

Um Perfil do Consumo de Bebidas Alcoólicas por Estudantes do Ensino Fundamental de uma Escola Pública

A Profile of the Consumption of Alcoholic Beverages by Primary School Students of a Public School

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RESUMO

Este artigo apresenta um levantamento sobre o consumo de bebidas alcoólicas por estudantes de uma escola pública de Ensino Fundamental do interior do estado do Rio Grande do Sul. A investigação teve o objetivo de verificar a existência da relação entre o gênero ou a idade com o consumo de bebidas alcoólicas. Assim, trata-se de uma investigação de métodos mistos qualitativos e quantitativos que utilizou o teste qui-quadrado para analisar a associação entre variáveis. Os participantes da pesquisa foram 116 estudantes das séries finais do Ensino Fundamental, com idades dos 13 aos 18 anos. O instrumento de coleta de dados foi um questionário, sendo que as respostas foram analisadas com auxílio de métodos estatísticos. Os dados coletados mostraram que a maioria dos estudantes, da amostra investigada, consome bebidas alcoólicas, sendo que o consumo do gênero feminino é significativamente maior do que o masculino. Além disso, o consumo tende a aumentar com a idade. Indagados sobre os motivos do consumo boa parte dos estudantes relataram que o fazem por apreciar o sabor. Esses resultados, aliados aos malefícios causados pelo consumo excessivo e precoce de bebidas alcoólicas, mostram a necessidade de se desenvolver projetos educacionais para discutir, junto com as famílias esse tema, evitando possíveis problemas de saúde ocasionados pelo consumo ou pelo alcoolismo.

PALAVRAS-CHAVE: Base Nacional Comum Curricular. BNCC. Competências. Pesquisa quali-quantitativa.

ABSTRACT

This article presents a survey about the consumption of alcoholic beverages by students of a public elementary school in the state of Rio Grande do Sul. The objective of the investigation was to verify

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the existence of the relationship between gender and age with consumption of alcoholic beverages. Thus, it is an investigation of mixed qualitative and quantitative methods that used the chi-square test to analyze the association between variables. Participants in the survey were 116 students in the final grades of Elementary School, aged 13 to 18 years. The instrument of data collection was a questionnaire, and the answers were analyzed using statistical methods. The data collected showed that the majority of the students in the sample investigated consumed alcoholic beverages, and the consumption of the female gender was significantly higher than the male consumption. In addition, consumption tends to increase with age. Asked about the reasons for consumption, a good part of the students reported that they did it because they appreciated the taste. These results show the need to develop educational projects to discuss, together with families, the early consumption of alcoholic beverages and the health problems caused by consumption.

KEYWORDS: Common National Curricular Base. CNCB. Skills. Quali-Quanti Research.

Introduction

The Brazilian educational system is in a process of reformulation with the Common Base National Curriculum - CBNC (BRASIL, 2018). This is a document that defines the essential skills that students must develop throughout Basic Education, through the teaching and learning processes, providing the student with an integral human formation that aims at building a fair, democratic and inclusive society (BRASIL, 2018).

In relation to the teaching of Mathematics, one of the objectives is to create “[...] abstract systems, which organize and interrelate phenomena of space, movement, shapes and numbers, associated or not with phenomena of the physical world” (BRASIL, 2018, p. 263). When developing didactic strategies that allow students to use mathematics to solve problem-situations or in research to investigate a real problem, the formation of critical citizens, aware of their social responsibilities, is potentially enhanced.

Problem investigation allows students to develop skills to “[...] collect, organize, represent, interpret and analyze data in a variety of contexts, in order to make well-founded judgments and make appropriate decisions” (BRASIL, 2018, p. 272). As a result, there is a need to promote didactic strategies that include teaching and learning statistics, since this knowledge has been foreseen since the early years, so that at the end of Elementary School the student can plan and build research reports using statistics descriptive in the calculation of central tendency measures, the construction of tables and various types of graph (BRASIL, 2018).

The study of statistics can be aided by the inclusion of technologies in the tabulation and data analysis processes. Thus, when considering a research process to solve or understand a real problem, with the help of technological resources, possibly, it contemplates at least three CBNC competences, numbered as 2, 4 and 6 and detailed below.

Competence 2 refers to the use of research as a teaching method, motivating the student “[...] investigation, reflection, critical analysis, imagination and creativity, to investigate causes, to elaborate and test hypotheses, formulate and solve problems and create solutions (including technological ones) based on the knowledge of the different areas” (BRASIL, 2018, p. 9).

In this research process, students use different forms of language (verbal, body, visual, sound and digital) “[...] to express themselves and share information, experiences, ideas and feelings in different contexts and to produce meanings that lead to mutual understanding” (BRASIL, 2018, p. 9). In this way, competence four is contemplated, as students use technologies to access information and the mathematical language to analyze the collected data, the results of which are presented orally, with the aid of graphs and tables, that is, different forms of language to understand the problem and share the results.

When investigating a social problem, the student is inserted in the research process, not limited to learning didactic content, but to developing skills and abilities to graduate as a citizen. Therefore, competency 6 is contemplated, as the student will “[...] appropriate knowledge and experiences that enable him to understand the relationships inherent in the world of work and make choices aligned with the exercise of citizenship and his project of life, with freedom, autonomy, critical awareness and responsibility” (BRASIL, 2018, p. 9).

In view of these assumptions and concerned with developing these general competencies defined by the CBNC, a didactic strategy was planned, in the form of research, to develop critical, creative, responsible and ethical skills in students. In this way, a research developed by ninth-year students in a public elementary school in the interior of Rio Grande do Sul (EFRS) is shared, whose theme was the consumption of alcoholic beverages among adolescents.

The students were responsible for planning the research project, preparing collection instruments, collecting data and analyzing them using descriptive statistics. The professor, who is one of the authors of the article, was responsible for guiding them in the research steps and procedures, in addition to analyzing the data with the chi-square test to verify the association between the qualitative variables raised, as the knowledge involved in the test are beyond the comprehension of ninth year students.

Context and delimitation of the research

Adolescence is a period characterized by biological, cognitive, emotional and social changes. In this phase, the adolescent seeks autonomy; building your personality; and the understanding and execution of adult habits (TIBA, 1998). A habit of adults that adolescents tend to imitate is to try psychoactive substances, such as licit drugs (alcohol, nicotine, among others) and illicit drugs (marijuana, cocaine, crack, ecstasy, among others).

Among these drugs, the World Health Organization - WHO (WHO, 2014) highlights that the consumption of alcoholic beverages is a health problem on a global scale, with Brazil being the second largest responsible for the causes of drug-related deaths (ANJOS; SANTOS; ALMEIDA, 2012). The consumption of alcoholic beverages poses problems for both personal and public health. Consumption without moderation can lead to alcoholism with personal and family consequences. Alcoholism or even excessive consumption is one of the main causes of traffic accidents and even homicides. Second, Anjos, Santos and Almeida (2012) the rate of alcoholism among adolescents aged 12 to 17 years is 7%, an alarming fact, since alcohol causes multiple problems to the central nervous system of adolescents, affecting the maturation of the brain and consequently, hindering the memorization and learning processes (MALTA et. al., 2014).

The Brazilian Institute of Geography and Statistics (IBGE, 2016) indicates that 55.5% of students in the 9th grade of elementary school has already consumed alcoholic beverages, being more common among students in public schools (56.2%) than among those in private schools (51.2%). Rio Grande do Sul was the state with the highest percentage in Brazil, totaling 68% (IBGE, 2016). Regarding the profile of consumers who tried a drink, the frequency reduces to approximately 43.0%, with girls having a higher average frequency compared to boys, from 44.7% to 40.9% (IBGE, 2016). According to Brazilian Institute of Geography and Statistics (2016), the main places where the first dose of alcohol was consumed were: at parties (43.8%); with friends (17.8%); buying at the market, store or bar (14.4%); and with someone in the family (9.4%).

In addition to these data, the Practical Guidance on the impact of alcoholic beverages on the health of children and adolescents, launched by the Brazilian Society of Pediatrics (BSP), shows that almost 40% of Brazilian adolescents experienced for the first time between 12 and 13 years of age, at home. Among adolescents aged 12 to 18 who study in public and private schools, 60.5% declared having already consumed (BRITO, 2017).

Given this scenario, it is understood that the consumption of alcoholic beverages among adolescents is a current and relevant educational problem to be investigated. This survey aimed to verify the existence of the relationship between gender or age, of adolescents from a public elementary school in the interior of Rio Grande do Sul (EFRS), with the consumption of alcoholic beverages. An answer was sought to the following problem: what is the level of association between the age and gender of the EFRS student with the consumption of alcoholic beverages? In addition to verifying these relationships, the survey had a formative and didactic character, because with the results, school managers can, in partnership with the Department of Health, carry out projects to guide students and their families, aiming to reduce consumption in the location where school is inserted.

Methodology

The developed research makes use of quantitative methods, whose design is a field survey (survey), in which an association test will be applied, with the aid of a spreadsheet, to verify the relationship between the variables involved. According to Gil (2008, p. 55) the survey is characterized by:

[...] direct interrogation of people whose behavior one wants to know. Basically, a significant group of people is asked to provide information about the problem studied and then, through quantitative analysis, obtain the corresponding conclusions from the collected data.

This type of survey is often used in investigating opinions and attitudes. Here, the aim is to verify the occurrence of alcohol consumption by adolescents at a school, so this design is adequate for the research objective.

The research was developed in a public elementary school in the interior of Rio Grande do Sul (EFRS), in the first semester of 2018, in which all students who were at least 13 years old were investigated. Before starting it, the students' guardians signed a Free and Informed Consent Form and an authorization to use the image, allowing the participation of the research and the use of the image.

The survey participants were 119 students, three of whom were excluded due to the incongruity of the answers³. Thus, for the analysis, the responses of 116 students with ages varying between 13 and 18 years old, of both sexes, taking classes in the Elementary School of EFRS were considered.

³ In the three excluded records, students reported that they consumed alcoholic beverages, however, no beverage was selected as consumed.

The data were collected using a structured and anonymous form, prepared on the Google platform to facilitate the collection and tabulation process. The form was developed by the authors of the article and the following variables were raised: age, gender, place of consumption, frequency of consumption of specific drinks and the reason for consumption⁴. Before applying the questionnaire, a pre-test was carried out with 18 students, to evaluate and validate the questionnaire, checking that the questions were clear and concise. Data collection was carried out in the school's computer lab, with individual computers in order to guarantee the anonymity and confidentiality of the participants' responses.

After collection, the data was automatically exported to a Google spreadsheet, where it was reorganized and processed to be then analyzed. The statistical procedures used were descriptive and counting measures in addition to the chi-square test to verify the association between qualitative variables.

The chi-square test was developed by the British statistician Karl Pearson (1857 - 1936)⁵ in 1900, with the aim of verifying the association between two variables (AGRESTI; FINLAY, 2012). For the application of the test, it is assumed that there is no association or dependence between the variables (null hypothesis), that is, that the variables are independent. If the null hypothesis is rejected, then it is accepted (the alternative hypothesis) that there is an association between the two variables, that is, that the variables are dependent (AGRESTI; FINLAY, 2012; NARESH, 2006). It is also possible to assess the strength of this association through an association coefficient. The chi-square test assesses the existence of an association between variables but does not assess the strength of the association (AGRESTI; FINLAY, 2012). Agreste and Finlay (2012, p. 264) synthesize that this procedure “[...] summarizes how close the observed frequencies are to the expected frequencies if the variables were independent. It indicates that the variables are dependent, not how strong the dependency relationship is”. According to Naresh (2006) to measure the intensity of association of the variables, Pearson's contingency coefficient can be used. Both the chi-square test and the calculation of the contingency coefficient were determined using a spreadsheet.

Data analysis

⁴ A copy of the questionnaire used is available at: <https://forms.gle/7jUxU5EaNS4TjNN99>.

⁵ British statistician founder of the Department of Applied Statistics at University College London.

The average age of the research participants was 13.9 years, with 77.6% of them aged between 13 and 14 years old and the rest, 23.4% over 14 years old. Regarding gender, 57.8% were male and 42.2% female. Among the participants, 53.4% reported that they consume alcoholic beverages monthly, of these 46.8% were male and 53.2% female. Table 1 shows the relationship between the students' ages and the type of alcoholic beverage consumed. There is a prevalence of beer / draft beer consumption in all age groups. This type of drink has an alcohol content between 5% and 9%.

Table 1 - Age of students and % of consumption of specific drinks

Age (in years)	Type of alcoholic beverage				
	Beer/Draft beer	Wine/Sparkling Wine	Spirits	Liqueurs	Ices
13	69,2	46,2	38,5	15,4	15,4
14	66,7	26,7	63,3	33,3	50,0
15	86,7	53,3	66,7	33,3	73,3
> 16 ⁶	100,0	53,3	66,7	33,3	73,3
Total	80,7	44,9	58,5	28,9	53,0

Source: Prepared by the authors.

Regarding beverages that had a considerable increase in consumption with age, distillates and ices stand out. The ices are alcoholic drinks that mix vodka, whiskey, rum or cachaça with juices, water or any other liquid that dilutes the alcohol and disguises its sharp flavor. The resulting alcohol content is similar to that of beer and is around 5%. Among the distillates that are frequently present in houses and parties there are cachaça (alcohol content between 30% and 40%), tequila (alcohol content between 35% and 38%), vodka (alcohol content between 37% and 40%), whiskey (alcohol content between 40% and 63.5%) and rum (alcohol content between 40% and 80%). Distillates are the drinks with the highest alcohol content and the highlight is that among students who consume alcohol, 58.5% ingest spirits.

Table 2 shows the consumption locations of the 62 students who reported drinking alcoholic beverages. The prevalence of consumption is observed only at parties/clubs (27.4%), followed by at home with family members (19.3%) and at parties/clubs and meeting with friends (16.1%).

Table 2 - Gender versus place of consumption

Genre	Place							Total
	House with	House with family	Parties and	Parties and ballads and	Parties and ballads and	Meeting with	All Places	

⁶ This age group had only four students.

	family	and group of friends	ballads	in group of friends	at home with family	group of friends		
Male	9	2	8	7	0	2	1	29
Female	3	3	9	3	5	2	8	33
Total	12	5	17	10	5	4	9	62

Source: Prepared by the authors.

These data provide a general scenario of the investigated participants. Initially, in planning the research, the objective was to verify the association between gender and the type of drink consumed, but due to the small sample and the variables, it was decided to analyze the association between gender and consumption. Table 3 shows the observed frequencies and the expected frequencies, assuming that the variables are independent.

Table 3 - Observed and expected frequencies of gender versus consumption

Consumption	Genre	
	Male	Female
Yes	29 (36)	33 (26)
No	38 (31)	16 (23)

Source: Prepared by the authors.

Performing the chi-square test, the differences between the observed and expected frequencies of the variables gender and consumption were compared. Table 4 shows the calculation of these deviations, divided by the expected frequency. The sum of these values gives a chi-square of 6.59 for a degree of freedom of one. This value has a significance of $p = 0.0103$. The value is small so that the result is due only to chance, being possible to conclude with approximately 99% probability of correctly rejecting the null hypothesis, that is, concluding that there is a relationship between the two variables.

Table 4 - Calculations of the chi-square statistic for table three

Consumption	Genre		Total
	Male	Female	
Yes	1,30	1,77	3,07
No	1,49	2,03	3,52
Total	2,79	3,80	6,59

Source: Prepared by the authors.

With this result, the null hypothesis can be rejected, at a significance level of 1.03%, and it is likely that gender and consumption are associated, that is, that the proportion of women who consume alcohol is significantly higher. than the male.

These results are in line with a survey carried out with students from public and private schools, in state capitals and the Federal District (MALTA et. Al., 2011, 2014), in which they found that 64.8% of men and 68, 3% of women consume alcoholic beverages. However, the intensity of the association between the two variables in Table 4 is not very strong⁷, since the corrected phi coefficient resulted in 0.43.

Regarding the association between the age group and consumption, significant results were also obtained that show a relationship between the proportion of students who consume alcohol with the age group, with older adolescents presenting a higher rate of alcohol consumption. Table 5 shows the observed and expected frequencies, assuming that there is no relationship between consumption and age.

Table 5 - Observed and expected frequencies between consumption and age

Consumption	Ages (in years)	
	13 a 14	15 or more
Yes	43 (48)	19 (14)
No	47 (42)	7 (12)

Source: Prepared by the authors.

Calculating the deviations between the observed and expected frequencies, Table 6, the chi-square value of 5.19 was obtained, resulting in a significance or p-value of 0.0227.

Table 6 - Calculations of the chi-square statistic for table five

Consumption	Age (in years)		Total
	13 a 14	15 or more	
Yes	0,54	1,87	2,41
No	0,62	2,15	2,77
Total	1,16	4,02	5,18

Source: Prepared by the authors.

With this result (5.18), Table 6, one can reject the null hypothesis, at a significance level of 0.028, so it can be said that there is an association between age and alcohol consumption. However, the intensity of this association is not very strong, since the adjusted phi coefficient resulted in 0.39.

Finally, in relation to the justifications for adolescents to consume alcoholic beverages, there are the following: 45.2% for liking the taste of the drink; 21.0% to get excited and lose shyness; 17.7% to celebrate an achievement or a festive date;

⁷ The value of the coefficient varies from 0 to 1, the closer to 1 the greater the intensity of the association between the variables (NARESH, 2006).

9.7% due to the influence of friends; 4.8% for de-stressing and 1.6% for being challenged. The taste for the drink's flavor had the highest frequency among the responses and this result is a cause for concern, as this can lead to an escalation in consumption, with serious consequences both personal and social.

Final considerations

The student when investigating a situation or phenomenon is not limited to learning only the school contents but develops the ability to: formulate and verify hypotheses; organize and describe the data collected; analyze and present the search results. These are capacities that need to be developed for the human and integral formation of the student. In relation to CBNC, through this research five of the eight specific mathematics competences for elementary school were contemplated (BRASIL, 2018).

When proposing the investigation of a problem that is part of the students' daily lives, it will be possible to develop the skills 2, 4 and 6, listed in the introduction. Initially, in this process, the research project was elaborated, the problem to be investigated was defined and the data collection instruments were elaborated. After collection, a database was created and with the help of a spreadsheet (competence 5) they were organized into tables and graphs to enable their analysis. In this process, several types of knowledge, both mathematical and computer, were used to elaborate the database and interpret the results of the problem under investigation.

In addition, the research topic, the consumption of alcoholic beverages by adolescents, is a national problem, as it involves serious factors that affect the health and intellectual and social development of students. Therefore, it is a matter of social urgency that needs to be developed and discussed at school (competence 7). Due to these arguments, we are convinced that students were provided with a didactic strategy that contemplates the new curricular guidelines, the National Common Curricular Base (BRASIL, 2018).

Regarding the data collected, it is shown that the EFRS situation, even though it is not equivalent to schools in some Brazilian capitals (MALTA et. Al., 2011, 2014; IBGE, 2015), deserves special attention. Frequent or excessive consumption of beverages with a high alcohol content may end up influencing the school performance of these adolescents, since alcohol impairs the attention and concentration processes and, consequently, learning. Corroborating this situation, many parents are happy to learn that their child is only consuming alcoholic beverages, due to the easy access to illicit drugs (TIBA, 1998).

Parents, most of the time, do not know how to conduct a conversation about this topic with their children. Thus, it is necessary to discuss with students and their families, through educational projects, about the consequences of consuming this drug for both the consumer and the family and for society. Another important factor that deserves attention and concern from the Department of Education and Health is the fact that students like the taste of the drink. This is a risk factor that can contribute to an increase in the 7% rate of alcoholics among adolescents aged 12 to 17 years.

In view of this social context, the majority of EFRS students consume alcoholic beverages, it is up to the school - teachers and school administrators - in partnership with the Department of Health, to plan actions to reduce these rates. Actions can involve adolescents and their families, since the consumption of alcoholic beverages is often initiated, carried out or encouraged by the family itself. EFRS needs to develop educational projects to assist students, especially female students, since consumption among women is significantly higher.

In addition, there is a relationship between adolescent age and consumption, with the proportion of older students who consume alcoholic beverages being significantly higher than the younger ones. This is not just an EFRS problem, but it is probably a bigger problem for high school teachers and school managers. Therefore, the research does not end. The next step is to apply the questionnaire in all schools in the municipality, both in elementary and high school, and analyze the data so that there is a municipal panorama of the consumption of alcoholic beverages by students of basic education and thus make a planning at the level to reduce consumption rates and consequently the adverse effects caused by the ingestion of alcoholic beverages.

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