dawn. Their first meal is the *quebra-torto* - rice with dried meat, accompanied by coffee and milk. The daily routine is punctuated three to four times, at pre-established hours, for *tereré* - an infusion, of Paraguayan origin, of maté grass in cold (often river) water. Acquaintance with nature has made locals skilled in predicting weather changes, rains, floods, or prolonged droughts, while not dismissing the effects traditionally assigned to the Moon cycle. Lore and acute observation blend to produce everyday wisdom.

2.3 Statistical Analysis

The sample was stratified by sex and age bracket. Data were input to Excel 2013 spreadsheets and analyzed using IBM-SPSS (v. 21) statistical software. Descriptive statistical methods were applied to calculate proportions, means, and standard errors of the means (SEM) for quantitative variables. A significance level of 5% ($p < 0.05$) was adopted.

3. Results

Table 1 shows the distributions of independent sociodemographic variables. Mean age was 32.6 years (SEM, 0.54; median, 28; mode, 18; non-normal distribution, $p < 0.001$).

Table 1. Distribution of independent sociodemographic variables.

Variable	<i>n</i>	%	SEM (%)
Sex			
Female	406	51.6	1.8
Male	381	48.4	1.8
Total	787	100.0	–
Age (years)			
15-19	176	22.6	1.5
20-29	244	31.3	1.7
30-39	131	16.8	1.3
40-49	106	13.6	1.2
50-59	72	9.2	1.0
60-69	33	4.2	0.7
≥70	17	2.2	0.5
Total	779	100.0	–
Educational level			
None	66	8.5	1.0
Primary school (Grades 1-9)	239	30.9	1.7
Secondary school (Grades 10-12)	334	43.2	1.8
Higher education or graduate studies	134	17.3	1.4
Total	773	100.0	–
Skin color (self-reported)			
White	248	31.9	1.7
Brown	408	52.5	1.8
Black	90	11.6	1.1
Yellow (East Asian)	31	4.0	0.7
Total	777	100.0	–
Marital status			
Single	390	49.9	1.8
Married or in common-law relationship	327	41.8	1.8
Separated or divorced	50	6.4	0.9
Widowed	15	1.9	0.5
Total	782	100.0	–
Children			
No	346	44.1	1.8
Yes	439	55.9	1.8
Total	785	100.0	–
Living arrangement			
Living alone	75	9.6	1.1
Living with family	679	86.7	1.2
Other	29	3.7	0.7
Total	783	100.0	–
Dwelling			

Owned	558	73.2	1.6
Rented	122	16.0	1.3
On loan	67	8.8	1.0
Other	15	2.0	0.5
Total	762	100.0	–
Retired			
No	727	93.8	0.9
Yes	48	6.2	0.9
Total	775	100.0	–
Religion			
Catholic	401	52.0	1.8
Protestant	305	39.6	1.8
Spiritist	21	2.7	0.6
Other	44	5.7	0.8
Total	771	100.0	–

SEM: standard error of the mean.

Source: Gaudioso (2020).

Table 2 shows the distributions of complementary independent sociodemographic variables. Mean time residing in region was 22.4 years (SEM, 0.53; median and mode, 20; non-normal distribution, $p < 0.001$).

Table 2. Distribution of complementary independent sociodemographic variables.

Variable	<i>n</i>	%	SEM (%)
Children			
1	142	34.2	2.3
2	147	35.4	2.3
≥3	126	30.4	2.3
Total	415	100.0	–
Daily working hours			
< 8	139	27.0	2.0
8	271	52.7	2.2
>8	104	20.2	1.8
Total	514	100.0	–
Monthly personal income (minimum wages)*			
<1	201	35.7	2.0
1-2	231	41.0	2.1
>2	131	23.3	1.8
Total	563	100.0	–
Monthly household income (minimum wages)			
<1	88	14.2	1.4
1-2	193	31.2	1.9
>2	337	54.5	2.0
Total	618	100.0	–
Time residing in region (years)			
<10	165	21.6	1.5
10-20	188	24.6	1.6
20-30	181	23.7	1.5
≥30	230	30.1	1.7
Total	764	100.0	–

SEM: standard error of the mean.

*Minimum salary = US\$ 200.75, as of April, 2020.

Source: Gaudioso (2020).

Table 3 depicts the distributions of independent variables related to habits.

Table 3. Distribution of independent variables related to habits.

Variable	<i>n</i>	%	SEM (%)
Alcoholic beverages			
No	619	79.5	1.4
Yes	160	20.5	1.4
Total	779	100.0	–
Smoking			
No	715	91.8	1.0
Yes	64	8.2	1.0
Total	779	100.0	–
Coffee			
No	382	49.0	1.8
Yes	397	51.0	1.8
Total	779	100.0	–
<i>Tereré</i>			
No	332	42.6	1.8
Yes	447	57.4	1.8
Total	779	100.0	–
<i>Chimarrão</i>			
No	699	89.8	1.1
Yes	79	10.2	1.1
Total	778	100.0	–
Physical activity			
No	394	50.7	1.8
Yes	383	49.3	1.8
Total	777	100.0	–

SEM: standard error of the mean. *Tereré*: maté grass infusion in cold water. *Chimarrão*: maté grass infusion in hot water.

Source: Gaudioso (2020).

4. Discussion

Individually, most subjects (43%) earned up to two minimum wages per month, while household incomes were typically (54.5%) higher than two minimum wages. A previous study conducted in the Nhecolândia sub-region, also in Mato Grosso do Sul, found that residents diversify their activities (e.g., working as tractor drivers, cowhands, foremen, and *empreiteiros*, a local designation for those who charge daily rates for sundry occupations (Mioto, Meneghell, Ribeiro, Marcato Júnior & Paranhos Filho, 2016) - a finding corroborated by years spent by the first author of the present study working in the municipal public services of two counties that shared similar characteristics as the Nhecolândia sub-region.

Most subjects (55.9%) had children, corroborating recent findings for workers in the Pantanal region (Guimarães, Meneghel et al., 2018, Guimarães, Cerchiari et al., 2018).

Most respondents had mixed black and white ancestry (52.5%). Wider miscegenation began early, with the arrival of white prospectors from neighboring São Paulo (earliest incursions took place in the 17th century), blacks (as slaves for mining and sugar farming), and native indigenous peoples, but later included migrants from Northeast Brazil, as well as Bolivians and Paraguayans (Abdon & Silva, 2006, Finocchio, 1998, Mito et al., 2016, Cabrita, 2014). To this day, Mato Grosso do Sul, which borders Paraguay and Bolivia, is home to the second largest indigenous population in the country. Public policies for protection of indigenous peoples have increased their numbers.

The proportion of subjects who were married or had a common-law relationship (41.8%) was lower than the percentage who declared being single (49.9%). These figures contradict a study in the Aquidauana sub-region, Mato Grosso do Sul, that found 83.1% of subjects to be married or cohabiting (.12,13 This difference is possibly related to the Paiaguás sub-region being more inhospitable and more removed from urban centers. Another possible factor, drawing on unpublished empirical evidence, is that Pantaneiro men often choose to work alone instead of raising a family, because the latter would represent a further burden in terms of resources and housing. Most of the Pantanal population is young and has experienced growing competition in a scarce labor market, enjoying fewer educational opportunities than their counterparts in other regions.

Most subjects were professionally active (93.8%, versus 6.2% retired). Although many of these individuals were not working on farms or small-producer communities, the high employment rate reflects a feature of local culture: the ethic of the worker responsible for resource provision. Regarded as competent hard workers, Pantaneiros, nonetheless, constantly face professional hardships and environmental harshness, with potential consequences for their physical and cognitive health (Cabrita, 2014).

5. Conclusion

The population investigated was mostly young, brown, with children (despite a non-significant difference between single and married/cohabiting subjects), had a low educational level, lived with relatives, and were homeowners. Nearly all held jobs, with individual incomes of up to one minimum wage and household incomes of up to two minimum wages. The Catholic faith predominated.

Marital status, labor inactivity (retirement), and alcohol, coffee, or maté grass infusion intakes were variables that failed to reach significant levels.

Due to the pioneering research in this population, the data presented will serve as a reference and become essential for new studies in the Pantanal population of Paiaguás. a great job on sleep and quality of life.

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Competing Interests

The authors have no competing interests to declare.

Referências

Abdon, M. M., & Silva, J. S. V. (2006). *Fisionomias da vegetação nas sub-regiões do Pantanal brasileiro*. São José dos Campos: INPE.

Brasil. Ministério da Saúde. (2013). *Política Nacional de Saúde Integral das Populações do Campo e da Floresta*. Brasília, DF: Ed. Ministério da Saúde. Retrieved from http://bvsms.saude.gov.br/bvs/publicacoes/politica_nacional_saude_populacoes_campo.pdf

Cabrita, D. A. P. (2014). *Viagem a bordo das comitivas pantaneiras*. Campo Grande, MS: FCMS/LIFE.

Costa, M. G. S. G., Dimenstein, M. D. B., & Leite, J. F. (2014). Condições de vida, gênero e saúde mental entre trabalhadoras rurais assentadas. *Estud Psicol.* 19(2), 145-54. Retrieved from <http://www.scielo.br/pdf/epsic/v19n2/07.pdf>

Delamo, L. M. P. R., Eddine, E. A. C., & Cunha, S. C. (2010). Memória e constituição do sujeito que vive na região do pantanal: atividade e educação em memorialistas pantaneiros.

EntreLetras. 3(2), 105-21. Retrieved from <https://sistemas.uft.edu.br/periodicos/index.php/entreletras/article/download/957/509/>

Finocchio, A. L. F. (1998). *O processo de constituição da identidade: as apreensões e mediações sociais e o ato educativo: um estudo do Paiaguás no Pantanal mato-grossense*. (Dissertação de Mestrado em Educação, Universidade Federal de Mato Grosso do Sul, Campo Grande, MS).

Fontoura, E. E., & Guimarães L. A. M. (2015). A saúde do homem pantaneiro e as políticas públicas de saúde no Brasil; uma questão de gênero? Anais do 2º Colóquio Internacional: Meio Ambiente e População Vulnerável, Sept. 17-19, Campo Grande, MS. Campo Grande, MS: UCDB, pp. 114-23.

Gaudio, C. E. V. (2020). *Sleep habits and disorders and their relationship with quality of life in the Pantanal population*. (Tese de doutorado em Ciências Médicas, Universidade Estadual de Campinas, Campinas, SP). Retrieved from <http://repositorio.unicamp.br/handle/REPOSIP/338392>

Guimarães, L. A. M., Cerchiari, E. A. N., Meneghel, V., Minari, M. R. T., Massuda Junior, J. & Tutya, S. T. B. (2018). Saúde mental do trabalhador do Pantanal Sul-Mato-Grossense, Brasil. In: L. A. M. Guimarães, E. A. N. Cerchiari (Orgs.), *Saúde do trabalhador do pantanal de Aquidauana, MS, Brasil*. Campo Grande, MS: UCDB. 61-82.

Guimarães, L. A. M., Meneghel, V., Fontoura Junior, E. E., Massuda Junior, J., Gomes, E. C. V. V., Oliveira, F. F. (2018). Qualidade de vida e aspectos de saúde em trabalhadores pantaneiros. *Arq Bras Psicol.*, 70(2), 141-57. Retrieved from <http://pepsic.bvsalud.org/pdf/arp/v70n2/11.pdf>

Harris, M. B., Arcangelo, C., Pinto, E. C. T., Camargo, G., Ramos Neto, M. B., & Silva, S. M. (2005). *Estimativas de perda da área natural da Bacia do Alto Paraguai e Pantanal Brasileiro*. Campo Grande, MS: Conservação Internacional. [Relatório técnico não publicado]. Retrieved from <http://riosvivos.org.br/arquivos/1783901110.pdf>

Lebrão, M. L., & Duarte, Y. A. (2003). Condições de saúde. In: Lebrão, M. L., Duarte, Y. A. (org.), *Saúde, bem-estar e envelhecimento: o projeto SABE no município de São Paulo: uma abordagem inicial*. Brasília, DF: Organização Pan-Americana da Saúde. pp. 75-91. Retrieved from <http://livros01.livrosgratis.com.br/op000002.pdf>

Mioto, C. L., Meneghelli, T. H. L., Ribeiro, A. A., Marcato Júnior, J. & Paranhos Filho, A. C. (2016). Contribuição à caracterização do Pantanal de Paiaguás. *Anu Inst Geociênc.*, 39(1), 32-41. Retrieved from http://www.anuario.igeo.ufrj.br/2016_1/2016_1_32_41.pdf

Mioto, C. L., Paranhos Filho, A. C. & Albrez, E. A. (2012) Contribuição à caracterização das sub-regiões do Pantanal. *Entre-Lugar*, 3(6), 165-80. Retrieved from <http://ojs.ufgd.edu.br/index.php/entre-lugar/article/download/2453/1404>

Reimão, R., Souza, J. C. R. P. & Gaudioso, C. E. V. (1999). Sleep habits in native Brazilian Bororo children. *Arq Neuropsiquiatr.*, 57(1), 14-7. Retrieved from <http://www.scielo.br/pdf/anp/v57n1/1529.pdf>

Pereira, A. S., et al. (2018). *Methodology of scientific research*. [e-Book]. Santa Maria City. UAB/NTE/UFSM Editors. Retrieved from https://repositorio.ufsm.br/bitstream/handle/1/15824/Lic_Computacao_Metodologia-Pesquisa-Cientifica.pdf?sequence=1.

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