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ORIGINAL ARTICLE

Child labor in a rural Egyptian community: an epidemiological study

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Abstract
Objectives Estimating the burden of child labor in a rural community of El-Minia governorate, Egypt and exploring its determinants and health impact.
Methods One hundred and ninety nine children randomly participated from a randomly selected village; 147 (73.9 %) males and 52 (26.1 %) females, whose ages ranged from 6 to 17 years (mean age 12.1 ± 2.9). All children were subjected to interview questionnaire, and medical examination.
Results Ninety (45.2 %) of the children reported that they are engaged in a work. The working children belonged to 65.6 and 85.6 % of illiterate fathers and mothers, respectively. The majority of the working children were engaged in jobs at quarries (58.9 %), followed by farming (21.1 %), then small proportions of children were working in other jobs. Poverty, big families and insufficient family's income were the most frequently reported reasons for starting to work (80 %). There was a significant higher prevalence of the reported health complaints among working children.
Conclusions Working children are at high risk of many health problems. Poverty, parents' illiteracy, large family size and fathers' absence are the driving force for child labor in the rural community of Eastern Minia.

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Introduction

Child labor is an important global issue associated with poverty, inadequate educational opportunities and gender inequality (Parker 1997a). The International Labor Organization (ILO) estimates that there are approximately 250 million child laborers worldwide, with at least 120 million of them working under circumstances that have denied them a childhood and in conditions that jeopardize their health and even their lives. Most working children aging 11–14 years, but as many as 60 million are between the ages of 5 and 11 (UNICEF 1997). Although the exact numbers are not known, available statistics indicate that approximately 96 % of child workers reside in developing countries in Africa, Asia, and Latin America (Parker 1997b).

ILO suggests poverty is the greatest single force driving children into the workplace (ILO, United Nations 2008). Families send their children to work to help increase the family's income to a level that permits them to survive (Edmonds and Pavcnik 2005). However, this only helps to increase poverty in the long term, since it prevents children from getting a level of education that enables them later to find more suitable work opportunities with a higher income. Children are considered better workers than adults because they are more obedient and easier to control, accept lower wages, and are particularly suitable for certain kinds of work (Itani 2009).

In Egypt, ILO estimated that 8.3 % of children aging 10–14 years were working (Suliman El and El-Kogal 2002). Poverty is the main cause of child labor in Egypt.

About 17 % of the population lives in poverty with almost 12 million people having difficulty meeting their basic needs; especially, the rural Upper Egypt is considered as the poorest region (Mattar 2007). The Egyptian Child Labor Law considers child labor to be all work or services obtained from a person under the age of 17. Moreover, it also prohibits children under the age of 17 from working in hazardous conditions, which entails any work that can jeopardize children's physical, mental, or moral health and safety (Act 12 in the Child Labor Law) (Ahmed and Jureidini 2010).

Concern about the health consequences of child labor derives primarily from the belief that work increases the child's exposure to health hazards that threaten to subject the child to illness or injury. The hazards may be obvious and threaten immediate damage to health, such as those risks arising in construction, manufacturing and mining from the use of dangerous tools and machinery and exposure to high temperatures and falling objects (Fassa et al. 2000). Alternatively, the hazards may hold longer-term consequences for health such as risks from contact with dust, toxins, chemicals and pesticides or lifting heavy loads. Hazards may also threaten child's psychological health through exposure to abusive relationships with employers, supervisors or clients (Forastieri 1997; ILO 1998).

Egyptian working children are engaged in several types of work, such as, farming, construction, mining, mechanic workshops and quarries. Work in the quarries is mostly unskilled labor, except for electricians, mechanics, and welders, who constitute only 5 % of the workforce. At Eastern Minia, there are 172 registered quarries, in addition to a large number of unregistered ones. The total number of workers in quarries estimated between thirteen and fifteen thousand workers, mostly farmers, fresh graduates, and a large number of children under the age of 16 (Klemm and Klemm 1993). Despite hardships and danger, there is no social or health security system for quarries' workers, especially the working children; and almost all the quarries lack any industrial safety equipment (Stewart 1996).

This study aimed at estimating the burden of child labor in a rural area in El-Minia governorate, Egypt and exploring the determinants and health impact of work among those children.

Methods

This community-based cross-sectional study was conducted in a randomly chosen rural area (Sawada village), El-Minia governorate between January and May, 2013. This area generally lacks good agricultural land and has a chain of mountains on its eastern side. Most inhabitants work in quarries, which occupy about 300 km^2 of the eastern side of the Nile, while a smaller percentage of inhabitants work in the agricultural sector.

Study population

The total population of Sawada village was 10,571 according to the last census. The sample size has been calculated to be 162, using the following equation: $n = (Z^2 * p * ''p)/D^2$ (Lwanga and Lemeshow 1991). Then we added additional number of children, about 20 % of the calculated sample to guard against non-response. The suggested prevalence of child labor (aging 6–17 years) was about 12 % (Kishk et al. 2004). A value of 2.5 is chosen as the acceptable limit of precision (D) at 95 % level of confidence.

The households were selected by systematic random sample by visiting every third house in a randomly selected direction asking for children aging 6–17 years. Once we found eligible children in the required age, we asked them and their guardians' consents. Our team met about 230 eligible children from whom 199 agreed to be interviewed and participate in the study (response rate 86.5 %). Ninety (45.2 %) of the children reported that they are engaged in a work and the rest of the children (109) were not joining any job.

All children either working or non-working were subjected to a structured interview questionnaire which included socio-demographic characteristics of the child (age, gender, level of education, father's and mother's education (illiterate, read and write, secondary and higher), father's occupation, family size (up to 5, 6 and more member), number of siblings (<3, 3–5, >5), smoking and drug abuse) and health complaints (injuries, allergy, tiredness, headache, insomnia, bilharziasis, gastrointestinal complaint, etc.,).

All children were asked if they were currently engaged with any work. Children who reported having a current work were further inquired about a detailed occupational history including: type of work (either in quarries, farmer, seller, baker, driver, mechanic workshop, others), reasons for starting to work (either provide income for family, family assistance, for child's will or other reason), hours of work per day, use of safety measures, daily wages (≤25, 26–50, >50 pounds), and their work perceptions (exposed to severe physical exertion or not), satisfaction with current job which was classified into satisfied, not satisfied or compelled, employer's attitude toward child's mistakes or absence from work (deduction from salary, violence, nothing); and participants were asked if they were exposed to any physical or verbal abuse by employers (El-Laithy et al. 2008).

A full physical examination was conducted to all the studied children assessing any signs of injuries, signs of anemia and vitamins deficiencies, examination of chest and measurement of weight and height according to standardized methods.

Following the interview and medical examination, children and their guardians were counseled regarding the clinical findings and importance of continuing education and the hazardous health impact of child labor.

Ethical consideration

The study was approved by the ethical committee of the Faculty of Medicine, El-Minia University. Prior to data collection, informed consent was obtained from guardians of children.

Statistical analysis

The Statistical Program SPSS for Windows version 13 was used for data entry and analysis. Quantitative data were presented by mean and standard deviation, while qualitative data were presented by frequency distribution. Chi-square test was used to compare between two or more proportions. Student t test was used to compare two means. Risk ratios were estimated by calculating odds ratios (OR), and a regression analysis was performed. The lowest accepted level of significance was 0.05 or less.

Results

This study included 199 children, 147 (73.9 %) males and 52 (26.1 %) females, whose ages ranged from 6 to 17 years. Children who aged 6–11 years constituted 48.2 % of the sample, while those who aged 12–17 years were 51.8 % from the studied children.

Ninety (45.2 %) of the children reported that they are engaged in a work and the rest of the children (109) were not joining any kind of work. Among the working children, males were significantly more likely to join a work, where 78 (86.7 %) were males and 12 (13.3 %) were females ($p = 0.0001$), (Table 1). Moreover, 75.6 % of the working children belonged to the age group of 12–17 years while only 24.4 % of them belonged to the age group of 6–11 years, however the non-working children significantly contradicted this age distribution, where, 32.1 and 67.9 % belonged to the age groups of 12–17 and 6–11 years, respectively, ($p = 0.0001$).

There was a significant difference between the working children and the non-working ones regarding the level of education ($p = 0.01$), where 17.8 % of working children were illiterates compared to 5.5 % among the non-working group. In contrast, 67 % of non-working group were enrolled in primary schools compared to 47.8 % of the working children.

Fathers' and mothers' level of education were significantly lower among the working compared to the non-working group. Percentages of 65.6 and 85.6 % of illiterate fathers and mothers were found for parents of the working children compared to 36.7 and 33.9 % of illiterate fathers and mothers of the non-working children, respectively ($p = 0.001$).

Fathers who were absent or unemployed were significantly overrepresented among the working children (40 %) compared to only (7.3 %) of fathers of the non-working group ($p = 0.001$).

About 45.6 % of the working children had more than five siblings compared to 3.7 % of the non-working ones ($p = 0.001$). Similarly, 68.9 % of the working compared to 32.1 % of the non-working children reported having a big family that included six or more members.

From all the children, 21 reported death of one parent, living with relatives or living with a father's wife. Eighteen out of those 21 children (85.7 %) were engaged in a work, while only 3 (14.3 %) were not working ($p = 0.001$), (Table 1).

There was a significant difference between the two groups as regard social habits, where 14.4 and 6.7 % of working children were current smokers and drug abusers, respectively, compared to none of non-working group.

Table 2 shows that the majority of the working children were engaged in jobs at quarries (58.9 %), followed by farming (21.1 %), then small proportions of children were working in other jobs.

Poverty was the most common reason for starting to work (63.3 %) with additional 16.7 % worked to help increase family's income. Thus, family members and relatives were the source of information and advisors for working for about 70 % of the working children.

About 70 % of the working children received $\leq$25 Egyptian pounds per day. Unfortunately, about 35 % of the working children had quitted studying (Table 2).

More than 81 % of the working children stated that they suffer from severe work-related physical exhaustion; however, more than half of them (55.5 %) were satisfied with their current job. About 18 and 28 % of the working children were exposed, respectively, to physical and verbal abuse by their current employers (Table 3).

Table 4 shows that except for fractures, there is a significant higher prevalence of all the inquired health complaints among the working children compared to the non-working group ($p < 0.05$). These complaints included burns, wounds, hematoma, skin allergy, breathing difficulties, headache, tiredness and general weakness.

Table 1 Socio-demographic characteristics of the studied children at a rural area of Eastern Minia, Egypt, during January–May 2013

Variables	Working children $n = 90$ (100 %) n (%)	Non-working children $n = 109$ (100 %) n (%)	Total $n = 199$ (100 %) n (%)	χ^2	p value
Sex					
Male	78 (53.1 %) (86.7)	69 (47.9 %) (63.3)	147 (100.0 %) (73.9)	13.9	<0.001***
Female	12 (23.1 %) (13.3)	40 (67.9 %) (36.7)	52 (100.0 %) (26.1)		
Age					
6–11 years	22 (24.4)	74 (67.9)	96 (48.2)	37.3	<0.001***
12–17 years	68 (75.6)	35 (32.1)	103 (51.8)		
Education					
Illiterate	16 (17.8)	6 (5.5)	22 (11.1)	10.6	<0.01**
Primary school	43 (47.8)	73 (67.0)	116 (58.3)		
Preparatory school	21 (23.3)	21 (19.3)	42 (21.1)		
Secondary school	10 (11.1)	9 (8.2)	19 (9.5)		
Father education					
Illiterate	59 (65.6)	40 (36.7)	99 (49.7)	26.2	<0.001***
Read and write	19 (21.1)	18 (16.5)	37 (18.6)		
Secondary and higher	12 (13.3)	51 (46.8)	63 (31.7)		
Mother education					
Illiterate	77 (85.6)	37 (33.9)	114 (57.3)	56.5	<0.001***
Read and write	5 (5.6)	9 (8.3)	14 (7.0)		
Secondary and higher	8 (8.8)	63 (57.8)	71 (35.7)		
Father occupation					
Employed	54 (60.0)	101 (92.7)	155 (77.9)	30.5	<0.001***
Unemployed/absent	36 (40.0)	8 (7.3)	44 (22.1)		
No. of siblings					
<3	7 (7.8)	14 (12.8)	21 (10.6)	49.4	<0.001***
3–5	42 (46.6)	91 (83.5)	133 (66.8)		
>5	41 (45.6)	4 (3.7)	45 (22.6)		
Family					
Father, mother and siblings	72 (80)	106 (97.2)	178 (89.4)	16.8	<0.001***
Father wife	3 (3.4)	0 (0)	3 (1.5)		
Death of one parent	11 (12.2)	1 (1.0)	12 (6.1)		
Live with relatives	4 (4.4)	2 (1.8)	6 (3)		
Family size					
Up to 5	28 (31.1)	74 (67.9)	102 (51.3)	26.7	<0.001***
6 and more	62 (68.9)	35 (32.1)	97 (48.7)		
Social habits					
Current smoking					
Yes	13 (14.4)	0 (0)	13 (6.5)	16.8	0.0001***
No	77 (85.6)	109 (100)	186 (93.5)		
Drug abuse					
Yes	6 (6.7)	0 (0)	6 (3.0)	7.5	0.006**
No	84 (93.3)	109 (100)	193 (97)		

As regard physical examination, Table 5 shows a significant higher prevalence of injuries, signs of anemia, vitamin deficiencies and wheezy chest among working children compared to the non-working group ($p < 0.001$).

Table 6 provides the adjusted OR and 95 % CI that quantifies the association between the combined effect of independent variables and the outcome variable (child work). These estimates were obtained using the logistic

Table 2 Work characteristics of working children at a rural area of Eastern Minia, Egypt, during January–May 2013

Variables	Working children $n = 90$	
	n	%
Type of work		
In quarries	53	58.9
Farmer	19	21.1
Seller	5	5.6
Baker	3	3.3
Driver	3	3.3
Mechanic workshop	2	2.2
Others (construction, fishing, ironing, service)	5	5.6
Reasons for starting to work		
Provide income for family (poverty)	57	63.3
Family assistance	15	16.7
Child's will	15	16.7
Others[a]	3	3.3
Hours of work/day		
Range (mean ± SD)	3–18 (8.7 ± 2.9)	
<10	45	50
≥10	45	50
Use of safety measures		
Yes	18	20
No	72	80
Daily salary (Egyptian pounds)		
≤25 pounds	63	70
26–50 pounds	20	22.2
>50 pounds	7	7.8
Source of information about the work		
Family	58	64.4
Relatives	5	5.6
Neighbor	6	6.7
By chance	14	15.6
Announcement	7	7.8
Age of starting work		
Range (mean ± SD)	5–17 (10.5 ± 2.3)	
Quit studying		
Yes	32	35.6
No	58	64.4

[a] Others as, earns own money and has spare time for work

regression analysis. Poverty, age, sex, father occupation and mother education were statistically associated with child labor. Poverty represents the major cause. Children whose fathers were absent or unemployed were about 11 times more likely to work than those whose fathers were present or employed (OR = 11.01, 95 % CI 2.13–56.89) ($p = 0.004$). Similarly, older children were about 6 times more likely to work than younger ones (OR = 6.89, 95 % CI 1.51–31.48) ($p = 0.01$).

Table 3 Work perceptions and relation with current employer among working children at a rural area of Eastern Minia, Egypt, during January–May 2013

Variables	Working children $n = 90$	
	n	%
Severe physical exhaustion	73	81.1
Satisfaction with current job		
Satisfied	50	55.5
Not satisfied	35	38.9
Compelled	5	5.6
Employer's attitude toward work mistakes or absence from work		
Deduction from salary	42	46.7
Physical or verbal abuse (violence)	15	16.7
Nothing	33	36.6
Physical abuse by the current employer	16	17.8
Verbal abuse by the current employer	25	27.8

Table 4 Health complaints among studied children at a rural area of Eastern Minia, Egypt, during January–May 2013

Health complaints	Working children $n = 90$ *n* (%)	Non-working children $n = 109$ *n* (%)	*z*	*P* value
Fractures	15 (16.7)	15 (13.8)	6.0	NS
Burn	12 (13.3)	5 (4.6)	2.2	<0.01**
Wounds	43 (47.8)	12 (11.0)	5.8	<0.001***
Hematoma	32 (35.6)	8 (7.3)	4.9	<0.001***
Allergy	34 (37.8)	14 (12.8)	4.1	<0.001***
Tiredness	64 (71.1)	4 (3.7)	9.9	<0.001***
Insomnia or sleep difficulty	39 (43.3)	4 (3.7)	6.7	<0.001***
Breath difficulty	38 (42.2)	13 (11.9)	4.8	<0.001***
Dizziness	34 (37.8)	8 (7.3)	5.2	<0.001***
Headache	40 (44.4)	14 (12.8)	4.9	<0.001***
Gastrointestinal complaints	28 (31.1)	18 (16.5)	2.4	<0.01**
General weakness	47 (52.2)	7 (6.4)	7.2	<0.001***
Bilharziasis	49 (54.4)	34 (31.2)	3.3	<0.001***
Previous hospital admission	48 (53.3)	29 (26.6)	3.8	<0.001***

Compared to children engaged in different jobs, those children working in quarries ($n = 53$) have significantly higher mean ages, height, weight, BMI, mean age of starting to work, family size and number of working hours (Table 7s).

Discussion

Most child labor occurs in developing countries, where poverty, traditions and cultural differences inhibit

Table 5 Physical examination of studied children at a rural area of Eastern Minia, Egypt, during January–May 2013

Variables	Working children $n = 90$ n (%)	Non-working children $n = 109$ n (%)	Total $n = 199$ n (%)	χ^2	p value
Injuries					
Wounds	22 (24.4)	5 (4.5)	27 (13.6)	35.5	<0.001***
Fractures	12 (13.4)	15 (13.8)	27 (13.6)		
Burn	8 (8.9)	3 (2.8)	11 (5.5)		
Others	4 (4.4)	1 (0.9)	5 (2.5)		
None	44 (48.9)	85 (78.0)	129 (64.8)		
Signs of anemia					
Yes	51 (56.7)	33 (30.3)	84 (42.2)	20.8	<0.001***
No	39 (43.3)	76 (69.7)	115 (57.8)		
Vitamin deficiency					
Vitamin B2	9 (10.0)	7 (6.4)	16 (8.0)	18.2	<0.001***
Vitamin A	7 (7.8)	4 (3.7)	11 (5.5)		
Others	15 (16.7)	2 (1.8)	17 (8.5)		
No	59 (65.6)	96 (88.1)	155 (77.9)		
Chest					
Normal	58 (64.4)	101 (92.7)	159 (79.9)	24.4	<0.001***
Wheezy	32 (35.6)	8 (7.3)	40 (20.1)		

international efforts to stop it (Human Rights Watch 2006; ILO 2006). In Egypt, ILO estimated that 8.3 % of children aged 10–14 years were working (World Bank, World Development Indicators 2004), where rural children and children from poor households account for the overwhelming majority of them (Suliman El and El-Kogal 2002).

In the present study, we included children aging between 6 and 17 years. Ninety (45.2 %) of the children reported that they are engaged in a work (Table 1). The studied community of eastern Minia is not a traditional rural community since its cultivated lands are limited while being closer to the mountainous areas of quarries. Therefore, nearly 60 % of the working children of this community were engaged in different jobs at quarries while, about 21 % of them were engaged in farming (Table 2).

Additionally, working in quarries requires stronger and older children to be able to perform the hard work and difficult tasks compared to other jobs. Our findings confirmed that in the studied community, the age group of 12–17 years was significantly associated with joining a job (Table 1).

Illiteracy of children and low educational levels of their parents were significantly associated with child labor. Our findings showed that 17.8 % of the working children were illiterate compared to 5.5 % of the non-working group.

Table 6 Logistic regression analysis of factors independently associated with child labor at a rural area of Eastern Minia, Egypt, during January–May 2013 ($n = 199$)

Risk factors	OR (95 % CI)	p
Poverty		
No	1.00 (reference)	0.0001[a]
Yes	0.03 (0.01–0.09)	
Fathers' occupation		
Working	1.00 (reference)	0.004[a]
Not working/absent	11.01(2.13–56.89)	
Age (years)		
6–11	1.00 (reference)	0.01[a]
12–17	6.89 (1.51–31.48)	
Sex		
Female	1.00 (reference)	0.02[a]
Male	0.17 (0.04–0.76)	
Mothers' education		
Secondary and higher	1.00 (reference)	0.03[a]
Read and write	0.14 (0.03–0.66)	
Illiterate	0.51 (0.06–4.66)	
Family size		
Up to 5	1.00 (reference)	0.2
6 and more	2.09 (0.63–7.02)	
Child education		
Secondary school	1.00 (reference)	0.6
Preparatory school	1.72 (0.18–16.41)	
Primary school	0.65 (0.06–7.19)	
Illiterate	1.51 (0.09–23.35)	
No. of siblings		
<3	1.00 (reference)	0.1
3–5	1.87 (0.18–20.07)	
>5	4.97 (0.85–28.93)	
Father education		
Secondary and higher	1.00 (reference)	0.8
Read and write	1.65 (0.34–7.86)	
Illiterate	1.52 (0.27–8.49)	

$R^2 = 0.79$

NB dependent variable is child work, *OR* odds ratio, *CI* confidence interval

[a] Statistically significant

About 65.5 and 85.6 % of the working children reported that their fathers and mothers were illiterate, which was significantly higher than that of the non-working children ($p = 0.0001$) (Table 1). Similar findings were reported by Nath and Hadi (2000) in a survey of 3,809 children aged 10–14 years living in 150 villages in two rural districts of Bangladesh.

Children from big families and those with many siblings were more likely to be engaged in working. About 41/45 (91.1 %) of children who have more than five siblings were

engaged in working compared to the non-working ones ($p = 0.0001$) (Table 1). These results were in coherence with that of Patrinos and Psacharopoulos (1997) who found that the larger the family, the lower the probability that a child is in school and more child labor.

Poverty and insufficient family's income were the most frequently reported reasons for starting to work (63.3 and 16.7 %, respectively), which was similar to that of Edmonds and Pavcnik (2005) who observed that child labor is a symptom of poverty. Low income and poor institutions are driving forces behind the prevalence of child labor worldwide.

Our results showed that there was a significant difference between the working and non-working children regarding social habits, where 14.4 and 6.7 % of working children were current smokers and drug abusers, respectively; however, none of the non-working children reported having such habits. This is in agreement with the observations of Nuwayhid et al. (2005) who studied the associations between work status and multidimensional health indices in a sample of urban Lebanese children. They found more smoking and frequent substance abuse among the working children than the comparison group. Similar finding were reported by Batty et al. (2012).

The present study found that about 35 % of the working children had quitted studying. This unfortunate result is directly related to the fact that the child works several hours at the work, is exhausted and cannot concentrate or perform in school. This result was consistent with the findings of El-Gilany et al. (2007) who found that students who worked were more likely to have failed at least one grade in school. Inadequate income and work stress and injuries may affect the student's health, which in turn can affect academic performance (Robinson, 1996).

Our results showed that about 18 and 28 % of working children reported that they were exposed to physical and verbal abuse, respectively. These results were much lower than that of Celik and Baybuga (2009) who found that children working on the street were subjected to verbal, physical and sexual abuse (50, 50 and 65 %, respectively). This difference can be explained by exposure of the children working in streets to physical abuse from other working children who were generally, homeless. However, in our study, children worked in specific places and used to spend their night at home with their families or relatives. Therefore, they were exposed to lower verbal, physical and sexual abuse.

The findings of the present study showed a significant higher prevalence of the reported health complaints of wounds, allergy, tiredness, headache, respiratory problems and bilharziasis among working children compared to the non-working group. These results were consistent with the findings of El-Gilany et al. (2007), who observed increased risks of physical disorders including back pain, fatigue, chronic diarrhea, bronchial asthma, skin problems, and chronic headache for working compared to non-working students.

Noweir et al. (1993) reported that young workers had significantly higher prevalence of the following manifestations compared to controls: respiratory, cardiovascular, gastrointestinal and neuropsychiatric complaints; and other health problems including backache, hernia and nocturnal enuresis. The authors attributed these health effects to the impact of work on health and the low socioeconomic background that requires the children to work, and they recommended the use of primary health care approach to child labor.

Regarding physical examination, we found a significant higher prevalence of injuries' marks, signs of anemia and wheezy chest among working children compared to the non-working ones ($p < 0.001$), (Table 6). This is in agreement with Omokhodion and Omokhodion (2001) who reported many health problems among working children such as skin infection, fever, upper respiratory tract infection, visual problems and musculoskeletal disorders.

Our findings indicated that children working in quarries had more likelihood of being exposed to work-related injuries, physical exhaustion and chest problems than children in other types of work ($p < 0.05$). Such results were similar to that of Cakir et al. (2009) who observed that respiratory symptoms and lung function differ in children who work in different occupational activities.

The logistic regression analysis showed that poverty, age, sex, father occupation and mother education explained 79 % of the variation in the child's work with poverty represented the major cause. Similarly, Helmy and Ismail (2005) reported that poverty was the chief cause of child labor in a survey conducted in Egypt. Over half of the children surveyed who acted as sole or partial breadwinners asserted that they worked to support their households and meet basic household requirements. These findings were consistent with other studies reported by Itani (2009) and Özen (2008).

Limitations

1. Some children and parents refused to participate in the study. Applying patience and diplomacy the researchers had to work for long hours.
2. Some children were quite young and their perception of the work hazards may not have been accurate. The questions were explained to children and unclear points were discussed with their guardians.

Conclusions and recommendations

This study concluded that working children are at high risk of many health problems and unhealthy habits. Poverty,

parents' illiteracy, large family sizes and fathers' absence or unemployment are the driving forces for child labor in the rural community of Eastern Minia.

We recommend that the government should put the regulations of the child labor laws into action to protect children's rights, abolish child abuse or their employment in hazardous occupations and guarantee their social security and health insurance. A national program for prevention of child labor must be adopted to educate people about the vicious circle of poverty and child labor, with its health problems and adverse effects on child development.

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