

EFFECT OF AN EDUCATIVE ACTION ON RELATIVES' KNOWLEDGE ABOUT CHILDHOOD BURNS AT HOME¹

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This article aimed to evaluate the effect of an educative action on the knowledge of children's relatives about burns at home. Participants were 40 relatives of children under four years of age, equally divided between an intervention and control group. An initial interview was held, the educative action involved a folder about burns and, after one week, another interview took place. The answers were compared using Fisher's statistical test. In the first interview, 60 answers on risk situations were registered in the control group and 62 in the intervention group; in the second, the results increased to 61 and 80, respectively. In the first interview, 90% of the control group and 80% of the intervention group expressed the belief that childhood burns can be avoided; in the second, this indication decreased to 84% and increased to 100%, respectively. This study showed the importance of the advisory folder on burns at home.

DESCRIPTORS: burns; health education; orientation; family

EFFECTO DE UNA ACCIÓN EDUCATIVA SOBRE EL CONOCIMIENTO DE LOS MIEMBROS DE LA FAMILIA RELACIONADO CON QUEMADURAS INFANTILES EN UN AMBIENTE DOMÉSTICO

El objetivo de esta investigación fue evaluar el efecto de una acción educativa sobre los conocimientos de los familiares de niños en lo que se refiere a quemaduras en el ambiente doméstico. Participaron 40 familiares de niños con menos de cuatro años de edad, divididos equitativamente entre un grupo control y otro de intervención. Fueron realizadas: una entrevista inicial, una acción educativa con un impreso propagandístico sobre quemaduras y una nueva entrevista después de una semana. Las respuestas fueron comparadas con la prueba estadística de Fisher. En la primera entrevista, fueron registradas 60 respuestas de situaciones de riesgo en el grupo de control y 62 en el grupo de intervención; en la segunda, aumentó para 61 y 80 indicaciones, respectivamente. En la primera entrevista, 90% de los participantes del grupo de control y 80% del de intervención dijeron creer que la quemadura puede ser evitada. En la segunda, la indicación disminuyó para 84% y aumentó para 100%, respectivamente. Este estudio muestra la importancia de la orientación usando impresos propagandísticos sobre quemaduras en el hogar.

DESCRIPTORES: quemaduras; educación en salud; orientación; familia

EFEITO DE AÇÃO EDUCATIVA SOBRE O CONHECIMENTO DE FAMILIARES A RESPEITO DE QUEIMADURAS INFANTIS EM AMBIENTE DOMÉSTICO

O objetivo deste trabalho foi avaliar o efeito de ação educativa sobre o conhecimento de familiares de crianças a respeito de queimaduras em ambiente doméstico. Participaram 40 familiares de crianças menores de quatro anos, divididos igualmente em grupos intervenção e controle. Foram realizadas entrevista inicial, ação educativa com folder de queimaduras e entrevista após uma semana. As respostas foram comparadas, utilizando-se teste estatístico de Fisher. Na primeira entrevista, registrou-se 60 respostas de situações de risco no grupo controle e 62 no grupo intervenção; na segunda, aumentou para 61 e 80 indicações, respectivamente. Na primeira entrevista, 90% dos participantes do grupo controle e 80% do grupo intervenção verbalizaram acreditar que a queimadura infantil pode ser evitada; na segunda, a indicação diminuiu para 84% e aumentou para 100%, respectivamente. Este estudo mostrou a importância da orientação com folder de queimaduras em ambiente doméstico.

DESCRIPTORES: queimaduras; educação em saúde; orientação; família

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INTRODUCTION

Burns are frequent in the child population. Over a ten-year period (1995-2005), they caused severe diseases and/or deaths in more than 8,000 children under five years of age and in more than 3,000 children over this age⁽¹⁾. Children under three years of age present greater risk, due to curiosity, impulsiveness and lack of experience to assess dangers⁽²⁾. Ignorance about the characteristic phases of children's growth and development is one acknowledged factor favoring accident occurrence⁽³⁾. Childhood burns predominantly occur in the home environment, especially in the kitchen⁽⁴⁾. Scalding and thermal burns are the most frequent burn types, and are more associated with food preparation⁽²⁾. The most common aggressors are foods, drinks, oil and other hot products, which mostly affect the trunk, shoulder, arm and forearm⁽⁵⁾.

The physical recovery of burned patients is challenging and longtime. It demands acute care and surgical procedures (entailing susceptibility to infections and other complications); causes intense pain which, according to patients, does not improve after medication administration⁽⁶⁾. Moreover, they almost always result in emotional problems for victims and their families and also generate high financial costs⁽⁷⁻⁸⁾.

Studies show that most accidents can be prevented, but accident prevention programs, especially for burns, are scarce in Brazil⁽⁹⁾. Education for prevention can reduce childhood accident risks. To achieve this, various population segments need to be mobilized⁽¹⁰⁾. Counseling in primary health care with a view to increased knowledge on safety and adoption of safer behaviors should be the pillars to reduce physical injury incidence levels⁽¹¹⁾. Using print materials can facilitate the acquisition, effective use and reinforcement process of this knowledge, besides strengthening oral information and discussions between educators and the population⁽¹²⁾.

A previous study in a hospital environment showed a significant increase in family members' learning on this theme. Structured interviews were applied before and immediately after an educative action with a folder and verbal intervention, among 37 keepers of children and adolescents hospitalized in the Public Pediatrics Sector of two hospitals in a city in the interior of São Paulo State. The results showed increased responses to all questions addressed in the script, which demonstrated the educative

action's good potential in the hospital context, which is also suggested for other sites, including primary health care actions for example⁽¹³⁾.

The fact that domestic accidents in children are potentiated by non-observance, absence of preventive behavior by families and lack of surveillance by keepers⁽¹⁴⁾ justifies educative actions to prevention this type of accident, involving parents and/or other keepers in this process. Considering the dimensions of the childhood burn problem, the possibility of preventing childhood burns through environmental orientations and modifications, results of previous studies and the lack of this kind of studies in Brazilian nursing, this research assessed the effect of an educative action on the knowledge of children's relatives about childhood burns at home.

METHOD

This research was approved by the Ethics Committee at *Universidade Estadual Paulista Júlio de Mesquita Filho* (Protocol 1337/2006-A). It is part of a set of different actions within the thematic project Educative actions to prevent childhood accidents: support collection, strategy elaboration, application and assessment, approved by the National Council for Scientific and Technological Development (CNPq). This is a quasi-experimental⁽¹⁵⁾ and qualitative-quantitative⁽¹⁶⁾ research design.

Environment

This study was carried out in the home environment of clients from one Basic Health Unit (BHU) and one Family Health Unit (FHU). These Units are circumscribed to one (among five) region(s) in a medium-sized city in the interior of São Paulo State. This region was selected because, in the last three years, it presented the highest morbidity rate due to external causes in the city, according to data from the Information Center of the Municipal Secretary for Hygiene and Health.

Only three health units in the respective region predominantly attended users under four years of age and were chosen for this research. Thus, through a draft, one was selected for the pilot study, one for the control group and another for the intervention. The remaining health units in the region were designated to studies on other accident prevention themes, as part of the broader research.

Materials

The following were used: presentation letter, free and informed consent term, structured interview script (asking about the participant's personal data, situations favoring the childhood burn, accident occurrence and prevention, as well as information reception about the theme) and an educative folder about the prevention of childhood burns (about preparing and having meals, the children's bath and care with plugs, electrical wires and flammable products). The same folder was used for a research in the hospital environment⁽¹³⁾, but with differences in the educative action, as the present research prioritized prevention, while the former emphasized epidemiological aspects.

Participants

The three health units listed all families with children under four years old which lived within their area of coverage. This age range was selected because literature indicated the highest prevalence of childhood burns in this group.

After several visits to the users' homes, which took place during the term conceded by CNPq to conclude the project, 40 participants accepted to participate in the study and signed the free and informed consent term. Twenty were distributed to the control group and 20 to the intervention group, according to the two health units they belonged to.

Material elaboration procedures

The elaboration of the structured interview script and educative material was based on literature about the theme and on research experience in the Research Group on Education and Accidents (EDACI). These materials were previously assessed by experts (researchers with Master's and Ph.D. degree) in terms of structural and language adequacy.

A pilot study was carried out, involving 20 relatives of children under four years of age, who attended two primary health units in the same region. The results were again submitted to expert evaluation and permitted modifications in the data collection script, so as to adapt it to the study population. After the research instrument had been modified, definitive data collection was carried out.

Data collection procedures

Data were collected through two home interviews, one before and another after the educative action.

All collaborators participated in the first interview. Then, dialogued educative action was performed with the intervention group, taking approximately 30 minutes. All members in this group received information about the contents of the childhood burns folder and a copy of the educative material. In the control group, the same procedure was adopted, however, using a folder on arterial hypertension, with a similar format but different information, and the same duration as in the intervention group.

The second interview was held one week after the first, with a view to checking if the information addressed during the educative action had remained clear during this time interval. Three people did not participate (one in the control group and two in the intervention group), because they were not found at home during the home visits or were not interested in participating in this research phase. Thus, in total, 77 interviews were held.

The control group, which had only received information about arterial hypertension, received explanations about childhood burns after the second interview, so as to inform these persons as well about how to prevent these accidents.

Data analysis procedures

The interviewees' answers were grouped per question as absolute and relative frequencies. More than one answer could be given to most questions, but frequencies in each category were calculated according to the total number of participants in each group (control and intervention).

Category frequencies in both groups were submitted to Fisher's exact statistical test, to check for a significant increase in the participants' declarations before and after the educative action.

RESULTS

As to the situations favoring childhood burns, during the first interview, 60 correct answers were registered on risk situations in the control group,

against 62 in the intervention group. During the second interview, this increased to 61 and 80 indications, respectively, showing stability in the control group's

answers, against an increase in the group that participated in the educative action on childhood burns, as shown in Table 1.

Table 1 – Distribution of participants' answers in both groups about situations and objects that can favor a childhood burn at home

| Situations and objects favoring burns | Intervention group | | | | Grupo controle | | | |
|---------------------------------------|----------------------|----|-----------------------|----|----------------------|----|-----------------------|----|
| | First interview N=20 | | Second interview N=18 | | First interview N=20 | | Second interview N=19 | |
| | f | % | f | % | f | % | f | % |
| Stove | 15 | 75 | 10 | 56 | 16 | 80 | 17 | 89 |
| Iron | 11 | 55 | 12 | 67 | 11 | 55 | 12 | 63 |
| Chemical and flammable products | 10 | 50 | 11 | 61 | 8 | 40 | 4 | 21 |
| Match and lighter | 6 | 30 | 8 | 44 | 7 | 35 | 5 | 26 |
| Pan and hot food | 5 | 25 | 11 | 61 | 10 | 50 | 9 | 47 |
| Plug | 5 | 25 | 11 | 61 | 5 | 25 | 5 | 26 |
| Fire | 3 | 15 | 2 | 11 | 1 | 5 | 1 | 5 |
| Hot objects | 1 | 5 | 2 | 11 | 1 | 5 | 1 | 5 |
| Others | 6 | 30 | 13 | 83 | 1 | 5 | 7 | 37 |

In general, in most categories, answers fluctuated in both groups, but this variation was rather more stressed in the intervention group.

The risk situations the participants identified were mostly related to the kitchen (stove, pan and hot foods, match and lighter, fire) and during meal preparation, mainly involving pans and stoves.

Statistical analysis of results in the intervention group indicated a significant increase in most answers collected during the second interview: very significant for "pan grip turned outside the stove" ($p=0.0067$); significant for "chemical and flammable substances close to the fire" ($p=0.0415$) and "electric device wire in the child's reach" ($p=0.0415$) and partially significant for "plug within the child's reach" ($p=0.0869$) and "very hot bath water" ($p=0.0967$). On the other hand, the analysis of the control group did not identify a significant increase in answers, except for a reduction in the subcategory "child pulling pan grip" ($p=0.0471$).

During the first interview in the intervention group, before the educative action, 16 interviewees said they believed that preventing childhood burns is possible, two said that burns cannot always be avoided, one said (s)he did not know and another person that (s)he did not believe in this possibility. During the second interview, after the educative action, all interviewees reported they believed that childhood burns can be prevented.

In the control group, initially, 18 interviewees said they believed in this possibility, whereas two said they did not. In the second interview, as opposed to the intervention group, no similarity was found in the

participants' answers. Eighteen of the 19 participants maintained their original answer, and one changed opinion.

Before the educative action, in total, participants in the intervention group gave 47 reports on prevention measures. After the action, this increased to 67 answers. In the control group, on the other hand, the answer frequency was practically maintained, with 50 responses on prevention measures in the first phase against 47 in the second.

As to possible prevention measures to avoid childhood burns at home, the most indicated ones were related to the caregivers' attitudes towards the child; care with the stove, pan and hot foods, chemical and flammable products, match and lighter, plugs and iron.

In the intervention group, the application of the statistical test showed a highly significant increase for the subcategory "keeping the pan grip turned towards the internal part of the stove" ($p=0.0067$) and a significant rise for "keeping hot pans outside the child's reach" ($p=0.0415$) and "protecting plugs" ($p=0.0424$). No significant variation was found in the control group.

About the occurrence of childhood burns and reception of information about the theme, during the first interview in the intervention group, participants mentioned five childhood burns. The same number of participants reported having received information about childhood burns in the past. All collaborators affirmed that they thought it was important to receive information on how to prevent these accidents.

Based on the participants' reports during the same interview, in the control group, five childhood

burns were identified. Nine interviewees reported previous information about childhood burns and all collaborators found it was important to receive information on measures to prevent these injuries.

Among the 14 interviewees who reported previous information about burns, four affirmed that they received preventive and ten remediating information. All participants who reported having received preventive information affirmed that this came from professionals at primary health care units. The remediating information came from a driver's license course, posters at basic health units, family health units and hospitals, firemen, TV, internet and the family health unit after a burn had occurred.

During the second interview, none of the interview reported on the occurrence of burns or the reception of new information in the interval between the interviews. Again, all participants found it was important to receive information about the subject.

DISCUSSION

The participants correctly reported a wide range of risk situations and possible measures to prevent childhood burns at home, but few participants mentioned most of these situations, which highlights the importance of periodical health education activities in the population, so as to maximize their recollection and identification of risks and protection measures against burns accidents. In daily reality, many behaviors and situations end up putting adults' and children's physical integrity at risk. Hence, in accordance with literature, families need to know about risks present in the home environment to expand the possibilities of adopting preventive behaviors, as lack of knowledge contributes to the occurrence of these events⁽¹⁴⁾.

Most interviewees perceived the possibility of preventing this type of accident. This important data may indicate greater susceptibility to accept changes in behavior and in the home environment with a view to avoiding child burns.

The results of this study showed that the group that received orientations through the educative action, using the educative folder on burns, reported more risks and prevention measures during the second interview in comparison with the control group. No reception of new information during the interval between the interviews may indicate that no other

information sources interfered in the assessment of this study's educative action.

The risk situations the participants perceived were mostly related to the kitchen (stove, pans and hot foods, matches and lighters, fire) and to meal preparation, mainly involving pans and the stove. These data are in line with scientific literature, as studies show the kitchen as the main burn accident site, and fire and hot liquids as the main aggressors⁽⁵⁾.

About the prevention measures, besides changes in the environment and habits, the caregivers' attitudes towards the children were emphasized. The importance of adequate supervision and orientation to the child was frequently reported. As to environmental measures and habits, the focus was on care with the stove, pans and hot foods, chemical and flammable products, matches and lighters, plugs and irons. Hence, in the same way as the identified risks, preventive attitudes strongly focused on the kitchen. This data should be taken into account, as "to be effective, any prevention measures always need to take society's perception into consideration. The community frequently perceives risks differently than scientifically determined risks"⁽¹⁷⁾.

Different studies appoint the urgent need for control and prevention measures⁽⁷⁾. The Ministry of Health assumes the commitment to participate, together with civil society and other sectors, in discussions about and solutions to this problem, proposing guidelines for health promotion and accident prevention⁽¹⁸⁾.

Despite public policies' efforts, health professionals need to make joint efforts to raise people's awareness that most accidents can be prevented through education, environmental modifications and adequate supervision. A constant education process is needed to keep up people's consciousness about measures for a safe house⁽¹⁹⁾.

CONCLUSION

It is concluded that the intervention carried out in this study favorably affected the increase of correct information declared about the subject.

The educative material used aroused important discussion about the theme with the participants, suggesting further use in future studies, to assess the educative material after different time intervals for example, so as to check whether the acquired knowledge was maintained. Further research

is also necessary to produce other educative materials in this area (videos, posters, pamphlets etc.) and improve existing ones (folders). Moreover, it is important to train different health and education professionals to work with this kind of information, involving the population, checking for impacts not only on knowledge, but also on changes in terms of behaviors and environmental arrangements.

Health communication has become a very useful tool in health education programs. Its efficacy results from the correct communication of the message, its scientific base and the use of adequate channels to reach the target public⁽¹²⁾.

About accidents, especially burns, most of the few studies that have been disseminated present data on epidemiological surveys⁽¹⁰⁾, consequences of the accidents⁽⁶⁾ and some reports by patients and accident victims' relatives⁽³⁻⁹⁾. Little has been written about prevention measures put in practice. The results of the present study highlight the importance of educative programs with a view to preventing childhood accidents.

Considering the study limitations, further research is suggested, with a larger number of participants, action mediated by different educative materials, integration between information from the domestic environment and what is offered in health and education institutions, follow-up of future use of the educative material and information dissemination, the impact of relatives' routine actions, the children and the environment on care style changes, the assessment of generalized results in different environments and over time and the improvement of instruments and of the entire process evaluation. Moreover, it is remarkable that clinical professionals and students from different areas participate, performing intersectoral actions that involve as many community segments as possible.

Health education permits changing knowledge also makes it easier to adopt safer behaviors and protective arrangements in different situations and contexts, which are fundamental to reduce the number of childhood burns accidents.

REFERENCES

1. Fontana C. Queimaduras. In: Waksman RD, Gikas RMC, organizadores. Segurança na infância e adolescência. São Paulo(SP): Atheneu; 2003. p. 113-8.
2. Dragg DA. Kitchen scalds and thermal burns in children five years and younger. *Pediatrics* 2005; 115(1):10-6.
3. Souza LJEX, Rodrigues AKC, Barroso MGT. A família vivenciando o acidente doméstico: relato de uma experiência. *Rev Latino-am Enfermagem* 2000; 8(1):83-6.
4. Santos HO. Crianças acidentadas. Campinas(SP): Papirus; 1988.
5. Baracat ECE, Paraschin K, Nogueira RJN, Reis MC. Acidentes com crianças e sua evolução na Região de Campinas, SP. *J Pediatr* 2000; 76(5):368-74.
6. Rossi LA, Camargo C, Santos CMNM, Barruffin RCP, Carvalho EC. A dor da queimadura: terrível para quem sente, estressante para quem cuida. *Rev Latino-am Enfermagem* 2000; 8(3):18-26.
7. Ratliffe KTF. In: Ratliffe KTF. Fisioterapia na Clínica Pediátrica: guia para equipe de fisioterapeutas. São Paulo(SP): Livraria Editora Santos; 2000. p. 275-312.
8. Martins CBG. Acidentes na infância e adolescência: uma revisão bibliográfica. *Rev Bras Enfermagem* 2006; 59(3):344-8.
9. Rossi LA, Ferreira E, Costa ECFB, Bergamasco EC, Camargo C. Prevenção de queimaduras: percepção de pacientes e de seus familiares. *Rev Latino-am Enfermagem* 2003; 11(1):36-42.
10. Filócomo FRF, Harada MJCS, Silva CV, Pedreira MLG. Estudo dos acidentes na infância em um pronto socorro pediátrico. *Rev Latino-am Enfermagem* 2002; 10(1):41-7.
11. Blank D. Controle de acidentes e injúrias físicas na infância e adolescência. In: Costa COM, Souza RP. Avaliação e cuidados primários da criança e adolescente. Porto Alegre(RS): Artmed; 1998. p. 235-42.
12. Moreira MF, Nóbrega MML, Silva MIT. Comunicação escrita: contribuição para a elaboração de material educativo em saúde. *Rev Bras Enferm* 2003; 56(2):184-8.
13. Gimeniz-Paschoal SR, Nascimento EN, Pereira DM, Carvalho FF. Ação educativa sobre queimaduras infantis para familiares de crianças hospitalizadas. *Rev Paul Ped* 2007; 25(4):331-6.
14. Souza LJEX, Barroso MT. Acidentes domésticos em crianças: abordagem conceitual. *Acta Paul de Enferm* 1999; 12(1):70-7.
15. Cosby PC. Métodos de pesquisa em ciências do comportamento. São Paulo(SP): Atlas; 2003.
16. Minayo MCS, Sanches O. Quantitativo-qualitativo: oposição ou complemento. *Cad Saúde Pública* 1993; 9(3):239-62.
17. Schvartsman S. Conceitos de risco e segurança. In: Waksman RD, Gikas RMC, organizadores. Segurança na infância e adolescência. São Paulo(SP): Atheneu; 2003. p. 3-6.
18. Ministério da Saúde (BR). Programa de redução da morbimortalidade por acidentes de trânsito: mobilizando a sociedade e promovendo a saúde. *Rev Saúde Pública* 2002; 36(1):114-7.
19. Tse T, Poon CHY, Tse K, Tsui T, Ayyappan T, Burd A. Paediatric burn prevention: an epidemiological approach. *Burns* 2006; 32(2):229-34.