

The interrelation of consumer accidents and health assistance: integrative review

A inter-relação do acidente de consumo e assistência à saúde: revisão integrativa

La interrelación de los accidentes del consumidor y la asistencia a la salud: revisión integradora

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REVISIA

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RESUMO

Objetivo: Analisar a produção científica acerca da inter-relação entre consumidor, produto e assistência à saúde. **Método:** Trata-se de uma Revisão Integrativa da Literatura realizada nas bibliotecas e bases de dados: BVS, PubMed, Scielo e Portal de Periódicos CAPES. Foram arrolados dez estudos após a aplicação dos descritores não controlados: “consumidor/ consumer”, “acidente / accident” combinados pelo operador booleano “AND” e dos respectivos critérios de inclusão e exclusão. **Resultados:** A análise dos estudos selecionados possibilitou que três categorias emergissem: Principais fatores que levam a ocorrência de acidentes de consumo; Métodos de prevenção dos acidentes de consumo; e, O papel da equipe de saúde na prevenção dos acidentes de consumo. **Conclusão:** Nesse viés, compreende-se a importância da articulação para estratégias de prevenção de acidentes de consumo, sobretudo, no que se refere ao promissor papel da equipe de saúde neste âmbito, no que tange à educação para prevenção e avaliações para aperfeiçoamento dos produtos.

Descritores: Assistência à Saúde, Equipe de Assistência ao Paciente, Defesa do consumidor, Perigos à Saúde por Substâncias, Produtos e Materiais.

ABSTRACT

Objective: to analyze the scientific production on the interrelationship between consumer, product and health. **Method:** this is an Integrative Literature Review carried out in the libraries and databases: VHL, PubMed, Scielo and Portal do Jornal CAPES. Two studies were found after application of two uncontrolled descriptors: “consumidor/ consumer”, “accidente/accident” combined with the recommended Boolean operator “AND” and two respective inclusion and exclusion criteria. **Results:** When analyzing two selected studies, it is possible that three categories may arise: Main factors that lead to the occurrence of consumption accidents, Methods for the prevention of two consumption accidents, Or the role of the health team in the prevention of two consumption accidents. **Conclusion:** In this regard, it is understood the importance of articulation for consumer accident prevention strategies, especially not referring to the promising role of the health team in this area, not involving prevention education and evaluations for the improvement of two products.

Descriptors: Delivery of Health Care, Patient Care Team, Consumer Advocacy, Health Danger Provoked by Substances, Products and Materials.

RESUMEN

Objetivo: Analizar la producción científica sobre la interrelación entre consumidor, producto y cuidado a la salud. **Método:** Se trata de una Revisión Integrativa de Literatura realizada en las bibliotecas y bases de datos: BVS, PubMed, Scielo y Portal de Periódicos CAPES. Fueron registrados diez estudios tras la aplicación de los descriptores no controlados: “consumidor/ consumer”, “accidente / accident”, combinados por el operador booleano recomendado “AND” y los respectivos criterios de inclusión y exclusión. **Resultados:** El análisis de los estudios seleccionados permitió emerger tres categorías: Principales factores que conducen a la ocurrencia de accidentes de consumo, Métodos de prevención de accidentes de consumo, El papel del equipo de salud en la prevención de accidentes de consumo. **Conclusión:** En este contexto, se comprende la importancia de la articulación para las estrategias de prevención de accidentes del consumo, especialmente en lo que respecta al rol promotor del equipo de salud en esta área, en lo que corresponda a la educación para la prevención y las evaluaciones para mejorar los productos.

Descritores: Prestación de Atención de Salud, Grupo de Atención al Paciente, Defensa del Consumidor, Peligros en la Salud por Sustancias, Productos y Materiales.

Introduction

Law No. 8,078, created in 1990, provides for consumer protection and rights, conceptualizing them as any natural or legal person who, in a consumer relationship, purchases or uses a certain service or product, defined as any good, movable or immovable and material or immaterial. Therefore, the National Consumer Relations Policy provides for the guarantee of these goods through adequate standards of quality, safety, durability and performance, determining that they should not pose risks to health or safety to consumers, except those recognized as harmful or dangerous.¹

Thus, consumer product is defined as the set of attributes that have the objective of providing satisfaction or benefits to the potential consumer.² However, even with notable advantages, the use of such products, commonly, translates into possible accidents or incidents that can bring consequences that pass between frustrations, lawsuits, material damages, injuries and deaths.³⁻⁴

This is due to the fact that consumer products have reached a level of complexity and difficulty not assimilated by their users.⁵ Furthermore, when designing goods that require greater security, only the use of strong and durable raw materials does not guarantee the integrity and user safety, requiring security systems that work properly.⁶

Furthermore, when an injury caused to the consumer results in an accident, be it from the service provided or the product provided, it is called a consumption accident, even if the individual has used or handled it according to the instructions for use.⁷

In Brazil, the National Institute of Metrology, Standardization and Industrial Quality (Inmetro) has been monitoring cases of consumer accidents since 2006. Initially, through the Consumer Accident Database and, from 2013, using the Inmetro System Consumer Accident Monitoring System (SINMAC). This system is open to the entire population and considers notifications of accidents and incidents that occurred in any environment, caused by insecurity of products and services or even the misuse of the consumer. Inmetro also makes public the statistics and reports of such events registered.⁷

Thus, based on the analysis carried out by Inmetro, it is possible to state that consumption accidents occur mostly in the Southeast of the country, mainly in the State of São Paulo. With regard to the age group, between 2006 and 2018, it is noted that the main age range with injured individuals was 31 to 40 years, although in 2019 there was a change, whose main age range was 0 to 3 years old.⁷

As for the level of education, between 2006 and 2015, accidents basically affected individuals with complete higher education. In the years 2016 and 2017, it is observed that the main level of education attained happens to be people with incomplete higher education. In 2019, the change was significant, of which the main population affected is the uneducated, that is, consumption accidents reached children and the notification was made by their parents or guardians.⁷

Regarding injuries resulting from accidents, it is possible to observe the predominance of burns and cuts in all surveys performed. As for the causative products, stoves, domestic stairs and toys are unanimous.⁷

The records made at SINMAC help the institute to identify products and services that pose more risks to the health and safety of the consumer. Thus, it allows the execution of actions, promoted by public entities, consumer protection

agencies and industries, with the objective of reducing the incidence of such accidents, in addition to alerting the population and different professional segments. Interventions arising from the perception of health problems may include the development of technical regulations, conformity assessment programs and educational actions with the population. And yet, estimate the impact of these events on the country's productivity and expenses on the National Health System.⁷

In the United States of America (USA), in 2012 alone, there were about 36 million consumer accidents, among which 35 thousand were fatal and represented expenses of around trillions of dollars for the country. Meanwhile, around 35 billion euros are spent in the UK each year on the same type of occasion. In Brazil, publications on the subject are still incipient, however, of the total recorded in 2019, 23% of the occasions requested medical care and 8% demanded a withdrawal from work activities, which may have important repercussions on the country's economy.⁷

Therefore, the present study aims to analyze the scientific production carried out so far on the interrelationship between consumers, products and health care.

Method

It is an integrative review, that is, it consists of the analysis of relevant research from secondary sources through a bibliographic survey that gathers knowledge about the phenomenon to be investigated.⁸ It constitutes a research technique with methodological, judicious and conscientious rigor that increases the credibility and depth of conclusions that can contribute to reflection on future studies. Thus, it also contributes to decision making that seeks to improve the recent evidence.⁸

In the present study, we chose to search databases with wide scientific dissemination in the national and international environment, using the Virtual Health Library (VHL), the United State National Library of Medicine (PubMed), Scientific Electronic Library Online (SciELO) and the CAPES Periodicals portal for greater reach with respect to publications at the national level.

In the digital search of scientific articles indexed in the cited databases, the following uncontrolled descriptors were used: "consumer" (consumer), "accident" (accident), combined by the Boolean operator "AND" as explained in Chart 1.

Chart 1 - Database search strategy (n = 2987). Brazil, 2020.

Database	Search Strategy	Results	Filtered	Selected	Repetition
BVS (DECS)	tw: (consumidor AND acidente) AND (year_cluster:[1974 TO 2020])	544	1	0	1
SciELO (DECS)	Consumer and accident	7	2	0	0
PubMed (Mesh)	Consumer and accident	1520	65	9	0

CAPES Journal Portal	Consumidor and acidente	916	5	1	1
Total	-	2987	73	10	2

Data collection was carried out in March 2020. The language (texts published in Portuguese and English), publication period (from 1974 to 2020) and its full availability (as published in Portuguese and English) were applied as filters within the databases. available in full). After selecting titles and abstracts, studies were included that responded and met the research objective and literature reviews, dissertations and theses were excluded.

After reading the articles in full, the final sample of studies was selected, in addition to extracting the information for the composition of the synoptic table, and the articles were then presented using the following variables: title, authors, basic training of researchers, year of publication, publication journal, method, database, conclusion and level of evidence according to the Grade Method.⁹ The studies were further categorized and presented by central themes: main factors that lead to the occurrence of consumer accidents; methods of preventing consumer accidents; and, the role of the health team in preventing consumption accidents.

Results

When associating the descriptors, 544 texts were found in the VHL, 1520 in PubMed, 7 in Scielo and 916 in the Portal de Periódicos Capes. At first, these studies were analyzed for title and summary, with ten studies from PubMed, one from the journal portal Capes and two from Scielo being evaluated. In the comparison of the results found in the searches between the databases, of the total of thirteen, none was repeated, thus leaving thirteen publications selected for full reading of the texts. And later, when analyzed as to its content in its entirety, ten studies were included, 9 from PubMed and 1 from the Capes Journal Portal, and are presented in the table below.

Chart 2 shows a predominance of international studies, mostly in PubMed (n = 9). With the publication period between 1974 and 2020.

Chart 2- Order, title, year of publication, publication periodical and database (n = 10). Brazil, 2020.

N	Title	Year	Journal	Database
I	<i>Consumer Input for Child Safety Programs</i>	1974	<i>The Journal of School Health</i>	PubMed
II	<i>Playground Safety</i>	1992	<i>Journal of Pediatric Health Care</i>	PubMed
III	<i>A randomized trial of an intervention to prevent lawnmower injuries in children</i>	1998	<i>Patient Education and Counseling</i>	PubMed
IV	<i>Unintentional Strangulation in Children: A Professional Approach to the Problem</i>	2001	<i>International Journal of Trauma Nursing</i>	PubMed

V	<i>Child Passenger Protection: Then and Now</i>	2002	<i>Journal of Emergency Nursing</i>	PubMed
VI	<i>Danger in the Toy Box</i>	2005	<i>Journal of Pediatric Health Care</i>	PubMed
VII	<i>Pediatric Injuries Related to Window Blinds, Shades, and Cords</i>	2017	<i>Pediatrics</i>	PubMed
VIII	<i>Acidentes Domésticos infantis: Percepção e Ações dos Profissionais de Saúde da Urgência e Emergência</i>	2017	<i>Serviço Social e Saúde</i>	CAPES
IX	<i>Study of Child-resistant Packaging Technologies to Prevent Children from Accidental Ingestion of Drugs in Japan</i>	2018	<i>Yakugaku Zasshi</i>	PubMed
X	<i>Korean Consumers Recognition of Risks Depending on the Provision of Safety Information for Chemical Products</i>	2020	<i>International Journal of Environmental Research and Public Health</i>	PubMed

Chart 3 shows a list of the authors of the articles covered and their basic education, with a predominance of nursing education (n = 6).

Chart 3- List of authors and their respective background (n = 10). Brazil, 2020.

N	Authors	Basic Education
I	MARTIN, G; HEIMSTRA, N.	Medicine and Psychology.
II	SWARTZZ, M.	
III	MAYER, J; ANDERSON, C; GABRIEL, K; SOWEID, R.	Nursing.
IV	DREW, C.	Nursing and Medicine.
V	KUSKA, T.	Nursing.
VI	STEPHENSON, M.	Nursing.
VII	ONDERS, B; KIM, E; CHOUNTHIRATH, T; HODGES, N; SMITH, G.	Medicine, Law and Mathematics.
VIII	AMARAL, A; PASCON, D; COSTA, J.	Social Work, Nursing and Medicine.
IX	MIZOGUCHI, M; MIURA G; OJIMAC F.	Pharmacy.
X	KWON, S; YOO, H; SONG, E.	Public administration.

Chart 4 shows the predominance of articles with the methodological design of opinion polls (n = 5) with a low level of evidence (n = 8), according to the Grade Method and the study's contributions to the theme that has elapsed.

Quadro 4 - Método, nível de evidência segundo o Método Grade e síntese do artigo (n=10). Brasil, 2020.

N	Method	Evidence Level	Study contributions
I	Opinion article	Very low	It brings the need to consider consumer participation in the planning of child safety programs.
II	Opinion article	Very low	Indicates safe practices for the installation and maintenance of children's playgrounds, taking into account, location, materials, surface, general hazards and periodic inspection.
III	Randomized Clinical Trial	High	It proves the effectiveness of educational intervention in a clinical setting, in relation to safe behaviors associated with consumer products.
IV	Opinion article	Very low	After evaluating the product and the accident, flaws were found, from the use of labels to the modification of the product by the consumer. In addition, trauma professionals should actively educate consumers and other professionals in order to reduce the occurrence of accidents.
V	Opinion article	Very low	It reports the modifications that were necessary in the product to make it safer after the perception of various accident notifications over the years.
VI	Opinion article	Very low	It mentions a series of safe behaviors that must be adopted by parents or guardians when dealing with the purchase, maintenance and supervision of children's toys.
VII	Prospective analytical documental study	Moderate	Mandatory safety rules must be developed to reduce cases of accidents related to window cables.
VII I	Crossectional and analytical study	Low	It shows that professionals provide assistance to domestic accidents seeking to minimize risks and injuries. However, it has some deficits.
IX	Crossectional and analytical study	Low	When designing measures that make products safer, the development characteristics of the population in question must be considered.
X	Crossectional and analytical study	Low	It states that the provision of information to consumers and their education positively affects their risk management related to products.

Discussion

Main factors that lead to the occurrence of consume accidents

The main consumption accidents reported in the studies were: unintentional strangulation with the use of armbands, injuries caused by the lawn mower, accidents caused by the child carrier, injuries related to curtains, cables and blinds, accidents associated with children's toys and accidental ingestion drugs. These occurred in Boston, St. Louis, Palos Heights, Columbus and Dallas, cities belonging to the United States of America (USA) and one in Japan.¹⁰⁻¹⁵

Studies in Palos Heights and Boston point to the influence of warnings and instructions present on the product as causing accidents. The investigation in the city of Illinois discusses positive changes in the occurrences of death and accidents related to child transport seats after the adoption of some methods on the labels, such as: use of the English language in a simple way; increasing the number of warning labels; and, choice of visible places for the positioning of these.¹² Meanwhile, the Massachusetts city survey reports that it provided care for a child who had been strangled by an armband and, after checking by the team, had no warnings about the dangers related to the product.¹¹

On the other hand, the research carried out in St. Louis conducted an interview prior to the intervention, in which it was found that parents did not follow the recommendations on the product's warning label, in which it was recommended not to use the product near children and clean the yard before starting the mowing process. Finally, these were considered the main factors related to the occurrence of accidents with lawn mowers.¹⁰ In this context, the study in Dallas concluded that part of the accidents related to toys were caused by parents or guardians who ignored the recommendations on the product label.¹³

Regarding the design of materials as a factor for the occurrence of accidents, according to a study carried out in Japan¹⁵, there was a one-eighth reduction in accidental drug intake by children after changes in the packaging of medicines and the introduction of child-resistant packaging. Research by Palos Heights demonstrates that child carrier seats have undergone various adaptations not only in their design, but also in fitting to cars, in order to reduce the number of complications related to the product and make them safer for consumers.¹²

Among other factors, we can also mention the change in the originality of the product on the part of consumers,¹⁴ the lack of supervision by child users¹⁶ and parents / guardians overestimate the children's ability regarding use.¹³

In addition to these, it is important to highlight the recognized influence of social determinants of health on the occurrence of accidents, since even accidents occurring without distinction of social class, the social and economic aspects of vulnerability translate into deficiency in access to information, lack of adequate infrastructure, scarcity of leisure environments and lack of quality education and public policies aimed at accident prevention.¹⁶

Consumer accident prevention methods

From the search for publications, it is possible to affirm that preventive behavior should be reinforced in childhood¹⁶ studies confirm that children are

victims of accidents more often¹⁰⁻¹⁸ and the damage caused can impair child development. According to the non-governmental organization (NGO) Safe Kids Worldwide, 90% of injuries resulting from accidents can be avoided with awareness of the population, education for prevention, adaptation of environments and legislation, in order to provide more safety.¹⁶

A study carried out in Texas¹³ evaluated the dangers related to toys and listed a series of preventive measures that should be adopted by parents / guardians when dealing with purchase and maintenance. Therefore, it is recommended that when purchasing a new toy, it is primarily necessary to verify that the product meets the recommendations of the safety standards developed by the consumer product safety committee and obtain recall information.

From that, you should not buy toys with small and removable parts that have ropes or the like, that are painted with toxic material, avoid electric toys and if necessary, add to the present protection and safety accessories, such as: helmet, knee pads and elbow pads.¹³

As for preventive behavior, caregivers should teach children how to use the product safely, read product instructions, be alert to notifications of collected toys, supervise play involving assembling toys and inspect new and old materials regularly.¹³ In addition to the added responsibility of the child's parents and guardians, the manufacturer's importance in providing safe merchandise is emphasized.¹⁰

During the analysis of the researches, it was possible to infer some behaviors, which, if adopted by manufacturing companies, may cause the sale of safer products, such as: placing warning labels on the products and increasing the quantity of these, which must occupy a place high visibility; the safety instruction for the installation; the recommendation of the installation location of the purchased products; the need for frequent inspection; the specification of general hazards; recommending the product to the intended group of users from age; whether there is accessibility for the disabled; the creation of "consumer friendly" labeling; the way of safe storage of products; the adoption of the use of security kits; and not least, the introduction of child-resistant packaging to prevent accidental ingestion of drugs.^{11-15, 18}

In addition, physical, social and cross-cultural characteristics must be assessed in the development of safety methods, as stated in a study carried out in Japan, in which it reports that there were barriers to the introduction of child-resistant packaging, which prevent accidental ingestion of drugs, unlike the USA. This is because there are differences between children of both nationalities that imply the effectiveness of such a preventive method.¹⁵

Therefore, it is essential that the warnings are elaborated about the dangers of the product and, mainly, become public so that the injuries stop occurring.¹¹ Since, from the provision of risk information, consumers start to interpret and identify the dangers through expert opinions and government announcements, therefore, the greater the knowledge that the population obtains, the greater the effect on perception risk factors and can be a predictive factor for the elaboration of public policies directed.¹⁹

In this way, when a consumer is in possession of safety information, his attitudes about safe behavior are altered, as well as his relationship with dangerous products and environmental and health risk management. It also

highlights the importance of providing response guidelines that act positively to increase rational safety behavior.¹⁹

Therefore, in the event of a case involving injury associated with a consumer product, it should be reported to the client's lawyers, the manufacturer, the community and health professionals. Such reports create informational data that can be used to identify trends and alert the population and professionals.¹¹

One of the alternatives is the creation of commissions to protect communities from complications related to consumer products, as was done in the USA with the Consumer Product Safety Commission (CPSC), which is an independent federal agency that seeks to reduce injuries, through surveys, issuing recalls, standardization, providing information and educating consumers. Through a relationship with media outlets, state and local governments, private organizations and individual consultations.¹¹

In this context, an example of its performance was the perception of a large number of accidents associated with blinds, curtains and window cables, listing this occurrence among the top five hazards found in the US residence and, from that, recalls were developed and mandatory safety standards for their use. Consequently, it was possible to conclude that the most effective primary prevention is related to the modification of the product and the environment.¹⁴

Regarding the education of the population as a prevention tool, it is possible to affirm that there is a need for investment in permanent education¹⁶, because consumer education directly affects their perception of risk, which in turn reflects on public health and the management of personal risk of the public.¹⁹ Therefore, it is necessary to advise parents, guardians and caregivers on the dangers related to the products.¹⁴

In time, for the development of security programs, it is essential that the developers of the educational project recognize the need for the consumer's contribution when planning and evaluating such programs. Alternatively, the sites have proven to be a highly effective resource.^{11,17}

In research carried out in Palos Heights and St. Louis, it is possible to understand the importance of educating the population and its influence on the adoption of safe behaviors. In the first study, carried out in the State of Illinois, it was found that many children died using child transport chairs, due to the educational classes offered to parents providing little or no information on how to transport children safely.¹²

Another example is the study carried out at the orthopedics outpatient clinic at Cardinal Glennon Children's Hospital, in St. Louis, Missouri, which aimed to conduct an educational intervention with parents and guardians warning about the correct use of the lawn mower. The aforementioned research concluded that the parents who participated in the intervention adopted safe behaviors in relation to the product, while the individuals who did not participate did not demonstrate any change in behavior, showing that educational actions in a clinical environment are effective.¹⁰

In this sense, systems such as urgent and emergency systems should also act in the prevention of injuries and in the protection of life, redirecting the focus of assistance focused only on the consequences of injuries to a comprehensive and integrated service, seeking the autonomy of its customers and the community.¹⁶

The role of the health team in preventing consumer accidents

A large number of studies analyzed show the importance of health professionals in preventing accidents related to consumer products.^{10,13-14} Thus, it is possible to conclude that these health workers must operate by minimizing injuries through a variety of interventions that complement each other.¹⁶

In this context, the nursing professional stands out, since, commonly, the occurrences of accidents are identified primarily in nursing offices, including, this environment is often shared with social workers, who also use it strategically to observe and interpret the conditions and patient's health needs.¹⁶ For example, a survey conducted by Miranda Stephenson found that pediatric nurses are in the best position to advise parents on choosing safe toys for their children.¹³

Among the studies analyzed, permanent education focused on the prevention of health problems and protection of life was pointed out as the main component that must be present in the assistance provided by health professionals¹⁶, since, usually, the adoption of a safe and preventive behavior to accidents it is not part of family life. Thus, it is expected that professionals understand the context of the occurrence of accidents and are able to identify risk factors, and should also be able to diagnose, supervise, forward and report the problems found.^{14,16}

In addition to these, professional practice must be extended in front of the health unit environment, as professionals must support public regulations and political efforts to make consumer products safer.¹³

It is also noteworthy that it is essential to work in an intersectoral way to obtain a positive prognosis, thus, the actions are developed based on co-responsibility between sectors, through various interventions. In view of this, the findings should be shared with the multiprofessional team, in order to outline a comprehensive, holistic, humanized and effective service to patients and their families.¹⁶

From the above, when performing the analysis of the articles, it is not possible to observe the due emphasis on the importance of the action of Nursing professionals in consumption accidents, nor conduct aimed at the performance of the nursing team. The study is limited due to the lack of social identification of the importance of the theme, little interest from the scientific community in researching the topic and the publication period is very extended, with no uniformity between publications in terms of time and space, despite the fact that consumer accidents continue to happen, even with technological advances in this area.

Conclusion

In addition to summarizing the research and evidence on the subject, this study made it possible to perceive the deficit of Brazilian productions in this regard, which does not make its impacts less important in the country, on the contrary, it reveals how invisible the problem is.

It is also noted the evident importance of the nursing professional in this type of accident, which is one of the first to care for or receive injured people,

whether in pre-hospital care or in risk classification in hospitals, in addition to influencing prevention through education in health.

With the acquisition of the knowledge exposed here and associated with consumption accidents, it becomes possible to think of intervention proposals aimed at protecting life, promoting health and preventing injuries.

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