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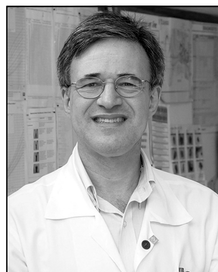
Pediatricians and external causes of morbidity and mortality



Danilo Blank[1]   **Edson Ferreira Liberal**[2]

What should be the attitude and the role of pediatricians (or of any health professional) concerning the "not so new" morbidity and mortality indicators in children and adolescents?

In present times, the exact notion that children and adolescents die in large numbers due to so-called external causes is increasingly a part of the beliefs of Brazilians. More importantly, people are becoming more aware that this is not the result of chance — that is, these deaths are not accidents. The media provide abundant evidence of that. In a recent article published in the weekly national magazine *Veja*, a journalist reports with great acuity and relevance the exemplary story of a boy who fell inside a drain and was engulfed by water in the heart of São Paulo. That, pointed out the writer, was far from being an accident, since behind this event, conspiring against the boy's luck, was a too large chain of factors that are typical of our contemporary society: poverty, unplanned and defective urban growth, improvidence and weak public institutions.[1] On the same day, a daily newspaper highlighted the running over of two garbage collectors on duty. The article stressed that excess speed – associated or not with drinking, disrespect for traffic signs and inability – was at the origins of this Brazilian tragedy.[2] Offering a different view of the problem, still on that day the same newspaper covered the risk of injury (physical, psychological and moral) in stories about virtual bullying[3] and the control of fire guns in society.[4] As can be seen, simply scanning a lay publication is sufficient to support the clear perception held by society – that injuries, intentional or not, are currently a serious social problem, stemming from certain behaviors associated with specific environmental risks.

For pediatricians, it should not come as a surprise that the morbidity and mortality due to external causes account for the largest burden of disease among children and youth in Brazil, similarly to what occurs in the rest of the world. However, it is never too much to emphasize the numbers: in the less privileged countries of the Americas, external causes are responsible for 53% of the total burden (measured in disability adjusted lost years) of the ten main diseases in the age group between 5 and 14 years[5]. Table 1, showing the main causes of death in Brazilians aged 0 to 19 years, reveals an evident predominance of injuries starting at the second year of life, causing between one-fifth to three-fourths of the deaths of children and adolescents. Thus, what we are talking about is a very serious public health problem.

However, scientific research in this field is still scanty in Brazil. A survey of the online contents of Jornal de Pediatria (using the key words injury, trauma, traumatism, accident, violence, maltreatment, abuse, poisoning, burn, fall, drowning, asphyxia, suffocation and resuscitation) revealed

1. Associate professor, Departmento de Pediatria e Puericultura, Faculdade de Medicina, Universidade Federal do Rio Grande do Sul (UFRGS). Chair professor, Child and Adolescent Health.
2. PhD (Medicine), Universidade Federal do Rio de Janeiro; Associate professor, Departamento de Pediatria, Faculdade de Medicina, Universidade Federal do Estado do Rio de Janeiro.

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Table 1 - Main causes of death from birth to 19 year of age, Brazil, 2002, deaths/100,000 inhabitants

	< 1 year n (%)	**1 to 4 years n (%)**	**5 to 9 years n (%)**	**10 to 14 years n (%)**	**15 to 19 years n (%)**
Infectious and parasitic diseases	139,5 (7,6)	11,5 (14,8)	2,6 (8,0)	2,1 (5,9)	2,7 (2,5)
Neoplasias	5,3 (0,3)	5,1 (6,6)	4,4 (13,5)	3,8 (10,7)	4,8 (4,5)
Respiratory diseases	117,1 (6,4)	13,1 (16,9)	2,5 (7,7)	2,2 (6,2)	3,5 (3,3)
Perinatal disorders	1022,9 (56,0)	0,6 (0,8)	0	0	0
Congenital malformations	237,8 (13,0)	5,8 (7,5)	1,1 (3,4)	0,9 (2,5)	0,6 (0,6)
External causes	34,9 (1,9)	14,8 (19,1)	12,2 (37,4)	16,5 (46,3)	76,8 (72,2)
Transportation	3,2 (0,2)	4,0 (5,2)	5,7 (17,5)	5,5 (15,4)	16,0 (15,0)
Falls	1,4 (<0,1)	0,7 (0,9)	0,5 (1,5)	0,5 (1,4)	0,8 (0,8)
Drowning	1,1 (<0,1)	3,9 (5,0)	2,8 (8,6)	3,5 (9,8)	5,5 (5,2)
Burns	1,3 (<0,1)	0,9 (1,2)	0,4 (1,2)	0,1 (0,3)	0,2 (0,2)
Poisoning	0,2 (<0,1)	0,2 (0,3)	0	0	0,1 (0,1)
Suicide	0	0	0	0,6 (1,7)	3,4 (3,2)
Homicide	2,8 (0,1)	0,8 (1,0)	0,7 (2,1)	3,4 (9,6)	42,2 (39,7)
Undefined intention	4,6 (0,3)	1,4 (1,8)	0,8 (2,5)	1,1 (3,1)	5,4 (5,0)
Total	1823,6 (100)	77,6 (100)	32,6 (100)	35,6 (100)	106,4 (100)

a mere 10 original articles,[6-15] nine review articles,[16-24] one case report[25] and four editorials.[26-29] In relation to a total of 1,230 papers published during the same period, 24 items represent less than 2% — not enough, if one takes into consideration the great relevance of injuries due to external causes in the pediatric population.

A search of the online archives of another journal, *Injury Prevention*, the most important scientific publication in this field of study, confirms the insignificant contribution of Brazilians: Two original articles published in 10 years.[30] And this cannot be attributed to a difficulty of publishing in English or in a first-world journal, since a search of the Latin American databases SciELO and LILACS (using the key words children, injury and accident) revealed only 13 Brazilian articles in the past 2 years. In addition, not one intervention assessment article was available: all were editorials, review articles or descriptive studies.[30]

The establishment in Brazil of a National Policy to Reduce the Morbidity and Mortality Resulting from Injuries and Violence, in 2001, which was the result of a deep debate among the most knowledgeable Brazilian academic authorities in the field of injury control, includes – within a broad spectrum of preventive actions in the primary to tertiary levels – the training of human resources through the support to research development.[31] It is expected that effective institutional support and the engagement of investigators will be sufficient to change the sad scenario of research in this field, which is so relevant to the health of children and adolescents.

In this sense, it will be interesting to observe the impact on the readers of Jornal de Pediatria – mostly general pediatricians – of this first thematic issue dedicated entirely to injuries due to external causes. This is important because the path to be followed by scientific publications is set, among other factors, on the response of readers. The main objective of this supplement is to strengthen the exchange concerning the very current topic of external causes of morbidity and mortality, and also to provide subsidies that may support the development of scientific research and facilitate the daily practice of pediatricians.

The 12 review articles featured herein, written by renowned authors, focus mostly on safety, considering the continuum from highly protected to highly vulnerable places as well as social and cultural aspects: the home, the school, the street, and the environment. The more generic and broad scope texts, dealing with contextual pediatrics and safe communities, provide a solid theoretical framework to support other more specific essays, which contribute to the reflection concerning the practice of professionals. Since this is a multifaceted field, encompassing many distinct views, we were not excessively concerned with harmonizing the language of the authors in terms of style or terminology. By respecting diversity we created a rich tapestry, leaving it to the reader to filter what best suits him or her.

The article on injury control and contextual pediatrics offers a wide range of options in terms of how to approach, start and plan individual or collective projects, taking into consideration, among others, family habits, cultural norms and the surrounding environment.[32] The text includes a comprehensive literature review and presents "trigger-questions" to facilitate the work of pediatricians. It also presents the Haddon matrix applied to the hot topic of gun violence in schools, suggesting step-by-step measures that should be considered depending on the capabilities of each institution. In addition, it offers a systematized representation of the main facts interfering with physical injuries, which should be at the core of all initiatives to promote safety, both individually and collectively. Ultimately, this article enhances the discussion concerning the factors that influence the genesis of injuries.

The second conceptual article, which discusses the safe community, provides a critical analysis concerning the restricted qualitative production in the field.[33] However, it highlights the theme as a World Health Organization (WHO) policy and emphasizes the importance of working with a broad view of intentional and non-intentional injuries. This article also introduces the basis for the safe community project: Organization of the community (broadest possible involvement with the community), knowledge of epidemiology, information, planned interventions and actions integrated to the development of social and political processes, and evaluation. Considering this approach, the pediatrician, frequently placed in the role of manager, must have an enlarged vision that allows the development of participative actions.

The safe home is another highlight of this supplement.[34] This is an important strategy and must be associated with the daily work of the pediatrician, who must always include, as part of the clinical interview, questions about how the home is and who takes care of it, and information about the risks that are typical of each developmental stage. According to Fred Rivara, preventive actions concerning the home must be focused on potentially traumatic events and age groups, to a certain extent opposing the notion of "child-proof home".[35] There is really no evidence for or against this type of intervention. For now, recognized measures, including the guidance of parents to see their home from the point of view of the child, making a list and correcting risk situations, continue to be recommended, until more consistent evidence provides more definitive answers.

Urban violence has multiple causes; it is closely related to social and cultural aspects and forms a complex network that needs to be unraveled by academic studies developed together with the organized society.[36,37] This theme has as its main objective the construction of a more fraternal society, one that is more inclusive, and to decrease social apartheid. Children and adolescents are particularly vulnerable. Thus, identifying the context in which one is working will help pediatricians provide more integral care, facilitating and organizing his or her practice at various levels, including prevention, early diagnosis, treatment of victims and their families, and, if possible, development of community actions.

The home is the most frequent place of violence, especially sexual abuse. This is a great challenge for pediatricians.[38] This is why the present supplement has two articles on this delicate issue. Most cases of violence, including sexual violence, take place in the domestic environment: The intrafamilial violence. In Brazil, it is estimated that 20% of the children and adolescents are victims of violence. In these cases, the pediatrician must work with a multiprofessional team, preferably using an interdisciplinary approach. However, when this is not possible, the pediatrician must be capable of performing the functions of sheltering, treating, accompanying and taking legal action. It is usually difficult to deal with child protection agencies, and there frequently isn't enough infrastructure to meet the demand and the complexity of cases. It is nevertheless essential that we keep insisting, so that the child protection services can improve; we should lobby with public organisms in favor of better work conditions and investments in the training of officials. When providing care to a family that experiences one or more cases of violence, it is important, most of all, to provide shelter without judgment, so that the family and the child can be helped.

The articles concerning the school environment deal with the safe school and bullying.[39,40] Aggressive behavior among students, including the use of nicknames, often seen as normal by teachers and even pediatricians, may lead to severe consequences for the self-esteem of those who are the targets of such violence. Often involved with physical aggression, including with fire guns, those who practice bullying should also be a reason for concern. Their self-esteem may also be low, so that they try to raise by being noticed. The WHO Health-Promoting School Program works with this and other issues from a broad perspective, whereas the Centers for Disease Control and Prevention provide guidance concerning the necessary steps for the development of a safe school. The school is a new field of work for the pediatrician, be it inside its walls, with actions focused on assistance, prevention and promotion of health, be it by organizing discussion groups and training teachers, always with the objective of implementing health-promoting schools.

Of course we couldn't forget traffic safety: The article focuses on children and adolescents as pedestrians, cyclists and passengers.[41] It emphasizes safety norms related to the pedestrian child, discussing why school boys are hit more frequently. The article also presents a detailed table describing the guidelines for adequate transportation in vehicles according to age and weight, and provides relevant comments about airbags. In this sense, the work with safe schools and communities is fundamental for the implementation of policies that can promote the development of healthy behaviors.

The discussion about chemical risks, either related to the environment or to acute ingestion of toxic substances, reflects the worldwide concern with the growing number of substances that make children more vulnerable because of their physiological characteristics, increased exposure, and need of protection with the aim of preventing contact with potential poisons.[42,43] Adolescents deserve special attention in the case of drug poisoning, and intentional use should be ruled out. Environmental chemical risks must be evaluated in the clinical context; but the pediatrician should be attentive and take part in actions to protect the environment, since this will ultimately result in the defense of children.

The article on the evaluation and transportation of traumatized children features a current review of procedures that can be followed.[44] It describes the pre-hospital and in-hospital care step-by-step, as well as the many possibilities for transportation. As the Brazilian Department of Health works to implement the Emergency Transport Service (SAMU), the article underscores the need to train professionals and provide continued training for teams of pediatricians who would be a reference for more complex cases.

Before this wealth of information, the pediatrician is evidently pressured to cover, within a health visit, the child's growth and development, immunizations, eating habits and injury prevention, while keeping a sharp perception of family ties, self-esteem and feelings of belonging. No doubt this is a tremendous challenge, which would certainly require a longer office visit. However, the first step is always to know the true importance of this new type of consultation. Aspects of organization, such as the use of checklists of preventive actions, may help. In addition, the time during the physical examination can be used to investigate ties. Another strategy that should deserve more attention is the use of the waiting room. In the waiting room, the adult accompanying the child can fill out questionnaires and other such instruments. This information facilitates the beginning of a conversation and the guidance during office visits. Therefore, the work of pediatricians is encompassing and full of possibilities. Pediatricians may engage in action in the office, outpatient clinics and schools, participate in community and educational campaigns and undertake a central role in the planning of preventive actions and health-promoting measures.

Thus, with this first thematic issue totally devoted to injuries due to external causes, Jornal de Pediatria wants to help pediatricians value preventive practices that have already been or need to be adopted, and also provide evidence-based subsidies to broaden or revise such practices. The present times, in which we are increasingly exposed to risk, requires great efforts toward the creation of an information network and the construction of knowledge about safety, a field that is still insufficiently studied.

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