

# Relation between Prevention to Trauma and Family Income on Infant Population of Curitiba, Brazil

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## ABSTRACT

**Background:** Trauma prevention made in the childhood presents great effectiveness for it is in this age that habits and values of safety and citizenship are created. This research intends to analyze which preventive measures are more frequently adopted by the parents of 0 to 12-year-old children and find the relation between prevention and family income.

**Study design:** For data collection we handed questionnaires to the parents of children studying in public and private schools in Curitiba-PR, Brasil. The information obtained was analyzed by the programs Epi Info<sup>®</sup> and Excel<sup>®</sup>.

**Results:** A total of 609 questionnaires were analyzed 291 children (47.8%) were female and 318 (52.2%) were male. From the total, 604 (99.2%) declared to take at least one preventive measure. The most common measures were: 'leaving the handle of the pan inward the stove' with 562 (92.28%), 'wearing seat belt' with 560 (91.95%) and 'leaving medicines and chemical products out of reach' with 541 (88.83%). The parents marked on the questionnaires which measures they adopted with their children out of a list with eight examples. Families with the income of 1 minimum wage (MW) had an average of 2.92 marked options; with the income of 1 to 3 MWs an average of 3.6; 3 to 6 MWs an average of 4.73; 6 to 10 MWs average of 4.91 and above 10 MWs average of 5.31.

**Discussion:** Even though most of the families used at least one kind of preventive measure with their children, the family income has marked influence on the amount and type of adopted measures.

**Keywords:** Trauma prevention, Seat belt, Family income.

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## RESUMO

**Introdução:** A prevenção ao trauma feita na idade infantil apresenta grande efetividade pois é nessa idade em que se formam hábitos e valores de segurança e cidadania. Esta pesquisa tem como objetivo analisar quais as medidas preventivas mais adotadas pelos pais de crianças de 0 a 12 anos e se existe uma relação da prevenção com renda familiar.

**Métodos:** Para a obtenção dos dados foram entregues questionários aos pais de alunos de escolas públicas e particulares de Curitiba-PR, Brasil. As informações obtidas foram analisadas pelos programas Epi Info<sup>®</sup> e Excel<sup>®</sup>.

**Resultados:** Analisamos um total de 609 questionários onde 291(47.8%) eram do sexo feminino e 318 (52.2%) eram

do sexo masculino. Do total, 604 (99.2%) afirmaram tomar alguma medida de prevenção sendo que as mais utilizadas foram: 'Deixar o cabo da panela para dentro do fogão' com 562 (92.28%), 'uso do cinto de segurança' com 560 (91.95%) e 'deixar remédios e produtos químicos fora do alcance' com 541 (88.83%). Os pais escolheram quais medidas preventivas adotam com seus filhos em uma lista com 8 exemplos. Famílias com renda de até 1 salário mínimo (SM) tiveram uma média de 2.92 opções assinaladas; de 1 a 3 SM uma média de 3.6; de 3 a 6 SM média 4.73; de 6 a 10 SM média 4.91; e acima de 10SM média 5.31.

**Discussão:** Foi observado que embora a maioria das famílias utilizaram algum tipo de prevenção com seus filhos a renda familiar exerce uma influência na quantidade e tipo de medidas preventivas adotadas.

**Palavras-chave:** Prevenção de trauma, Cinto de segurança, A renda familiar.

## INTRODUCTION

According to the system of information about mortality in Brazil, the third leading cause of deaths in the country are the external causes, they are responsible for 14.5% of the total deaths. This data exacerbates even more on the infant population because on the children of 5 to 14 years the external accidents are the main cause of death on both gender. To measure the dimension of the problem, according to Datasus there were 141.227 deaths of children and teenagers caused by external causes on the year of 2010.<sup>1</sup>

These data become even more aggravated due to the susceptibility of children to accidents; their incomplete development and their incapacity to evaluate risks.<sup>2</sup> It should not be disregarded the fact that trauma, especially in children, represents an important loss of money to the nation because of the expensiveness of procedures, hospitalization and above all the loss of potential life years.<sup>3</sup>

Accidents on childhood can be predictable and preventable; therefore, they can be avoided by simple measures. In this way, through an epidemiological analysis, it is possible to reach some important conclusions about the most correct way of preventing against pediatric trauma and about the capability that the health professional must have when responsible to assist these cases.

Every prevention method has a cost, and when compared it is observed great discrepancy of costs and values. The criterion used at public measures is: Give priority to prevent traumas that will be more onerous to the state. However, it is still not known which are the criteria adopted by the

families and what is the influence that familiar income have on this choice.<sup>4</sup>

There is a lack of research on the area of preventing at a familiar ambit. Therefore, this research intends to analyze which preventive measures are more frequently adopted by the parents of 0 to 12-year-old children and find the relation between prevention and family income.

## METHODS

For obtaining the data a questionnaire compound of two parts was made: The first part contains eight examples of prevention measures; the responsible for the child could mark more than one option or 'none of the alternatives'. The examples used were: 'Wall socket protector', 'keeping medicines and chemical substances out of reach', 'keeping the pan cable toward the inside of the stove', 'wearing knee protector, helmets or others when practicing sports', 'use of specific seat in the car, according to weight and height', 'wearing seat belt', 'use of protection net on the windows', 'protection grid on the bed or cradle'.

On the second part of the questionnaire information about familiar income, estimated by minimum wage (MW), was asked to the parents.

The questionnaires were given to students from 0 to 12 years old that studied at private and public schools on the region of Portão, Curitiba-PR, Brasil. The students took their questionnaires home to be filled by their parents and the family had a period of 1 week to fill and return them.

The population was divided in 5 groups according to the familiar income. An average of the quantity of measures adopted at each group was made, so that the maximum of measures adopted could be 8 and the minimum 0.

The information obtained was analyzed by the computer programs: Epi Info<sup>®</sup> and Excel<sup>®</sup>.

## RESULTS

A total of 609 questionnaires were analyzed, 291 (47.8%) corresponded to the female sex and 318 (52.2%) to the male sex. From the total amount, 604 (99.2%) affirmed taking at least one preventive measure. As shown at Figure 1 the most commonly used measures were: 'Keeping the pan cable toward the inside of the stove' with 562 markings (92.28%), 'wearing seat belt' with 560 markings (91.95%) and 'keeping medicines and chemical substances out of reach' with 541 markings (88.83%).

As shown at Figure 2, the biggest group was the one that made 3 to 6 MWs corresponding to 172 families (28.2%). Only 24 families (4%) made up to 1 MW.

The percentage of preventions adopted according to the familiar income is shown at Figure 3. The group with 3 to 6

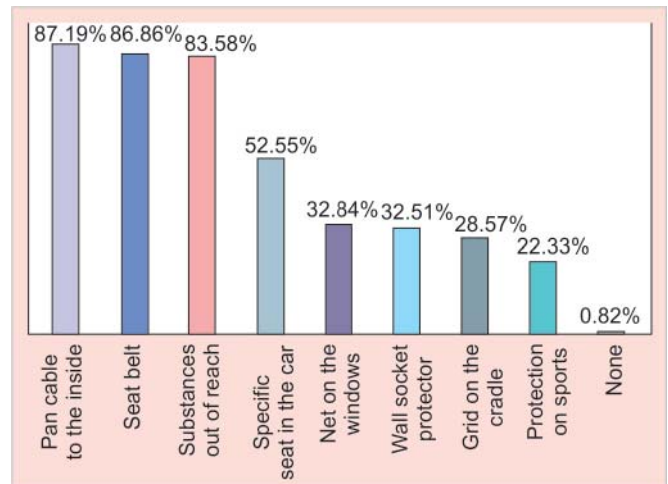


Fig. 1: Percentage of preventive measures adopted by the whole population

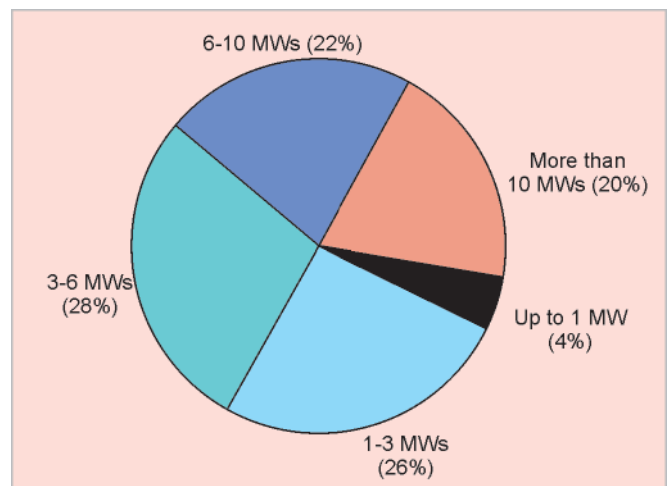


Fig. 2: Distribution of the population by family income

MWs had a slightly different tendency from the total group average. It had a result of 'wearing seat belt' as the most adopted measure with 165 (95.93%) followed by 'chemic substances out of reach' and 'keeping the pan cable towards the inside of the stove' with 161 (93.6%) and 159 (92.4%) respectively.

With the possibility to mark 8 options of preventive measures, families with income higher than 10 MWs marked an average of 5.31 options, whereas the families with up to 1 MW marked 2.92 options as illustrated on Figure 4.

## DISCUSSION

The World Health Organization (WHO) defines accident as a casual event that does not depend on human will and that is caused by an external factor causing physical and mental damage. This definition classifies trauma as an uncontrollable entity.

Even though being a casualty, when their causes, prevention methods and context are known and studied,

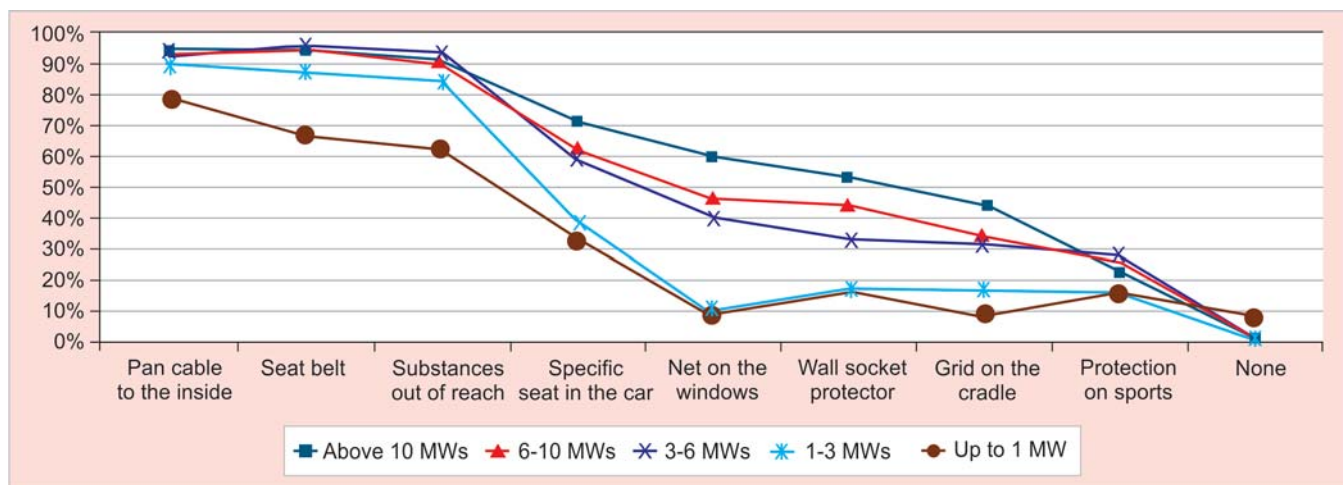


Fig. 3: Percentage of measures adopted according to family income

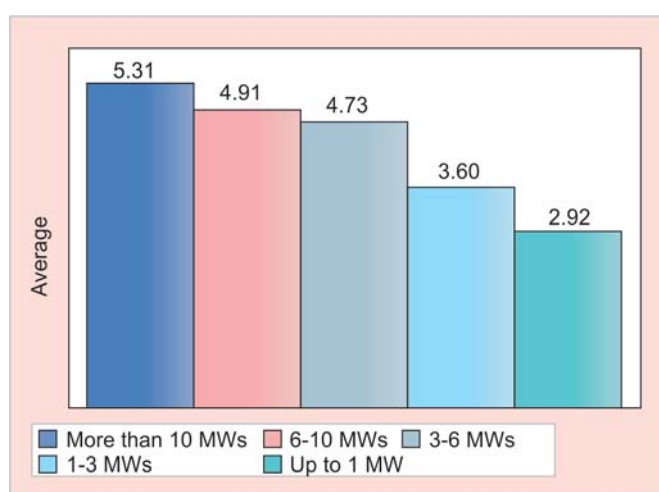


Fig. 4: Average of the amount of preventions adopted according to family income

accidents can be reduced and avoided. According to Waksman et al: ‘An adequate prevision will allow an efficient prevention, and for that, the knowledge of the risk factors is the basic step’.<sup>5</sup> There are some other factors that may help the comprehension of children accidents, but they are scarce at literature. Socioeconomic factor is one of them. Savelyich, Boki et al, showed that morbidity and mortality of accidents rise at socioeconomic deprived populations. Many are the explanations for this, but the lack of prevention on these groups is maybe the most important one.

Like at Waksman’s research article,<sup>5</sup> when the item ‘protection grid on the bed or cradle’ is analyzed and compared by the different socioeconomic classes, it can be seen that prevention rises along with the family income (Fig. 3). At Figure 3, it is observed that the prevention percentage disparity is big when comparing different socioeconomic classes. At the most common and ordinary items like: ‘keeping the pan cable toward the inside of the stove’, ‘wearing seat belt’ and ‘keeping chemical substances out of reach’ the disparity between classes is low, however,

at less adopted prevention methods this difference rises, suggesting that the socioeconomic influence varies in accordance with the type of prevention.

At a similar population, from a more economically developed country, 66% of the parents claimed that their children wear helmets when riding a bicycle and 59% of the children wear safety equipments when practicing sports.<sup>6</sup> Comparing these facts with the population from Curitiba, the option ‘wearing knee protector, helmets or others when practicing sports’ was marked at 22.33% of the questionnaires as shown at Figure 1.

At this research, the number of preventions adopted decreases along with the family income (Fig. 4). Souza and Barroso, cited by Vieira et al,<sup>7</sup> studied families of poisoned children. They detected that the socioeconomic deprivation contributed as a facilitator of these cases. These data become even more worrying at a country like Brasil where 60.7% of the population live at residencies where the family income per capita is less than 1 MW.<sup>8</sup>

The item ‘keeping the pan cable toward the inside of the stove’ was the most marked one at this research (Fig. 1), following the same tendency of the NGO Safe Kids research where the worst worry mothers have relating to children accidents are burns and the prevention most adopted by them to prevent that was keeping the cable of the pan toward the inside of the stove.<sup>9</sup>

It was observed that there is great relation between family income and trauma prevention. Even though the majority of the families used at least one method of prevention, there is an influence of the familiar income on the amount of measures adopted. It is observed that the lower the income, less preventive measures are adopted (Fig. 4). This shows that families are preventing, however, the amount is not enough when we compare the population by family income and analyze the poorest groups. Priority on stimulating prevention to trauma on these population should be given intending to reduce mortality rates and onerous costs to the state.

There is still great scarcity of researches that relate infant trauma with familiar income. Even though it is evident that the amount of preventions adopted rises along with the familiar income (Fig. 4) a monitoring research along the years is necessary to know, if the public awareness campaigns are being effective, if the approaches are correct and if the population, even the socioeconomic deprived ones, are being properly oriented about preventive measures to infant trauma.

## REFERENCES

1. Brasil. Datasus. Óbitos por causas externas - Dados preliminares Brasil: . Available at: <<http://tabnet.datasus.gov.br/cgi/tabcgi.exe?sim/cnv/pext10uf.def>>. Accessed at: 20 Sept 2011.
2. Linhares, Jds. Características epidemiológicas do atendimento pré-hospitalar das vítimas menores de 15 anos de acidentes de transportes terrestres em Maringá. 169 f. Thesis - Uel, Londrina, 2004.
3. Lima, Regina P de, et al. Perfil de famílias de crianças acidentadas no contexto domiciliar. Available at: <<http://www.objnursing.uff.br/index.php/nursing>>. Accessed at: 22 Sept 2011
4. Violências, Grupo Técnico de Prevenção de Acidentes e, et al. O impacto dos acidentes e violências nos gastos da saúde. Revista Saúde Pública, São Paulo 2006;3(40):553-56. Available at: <<http://www.scielo.br/pdf/rsp/v40n3/28.pdf>>. Accessed at: 15 Aug. 2011.
5. Waksman, Dejtiar R, Schvartsman, Samuel, Filho D, Ulysses. Educação Para Prevenção de Acidentes e identificação dos Fatores de Risco na Ambiente Domiciliar.: 1 - Primeiro ano de vida. Pediatría: (São Paulo), São Paulo 1987;93(4):117-23. Quarterly. Available at: <http://www.pediatrasiapaulo.usp.br/upload/pdf/1002.pdf>>. Accessed at: 25 Sept 2011.
6. Safe Kids USA (USA). Report to the Nation: Trends in Unintentional Childhood Injury Mortality and Parental Views on Child Safety. Available at: <<http://sk.convio.net/site/DocServer/STUDY-SKWK-08LRApril26.pdf?docID=9561>>. Accessed at: 25 Sept 2011.
7. Vieira, de Souza LJE, et al. Repercussões no contexto familiar de injúrias não-intencionais em crianças. Acta Scientiarum.: Health Science, Maringá, 2007;29(2):151-58. Semiannual. Available at: <http://periodicos.uem.br/ojs/index.php/ActaSciHealthSci/article/viewFile/1087/540> >. Accessed at: 25 Sept 2011.
8. Available at: <http://www.censo2010.ibge.gov.br>. Accessed at: 30 Sept 2011.
9. Criança Segura Brasil (Brasil). Acidentes com crianças: percepção e comportamento das mães brasileiras. Available at: <<http://www.criancasegura.com.br/percepcaodemaesbrasileiras.pdf>>. Accessed at: 28 Sept 2011.

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