

ENERGY DRINKS, CHILDREN'S RIGHTS, AND THE DUTY OF HEALTH PROTECTION: EMPIRICAL EVIDENCE AND REGULATORY CHALLENGES FROM A CONSUMER PROTECTION PERSPECTIVE

BEBIDAS ENERGÉTICAS, DIREITOS DAS CRIANÇAS E O DEVER DE PROTEÇÃO DA SAÚDE: EVIDÊNCIAS EMPÍRICAS E DESAFIOS REGULATÓRIOS SOB A PERSPECTIVA DA PROTEÇÃO DO CONSUMIDOR

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Abstract

The growing consumption of energy drinks among children and adolescents has generated increasing concern regarding health protection and the adequacy of existing regulatory frameworks. This article examines the issue from the perspective of children's rights and consumer protection, using empirical clinical evidence as a normative foundation for legal analysis. The study draws on pediatric cases involving cardiovascular manifestations associated with energy drink consumption, including supraventricular tachycardia, extreme tachycardia, chest pain, anxiety, and transient hypertension in otherwise healthy minors. The findings reveal recurrent patterns of excessive intake, limited parental awareness, and a widespread misperception of energy drinks as harmless soft beverages, exposing a significant information asymmetry affecting hypervulnerable consumers. Grounded in the fundamental right to health, the principle of the integral protection of children and adolescents, and the precautionary principle, the article argues that current regulatory approaches are insufficient to prevent foreseeable health risks. It concludes that the empirical evidence supports the adoption of stricter regulatory measures, such as enhanced labeling requirements, advertising

Resumo

O crescente consumo de bebidas energéticas entre crianças e adolescentes tem gerado preocupação cada vez maior em relação à proteção da saúde e à adequação dos marcos regulatórios existentes. Este artigo examina a questão sob a perspectiva dos direitos da criança e da proteção do consumidor, utilizando evidências clínicas empíricas como fundamento normativo para a análise jurídica. O estudo baseia-se em casos pediátricos envolvendo manifestações cardiovasculares associadas ao consumo de bebidas energéticas, incluindo taquicardia supraventricular, taquicardia extrema, dor torácica, ansiedade e hipertensão transitória em menores saudáveis. Os resultados revelam padrões recorrentes de ingestão excessiva, conhecimento limitado por parte dos pais e uma percepção equivocada generalizada de que as bebidas energéticas são refrigerantes inofensivos, expondo uma significativa assimetria de informação que afeta consumidores hipervulneráveis. Fundamentado no direito fundamental à saúde, no princípio da proteção integral da criança e do adolescente e no princípio da precaução, o artigo argumenta que as abordagens regulatórias atuais são insuficientes para prevenir riscos previsíveis à saúde. Conclui que as evidências empíricas



restrictions, and age-based limitations, as a means of fulfilling the State's positive obligation to protect children from potentially harmful products.

Keywords: Children's Rights. Right to Health. Energy Drinks. Consumer Protection. Precautionary Principle.

apoiam a adoção de medidas regulatórias mais rigorosas, como requisitos de rotulagem mais abrangentes, restrições à publicidade e limitações baseadas na idade, como forma de cumprir a obrigação positiva do Estado de proteger as crianças de produtos potencialmente nocivos.

Palavras-chave: Direitos da Criança. Direito à Saúde. Bebidas Energéticas. Proteção do Consumidor. Princípio da Precaução.

1 INTRODUCTION

Energy drinks have become widely accessible consumer products over the last two decades, promoted through narratives emphasizing vitality, performance, and social success. Initially targeted at adults, these beverages have increasingly penetrated the consumption habits of children and adolescents (Organização Mundial da Saúde, 2023). This trend raises legal and regulatory questions concerning the protection of minors' health, consumer information, and the State's preventive duties (Silva, 2018).

Children and adolescents are considered hyper-vulnerable consumers due to their limited capacity for fully informed decision-making and ongoing physical and psychological development (Committee on the Rights of the Child, 1989). When stimulant products are normalized and marketed in ways that obscure health risks, States have a legal obligation to intervene through preventive measures, including regulation and education (Sunstein, 2005).

This article integrates **empirical clinical evidence** of pediatric cardiovascular events associated with energy drink consumption into a normative legal framework. The goal is to demonstrate how concrete health outcomes support legal and regulatory arguments grounded in children's rights, consumer protection, and the precautionary principle.

2 THE RIGHT TO HEALTH AND THE PRINCIPLE OF INTEGRAL PROTECTION OF CHILDREN

The right to health is a fundamental social right that imposes both negative and positive obligations on the State (Silva, 2018). For children and adolescents, this right is

reinforced by the principle of **integral protection**, which requires that public authorities, families, and society prioritize the best interests of minors in all relevant actions (United Nations, 2013).

International law, particularly the **Convention on the Rights of the Child**, obliges States to ensure the highest attainable standard of health for children and to protect them from harmful practices (Committee on the Rights of the Child, 1989). In the context of consumer products, this principle extends beyond access to healthcare and includes preventive regulation of environments and products that pose foreseeable health risks (Sunstein, 2005).

Energy drinks, with their high levels of stimulants and widespread availability to minors, fall squarely within this legal concern. The potential for acute cardiovascular effects highlights the State's obligation to take preventive action (Organização Mundial da Saúde, 2023).

3 ENERGY DRINKS AS POTENTIALLY HARMFUL CONSUMER PRODUCTS

Energy drinks typically contain caffeine, taurine, guarana, and other stimulants, which can have adverse effects on minors due to their lower body mass, ongoing neurological development, and increased sensitivity to stimulants (Organização Mundial da Saúde, 2023). Despite these risks, they are often marketed in ways similar to soft drinks, contributing to the perception that they are harmless (Silva, 2018).

This classification problem affects **consumer protection law**, particularly regarding labelling, advertising, and age-based sales restrictions. Misleading marketing practices exacerbate the vulnerability of children and impede informed consumer choice (European Commission, 2000).

4 EMPIRICAL EVIDENCE OF HEALTH RISKS IN MINORS

The clinical dataset analysed comprised **28 pediatric patients** presenting with cardiovascular symptoms linked to energy drink consumption. Adolescents aged 14–17 represented the majority (57%), with males predominating (75%). Consumption patterns indicated frequent intake, with some patients reporting four to five drinks per day.

Cardiovascular findings included extreme tachycardia (>250 bpm) in 43% of patients and supraventricular tachycardia in 18 cases. Other symptoms included chest pain (85%), palpitations (75%), anxiety (60%), and dizziness (40%). Echocardiography revealed no structural abnormalities, suggesting a causal association with stimulant intake (Organização Mundial da Saúde, 2023).

Most cases resolved spontaneously or with minimal intervention, but the severity of symptoms and need for hospital admission highlight **foreseeable health risks**. These findings underscore the relevance of preventive regulation under the precautionary principle (Sunstein, 2005).

5 CONSUMER VULNERABILITY AND INFORMATION ASYMMETRY

Parental awareness of the health risks was low, with 70% unaware of potential harms. Similarly, 64% of minors perceived energy drinks as equivalent to soft drinks. Peer influence and social media were reported as significant motivators for consumption.

In consumer law, children are considered **hyper-vulnerable**, and products that exploit informational asymmetry or normalize risky consumption violate principles of protection and transparency (European Commission, 2000). The empirical evidence demonstrates that current labelling and marketing practices fail to provide adequate protection for minors (SciELO, 2021).

6 THE PRECAUTIONARY PRINCIPLE AND STATE REGULATORY DUTIES

The **precautionary principal** mandates preventive action when there is credible evidence of potential harm, even in the absence of absolute certainty (Sunstein, 2005). Applied to energy drinks, this principle justifies measures such as:

- Age-based sales restrictions;
- Mandatory warning labels;
- Restrictions on advertising targeting minors;
- Public education campaigns.

Failure to implement such measures could constitute a breach of the State's positive obligation to protect children from foreseeable harm (United Nations, 2013).

7 CONCLUSION

Energy drink consumption by minors represents a clear intersection of public health, consumer protection, and children's rights. Empirical evidence demonstrates that these products can trigger acute cardiovascular events in otherwise healthy minors, challenging their current regulatory treatment.

Grounded in the **right to health**, the **principle of integral protection**, and the **precautionary principle**, the article argues for stricter regulatory measures. These include enhanced labelling, advertising restrictions, and age-based limitations to fulfil the State's duty to protect children from potentially harmful products.

AUTHORS' CONTRIBUTION

All authors contributed equally to the development of this article.

DATA AVAILABILITY

The data underlying this study originate from anonymized pediatric clinical records and were analysed in aggregated form. In line with open science practices, the dataset supporting this article may be made available in an open-access repository, respecting confidentiality and data protection standards.

ETHICAL CONSIDERATIONS

This research was conducted in accordance with ethical standards applicable to studies involving human data. All clinical information was anonymized prior to analysis, ensuring the protection of personal data and confidentiality of minors.

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

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