

Domestic accidents and nursing diagnoses of children exposed to HIV at birth

Acidentes domésticos e diagnósticos de enfermagem de crianças nascidas expostas ao HIV

Accidentes domésticos y diagnósticos de enfermería de niños expuestos al VIH

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ABSTRACT

Objective: The objective was to identify risk factors for domestic accidents in children exposed to HIV at birth and to indicate associated nursing diagnoses. **Methods:** A descriptive and exploratory qualitative study, conducted in the home environment of 12 families, consisting of mother and child exposed to HIV at birth, between January and February 2011. It used photography as a technological resource to target those at risk of accidents and a semistructured form to characterize the families. We analyzed the data according to risk situations recommended by safety standards for the prevention of domestic accidents. **Results:** The injuries identified with the greatest risk of occurrence were: falls and fractures, poisoning, electric shock and suffocation/choking/gagging. The risks identified were the basis for the classification of nursing diagnoses. **Conclusion:** The home environment should be the focus of continuous assessment, so as to enhance interventions to reduce vulnerability to health problems in children.

Keywords: Child Health; Accidents, Home; Community Health Nursing; HIV; Health Promotion.

RESUMO

Objetivou-se identificar fatores de riscos para acidentes domésticos em crianças nascidas expostas ao HIV e indicar os diagnósticos de enfermagem associados. **Métodos:** Estudo exploratório-descritivo, qualitativo, realizado no ambiente domiciliar de 12 famílias compostas por mãe HIV+ e criança nascida exposta ao vírus, entre janeiro e fevereiro de 2011. Usaram-se a fotografia como recurso tecnológico para apontar as situações de risco de acidentes e o formulário semiestruturado para caracterização das famílias. Analisaram-se os dados em conformidade às situações de risco preconizadas por normas de segurança para prevenção de acidentes domésticos. **Resultados:** Os acidentes identificados de maior risco para ocorrência foram: quedas e traumas; intoxicações; choque elétrico e asfixias/sufocações/engasgos. Os riscos identificados serviram de base para a classificação dos diagnósticos de enfermagem. **Conclusão:** O ambiente domiciliar deve ser foco de avaliação contínua, de modo que propicie intervenções para redução de vulnerabilidade de agravos à saúde infantil.

Palavras-chave: Saúde da criança; Acidentes domésticos; Enfermagem em saúde comunitária; HIV; Promoção da saúde.

RESUMEN

Objetivo: Identificar factores de riesgo en accidentes domésticos de niños nacidos expuestos al VIH e indicar los diagnósticos de enfermería asociados. **Métodos:** Estudio exploratorio descriptivo, cualitativo, realizado en el domicilio de 12 familias compuestas por madres VIH+ y niños nacidos expuestos al VIH, entre enero y febrero de 2011. Se utilizó la fotografía como recurso para mostrar las situaciones de riesgo y un formulario semiestructurado para caracterización de las familias. Los datos fueron analizados según las situaciones de riesgo recomendadas por normas de seguridad para la prevención de accidentes domésticos. **Resultados:** Los accidentes identificados como de mayor riesgo de ocurrencia fueron: caídas y fracturas, intoxicaciones, choque eléctrico y asfixia/sofocación/atragantadas. Los riesgos identificados fueron la base para la clasificación de los diagnósticos de enfermería. **Conclusión:** El ambiente doméstico debe ser el foco de atención continua, de modo a ofrecer intervenciones para la reducción de la vulnerabilidad de riesgos a los niños.

Palabras-clave: Salud Del Niño; Accidentes domésticos; Enfermería en Salud Comunitaria; VIH; Promoción de la Salud.

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INTRODUCTION

The rates of domestic accidents in childhood are alarming, showing there to be a serious public health problem as a result of the harm to the health of the children and their family members¹.

The physical and psychological characteristics of the child in each stage of her development, and the lifestyle of the family, associated with socio-economic and cultural factors, contribute to the occurrence of accidents. Furthermore, aspects related to education, salary, housing and access to the health services are described as risks¹; that is, the risk of accidents is the result of a series of environmental, emotional and educational factors².

Some risk factors for accidents encompass the context of those children born exposed to HIV. Socio-economic vulnerability, orphanhood, the absence of social and family support, the parents' unemployment and the use of drugs among family members, in addition to unhealthy housing, can result in greater risks for the occurrence of domestic accidents^{3,4}.

As a result, it is essential to evaluate the risks for accidents present in the home environment of the children born exposed to HIV, if they are to be prevented. Studies with such a focus can help health professionals to investigate risks present in the children's home *in locus*, in such a way that they can investigate the context of these families with a view to including interventions associated with the home context during health monitoring.

In the light of the above, this study aimed to identify the risk factors for domestic accidents among children born exposed to HIV and the main nursing diagnoses.

METHOD

This is an exploratory-descriptive study with a qualitative approach, undertaken in the home environment of 12 families, resident in Fortaleza in the state of Ceará, in which the mother is seropositive for HIV and the child is of preschool age and was born exposed to the virus.

It was decided to select the pre-school age because this is a period of life in which the child escapes family control and behaves in a way that involves exploring and investigating the environment around her, without understanding the risks present. Photography was used as the main resort for situations of risk for domestic accidents, supporting the identification of problems and the formulation of nursing diagnoses associated with each situation.

The mothers were invited to participate in the study in an outpatient service which specializes in HIV, in Fortaleza-Ceará, the research being undertaken during the months of January and February 2011.

The informants were 12 mothers who were seropositive for HIV. The inclusion criteria for the study were: to be the biological mother of, and caregiver for, a child of up to 5 years of age born exposed to the virus; to reside in Fortaleza in the State of Ceará (CE); to accept to receive the researcher at home and to accept to have the home environment photographed.

The dimensioning of the amount of participants used the criteria of saturation, which consists of the knowledge formed by the researcher, in the field, who managed to understand the logic of the study group or collectivity⁵. The observations from the photographs began to present repetition of information in the 12th home visited.

A semi-structured interview was developed for data collection, seeking the characterization of the family and the indication of situations or possibilities of risk of accidents for the children in that environment. Also obtained were photographic records of situations of risk, which were analysed by the researchers so as to ratify the possibility of accidents.

After the confirmation of the risks, the situations were classified according to the types of risks determined by the Brazilian Pediatric Society, that is: falls or traumas, burns, drowning, asphyxia/suffocation/choking, poisoning, electric shock, foreign bodies in the airways, and dangerous objects and domestic animals⁶. Following that, knowing the situations of risk for accidents, the nursing diagnoses were elaborated following the taxonomy of the North American Nursing Diagnosis Association (NANDA) 2012-2014⁷, with a view to assisting the nursing professionals in implementing interventions for preventing accidents in the domestic setting.

The study was approved by the Research Ethics Committee of the Federal University of Ceará, under protocol N^o 136/10.

RESULTS

In the 12 homes visited, the number of residents varied from 2 to 10. All the mothers were housewives, aged between 18 and 39 years old, with little education. In relation to the children, all were male with ages varying from 22 days to two years and nine months. None had a definitive diagnosis related to infection by HIV.

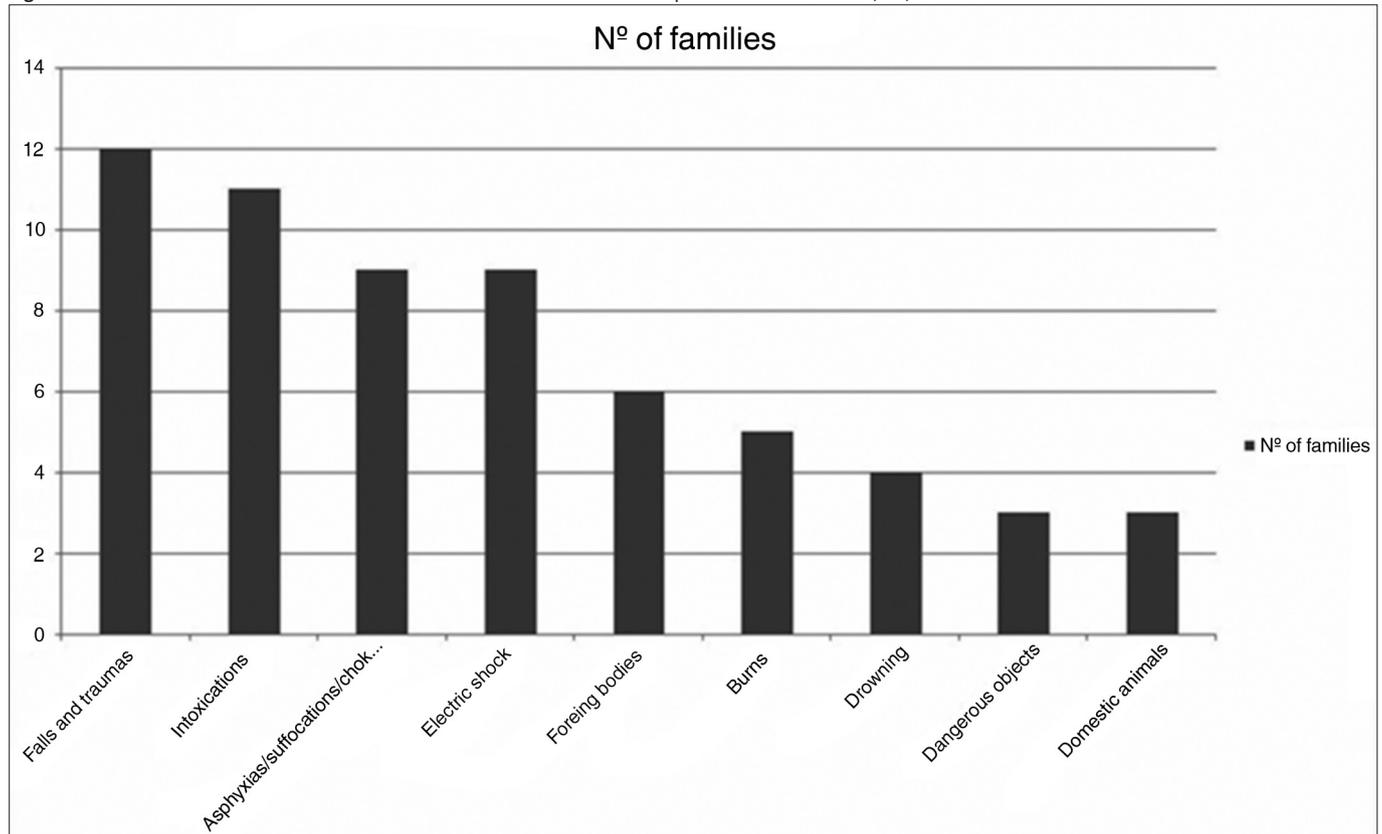
In relation to aspects regarding the family, income encompassed values between R\$130.00 and R\$1,132.00 per month. Eight families received the governmental benefit termed the *Bolsa Família*⁸. All of the homes were found on the outskirts of Fortaleza⁹ and were covered by the Family Health Strategy (ESF). The family context of the HIV, however, was not revealed to any member of the teams.

Figure 1 presents the risks for domestic accidents identified in each home, based on the Brazilian Pediatric Society's Child and Adolescent Safety Manual⁶, there being a wide variety of risks in the homes. Emphasis is placed on falls, poisoning, electric shock and asphyxiation/suffocation/choking.

Based on the principal risks for accidents found in the study, the nursing diagnoses corresponding to these risks, and the problems for accidents which defined them, were listed in Table 1.

DISCUSSION

Social economic and cultural conditions increase the vulnerability which HIV imposes on the child and her family.

Figure 1. Risk factors for domestic accidents of families with children born exposed to HIV. Fortaleza, CE, 2011**Table 1.** Nursing Diagnoses and problems identified for domestic accidents. Fortaleza, Ceará, 2011

Nursing diagnoses (Number of homes with the diagnosis)	Problems identified
Risk of Falls (12)	Environment with excessive furniture and objects; gate absent on stairways; high beds and hammocks; inadequate banisters on stairways; low windows, without safety measures; beds placed close to windows; loose, slippery carpets.
Risk of Trauma (12)	Pan handles pointing away from the oven; rapidly moving machines accessible to the child (fans, sewing machines); corrosive substances stored on the ground; sharp objects accessible; loose electrical wires.
Risk of Poisoning (11)	Medications and other products easily accessible.
Risk of Suffocation (10)	Small objects available to the child; presence of pillows or sheets loose in the cradle.
Risk of contamination (8)	Open-air sewers close to the house; factories emitting pollutants close to the house; unhealthy environments and few rooms; smokers in the home.

In relation to the places where accidents happen to children, these are more common within the home, which although a space for the growth and development of the child, can be shown to be hostile at some times. This occurs due to this environment being where the child spends the most time⁸. In line with this, the homes investigated were shown to be threatening to the children born exposed to HIV, as a result of the extensive existence of risk factors, some referent to the family context of HIV/AIDS, and

some resulting from the socio-economic conditions in which the majority of seropositive people live.

The influence of the physical structure of the home is evident in the occurrence of accidents. Among low-income families it is rare for construction to be planned in such a way as to avoid accidents. Very often, the homes are built in a disordered way and may reduce the physical space free for the child to play in. Slums and improvised dwellings are common⁹.

The risk of falls was present in all of the homes. One study undertaken in the south of Brazil showed a greater vulnerability in male children below two years old, with lesions to the head and neck predominating, and staircases/steps being related to 8.3% of the episodes of falls. Greater supervision of the child and maintenance of care with the domestic environment are indicated as preventive measures^{10,11}.

Dangerous objects increase the risk of trauma, and the caregivers need to be attentive so that such objects may not be accessible to the child. One study emphasises eye trauma as the principal consequence of dangerous objects being within the child's reach¹². As a safety measure, those responsible for children should store these objects in safe places so as to avoid accidents.

Also related to the diagnosis of risk of trauma, burns were present in five homes. Burning from heat is the most frequent cause of trauma in the home⁹. Other risk factors are indicated: low socio-economic and educational levels among the mothers and those responsible for the child, housing which is small for the number of residents, insecure equipment in the kitchen, and the presence of another child aged below five years old in the home¹³. In this case, preventive actions include keeping the handles of pans from pointing over the edge of the oven; keeping candles, cigarette lighters, matches, alcohol and inflammable chemical products out of children's reach; keeping the iron in an appropriate place; placing covers over electric outlets/plugs, and not handling hot liquids or foods with the child on one's lap^{8,10,11}.

The risk of trauma by electric shock takes third place in the ranking of accidents among children¹⁴. This study evidences a lack of planning directed at safety standards and prevention during the construction of the interviewees' housing. The electric outlets/plugs are situated at a height of 40 cm from the floor, where they are appealing for the child to explore. The caregivers must remain attentive so as to avoid the children making contact with bare wires and outlets/plugs, which should always be covered with safe and firm protectors¹⁵.

Regarding the risk of poisoning, children below five years of age make up a group which is vulnerable to accidental poisoning. In the majority of occasions, poisoning occurs in the living place itself, with substances stored inappropriately¹⁶. The present study evidenced the risk for the occurrence of exogenous poisoning, represented by the poor storage of cleaning materials and medications. A study of accidents in childhood showed 64.5% to involve accidents involving exogenous poisoning, with half being caused by the ingestion of medications, followed by domestic cleaning products in 23.1% of cases¹⁷. In the case of people with HIV, who use antiretroviral drugs (ARV), the attention must be redoubled. As some medications are stored in the fridge, the child must be supervised and kept from opening the same.

In the present study, various circumstances were observed which can lead to the risk of suffocation, especially due to the use of talcum powder, pillows or sheets in the cradle. As preventive measures, their use should be avoided, as the child can inhale the talcum powder, or be suffocated by the pillow or sheet in the

cradle. It is also worth emphasising the danger of drawstrings, diapers, or necklaces placed around the child's neck⁶.

In relation to the risk of foreign bodies in the airways, this represents one of the five main accidents which occur in the child population, and is classified as a potentially fatal accident. Emphasis is placed on the need for greater attention regarding making toys available which are not suitable for the age of the child. Toys must not be small and parts must not easily come loose or come off.

In the nursing diagnosis also related to the characteristics of the community, the risk of contamination involves, in addition to changes in habit of those living in the home with the child lives, broad intersectorial interventions and efficient public policies. It is a primary duty of the family to ensure the safety of the child, protecting her, bringing her up and, in particular, remaining vigilant in the various environments found, particularly in that of the home. Above all, in the case of children exposed to HIV, in the light of the specific characteristics of their situation as described above, attention to care required in the home must be redoubled. Nursing is responsible for facilitating better coping with HIV and its specific characteristics, principally in a phase characterised by doubts and insecurity on the part of the mother regarding care for children during the first years of their lives¹⁸. The unhealthy living conditions and the use of medications, among which emphasis is placed on the ARVs for prophylaxis and/or for treatment of opportunist infections, constitute situations of risk to children who live with maternal HIV.

CONCLUSIONS

Entering the domestic setting made it possible to investigate possibilities for accidents among children. Photography, a tool used in the research, was shown to be efficacious for recording a variety of situations of risk, which were not only related subjectively by the mothers, but shown clearly in the photographic records.

Among the situations of risk found, the following stand out: risk of falls, burns, drowning, asphyxiation, suffocation, choking, poisoning, electric shock, foreign bodies in the airways and dangerous objects and domestic animals: all of which are avoidable through health education activities.

Bearing in mind that the environmental, social and cultural issues of the families who live with AIDS are common to any family, the research surpasses the universe of seropositivity.

The study undertaken had important limitations such as: the need to invade the individual and family privacy in the presence of the seropositivity for HIV, the costs of developing photographs, and difficulty in interpreting the research's findings.

It is suggested that health professionals involved at the various levels of provision of health care for children born exposed to the HIV virus should arrange educational actions directed at accident prevention, bearing in mind the positive impact and the low cost of the soft care technology, that is, education.

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¹The *Bolsa Família* is a social welfare program run by the Brazilian government, providing direct financial aid to poor families, conditional on their children attending school and receiving vaccinations.

²The outskirts of Brazilian cities are where the poorest communities are found.