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EXCESSIVE SCREEN USE: PREVALENCE AND RISKS ASSOCIATED WITH CHILD DEVELOPMENT

O USO DE TELAS EM EXCESSO: PREVALÊNCIA E RISCOS ASSOCIADOS AO DESENVOLVIMENTO INFANTIL

EL USO EXCESIVO DE PANTALLAS: PREVALENCIA Y RIESGOS ASOCIADOS AL DESARROLLO INFANTIL

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ABSTRACT

The present study aimed to identify the consequences of excessive screen use in children, as well as to evaluate social interaction, measure Body Mass Index (BMI), and conduct a standard ophthalmological test using the Snellen Chart with 5th-grade elementary school students at CEM Prof. Valdir Gonçalves de Lima, in the municipality of Votuporanga, São Paulo, Brazil. The study is characterized as exploratory with a quantitative–qualitative approach, using questionnaires and interactive activities to foster bonding between the participants and the medical students.

Keywords: Screens. Childhood. Social Interaction. Visual Acuity.

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RESUMO
A presente pesquisa teve como objetivo identificar as consequências do uso excessivo de telas em crianças, além de avaliar a interação social, mensurar o Índice de Massa Corporal –IMC e realizar teste oftalmológico padrão, utilizando a Tabela de Snellen, com os alunos do 5°ano do Ensino Fundamental no CEM Prof. Valdir Gonçalves de Lima no município de Votuporanga-SP. O trabalho é caracterizado como exploratório de cunho quanti-qualitativo, com a utilização de questionário e dinâmicas para criação de vínculo entre os participantes e os acadêmicos de medicina.

Palavras-chave: Telas. Infância. Interação Social. Acuidade Visual.

RESUMEN
La presente investigación tuvo como objetivo identificar las consecuencias del uso excesivo de pantallas en niños, así como evaluar la interacción social, medir el Índice de Masa Corporal (IMC) y realizar una prueba oftalmológica estándar mediante la Tabla de Snellen, con estudiantes de 5.º año de la Educación Primaria del CEM Prof. Valdir Gonçalves de Lima, en el municipio de Votuporanga, São Paulo, Brasil. El estudio se caracteriza como exploratorio de enfoque cuantitativo-cualitativo, utilizando cuestionarios y dinámicas para la creación de vínculos entre los participantes y los estudiantes de medicina.

Palabras clave: Pantallas. Infancia. Interacción Social. Agudeza Visual.

1 INTRODUCTION

In the 1920s, television was created by Philo Farnsworth (1906-1971), being a model of electronic image transmission. However, the spectator is seen as an inert and passive receptacle, as he has no way of expressing himself in this environment (DUARTE, et al. 2006). Consequently, despite drawing the attention of the receiver, it would still not subject him to a strong risk of addiction compared to the creation of other technological means, especially in the twenty-first century. The arrival of this century brought with it a wide communication network, coming mainly from the improvement and popularization of devices such as the cell phone. Initially, the device was not very affordable and simple compared to the models that are sold today, but with the introduction of several brands stimulated by the multiple functions it began to present, the device became increasingly popular, reaching in 2023, according to the GSMA, 4.6 billion people who have access to it.

With the increasingly effusive introduction of smartphones in the daily lives of the world's population, addiction began to be a worrying factor that worsened after the Covid-19 pandemic. Statements such as "Before [the pandemic] my daughter spent the day at daycare, there she interacted with other children, played, and not now, now she plays at home, but also, many times, she stays more on her cell phone watching, until the time I vacate or until the time she goes to play with some other child. So, it interfered a lot, because then the use of screens increased even more. These were reports from the article "Repercussion of the Covid-19 pandemic on the use of screens in very early childhood" by Paloma Karen Holanda Brito (2023) which aimed to identify the consequences of the COVID-19 pandemic on the use of screens.

The Brazilian Society of Pediatrics (2019) developed the manual of guidelines for the use of children's screens that recommends:

- Avoid exposing children under two years of age to screens, even passively;
- Limit screen time to a maximum of one hour a day, always with supervision for children between the ages of two and five;
- Limit screen time to a maximum of one or two hours a day, always with supervision for children between the ages of six and ten;

It is known that technology has brought many benefits to society, and in relation to children, it can be seen that the conscious use of screens stimulates skills, such as

creativity, imagination and language development. However, excessive use of these mobile media can lead to losses, such as:

- Mental health problems: irritability;
- Mental health problems: irritability, anxiety, and depression;
- Attention deficit hyperactivity disorders;
- Visual problems, myopia and computer vision syndrome;
- Hearing problems and NIHL, noise-induced hearing loss;
- Postural and musculoskeletal disorders;
- Sleep disorders; (SBP, 2019)

In this sense, it should be understood that it is in early childhood that games make it possible, through social interaction, to understand the reality in which they are inserted, the improvement of body language, imagination and creativity, allowing the constitution of a broad vision and critical thinking, which helps in the formation of the child for a skillful social conduct in a society that constantly changes. However, the excessive use of screens corroborates greater social isolation, hindering relationships between friends and family and preventing access to stimuli essential for their development, which can lead to impacts ranging from delayed oral language acquisition to possible health damage.

According to research, excessive screen use is linked to a sedentary lifestyle, as children spend more time using these technological means (television, cell phones and video games) instead of practicing physical activity. Based on this, this problem can lead to an increase in Body Mass Index (BMI), influencing quality of life and child development.

In addition, gradual concerns can also be observed regarding the negative effects of excessive use of screens on children's visual health. Therefore, it has been reported and proven by ophthalmologists and the Brazilian Society of Pediatrics (SBP) that excessive screen use in childhood has consequences such as visual acuity, impact on visual accommodation, ocular surface, ocular motility, and is associated as a risk factor for myopia. In addition, experts say that it is not possible to measure the ocular effects in the long term, but short-term effects such as those mentioned above are already noticeable. In this way, it negatively affects the child's school performance and other daily activities.

Finally, there was a need to carry out research on the theme presented above, which is so evident nowadays that are the consequences of the abusive use of screens by children, whether in social, behavioral and biological aspects.

1.1 OBJECTIVES

1.1.1 Primary objective

To identify the consequences of excessive use of screens in children aged 10 to 11 years of the 5th year of Elementary School I in the afternoon, at the "Valdir Gonçalves de Lima" school, in Parque das Nações in the city of Votuporanga/SP.

1.1.2 Secondary objectives

- Evaluate the children's social interaction and access to screens through a questionnaire.
- Perform a standard ophthalmologic test using the Snellen Table.

2 METHODOLOGY

The methodology used in this research is characterized as exploratory of quantitative and qualitative nature.

2.1 LOCATION

The research was carried out in two locations: UNIFEV and Professor Valdir Gonçalves de Lima Municipal School in the Parque das Nações neighborhood, Votuporanga-SP.

2.2 PARTICIPANTS

This project was carried out with the participation of 24 students from the 5th year of Elementary School I in the afternoon period of the Municipal School Professor Valdir Gonçalves de Lima, in the Parque das Nações neighborhood in Votuporanga/SP.

2.3 SAMPLE

The sample was agreed upon according to adherence to participation in the research through the Informed Consent Form (ICF).

2.4 INCLUSION CRITERIA

- Students in the age group of 9 to 10 years;
- Student enrolled in Elementary School I of the aforementioned school.

- Students authorized through the Informed Consent Form and/or Informed Consent Form.

2.5 DATA COLLECTION

The collection was carried out with the target population, during the execution of dynamics and the Snellen test.

2.6 PROCEDURES

In the first meeting, the Informed Consent Form (ICF) and the Informed Consent Form (TALE) were delivered to the children and their guardians, which were signed and delivered the following week, in which the terms for the continuity of the project will be collected and verified. These terms were accompanied by an informative Folder, which contained information about the dynamics and issues that would be developed during the project.

In the second meeting, the consent forms and the consent form were collected, which were delivered in the last meeting. In addition, a dynamic called "get to know me better" was carried out in order to create a bond with the children, in addition to analyzing the social interaction and the children's preference about daily activities, to analyze the individual profile of each respondent.

Name of the dynamic "Get to know me better"

Description: A dynamic was carried out consisting of questions, riddles and challenges aimed at creating a bond between students and academics. At this meeting, 22 students were present.

In the third meeting, the research questionnaire (APPENDIX 1) was applied, which has 14 multiple-choice and discursive questions, in addition to the students creating a drawing that represents their families, with the objective of analyzing the patterns of screen use by children and seeking knowledge about the practice of physical activities and their socialization.

In this fourth meeting, the ophthalmological test was performed using the Snellen table in order to ascertain the visual acuity of the children based on international parameters of vision assessment. For this, the Snellen table was used positioned at a distance of 3 meters, at the approximate height of the children's eyes, after having positioned it in the correct location, it was observed which line it is able to understand

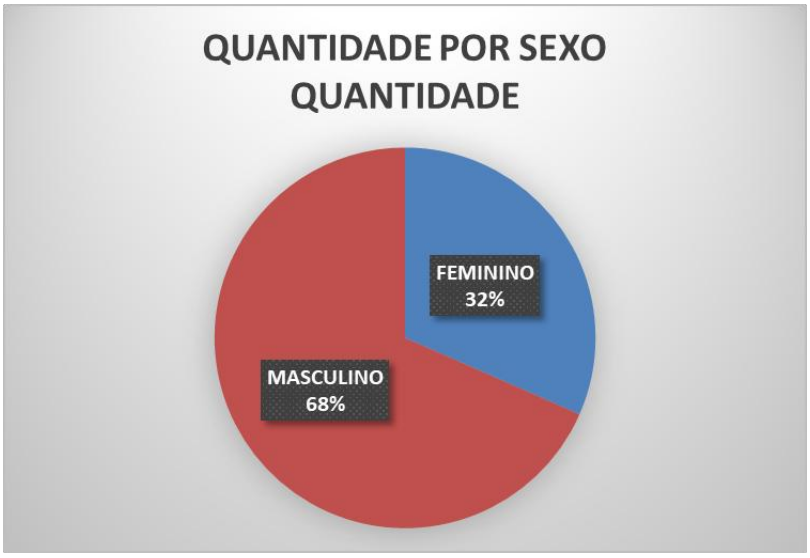
clearly. After the test, the results were analyzed by the students and a report was prepared with data on BMI, visual acuity test and recommendations for health education (APPENDIX 2).

In the fifth meeting, after analyzing the results obtained in the previous meetings, a conversation circle was held in order to inform and raise awareness among children about the possible effects of excessive use of screens. To this end, an information pamphlet (APPENDIX 2) was given to the children's parents indicating the consequences on child development, associated with visual acuity and social interaction, and whether it is advisable to take them to the doctor at the nearest UBS to assess their situation.

3 RESULTS

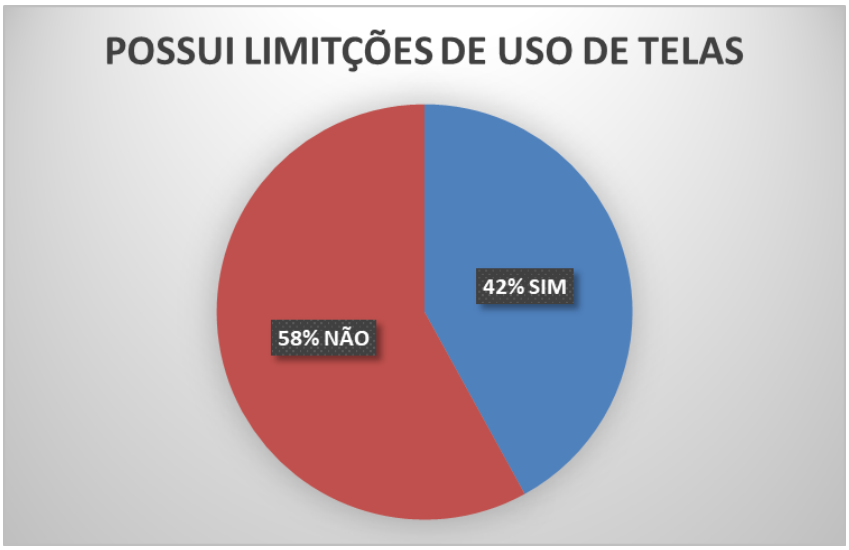
The questionnaire was applied to 19 students who were present on the day (09/11/2024), with 12 questions addressing the use of screens, physical activity and social interaction. Relating to the damage to health due to the inappropriate use of screens. They were 13 boys and 6 girls, as shown in the graph below:

Figure 1



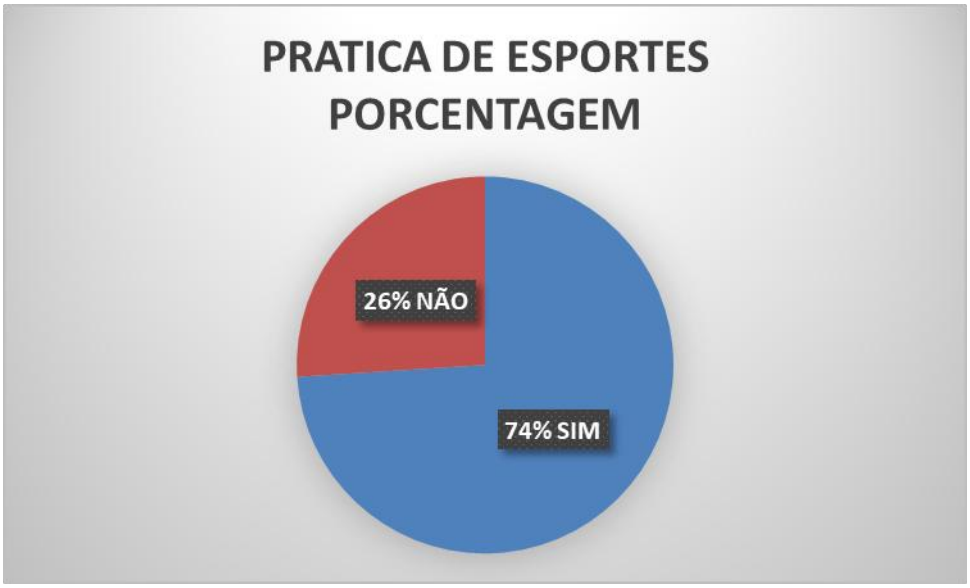
In the eighth question, about the limitation to use screens, 58% of the students have a limit on the use of screens and 42% have no limit on the use of screens, as shown in the graph below:

Figure 2



In the eleventh question, about the practice of sports, 74% of the students practice physical exercise and 26% do not practice physical activity, according to the following graph:

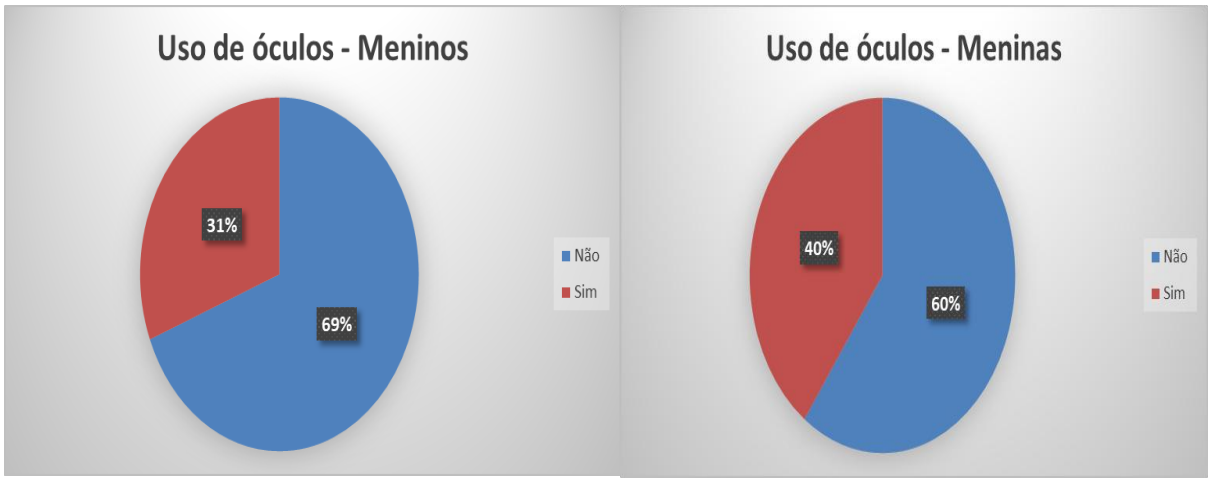
Figure 3



The ophthalmologic test was performed using the Snellen table, in which 23 students were present, 13 boys and 10 girls.

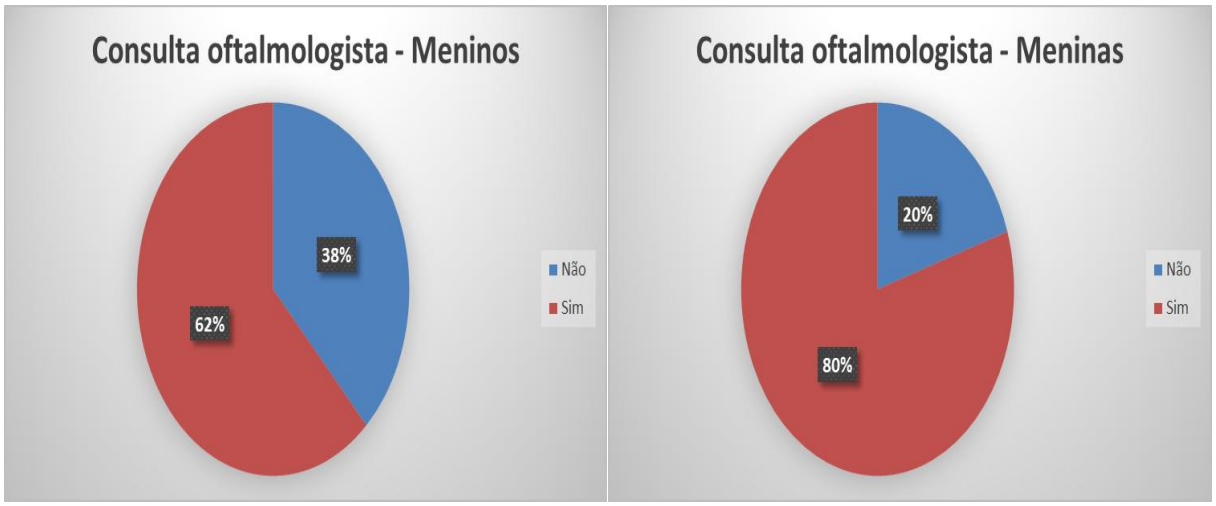
Among the 13 boys, only 4 wore glasses and among the 10 girls 4 did.

Figure 5



Among boys, 62% have already consulted with an ophthalmologist and among girls, 80% had an ophthalmological consultation.

Figure 6



In this graph, it can be seen that 69% of the boys presented satisfactory results, indicating good visual acuity, while 31% of the boys did not achieve the expected result. In relation to girls, 70% presented satisfactory results, indicating good visual acuity, while 30% did not achieve the expected result.

4 DISCUSSION

At first, the project was structured with the objective of promoting health education based on the identification of weaknesses related to the excessive use of screens

observed in the target group of the research, composed of students of the 5th year of Elementary School at CEM Prof. Valdir Gonçalves de Lima in the municipality of Votuporanga-SP. For this, 5 meetings were proposed aimed at evaluating social interaction, body mass index and eye health in order to identify if the use of screens in childhood is adequate, as previously defined by the Brazilian Society of Pediatrics: "Children aged between 6 and 10 years, limit screen time to a maximum of 1-2 hours/day, always with the supervision of parents/guardians" (SBP, 2024). Otherwise, the central question of the research arises: Does the excessive use of screens interfere with children's health?

Under subsequent analysis, data were collected through a questionnaire, anthropometric measurements and ophthalmological test using the Snellen table, in addition to the participation of children, guardians and the school institution. Thus, it showed that all children surveyed had access to the internet, but only 42% had a limit on the use of electronic devices, corroborating the studies by Nobre et al. (2021) who observed the importance for children's neurological development to follow restrictions with regard to exposure to electronic devices. On the other hand, the result of the Snellen test was worrisome, and 31% of the boys and 30% of the girls were recommended to seek an ophthalmologist, thus identifying the main vulnerability of the participating group.

In short, visual acuity generated greater concern among the subjects addressed and it is necessary to share information following recommendations from the American Optometry Association: "At 5 years of age, children should be examined for visual acuity and alignment. Myopia is the most common problem in this age group. It is corrected with glasses. An ophthalmologist should examine a child with misaligned eyes or signs of other eye problems." Therefore, with the growing use of technology since childhood, it is essential to limit and care for well-being, being essential to avoid health problems caused by sedentary lifestyle and exposure to blue light causing eye fatigue and sleep disorders, (Gozal, 2017) states that "Increased access to media will affect youth not only by reducing or consuming the time they would need to do their schoolwork or sleep, but also possibly because it affects their convictions and their behaviors."

5 CONCLUSION

The research project was carried out as planned, with good adherence from the participants and their guardians, in addition to the contribution of the educational institution by the management and teachers.

During the meetings, when carrying out bonding dynamics, it was observed that the Parque das Nações territory is favorable for a good relationship between school and community, it was also found that good family structure, good living conditions since there is access to the internet and health services.

However, it was found that the use of the internet in the family environment is indiscriminate in relation to content and screen time, since children do not follow the recommendations to interrupt the use of electronic devices at least one hour before bedtime, proposed by the Brazilian Society of Pediatrics, as found in the questionnaire.

In addition, the results showed that the children had good social interaction, since there was satisfactory participation in the dynamics and activities proposed. The participants stated that they practiced physical activities frequently, either at school or outside it, such as extracurricular activities.

In addition, the research showed partially altered ophthalmological results, with 31% of the boys presenting visual acuity below the threshold value, while 30% of the girls also had unsatisfactory results, although most of them have already attended the ophthalmological consultation and/or use glasses.

Finally, we can conclude that there is sports practice and social interaction, since the school environment provides healthy food and regular physical education practices. On the other hand, the results in relation to the visual acuity test may be associated with the abusive use of screens, requiring health education that was developed by the students through information pamphlets forwarded.

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APPENDICES

Figure 7

QUESTIONÁRIO

- IDADE: _____.
- SEXO: MENINA ◯ MENINO ◯
- TEM ACESSO À INTERNET EM CASA? SIM ◯ NÃO ◯
- FAZ USO DE TELAS? SIM ◯ NÃO ◯
  - QUAIS? CELULAR ◯ TABLET ◯ COMPUTADOR ◯ TELEVISÃO ◯ OUTROS ◯
  - QUANTO TEMPO? MENOS DE 1 HORA ◯ MAIS DE 1 HORA ◯ MAIS DE 2 HORAS ◯
  - COM QUAL IDADE VOCÊ COMEÇOU A TER ACESSO A TELAS? ANTES DOS 5 ANOS ◯ DEPOIS DOS 5 ANOS ◯
  - POSSUI LIMITAÇÃO PARA USAR AS TELAS? SIM ◯ NÃO ◯
  - O QUE VOCÊ COSTUMA ACESSAR NO SEU CELULAR/TABLET? _____.
  - QUANTO TEMPO ANTES DE DORMIR VOCÊ USA O CELULAR? _____.
- PRATICA ESPORTES? SIM ◯ NÃO ◯
  - QUAIS? _____.
  - QUANTAS VEZES NA SEMANA? _____.
- VOCÊ FREQUENTA A CASA DOS SEUS AMIGOS? SIM ◯ NÃO ◯

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Figure 8