

Percepção de risco e atitudes de prevenção de acidentes em crianças (10-12 anos)

Risk perception and attitudes of accident prevention in children (10-12 years)

Eveline Favero^I
Sarah Cristina Pezenti^{II}
Andressa Roseno Ames^{III}
Fabrício Duim Rufato^{IV}

Universidade Estadual do Oeste do Paraná.

Luiz Carlos Pinto da Silva Filho^V

Universidade Federal do Rio Grande do Sul.

Resumo

O estudo analisou a percepção de risco de acidentes em crianças, bem como sua opinião relativa às atitudes de prevenção. Participaram 886 crianças, 54% meninas 46% meninos, com idade entre 10-12 anos ($M=10,66$; $DP=0,62$), residentes em Cascavel-PR. Os participantes responderam a um questionário, com respostas em escala de *Likert* variando de 1-5, analisado quantitativamente, através de técnicas de estatística tais como análise fatorial, análise de frequência e teste *t* de *Student*. As crianças apresentaram médias baixas ($\leq 2,24$) relativas à percepção de exposição ao risco de acidentes, o que indica relação com a crença pessoal de invulnerabilidade. Por sua vez, as médias relativas à importância das atitudes de prevenção foram altas ($\geq 3,40$), revelando um bom nível de informação sobre esse assunto.

Palavras-chave: percepção de risco, prevenção de acidentes, infância.

Abstract

The study analyzed the risk perception of accidents in children, as well as their opinion on the attitudes of prevention. The study included 886 children, 54% female and 46% male, 10-12 years old ($M=10.66$; $SD=0.62$), living in Cascavel-PR. The participants answered a questionnaire with Likert scale responses ranging from 1-5, analyzed quantitatively through techniques of statistics such as factor analysis, frequency and Student's t-test. The children presented low means ($\leq 2,24$) relative to the perception of exposure to the risk of accidents, which may be related to the personal belief of invulnerability. On the other hand, the averages relative to the importance of the attitudes of prevention were high ($\geq 3,40$), revealing a good level of information on this subject.

Keywords: risk perception, accidents prevention, childhood.

The work is based on the assumption that, in order to invest in risk and disaster prevention programs, we must first know how children perceive the threats present in the environment where they live and what they do to protect themselves, as well as how vulnerable they are to different risks. Considering risk prevention in vulnerable populations, the Interministerial Ordinance no. 02 (Brasil, 2012), instituted the Joint National Protocol for Integral Protection of Children and Adolescents, Seniors and Persons with Disabilities

in Risk and Disaster Situations. Regarding the education sector, it is the responsibility of the school to develop educational programs focused on the development of life skills, self-protection for accidents and disasters, as prevention and as part of the programmatic matrix (Brasil, 2012). The university in its social commitment may be contributing, from the production of scientific knowledge, with subsidies for the elaboration and improvement of programs that help society to qualify the perception of the risks (Favero et al., 2016), to

^I Doutora em Psicologia (UFRGS), Professora Adjunta de Psicologia, Universidade Estadual do Oeste do Paraná, Programa de Pós-Graduação em Administração e Contabilidade, área Psicologia Ambiental e Psicologia Organizacional.

^{II} Graduanda em Administração, aluna de PIBIC. Universidade Estadual do Oeste do Paraná.

^{III} Bióloga, Mestre em Ciências Ambientais. Universidade Estadual do Oeste do Paraná.

^{IV} Psicólogo, Mestrando em Ciências Ambientais. Universidade Estadual do Oeste do Paraná.

^V Professor Adjunto de Engenharia, Programa de Pós-Graduação em Engenharia Civil. Universidade Federal do Rio Grande do Sul.

To schools and students for participating in the study. To the professionals who contributed their knowledge, especially the professionals of the 4o. Fire Brigade Group (PR) and SAMU (RS and PR). To the CNPq for the financial support, as well as to the Scientific Initiation program of Unioeste (PIBIC).

better face them and extend the possibilities of ensuring their safety.

The World Health Organization, together with UNICEF, has issued a report on the prevention of accidents in children (WHO/UNICEF, 2008). Regarding accidents, each year, approximately 830,000 children and adolescents die from unintentional injuries. Children over nine years of age and adolescents are the ones most affected by intentional accidents, such as traffic accidents, drowning, falls, fire burns and poisonings. Traffic accidents and drowning are the leading causes of death in this age group, while traffic accidents and falls are primarily responsible for disabilities in children.

Children, much more than adults, present a high risk of experiencing the adverse effects of environmental agents (Dziubanek et al., 2013). Accidents with children are closely related to the type of activities they carry out and those are related with age and each stage of development. Curiosity and the need to experience are not always attuned to the risk of an accident (WHO/UNICEF, 2008). Thus, it is important to study how children perceive themselves when exposed to the different types of risks in the environment.

The topic of risk perception in children and adolescents still lacks development. A database search conducted in the year 2016, using the descriptor “child risk perception” (in Portuguese and English) and covering the period of 2010-2015, resulted in six articles in the Scientific Electronic Library database, 11 articles on the Web of Science and no articles on the Lilacs network. Of the 17 articles found, only four of them actually dealt with the topic of risk perception in children, although not all referred to research directly with children.

The study by Börner, Albino, Carveo and Tejada (2015), analyzed the perception of 74 Mexican adolescents in relation to environmental health risks in contaminated urban areas. The study used environmental photography as a methodology for the analysis of local risk perception. According to the authors, knowing the risk perception of adolescents plays a crucial role in the development of risk communication programs for the improvement of community health, since, through this analysis, both perceived and neglected risks can be verified.

On the other hand, Melchiori et al. (2010) analyzed the risk perception of 50 children (04-13 years old) and their parents about lead poisoning and its implications, through a structured interview. The results indicated a lack of understanding of several aspects investigated and the evolution of knowledge with increasing age. Thus, it was verified that the older children have a greater perception of the risk when compared to the smaller ones.

Studies show the importance of risk perception for the effectiveness of prevention strategies. The study by Noronha and Rodrigues (2011) argued that children's perception of their own health is an important indicator for the definition of child health promotion strategies. The study was conducted with 216 Portuguese children and concluded that describing the health profile of children can contribute to the planning of intervention strategies and health education for children in the school context.

Authors such as Khandarman, Harun-Or-Rashida and Sakamotoa (2012) examined the perception of burn risk factors in 1,154 children under five years of age in Mongolia, as this is one of the major causes of accidents in children. Of the total, 25% of the children had already suffered burns, most of which occurred inside the house. The study concluded that the knowledge and practice of caregivers was insufficient to prevent accidents, and the physical conditions of the domestic environment were generally inadequate.

Other studies can also be found in the international context, such as that of Soori (2000), which analyzed the perception of the dangers of playing outside the home and compared the differences between younger children with older children, boys and girls, and children more economically favored with those less favored. According to the study, older children are more likely to perceive crossing a busy highway with their friends as safe when compared to younger ones. Boys compared to girls are more likely to perceive climbing a wall as safe, and economically disadvantaged children are more likely to perceive riding a bicycle without a helmet as safe than more economically favored children (Soori, 2000).

The data from this study were corroborated in the WHO/UNICEF (2008) report, which pointed to a greater occurrence of accidents with boys, both because of their different degree of activity and the way they are socialized, since parents usually limit girls in exploratory activities more than boys. Poverty, in turn, is a factor that leads to greater vulnerability to environmental risks. However, it is not just that. Accidents are also related to the inability of children to control and modify their environments, since these were designed mostly by and for adults. Thus, it is important that the needs of children are incorporated into the environment in which they live, since among the most satisfactory prevention strategies is the adaptation of the environment to the characteristics of children, integrating safety in product design (WHO/UNICEF, 2008).

On the other hand, studies such as those by Ronan, Johnston, Daly and Fairley (2001) found that children aged five to thirteen showed fairly accurate

perceptions of the risks that actually exist in their environment, a widespread awareness of the need for risk reduction as a protective factor and a moderate to strong belief about their ability to deal emotionally with future risks. The study also found that children involved in risk education programs demonstrated more stable perceptions, reduced fear of risks and a high concern about the importance of protective behaviors when compared to children who reported not participating in such a program. In addition, children who participated in two or more programs presented a more significant concern about protective behaviors compared to those who participated in only one program.

In the same way, a study by Greening, Stoppelbein, Chandler and Elkin (2013) found that lack of personal experience causes less concern about health threats in children and adolescents aged nine to seventeen, not sensitizing that population for potential risks. In the same way, the study by Little and Vyver (2010) identified that the child's characteristics, such as age, sex, risk behaviors and search for sensations influence their ability to assess the risks of playful outdoor activities. Children aged four to five were able to identify injury risk behaviors, but were not able to differentiate the potential for injury from one behavior to another, which could be better explored in older children.

According to the WHO/UNICEF (2008) report, with regard to prevention, it is important to consider that the type of accident varies with the age, developmental stage and context in which the child lives, which is continuously in transformation. For example, as far as traffic is concerned, studies have shown that young children lack the knowledge and attitudes, as well as the degree of concentration needed to meet the challenges that a road can impose, however secure it may be. Similarly, a child may fall from a high place because their ability to climb does not match their ability to analyze the situation (WHO/UNICEF, 2008).

The social improvements related to childhood must be tied to the physical environment where life develops (Galli, 2014). Therefore, thinking about the environment is an essential part of policies aimed at protecting children from accidents. Thus, it is necessary to break with the belief that accidents are due to fate. Data on how children perceive risks, how they act to protect themselves, and the development of integrated prevention programs and strategies among different social entities and political commitment to prevention are essential to ensure safer childhoods.

Considering the above, the objective of this study was to analyze the perception of risk of accidents in

children aged 10-12 years, as well as their opinion regarding prevention attitudes. It is expected to contribute with data that can subsidize public policies and prevention programs, with the school, the family and society in general, as allies in this important process.

METHOD

Participants

The study was carried out with 886 children from the sixth grade of the public school of Cascavel-PR, aged 10 to 12 years ($M = 10.66$, $SD = 0.62$), with 54% of the sample being female and 45,7% male. When the sample was characterized by age, it was found that, at the time of the research, 415 children were 10 years old (46.9%), 392 children were 11 years old (44.2%) and 79 were 12 years old (48,9% of the sample). The number of students enrolled in the sixth year of 29 schools in the urban zone of Cascavel in the year 2016 was $N = 3625$. Thus, the selected sample was representative of this population and the data collection was done in 19 of the 29 schools.

Instruments and procedures

A questionnaire was applied in 19 state schools (the municipality has 29 schools that serve students in the urban area, excluding schools that attend Youth and Adult Education (EJA), vocational education, special education and field education), after approval of the Ethics Committee (Number 1.450.652 on 14/03/2016) of Universidade Estadual do Oeste do Paraná (UNIOESTE) and authorization of the Regional Nucleus of Education. The principals of the schools signed the Term of Institutional Agreement, and the schools were selected by draw lot. The students participated with the authorization of their parents or guardians, by means of a signed Free and Informed Consent Form, which was also signed by the participants. The questionnaire was completed in the classroom during the first semester of 2016.

The research instrument was divided in two blocks, with the first being composed of 16 questions about accidents. The participant indicated whether or not he had experienced an accident. Subsequently, the participant responded to an ad hoc scale called Child Perception on exposure to accident risks. The question was "How likely is that to happen to you?" (responses ranged from 1=low to 5=high). In the second block, participants used a scale of 1-5 to indicate how much they agreed that certain attitudes could reduce the risk of accidents or not (1 = strongly disagree and 5

= strongly agree), being constituted in the ad hoc scale of Accident Prevention Attitudes In Children.

The items of the scales, both from the first and from the second block, were developed from the literature in the area, consultation with specialists (local Civil Defense agents, Fire Brigade, Military Police and health professionals who attend to occurrences of disasters in the region) and consultation to the database of the 4th. Group of Firemen from PR (Which covers the city of Cascavel). The instrument was not validated previously but was first used in this study. A pilot test was conducted with 30 children to verify if they had difficulties in understanding the items of the questionnaire. From the test, the necessary adjustments were made.

Data analysis

The data were entered in a spreadsheet and analyzed quantitatively by the Statistical Package for Social Sciences (SPSS, v. 23.0). Factor analyzes were employed in order to test the psychometric properties of the instruments. In the sequence, the percentage of participating children who have experienced different types of accidents was verified, calculating the percentage also

by sex. Finally, we calculated the mean in the perception of the exposure to the risk of accidents and the importance of the prevention attitudes, and if the differences in means by sex were significant. For this the Student's t-test was used.

RESULTS AND DISCUSSION

First, a factorial analysis of the scales used in the study was performed, in order to verify its internal consistency. The Child Perception Scale on Exposure to Accident Risks, with 16 items, presented Cronbach's alpha of .87 and 42.97% of variance explained. The factorial analysis by the Principal Components method with Varimax Rotation resulted in two factors. The first one, comprised by eight items, was named Accidents with External Cause (causes that most often escape the child's control) and presented Cronbach's Alpha of .81. The second factor, also with eight items, was named Accidents Related to Childhood Games and Environmental Exploration (being more related to the child's activities and its development period), presented Cronbach's Alpha of .78. Table 1 shows the loads of items in each factor.

Table 1

Factorial Analysis of Children's Perception Scale on Accident Risks

Items in the Scale	Factor 1	Factor 2
Burn		.645
Fall of an object		.601
Fall from a high place		.651
Running over	.582	.335
Electric shock	.323	.556
Choking		.660
Asphyxia	.488	.269
Drowning		.605
Physical aggression	.428	
Car accident	.710	
Motorcycle accident	.725	
Bicycle accident		.514
Bus accident	.745	
Machine accident	.673	
Intoxication and/or poisoning	.582	
Attack and/or accidents with animals/insects	.365	.475
Factor Alpha	.81	.78

Note. Extraction Method: Analysis of Principal Components with Varimax Rotation (Kayser Normalization); N = 886.

Then, a factorial analysis of the scale on Accident Prevention Attitudes in Children was carried out. The

16 items scale presented Cronbach's alpha of .84 and explained variance of 56.11%. The factorial analysis

by the Principal Components method with Varimax Rotation resulted in four factors. The first one named Play safety ($\alpha = .68$), the second Protection in traffic ($\alpha = .80$), the third Avoid dangerous games ($\alpha = .79$) and the fourth Respect recommendations on the safety of places and activities ($\alpha = .64$). The results are shown in

Table 2. Although factors 1 and 4 presented alphas lower than .70, the scale, in general, presented good internal consistency, suggesting that the next studies will include more variables related to the factor items, in order to increase their variance. In this study, the way items loaded cover activities with different characteristics.

Table 2

Factorial Analysis of the Scale on Accident Prevention Attitudes in Children

Items in the Scale	1	2	3	4
Play on the street with adult supervision		.352		.397
Respect traffic signs		.806		
Cross the street on the security strip		.792		
Wear the seat belt		.771		
Do not get into the water in places not attended by lifeguards, at night and after meals				.599
Do not handle sharp tools				.649
Do not play on the beach on rainy days				.626
Do not perform shallow water dives				.611
Wear life-jackets when entering the water	.735			
Master the practice of swimming	.497			
Do not play in or near the pool without adult supervision	.669			
Play away from ravines, stairs and balconies	.483		.445	.338
Do not play near the stove when in use	.318		.676	
Do not place metallic objects inside electrical equipment and outlets			.817	
Do not handle alcohol near fire			.823	
Use safety equipment for riding a motorcycle, bicycle, skateboard, skates	.737			
Factor Alpha	.68	.80	.79	.64

Note. Extraction Method: Analysis of Principal Components with Varimax Rotation (Kayser Normalization); N=886.

The percentage of participating children who have experienced different types of accidents (Table 3), as well as the average perception of exposure to them, was verified. It was verified that the accidents that the children most experienced were accidents with a bicycle (47.1%), choking (45%), object falling (39.5%), burning (37.8%), drowning (36.3%) and attacks with animals or insects (35.3%). According to Mello-Jorge and Koizumi (2010), the accidents that most leave children hospitalized in Brazil are falls, accidents with transportation, burns, contact with poisonous animals and plants, exposure to fire and poisoning, which indicates some similarity to the studied sample. The same study revealed that when the occurrence by gender is

verified, boys are more susceptible to physical aggression, electric shock, automobile accidents, falling from high places and accidents with animals and/or insects, while the girls are more susceptible to burns and drowning (Mello-Jorge & Koizumi, 2010). The results of the present study corroborate these findings.

Although the percentage of accidents in the sample studied is relatively high (up to 47.1% in bicycle accidents, for example), when the likelihood of the same types of accidents is expected to occur (perception of the degree of exposure) was questioned, the average of responses was quite low, corroborating the study by Soori (2000) that older children have a lower perception of risk. The highest averages were for burn

(2.13; 2;14), object fall (2.08; 2.03), choking (2.03; 2.09), bicycle accident (2.24; 1.97), male and female respectively, and responses varied from 1-5 (1=low; 5=high). The possibility arises that, for the period of development in which they are, i.e., pre-adolescence, a sense of invulnerability could predominate in the

sample studied. It refers to the individual's conviction that victimizing events do not occur with him (Bulman & Frieze, 1983), which may be related to a high sense of control over the environment, believing in the ability to control and predict events that may occur to it (Chiuzi & Siqueira, 2008).

Table 3

Percentage Analysis and Means on Personal Accident Experience and Perception of Risk Exposure in Children

Type of accident	Total of the sample (886 cases)		Occurrence by gender (Answer "Yes")		Means for Risk exposure perception (responses from 1-5)		t-test for Equality of Means
	Yes %	No %	Male %	Female %	Male (n = 405)	Female (n = 478)	Sig. (2-tailed)
Burn	37.80	62.20	17.49	19.61	2.13	2.14	0.840
Fall from a high place	20.50	70.50	11.13	08.33	1.90	1.73	**
Fall of an object	39.50	60.50	20.31	20.14	2.08	2.03	0.069
Running over	08.90	91.10	04.34	03.38	1.56	1.60	0.241
Electric shock	33.20	66.80	18.90	13.42	1.95	1.83	**
Choking	45.00	55.00	23.14	22.26	2.03	2.09	0.072
Asphyxia	11.40	88.60	05.12	05.83	1.40	1.50	0.857
Drowning	36.30	63.70	16.96	19.61	1.85	1.89	0.389
Physical aggression	16.70	83.30	11.66	04.77	1.74	1.37	**
Car accident	17.70	82.30	09.36	07.77	1.67	1.63	0.063
Motorcycle accident	06.10	93.90	03.35	02.47	1.52	1.47	0.101
Bicycle accident	47.10	52.90	02.61	02.04	2.24	1.97	**
Bus accident	02.50	97.50	01.06	00.53	1.26	1.27	0.114
Machine accident	05.00	94.30	03.71	02.12	1.43	1.32	*
Intoxication and/or poisoning	04.80	95.10	02.12	02.82	1.93	1.81	0.749
Attack and/or accidents with animals/insects	35.30	64.70	18.37	16.60	1.34	1.33	**

Note. N= 886 children; **p<0,001; *p<0,05

However, in order for this to be confirmed, comparisons between samples of different ages should be performed, as well as the evaluation of these two constructs in this age group. The results also indicate the need for education programs for the recognition of risks in children, as well as for the qualification of the perception on the exposure to certain accidents (Favero et al., 2016), especially those that the statistics show as high occurrence.

Finally, through the Student's t-test for independent samples, we verified the differences between the averages by gender and if they were significant, considering the perception of the exposure and agreement on prevention attitudes. Regarding the exposure to accidents, the differences between averages were significant for the following variables: Fall from a high place ($t=-3.198$, $df=802.269$, $p=0.001$, $MD=-.0870$), Electric shock ($t=-5.322$, $df=813.926$, $p=0.001$, $MD=-.1655$),

Physical aggression ($t=-5.709$, $df=699.615$, $p=0.001$, $MD=-.1408$), Bicycle accident ($t=-5.872$, $df=852.276$, $p=0.001$, $MD=-.1919$), Machine accident ($t=-3.024$, $df=691.387$, $p=0.003$, $MD=-.10498$), Attack and/or accidents with animals/insects ($t=-3.260$, $df=837.077$, $p=0.001$, $MD=-.1033$). The averages for these variables were higher for males, a factor that may be related to personal experience (Greening et al., 2013), which corroborates the data from the study by Mello-Jorge and Koizumi (2010). However, when questioned about how much they agree that certain attitudes can reduce exposure to the risk of accidents, the children participating had high averages (Table 4), since the responses varied from 1-5 (1 = strongly disagree, 5 = strongly agree). In the same way, the study by Little and Vyver (2010) identified that little children are able to identify injury risk behaviors, which does not mean that children can perceive themselves as exposed to these same risks.

Table 4*Analysis of the Means of the Degree of Agreement on Accident Prevention Attitudes in Children*

Do you agree that the following attitudes may lower your exposure to the risk of accidents? (responses from 1-5)	Means for Accident Prevention Attitudes (Responses from 1-5)		<i>t</i> -test for Equality of Means Sig.(2-tailed)
	Male (n=405)	Female (n=478)	
Play on the street with adult supervision	3.75	3.83	0.275
Respect traffic signs	4.52	4.48	0.480
Cross the street on the security strip	4.39	4.24	0.497
Wear the seat belt	4.53	4.50	0.550
Do not get into the water in places not attended by lifeguards, at night and after meals	3.86	3.94	0.312
Do not handle sharp tools	3.68	3.93	**
Do not play on the beach on rainy days	3.85	3.92	0.610
Do not perform shallow water dives	3.62	3.72	0.192
Wear life-jackets when entering the water	3.73	3.88	*
Master the practice of swimming	4.03	3.93	0.170
Do not play in or near the pool without adult supervision	3.40	3.76	**
Play away from ravines, stairs and balconies	3.91	4.11	*
Do not play near the stove when in use	4.21	4.30	0.145
Do not place metallic objects inside electrical equipment and outlets	4.40	4.39	0.889
Do not handle alcohol near fire	4.46	4.50	0.431
Use safety equipment for riding a motorcycle, bicycle, skateboard, skates	3.94	4.11	*

Note. N= 886 children; ** $p < 0,001$; * $p < 0,05$

We found significant differences between averages by gender regarding prevention attitudes on the following variables: 1) not handling sharp tools ($t = -3.474$, $df = 799.669$, $p = 0.001$, $MD = -.2560$); 2) use a life jacket when entering the water ($t = -2.143$, $df = 803.197$, $p = 0.032$, $MD = -1.581$); 3) not play in or near the pool without adult supervision ($t = -4.369$, $df = 802.272$, $p = 0.001$, $MD = -.3615$); 4) play away from ravines, stairs and balconies ($t = -2.796$, $df = 788.579$, $p = 0.005$, $MD = -.1997$); 5) use safety equipment for riding a motorcycle, bicycle, skateboard, skates, etc. ($t = -2.400$, $df = 789.875$, $p = 0.017$, $MD = -.1741$). In all variables, the averages were higher for the female gender.

The data are in the same direction as the study by Soori (2000), who found that boys, when compared to girls, have a greater perception of safety in certain activities, such as climbing a wall. This study has other variables, however, they also indicate activities that are more stimulated in boys, and this difference may be related to cultural and educational factors, which lead to the adoption of different forms of socialization (WHO/UNICEF, 2008).

CONCLUSION

It is concluded that the percentage of accidents involving children in the sample analyzed is quite high. However, the average perception of children on exposure to accidents varies from low to moderate. Otherwise, children generally agree that prevention attitudes are important to avoid accidents. In this sense, the results can be the effect of the education received both in the family, in the school and in the community as a whole, through campaigns and prevention programs. Thus, the results may be related to the children's level of information about the assessed aspects, unlike what was found on the risk exposure perception, which would be more related to personal belief in the possibility of a future event.

Precisely because of the limitations that children may have regarding risk assessment, it is suggested that interventions should take place in the field of education as well as in the field of space adequacy in order to minimize the possibility of accidents. That is, public policies should seek to encourage and develop actions in order to build safer environments. The occurrence

of accidents with children is largely due to their vulnerability, which is closely related to the social conditions in which families are located. Thus, actions seeking the prevention of accidents with children cannot be given in isolation, i.e., information alone will not be enough if the environmental conditions remain the same.

It is suggested that more studies be done with children on the subject of accident risk perception and that the studies prioritize the understanding of this process from the perspective of the children themselves. In addition, future studies may also improve the research tools developed by the authors and presented here, as well as use qualitative methods to evaluate data in depth. Longitudinal studies are also encouraged to understand if and how the perception of risk changes with age.

Among the limitations of the study are the fact that there was no previous exploratory study, conducted directly with the children, in order to raise the variables to be analyzed. Otherwise, the study was based on data from the literature, official statistics and expert opinion. This fact does not diminish the importance of the present research, since the area lacks development and it was carried out with a robust sample. Considering the above, listening to children in a future study may be of fundamental relevance to understand why, while children recognize the importance of preventing risks, they do not perceive themselves exposed to the different threats present in the environment. In addition, the study could be extended to the adolescent and adult population, in order to generate comparative groups.

REFERENCES

- Brasil. (2012). Interministerial Ordinance No. 02, of 12/6/2012, which institutes the Joint National Protocol for Integral Protection of children and adolescents, seniors and persons with disabilities in risk and disaster situations. *Diário Oficial [da] República Federativa do Brasil*, Brasília, DF, Dec. 06, 2012. Retrieved from <http://www.jusbrasil.com.br/diarios/58845141/dou-secao-1-09-09-2013-pg-18>
- Borner, S., Albino, J. C. T., Caraveo, L. M. N., & Tejada, A. C. C. (2015). Exploring Mexican adolescents' perceptions of environmental health risks: a photographic approach to risk analysis. *Ciência & Saúde Coletiva*, 20(5), 1617-1627. doi: 10.1590/1413-81232015205.11382014
- Bulman, R. J. & Frieze, I. H. (1983). A theoretical perspective for understanding reactions to victimization. *Journal of Social Issues*, 39(2), 01-17. doi: 10.1111/j.1540-4560.1983.tb00138.x
- Chiuzi, R. M. & Siqueira, M. M. M. (2008). Construção e validação da escala de percepção de invulnerabilidade. *Psicologia em Estudo*, 13(4), 885-892. doi: 10.1590/S1413-73722008000400027
- Dziubanek, G., Marchwińska-Wyrwał, E., Piekut, A., Hajok, I., Bilewicz-Wyrozumska, T., & Kuraszewska B. (2013). Environmental risks perception: a study of the awareness of families to threats in areas with increased health disorders in children. *Annals of Agricultural and Environmental Medicine*, 20(3), 555-558. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/24069864>
- Favero, E., Trindade, M. C., Passuello, A., Pauletti, C., Foresti, A. J., Sarriera, J. C., & Silva Filho, L. C. P. (2016). Percepção de risco ambiental: uma análise a partir de anotações de campo. *Revista Interamericana de Psicologia/Interamerican Journal of Psychology*, 50(1), 64-74. Retrieved from <https://journal.sipsych.org/index.php/IJP/article/viewFile/42/pdf>
- Galli, F. (2014). *A relação das crianças do sul do Brasil com o ambiente e a sua relação com o bem-estar pessoal* (Master's thesis). Retrieved from <https://www.lume.ufrgs.br/bitstream/handle/10183/98325/000929112.pdf?sequence=1>
- Greening, L., Stoppelbein, L., Chandler, C. C., & Elkin, D. (2013). Predictors of children's and adolescents' risk perception. *Journal of Pediatric Psychology*, 30, 425-435. Retrieved from <http://jpepsy.oxfordjournals.org/content/30/5/425.full.pdf>
- Khandarma, T. O., Harun-Or-Rashid M., & Sakamoto, J. (2012). Risk factors of burns among children in Mongolia. *Burns*, 38(5), 751-757. doi: 10.1016/j.burns.2011.11.006.
- Little, H. & Vyver, S. (2010). Individual differences in children's risk perception and appraisals in outdoor play environments. *International Journal of Early Years Education*, 18, 297-313. doi: 10.1080/09669760.2010.531600
- Melchiori, L. E., Kusumi, P., Rodrigues, O. M. P. R., Valle, T. G. Do, Capellini, V. M., & Neme, C. M. B. (2010). Percepção de risco de pessoas envolvidas com intoxicação por chumbo. *Paidéia* (Ribeirão Preto), 20(45), 63-72. doi: 10.1590/S0103-863X2010000100009
- Melo-Jorge, M. H. M. & Koizumi, S. (2010). *Acidentes na infância: magnitude e subsídios para a sua prevenção*. Relatório da pesquisa apresentado à Criança Segura, São Paulo. Retrieved from <http://www.criancasegura.com.br/downloads/relatoriocrise.pdf>

- Noronha, M. I. & Rodrigues, M. A. (2011). Saúde e bem-estar de crianças em idade escolar. *Esc Anna Nery*, 15(2), 395-401. doi: 10.1590/S1414-81452011000200024
- Ronan, K. R., Johnston, D. M., Daly, M., & Fairley, R. (2001). School children's risk perceptions and preparedness: a hazards education survey. *The Australasian Journal of Disaster and Trauma Studies*, 01, 2001. Retrieved from <http://www.massey.ac.nz/~trauma/issues/2001-1/ronan.htm>
- Soori, H. (2000). Children's risk perception and parents' views on levels of risk that children attach to outdoor activities. *Saudi Medical Journal*, 5, 455-460. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/11500680>
- World Health Organization/UNICEF. (2008). *World report on child injury prevention*. World Health Organization, Geneva, Switzerland. Retrieved from http://www.who.int/violence_injury_prevention/child/injury/world_report/en/

Endereço para correspondência:

Eveline Fávero

Travessa Cristo Rei, 220/403

CEP: 85812-080 – Cascavel/PR

E-mail: evelinefaver@yahoo.com.br

Recebido em 07/03/2017

Aceito em 20/05/2017