

Międzywydziałowa Katedra i Zakład Zdrowia Publicznego
Akademii Medycznej w Lublinie
Interfaculty Chair and Department of Public Health, Medical University of Lublin

WOJCIECH KRAWCZYK, MARIUSZ GONIEWICZ,
EDYTA OPALIŃSKA

*Analysis of causes and effects of children's
injuries in a rural area*

Analiza przyczyn i skutków urazów u dzieci na wsi

Accidents and injuries are the main cause of death among children, before cancer diseases and circulatory system diseases. An analysis of after-accident protocols of Farmer Social Insurance Office (Kasa Rolniczego Ubezpieczenia Społecznego) reveals that every year about 1,000 children, up to 15 year old, meet with accidents (6).

Most often injuries of children living in a rural area are: extensive concomitant injuries of head, limbs, pelvis, flesh organs and other body parts (1, 2). Each injury, particularly referring to many organs, constitute a big threat to health and life. It particularly relates to children (3, 4, 5).

Due to an increase in the number of injuries in the rural environment, especially involving children, we decided to take a closer look at this issue and present some problems in the hereby paper. (6)

MATERIAL AND METHOD

Research comprised 170 general practitioners (GP's), working in communal health centres and local medical centres encompassing rural areas.

Researchers used the method of auditorium questionnaires, which were filled out anonymously. Questionnaire consisted of 17 questions regarding such issues as: most frequent causes of children's injuries, type of injury, its place, degree of possibility of providing help and activities in favour of health promotion.

Results are presented in tables as well as in number and percentage juxtapositions. Some results are demonstrated by means of charts. In case of tables referring to a question, which might have more than one answer, the number of respondents were taken into account as a base to calculate the percentage indicators. There was no lack of answers in case of number juxtapositions, which means that the sum of respondents answering various questions are different.

Research was carried out at training courses for GP's, which were held at Institute of Medicine of Rural Environment (Instytut Medycyny Wsi) in Lublin. Research was conducted since January 1998 by auditorium method. After informing GP's about the objective of the research and giving instructions about the way the questionnaire should be filled out, the respondents completed the questionnaire in the presence of a person from the research team.

Among 170 respondents there were 108 (63%) women and 62 (37%) men. Out of all surveyed people, 60 persons worked over 15 years, 58 persons worked from 11 to 15 years, other people less than 10 years.

Most of the surveyed people work in communal or rural health centre – 103 persons (61%), but 67 persons (39%) work in local medical centre whose activity encompasses the rural areas.

The age of most surveyed GP's ranged from 36 to 45 years – 99 persons (58%), 25-35 years – 45 persons (26%) and the remaining 26 persons (16%) were over 46 years old.

The majority of surveyed people are in the course of degree II of specialisation – 58 persons (34%), 50 persons possess degree I of specialisation of internal diseases or pediatrics (29%), 46 persons possess degree II of specialisation (27%), and only 16 persons do not have any degree of specialisation (10%) – (Fig 1).

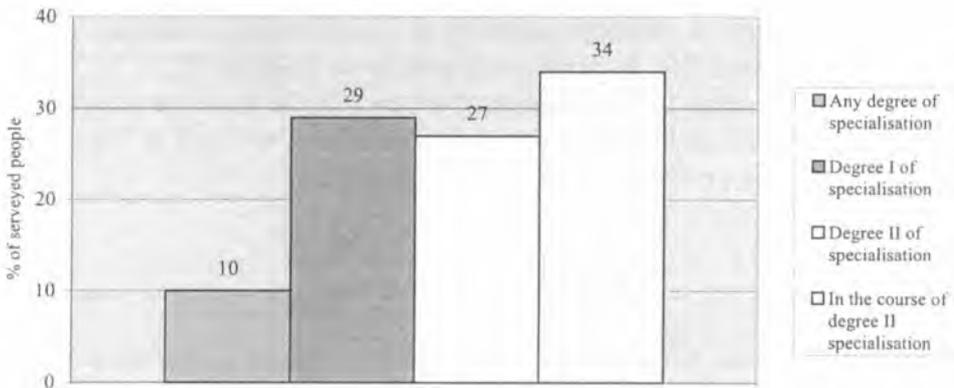


Fig. 1. Possessed specialisation

Passing to discussion of children's injuries, we asked the surveyed people what is the age and sex of children who most often visit a doctor. It turned out that the children's age ranges from 6 to 10 years, as confirmed by 98 GP's (58%), and then children from 1 to 5 years old, as confirmed by 42 GP's (25%).

Taking into account the sex of children with injuries taken to a doctor, obviously, we are not surprised by the results in this case, because 156 (92%) out of 170 surveyed people stated that most children taken to a doctor are boys and 14 (8%) girls.

Most frequent causes of children's injuries are: 1) accidents at school or at kindergarten, 2) accidents during sports activities 3) travelling accidents, 4) accidents while doing housework, 5) accidents at a farm, 6) poisoning with medicines, 7) poisoning with chemical substances, 8) accidents connected with water tanks. Accidents at schools and kindergartens are in the first place, which is connected with the fact that children stay for a long time during a day in big groups without constant supervision of teachers. One question, in the group of questions related to the causes of injuries, was about the lack of

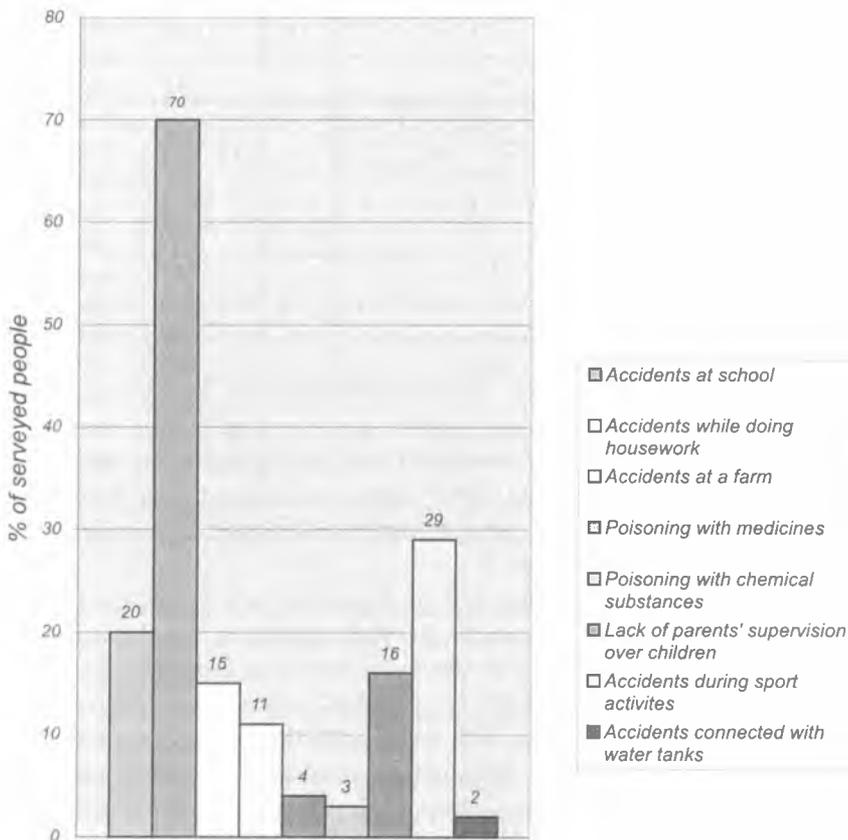


Fig. 2. Causes of injuries

parents' supervision over children, which may be a cause of above-mentioned injuries. 16 out of 170 surveyed people gave such a cause (Fig 2).

The next two questions aimed at finding out the frequency and place of children's injury. It turned out that the most frequent types of injury are the following: bruises - 66 answers (40%) and wounds - 47 answers (28%). Other injuries were sprains and twists - 30 answers (18%), burns - 18 answers (11%) and fractures - 10 answers (6%).

Taking into account the place of injury, the following parts of the body should be mentioned: head, chest, stomach, hand, leg, pelvis, and spine. Most often the place of injury is hand, as stated by 88 surveyed people (52%), leg - 50 (30%), head - 20 (12%). These parts of the body are most liable to injury. Other body parts are: chest, stomach, pelvis and stomach (Tab. 1).

Tab. 1 Most often injured body parts

Body part	Number of answers	
	N	&
Hand	86	52
Leg	50	30
Head	20	12
Chest	5	3
Stomach	3	2
Pelvis and spine	2	1
Total	168	100

All injuries and accidents, which were considered previously in points, are here presented in time schedule. In winter months, fewer children get injured. It is connected with greater supervision over children by parents, which is insufficient in summer time, and less housework done in the farm (Tab. 2).

Evaluation of the possibility of providing help to the injured by GP's and the causes of the impossibility of providing such help reveals that such activities as immobilisation of a fractured limb, holding up bleeding, implementation of anti-shock procedure, reanimation are the ones which can be performed by GP's. However, performance of such activities as surgical wound treatment, access to deep veins, protection of biological material are worse handled by GP's (Tab. 3). The most frequent reason for impossibility of performing any of these activities is lack of equipment - 112 people (82%), 12 GP's (8.6%) stated that they do not possess sufficient skills and do not have equipment in consulting rooms.

Tab. 2 Number of accidents in particular months

Injuries	Months											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Travelling accidents	14	16	16	13	35	60	66	51	34	18	19	19
Accidents at school or kindergarten	27	26	32	46	76	42	4	6	82	53	25	26
Accidents while doing housework	12	10	14	23	21	28	44	47	27	14	14	27
Accidents at a farm	0	0	3	11	16	30	72	88	40	7	1	0
Poisoning with medicines	24	29	26	17	23	23	22	20	21	17	22	21
Poisoning with chemical substances	4	3	11	15	22	35	28	26	14	8	4	4
Lack of parents' supervision of over children	28	24	28	32	41	52	73	72	40	31	25	26
Accidents during sports activities	32	24	15	28	55	75	71	57	43	25	13	21
Accidents connected with water tanks	3	4	1	1	10	30	30	45	5	0	2	4
Total	144	136	146	186	299	375	410	412	306	173	125	148

Additional examinations which are most often advised to the injured children by GP's are: X-ray - 110 respondents, USG - 50 and EEG - 15. 2 respondents also mentioned toxicological examination.

Most of the of GP's do not run in their regions a health promotion training aiming at children's injury prevention - 104 GP's (61%), but it seems that this results from the lack of interest in this issue on the part of parents. 72% of parents do not demonstrate any interest in the fact that the majority of schools run prophylactic activities with respect to accident prevention - 60% (7).

Tab. 3. Possibility of providing help to injured children

Injury treatment	Possibility of providing help			
	YES	%	NO	%
Immobilisation of a limb	163	96	7	4
Surgical wound treatment	71	42	99	58
Holding up bleeding	158	93	12	7
Anti-shock procedure	135	79	35	21
Reanimation	133	78	37	22
Access to deep vanes	56	33	114	67
Protection of biological material	64	38	106	62

CONCLUSIONS

1. Age of the most frequently injured children ranges from 6 to 10 years.
2. Boys more frequently get injured than girls.
3. The biggest number of accidents take place in schools and kindergartens.
4. Most frequent type of injury is bruise and most often injured part of the body is hand.
5. Most accidents take place in summer time.

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STRESZCZENIE

Badaniem w formie ankiety audytoryjnej objęto 170 lekarzy podstawowej opieki zdrowotnej. Uzyskane dane zostały poddane analizie statystycznej. Większość ankietowanych (58%) podała, że urazom najczęściej ulegają dzieci między 6 a 10 rokiem życia. W 90% są to chłopcy, 10% stanowią dziewczynki. Najczęstsza przyczyna obrażeń to wypadek w szkole (70%) oraz wypadek podczas uprawiania sportu (29%). Określając lokalizację obrażenia, 52% badanych wskazało na kończynę górną, 30% na kończynę dolną. W zakresie możliwości udzielenia pomocy poszkodowanym przez lekarzy okazuje się, że takie działania, jak unieruchomienie kończyny przy złamaniu, zatamowanie krwawienia, wdrożenie postępowania przeciwwstrząsowego, reanimacja, to czynności, które potrafi wykonać większość lekarzy POZ. Gorzej wypada wykonanie dostępu do żył głębokich lub zabezpieczenie materiału biologicznego, a najczęstszą przyczyną tego stanu rzeczy jest brak wyposażenia, jak stwierdziło 82% ankietowanych.

Większość lekarzy (61%) nie prowadzi w swoim rejonie szkolenia z promocji zdrowia pod kątem zapobiegania urazowości u dzieci, ale wydaje się, że wynika to z braku zainteresowania tym problemem ze strony rodziców - 74% rodziców nie wykazuje zainteresowania.

