

# Child labour for the benefit of the family in rural Poland

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## Abstract

Employing children to work in a family household or on a farm is a widespread phenomena in many countries worldwide. This paper presents the results of an investigation of the phenomenon of the involvement of children aged 11-14 years in work on family farms and in rural households in central and eastern Poland, a typical agricultural region. The data obtained are characterized by high reliability due to utilization of various research techniques: surveys and observations based on records of daily routines. Material collected by questionnaire survey is significant because of the relatively large group of respondents – 1,536 people, selected by stratified sampling. Records of the daily routines of 332 people randomly selected from the general sample of 1,536 people, were conducted over a total period of 2 months through all the seasons – 2 weeks in each season – provided reliable data. Analysis of the collected material allowed characterization of the phenomenon of children's engagement in the work in a family household and on a farm belonging to their parents or relatives, and an indication of the life and health hazards of children involved in work for a benefit of the family.

## Key words

child labour, child labour and health, rural children

## INTRODUCTION

The issue of child labour is a complex global phenomenon the origin of which rests in the culture and traditions of certain societies, their structure and economic conditions. Concern arose in the early 19<sup>th</sup> century, the period of intensive development of industry in America and Europe. Factory owners, in order to maximize their profits, began to employ children as the cheapest labour. Some researchers have pointed out that the Industrial Revolution was responsible not only for the widespread inclusion of child labour [1], but also for employing children to work in agriculture, as it was common practice in the 18<sup>th</sup> century.

Although in recent years a significant decline in the number of working children has been reported, it should be noted that to date globally, 1 in 5 children under the age of 14 years is economically active (20.3%), 1 in 7 performs light work (13.9%), and 1 in 12 (8.1%) performs work that is dangerous or detrimental to health and development [2]. In 2002, the research work of the International Programme on the Elimination of Child Labour (IPEC) estimated that out of 246 million minors, i.e. persons under 18 years of age, engaged in heavy work, 171 million were employed in high-risk conditions, defined by the International Labour Organization (ILO) as conditions unsuitable for people of this age, and 8.4 million minors performed the heaviest forms of work prohibited by ILO Convention No. 182 [3].

Several researchers (e.g. A. Amassie [4], A. Gigno, F. Rosti, L. Guarcello [5]) point out that the data on the scale of the phenomena of child labour published by the ILO and the World Bank are incomplete and do not include the children performing work for a family household or farm, nor in the

informal sector in the form of unpaid work. In addition, the underestimation of the number of working children may be caused by the fact that in many countries child labour is prohibited by law. It is therefore an 'underground economy' of the labour market, the scope of which is difficult to estimate, and therefore the authorities in many countries are reluctant to reveal the true extent of this phenomenon.

Although Europe is considered to be a continent free from child labour, it is estimated that about 5 million European children are used to work for companies, mainly in Central Europe and the Mediterranean region, including Turkey, where more than 1.6 million children aged 6-14 [6] demonstrated economic activity. Research undertaken by M. Dayioglu shows that over 2/3 of Turkish children perform gainful employment, while the remainder (32%) did not receive payment for their labour, since the vast majority of them worked for their own family.

In the United States of America, the issue of child labour is associated primarily with work in agriculture. The National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS) estimates that in 2006 in the United States, about 1.12 million people below the age of 19, worked on farms [7]. These were mostly children of farm owners, followed by children employed part-time at other farms, and children working together with parents who are migrant or seasonal workers. Most farms in the USA are still family concerns where engaging children in work is considered to be a part of the farming culture and tradition. In some cases, support from children is indispensable for economic reasons or due to lack of wage workers. Kim, Zepeda and Kantor refer to studies which show that the majority of children from rural areas work on farms, while all the children from farming families aged 13-19 perform this kind of work [8].

Although children employed on farms are exposed to several hazards, there are studies indicating that work in agriculture is lighter for them than the physical work in

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other sectors of the economy. This observation finds its justification in the results of research work conducted in India by the Delhi School of Economics and Indian Social Institute), which showed that child labour in agriculture is often light and allows obtaining an adequate education [9]. In the research group of 1,221 children from rural families it was found that on a day free from school classes, half of them worked less than 3 hours and 18% of them worked for more than 8 hours. The authors compared the situation of these children with their peers employed in factories and other forms of organized labour, to recognize the fact that the situation of the latter was much worse.

In Poland, the employment of children is primarily regulated by the Labour Code, the Regulation of the Council of Ministers proclaiming the list of prohibited employment for minors, Family and Guardianship Code, as well as the ILO Conventions ratified by Poland. All of the above-mentioned acts relate to the employment of minors as employees under a contract of employment or commission contract. Therefore, the children engaged by their parents to work on their own farms or other family workshops are without legal protection. In the aforementioned cases, it depends mainly on the parents whether the delegation of certain work affects their children in a positive way or, on the contrary, constitutes a threat to their health and development. Studies conducted in highly developed countries (e.g. the USA) argue that the social development of children is the primary motivation for their engagement in family farm work activities [10]. Sociologists in Poland came to similar conclusions, claiming that the children in farming families are no longer perceived as a cheap labour force [11] which, however, does not mean that the phenomenon of the involvement of children in work on family farms ceased to exist. Most Polish children under the age of 16, living in farming families, are engaged in work activities for the benefit of the farm [12-14]. Their assistance in running the farm is an important element of the family farming tradition and culture.

Regardless of the motivation of entrusting children with work in family farms, performing them, apart from educational and socializing purposes, also has certain economic value. Children participating in agricultural production, support the parents in exercising their profession and increasing family income. The value of child labour is especially appreciated in developing countries where children are perceived as cheap labour, and economic considerations are a crucial motivator of parents delegating work activities to their children [15]. The difficult financial situation of many families motivate them to send children to salaried employment, or engage them on their own farms in order to ensure elementary needs or improve the standard of living.

Despite the obvious benefits of the involvement of children in the work on a family farm, child labour in agriculture creates numerous hazards, and assigning children to tasks maladjusted to their capabilities may produce negative consequences for their health and development [16-18].

This article presents the phenomenon of work employment of children aged 11-14 living in Poland in areas characterized by a large share of agricultural production. Most of the families of the researched children derive income from work carried out on their own farms.

## MATERIALS AND METHODS

The case study of the phenomenon of the involvement of children in work on family farms and households is based on the results of research among children from rural families residing in central and eastern Poland, conducted from September 2008 – August 2009. The area under consideration is sparsely industrialized, typically agricultural, with a predominance of small and medium-sized family farms. A group of children was selected by stratified sampling in the following order:

- 1) random selection of 34 communes from the region;
- 2) random selection of one school in each of the communes;
- 3) in the selected schools, a survey about participation in work for the benefit of the family was conducted among children aged 11-14;
- 4) in each location, 10 children were randomly chosen for the research, based on the records of daily routines.

The research was anonymous. Supervision of the pupils' diaries was undertaken by their teachers who informed the parents about the aims of the research. Two of the children selected at random did not take part in the research because their parents did not consent to their children participating in the experiment.

The research group consisted of 1,536 children aged 11-14, who filled-out a random survey questionnaire: 'The employment of children in the family household and farm.' Among these children, 332 respondents were randomly selected to keep records of daily routines for a period of 8 weeks – 2 weeks in each season. The work performed in the household and farm, including work time, time spent on other activities, and discomforts felt on a given day, were recorded in the diaries.

The researched group of children was characterised by a similar number of girls – 779 (50.7%) and boys – 757 (49.3%). Older children aged 13-14 (56.9%) constituted a slightly larger group than younger children aged 11-12 (43.1%). All sampled pupils came from rural families living in 2 provinces of central and eastern Poland: Lublin and Podlaski. The majority of the group (70%) had direct contact with a farm – their parents had their own farms. The parents of the remaining group did not have a farm and worked outside agriculture. Nevertheless, a significant part of the latter group had contact with work in agriculture by helping their grandparents and other members of the family, as well as friends. Among the families owning their own farms, for a half of the group, work on their own farms was the sole occupation of family members (48.6% of fathers and 38.6% of mothers). Other families owing farms were defined as 'dual professional', because at least one of the parents was engaged in a non-agricultural occupation besides working on the own farm.

## RESULTS

The results of the research based on records of daily routines show that during the 56-day period of observation, each child aged 11-14, on average, worked 1 hour in the household (0.97 h) and 45 minutes on the farm (0.70 h). The average amount of time spent on agricultural work was relatively small, even though it only applied to children

connected with an agricultural farm that belonged to parents or relatives. One has to bear in mind, however, on that public holidays and the days of winter, typically less agriculturally productive in almost every farm, were taken into account while calculating the average work engagement. The longest average time devoted daily to farm work was recorded in the summer, i.e. during the period when there was no school and, at the same time, agricultural work intensified. During that season, the children researched spent daily, on average, over 1 hour ( $\bar{x} = 1.2$  h) working on the farm (Fig. 1). A much shorter time was devoted to farm work in the autumn ( $\bar{x} = 0.66$  h) and spring ( $\bar{x} = 0.60$  h), and the shortest was noted in winter ( $\bar{x} = 0.44$  h). However, the time spent on work for the household varied to a minor extent, depending on the season of the year. On average, the researched group of children assisted in house work slightly longer during summer ( $\bar{x} = 1.20$  h) than in other seasons – an average of about 1 hour a day.

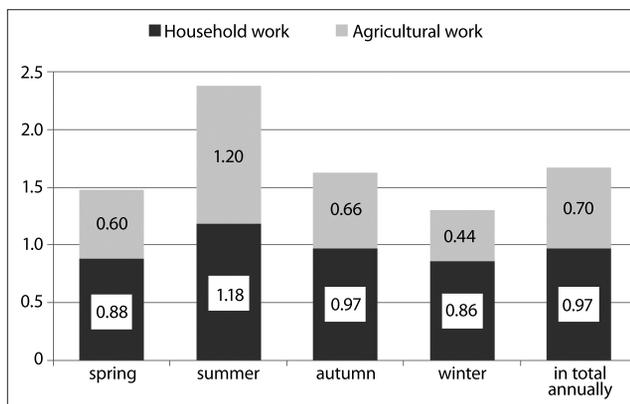


Fig. 1. Average time spent by children on household and agricultural work in different seasons

Regardless of the season, boys spent more time on farm work than girls. In spring, the differences in average working time between boys and girls were not statistically significant, while in autumn and spring they did become statistically significant ( $p < 0.01$ ). The greatest difference in average working time was recorded in summer. At this time of the year, the boys helped their parents in agricultural work almost 0.5 hours longer than girls ( $t = -3.78$ ,  $p < 0.001$ ).

Analysis of the time spent in performing agricultural work during the period of keeping records of daily routines, calculated for each child, shows that the situation of the individual child was very diverse. Among children associated with farm (284), during the period covered by the records of daily routines, 12 (4.2%) did not participate at all in work on the farm, while the others were involved in farm work. The

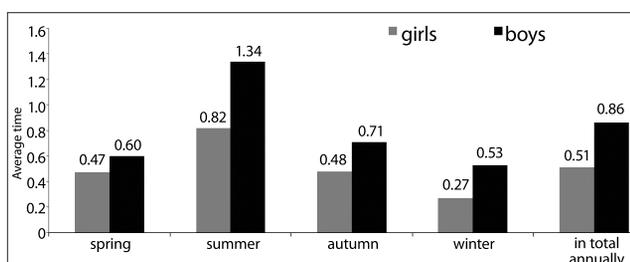


Fig. 2. Average time devoted by children to perform agricultural work in various seasons of the year presented by gender

great majority of children from farms were engaged in the work for a time not exceeding, on average, 1 hour per day (70.1% of the whole group), whereas the majority of them worked, on average, less than half-an-hour a day (Table 1).

It is therefore necessary to admit that the most of the researched children devoted a relatively small amount of time to farm work. Every 6<sup>th</sup> child (16.5%) devoted slightly more time to agricultural work, on average, between 1-1.5 hours a day. Almost every 10<sup>th</sup> farmers' child worked, on average, more than 1.5 hours per day. This may cause fatigue and overwork, and even negative consequences for their development and health.

The situation of children in terms of the time spent on agricultural work was very varied in different seasons, which is particularly apparent when average working time in winter and summer is compared (Table 1). These differences are due to the nature of agricultural production, especially of vegetables, as well as the obligatory education of children who benefit from the summer holidays, and therefore, to a greater extent, may help their parents in agricultural work. In winter, almost one third of the children were not engaged in work on the family farm, and almost the same proportion (34.6%) performed this work for no longer than for half-an-hour a day, on average. Only every 10<sup>th</sup> of the researched children worked an average of 1-1.5 hours, and children (3.3%) worked longer than 1.5 hours. The researched children worked much longer hours during the summer. In that season, compared with winter, the group of children who did not perform agricultural work was half the size (15.6%). The remaining worked much longer than in the winter. During school holidays, almost every 5<sup>th</sup> child worked, on average, more than 2 hours, whereas 8.4% of the farmers' children worked, on average, more than 3 hours a day.

Table 1. Average time spent by the researched children on agricultural work and their gender (on the basis of the data obtained from the diaries)<sup>1</sup>

Working time categories	girls		boys		total	
	no.	%	no.	%	no.	%
During the whole time of observation*						
no work done	6	4.3	6	4.2	12	4.2
less than 0.5 hour	72	51.1	43	30.1	115	40.5
between 0.51 and 1 hour	36	25.5	48	33.6	84	29.6
between 1.01 and 1.5 hour	19	13.5	28	19.6	47	16.5
over 1.5 hour	8	5.7	18	12.6	26	9.2
	141	100.0	143	100.0	284	100.0
In winter season**						
no work done	53	39.3	32	23.4	85	31.3
less than 0.5 hour	48	35.6	46	33.6	94	34.6
between 0.51 and 1 hour	22	16.3	35	25.5	57	21.0
between 1.01 and 1.5 hour	10	7.4	17	12.4	27	9.9
over 1.5 hour	2	1.5	7	5.1	9	3.3
	135	100.0	137	100.0	272	100.0
In summer season***						
no work done	21	16.4	18	14.8	39	15.6
less than 0.5 hour	34	26.6	20	16.4	54	21.6
between 0.51 and 1 hour	17	13.3	20	16.4	37	14.8
between 1.01 and 2 hour(s)	43	33.6	31	25.4	74	29.6
between 2.01 and 3 hours	8	6.3	17	13.9	25	10.0
over 3 hours	5	3.9	16	13.1	21	8.4
	128	100.0	122	100.0	250	100.0

\* $\chi^2 = 14.58$ ;  $p < 0.01$ ; \*\* $\chi^2 = 12.77$   $p < 0.05$ ; \*\*\* $\chi^2 = 14.90$ ;  $p < 0.01$

<sup>1</sup> In order to calculate the average time of farm work in the particular season those diaries which were filled in relation to a half or the smaller number of days which covered the diaries observation were not accepted. Therefore the data referring to particular seasons are related to a different number of people.

In order to establish a link between the time children spent on working for their family with other characteristics of the child and family background, stepwise regression analysis was performed. 7 predictors (explanatory variables) were introduced for the analysis. They were: age of the researched children, gender of the researched children, age of parents, parents' education, size of farm, extent of farm mechanization, and family economic status (variables that were not expressed on an interval scale or ratio scale were converted into a dichotomous variable).

Multivariate stepwise regression analysis showed that the average time for house or agricultural work was significantly dependent on the gender of the children, but the direction of dependence was opposite. Boys were engaged in farm work to a greater extent than girls, while girls are involved in house work to a greater extent than boys (Table 2). The remaining explaining variables (age of the child, age of parents, their education, size of farm, and the financial situation of the family, did not affect the time of housework or farm work.

In the model explaining the relationship between the time of engagement in farm work and the explanatory variables, there is yet one more feature to be taken into consideration: the extent of farm mechanization. The positive beta value indicates that the farms equipped with more machines are also the ones with a bigger involvement of children in farm work. This is contrary to the common belief, that the mechanization of work reduces the need for human labour, thereby reducing the need for engaging children in farm work. It can be assumed that farmers with a wide range of machinery, to a greater extent, are involved in various agricultural activities and therefore benefit more often from the help of their children. In the case of house work, the average time of involvement of the researched children correlated with the material status of the family; therefore, children from families in a worse substantive situation spent more time on house work.

**Table 2.** Variables significantly dependent on the time spent on agricultural and household work. (results of the stepwise regression analysis)

Workload rate (explanatory variable)	Predictors	Unstan- dardized coeffi- cients		Stan- dardized coeffi- cients beta	T	p	Ad- justed R2
		B	Statis- tical error				
Time spent of agricultural work	(constant)	0.009	0.133		0.069	0.995	
	mechanization <sup>2</sup>	0.096	0.024	0.236	4.075	0.000	0.312
	Child's gender <sup>1</sup>	0.29	0.064	0.206	3.557	0.000	0.091
Time spent on household work	(constant)	1.087	0.1099		10.007	0.000	
	Child's gender	-0.218	0.055	-0.231	-3.997	0.000	0.305
	Family economic status <sup>3</sup>	0.216	0.035	0.191	3.290	0.001	0.086

<sup>1</sup> children gender codes: „1” girl, „2” boy.

<sup>2</sup> codes for the farm mechanization: from „1” –no mechanization to „5” very high level of mechanization.

<sup>3</sup> codes for family economic status: „1” very high, „6” very low.

Agriculture is considered to be one of the most dangerous sectors of the economy. It is characterized by a variety of harmful factors in the working environment which includes a number of workplaces and varied activities [19]. Many activities in agriculture pose significant risks to health and

life, which is confirmed by the high rate of accidents in agriculture. The accident rate per 1,000 people employed in Polish agriculture is 2.5 times higher in comparison with other branches of the economy. Practising the profession of a farmer, therefore, is dangerous for adults, and consequently, also for children engaged in work on farm. It seems that delegating certain farm work to children may pose a serious threat to their health and even lives. Performing these jobs is prohibited by some of the ILO conventions (e.g. Convention No. 182) and national laws (Labour Code, Ordinance of the Minister of Labour concerning work prohibited for adolescents) and the list of works not recommended to be performed by children under 15 years of age; list of jobs prepared by representatives of the National Labour Inspectorate (PIP), Agricultural Social Insurance Fund (KRUS), and academic institutions. In the case of the engagement of children in agricultural work, these documents serve rather as educational material, since majority of them relate to the employment of minors under contract of employment.

The study shows that the majority of children aged 11-14 from farming families have already performed jobs considered dangerous or harmful to the child's health. Almost 2/3 of the researched children carried items which they considered were heavy (63.3%), drove tractors (62.3%), and about 1/3 of them were engaged in the cultivation of soil with agricultural tractor tools, and planting potatoes with a potato planter. Only slightly smaller group of children (about 25%) helped their parents in manual or mechanical sowing of fertilizers and cutting straw or hay with a straw-cutter. Nearly one in five children worked in mowing with mowing tractors, harvesting potatoes with potato harvester, cutting wood with chain or circular saw, and slaughter animals. Research children also participated in mowing work with self-propelled machinery, e.g. combine harvesters – 15.7%, and in work with chemical pesticides: manual spraying – 14.2%, mechanical spraying – 11.5%. Even occasional engagement in the above-mentioned work by a child creates a major danger to health, danger of causing an accident, and the risk of exposure to the negative effects of the working environment, the impact of which may be distant in time (e.g. use of chemicals).

Risk associated with performing hazardous work in agriculture is increasing, when the child performs such work alone, without adult supervision. Unfortunately, the relatively large proportion of the researched children admitted that they performed such work completely independently (Table 3). Every 4<sup>th</sup> child drove a tractor (24.7%) and carried heavy objects (26.4%) without adult supervision, and every 8<sup>th</sup> child performed cultivation work with an agricultural tractor on their own (12.8%). Some of the researched children independently undertook farming work such as the manual and mechanical sowing of fertilizers, cutting straw or hay with a straw-cutter, mowing with a mowing tractor, cutting wood with a chain saw or circular saw, and using chemical pesticides.

The presented characteristics of the involvement of children in agricultural work suggest that some of them are excessively overburdened with the work and are employed at dangerous or health hazardous work. In some cases, the work exceeded the physical or mental capacity of the child. It can only be expected that such situations have a negative impact on the somatic, psychological, and social development of a child, and are also the causes of accidents – even fatal accidents.

**Table 3.** Proportion of children performing dangerous or hazardous work at least once in their lifetime

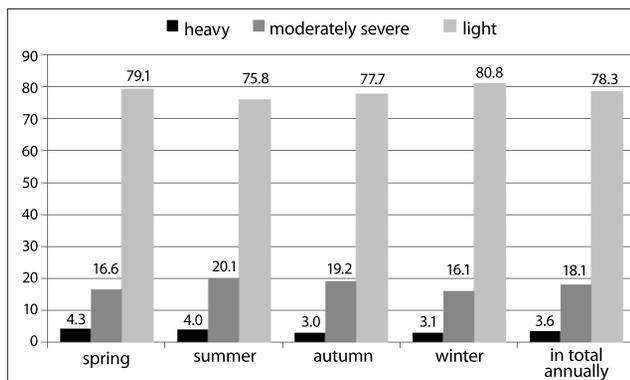
Kind of work	Work performed with and without supervision	Work performed independently (without adult supervision)	N*
Driving a tractor	62.3	24.7	1044
Soil cultivation with agricultural tractor	37.4	12.8	1044
Mowing with mowing tractors	19.9	5.0	1044
Mowing with self-propelled machinery	15.7	2.2	1044
Planting potatoes with potato planter	28.9	3.9	1044
Harvesting potatoes with potato harvester	19.3	3.6	1044
Mechanical sowing of synthetic fertilizers	21.2	5.7	1044
Manual sowing of synthetic fertilizers	24.0	8.0	1044
Work with chemical pesticides (manual spraying)	14.2	4.0	1044
Work with chemical pesticides (mechanical spraying)	11.5	2.4	1044
Slaughter of animals, poultry	16.9	1.7	1044
Cutting wood with circular saw	19.3	2.7	1044
Cutting wood with chain saw	18.4	4.3	1044
Cutting straw or hay in the straw-cutter	23.9	5.6	1044
Carrying heavy objects	63.3	26.4	1044

\* The persons helping the parents or other relatives in rural labour were taken into consideration.

Half of the children from farming families confirmed cases of an excessive amount of work performed for the benefit of the family. These children admitted that at least once in their lifetime they felt extremely tired because of the work, which resulted in bad mood, depression, lack of willingness for doing homework. Among them were also children who were often or very often very tired by their work. Every 5<sup>th</sup> one of the children (19.7%) was very tired after work at least once a week, including 35 pupils (3.4%) who stated that they experienced such fatigue almost every day.

Fatigue is associated with the type of work performed and the physical or mental burden related to their performance. The research based on the records of daily routines showed that from the 21,731 different jobs undertaken by the children during the 2 months of observation, the great majority of them were assessed by the children themselves as light jobs (78.3% of the total work performed). Almost 1/5 of the work was rated as moderately heavy, and only 3.6% of the work was assessed as heavy (Fig. 3).

Accidents are the direct negative consequence of the involvement of children in agricultural work. Based on data collected by the Agricultural Social Insurance Fund (KRUS), it has been estimated that each year about 1,000 children



**Fig. 3.** Assessment of work performed by the researched children during the period of keeping records of daily routines (in %)

under the age of 15 have accidents during agricultural work. Between 1999-2003, 26 children were killed in agricultural work accidents [20].

The presented survey data shows that every 14<sup>th</sup> child (7%), at least once in their lifetime, had an accident at work on the farm or in the household. Some of the researched children had work accidents twice (18 cases) or even 3 times (9 cases). During the period of observation noted in the records of daily routines (56 days per year), only 11 of the children (3.3% of those keeping records) claimed that during the engagement in work for a family had experienced dangerous events – accidents. Some children experienced a dangerous situations twice (4 people), or even 3 or 4 times (one person in both cases). Most of the reported accidents occurred at house work (cleaning, preparing meals, and washing dishes). Other events (6 out of 23) occurred in agricultural work (chopping wood, transport work, maintenance of agricultural machinery). The consequences of the above-mentioned work accidents were mostly cuts (12 cases), bruises (8 cases), fractures (2 cases) and burns (1 case).

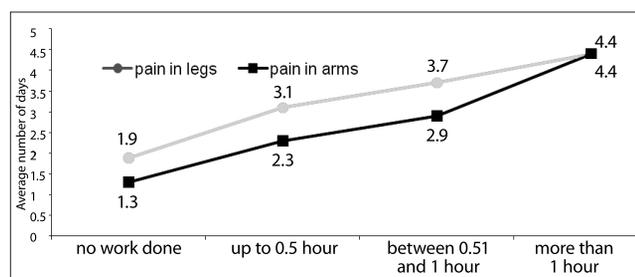
Excessive loading of children with work for families, particularly with farm work, may not only cause accidents, but can also trigger various psychosomatic ailments which often produce adverse health effects in the future. Children from rural families engaged in keeping records of daily routines registered additionally discomforts that typically occur in conjunction with excess duties in the household or on the farm. The data obtained shows that during the observation period noted in the records of daily routines, the respondents most commonly experienced ailments such as: headaches, feeling great fatigue, pain in the legs, pain in the hands, daytime somnolence, backache and discouragement.

Analysis of the relationship between the number of days in which the researched children suffered from psychosomatic ailments and the time committed to work for families, showed that there was a greater interdependence between the ailments and the time spent on the house work than between the prior and the time spent on agricultural work. The time committed to house work had a substantial connection with the experience of ailments such as pain in arms and legs, backache, headache, and intense sense of fatigue. Other analysed ailments – nape of neck pain, joint pain, abdominal pain, lack of appetite, daytime drowsiness, intensive anxiety, despondency – had no significant connection with the time committed to house work. All of the aforementioned symptoms occurred more frequently when the children spent more time helping parents with agricultural work. The least number of pain ailments was recorded among children who spent an average of 0.5 hours per day on house work. The number of complaints increased considerably in the group of children who worked for an average of 0.5-1 hour, and was the highest among respondents who worked more than 1 hour a day. Children who worked the longest amount of time, compared with children who spent the least amount of time on work, much more often complained of certain ailments, for instance, pain in the arms and intense fatigue – more than 3 times as often, pain in the legs – more than twice as often, headache – nearly 3 times as often, and backache – 4 times as often (Table 4).

The time committed to agricultural work had a significant relationship only with the pain in the hands and legs (Figure 4). The increased number of these ailments is directly connected with the amount of time spent on agricultural

**Table 4.** The relationship between the average number of days in which the researched children suffered from ailments in relation to the time devoted to household work (variance analysis).

Character of work	N	Mean ( $\bar{x}$ )	Stan- dard devi- ation	Stan- dard error	F-test	Sig- nifi- cance (p)	Test post hoc (T2 ALPHA)	
							Categories Differ- significantly different	p
<b>Pain in hands</b>								
1. up to 0.5 hour	49	1.1	1.9	0.27				
2. between 0.51 and 1 hour	141	2.7	4.4	0.37			1-2	-1.58 0.005
3. between 1.1 and 1.5 hour	100	3.6	5.7	0.57	2.72	0.045	1-3	-2.47 0.001
4. more than 1.5 hour	42	3.7	8.9	1.38				
Total	332	2.9	5.4	0.29				
<b>Pain in legs</b>								
1. up to 0.5 hour	49	1.7	2.62	0.37				
2. between 0.51 and 1 hour	141	3.2	4.95	0.42				
3. between 1.1 and 1.5 hour	100	4.6	6.34	0.63	3.10	0.027	1-3	-2.88 0.001
4. more than 1.5 hour	42	3.6	8.01	1.24				
Total	332	3.4	5.68	0.31				
<b>Backache</b>								
1. up to 0.5 hour	49	0.6	1.00	0.14				
2. between 0.51 and 1 hour	141	2.1	3.77	0.32			1-2	-1.55 0.000
3. between 1.1 and 1.5 hour	100	2.5	4.44	0.44	2.85	0.037	1-3	-2.91 0.000
4. more than 1.5 hour	42	2.4	4.98	0.77				
Total	332	2.1	3.94	0.22				
<b>Headache</b>								
1. up to 0.5 hour	49	2.1	2.69	0.38				
2. between 0.51 and 1 hour	141	4.7	6.08	0.51			1-2	-2.64 0.000
3. between 1.1 and 1.5 hour	100	5.8	6.42	0.64	4.86	0.003	1-3	-3.77 0.000
4. more than 1.5 hour	42	5.6	6.33	0.98			1-4	-3.51 0.009
Total	332	4.8	5.96	0.33				
<b>Intense sense of fatigue</b>								
1. up to 0.5 hour	49	1.2	2.28	0.33				
2. between 0.51 and 1 hour	141	3.1	4.33	0.36				
3. between 1.1 and 1.5 hour	100	4.2	6.05	0.61	4.21	0.006	1-2	-1.86 0.001
4. more than 1.5 hour	42	3.1	5.55	0.86			1-3	-3.00 0.000
Total	332	3.2	4.93	0.27				

**Fig. 4.** The dependance between the average number of days in which the researched children suffered from pain in legs and arms and the time devoted by them to agricultural work

work. The lowest number of days of feeling pain was reported in children who did not perform agricultural work (pain in legs – an average of 1.9, pain in arms – on average 1.3 days). This number increased significantly among children engaged in any kind of work on the farm, reaching the highest value in the group of respondents spending the longest amount of time at work (more than 1 hour per day).

The observed dependence is confirmed by a significant correlation between the time spent on house work and the occurrence of certain ailments. The more time was devoted by the researched children to homework, the more days with pain in the arms ( $r = 0.112$ ,  $p < 0.05$ ), headache ( $r = 0.148$ ,  $p < 0.01$ ), and intense fatigue ( $r = 0.134$ ,  $p < 0.05$ ) were noted within the period of keeping the records of daily routines. Among the researched children suffering from pain, this resulted directly from time devoted to agricultural work. The correlation coefficient was, respectively, ( $r = 0.180$ ,  $p < 0.001$ ) for pain of arms and ( $r = 0.126$ ,  $p < 0.05$ ) for backache. The relationship of time devoted to work in the household and farm with the occurrence of certain ailments is also indirectly confirmed by the correlation between the number of complaints and the amount of time spent daily by the children on other activities. The conducted analysis showed no relation between suffering from pain and time spent at school, doing school homework, watching TV, using a computer, or time spent at fun and games. Only the time spent at the latter produced a negative correlation with pain in the arms. This means that children spending more time at fun and games complained less often of pain in the arms.

## DISCUSSION

Participation of children in the work for a family household or farm brings certain advantages to the family: bigger revenue and efficient completion of urgent work. Skilfully involving children in work brings also positive effects in the process of socialization and upbringing. In particular, parents indicate that bringing children up through work brings many benefits. This is so because the child carrying out work at home or on the farm learns reliability, diligence, respect for work, gains new manual skills, and learns how to cope with problems [21, 22].

The presented research results show that almost all Polish children from rural families help their parents with house work, and that most of them also carry out work on farms of their parents, relatives, or friends. Analysis of the scope of the work demonstrated that a significant number of rural children are involved in agricultural work not suitable for their physical capabilities. Additionally, they devote too much time for this kind of work. Moreover, the majority of the children were also engaged in work dangerous for them or hazardous to their health (e.g. operating agricultural machinery, carrying heavy objects, usage of chemical agents). Some of the researched children performed dangerous and risky work without the supervision of adults. This applies especially to driving agricultural tractors (1/4 of respondents), soil cultivation with agricultural tractor tools (12.8%), and sowing of mineral fertilizers (8.0%).

Despite the fact that the engagement of children in work for the benefit of rural families is significant, it should be acknowledged that in recent years considerable changes in the scale of this phenomenon have been observed. The data

obtained were compared to research carried out in the same area 11 years ago. Analysis of the results of both research studies revealed that while there was little decrease in the average time committed to house work, there occurred a significant decline in the amount of time spent on agricultural work – the average time was reduced twofold [13]. Unfortunately, no substantial changes were recorded concerning the type of agricultural work performed. The phenomenon of involving children in work considered dangerous or detrimental to health remained at a similar, high level.

Despite some positive changes in the occurrence of engaging rural children in work for the benefit of the family, it can be assumed that the existing legal regulations do not protect children effectively enough from situations of excessive work load, or entrusting them with tasks that may result in negative consequences for their health and even lives. This is confirmed by the statements of the researched children which showed that about 7% of them were victims of accidents during household or agricultural work. In a few cases, these events occurred more than once. In addition, analysis of the relationship between the time devoted to household or agricultural work and the incidence of various ailments showed that the longer time of performing such tasks is significantly connected with the frequency of suffering from various ailments. The observed correlations suggest that a longer time at house work affects the increasing presence of ailments such as pain in arms and legs, backache, and feeling intense fatigue. The time spent at agricultural work was in significantly related only with pain in the hands and legs - the longer the time at work, the more the ailments were felt.

The presented results suggest that a significant proportion of rural families expose their children to negative health consequences by engaging them in work on the farm. In some cases, children actually experienced these consequences, suffering from accidents or experiencing discomfort as a result of work overload. Studies conducted among the owners of farms in Poland, [12, 22] and in the USA [10] show that this type of parental approach results not only from the family demand for child labour (a difficult financial situation, lack of manpower), but also from the belief that work is an important part of the socialization and upbringing of the young generation. The excessive or improper involvement of children in work for the benefit of the family is also the outcome of little awareness of the risks associated with the allocation of work maladjusted to a child's abilities. Therefore, education of children from rural areas and their parents about the principles of entrusting children with work, and especially agricultural work, is the one of the fundamental elements of prevention of the adverse effects of the involvement of children in work in the household and on the farm. Results of research among adults also indicates that the well-being of the children depends on the time devoted to domestic work, or professional work, and the burden experienced due to their role [23].

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