Work-Related Injuries with Child Labor in Iran

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Abstract

Aim Accurate present-day child labor information is difficult to obtain. The aim of this study was to evaluate the characteristics of child labor patients according to worker status and identify the proportion of work-related injuries that could be prevented by protection devices.

Patients and Methods This study was performed in one of the largest pediatric trauma center in the central part of Iran. In a prospective case series study, injured children with age less than 15 years who were consecutively admitted to the trauma center for management of their trauma were evaluated. In each patient data such as age, sex, worker status, anatomic site of injury, and costs were collected.

Results In this study, a total of 127 children were evaluated. Most of the injuries (80.3%) occurred in urban areas. In most of the injured patients, the main reason of working was to help pay own family debts or supplement family income. Industrial workroom was the most common place for injury (58.2%). Falling from height or in horizontal surface was the most common mechanism of injury (44%). None of the patients had preventable device at the time of injury. Cuts (49.6%) were the most commonly reported injuries. The lengths of hospitalization were 1.23 + 0.88 days. There was no death reported in our cases. The mean of cost of hospitalization was US $29.9 ± 20.36.

Conclusion Our study showed that child labor injury in the central part of Iran mainly occurred in nonagricultural sector due to falling. These injuries are nonfatal and might be prevented by protective equipment.

Keywords
- child labor
- hazardous work
- work injury

Introduction

Since widespread employment of children in hazardous work and worldwide attention in the public health community for child labor,[1,2] several studies focused on the risk factors and impact of this practice on the child's physical and psychosocial aspects.[3–5]

Although the majority of these reports confirmed child labor in developing countries with high poverty and poor schooling opportunities, it is still prevalent in more developed countries.[6,7]

The World Health Organization (WHO) estimates that at least 950,000 injury deaths occur annually in children who are 17 years and younger.[8] The International Labor Organization (ILO) estimates that the worldwide number of employed children, 5 to 17 years of age, was 306 million in 2008, with 115 million of them engaged in hazardous labor.[9]

However, accurate child labor information is difficult to obtain because of disagreements between data source as to what constitutes child labor. Moreover, governmental policies might be potential confounding variable for such studies.

The aim of this study was to evaluate the characteristics of child labor patients according to worker status and identify

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the proportion of work-related injuries that could be prevented by protection devices.

Patients and Methods

This study was performed in one of the largest pediatric trauma center in central part of Iran from March 2007 to 2012.

In a prospective case series study, injured children with age less than 15 years were evaluated.

Participants were all children consecutively admitted to the trauma center for management of their trauma. The inclusion criteria were work-related injuries (child labor) based on positive history (from child or parents) or social worker reports in suspicious cases (denied by child or parents).

Children with non–work-related injuries or escaped patients were excluded. Patients with acoustic or ocular injuries were also excluded because their managements were done in another specialized center.

Approval for the study was obtained from the university and hospital ethics committees. Written consent was obtained from the parents, after discussion of study purposes with them.

In each patient data such as age, sex, worker status, anatomic site of injury, and costs were collected.

The statistical package for social sciences (SPSS Inc., Chicago, Illinois, United States) software (version ll.5) was used for data analysis. Data were expressed as mean ± SD for quantitative variables and percentage for qualitative ones.

Children younger than 15 years were reported (as worker), if they worked at least 1 hour during 5-year reference period in paid or unpaid work whether in the formal or informal sector. It did not include household chores performed in a child's own home.[10]

Results

In this study, a total of 127 children were evaluated. Patient demographics are outlined in ►Table 1. The mean age of the patients was 10.9 ± 3 years (3–14 years).

Most of the patients (89%) were male. In < 5 years group, the main reason of trauma was to help in their own household enterprise (loom, workshop, etc.).

Most of the injuries (80.3%) occurred in urban sector. The main reasons for working are listed in ►Table 2. In most of the injured patients, the main reason of working was to help pay their own family debts or supplement family income.

The place of employment is listed in ►Table 3. According to these results, industrial workroom was the most common place for injury (58.2%).

►Table 4 presents the mechanisms of injuries in patients. Falling from height or in horizontal surface was the most common mechanism of injury (44%). None of the patients had a preventable device at the time of an injury; however, their task masters acclaimed that employers had these devices in the workroom.

►Table 5 presents the anatomic sites and type of injuries in patients. Cuts (49.6%) were the most commonly reported injuries.

The lengths of hospitalization were 1.23 + 0.88 days in our center. Crushed patients were transported to another tertiary specialized center after their stabilization. There was no death in our cases. The mean of cost of hospitalization was US $29.9 ± 20.36. Of the known, 40.9% of patients had no insurance service for their payments. Most of the patients were discharged with complete recuperation (94%), but in others (6%) children were discharged with parent's self-consent. These patients were referred to social workers.

Table 1 Patient demographics

Age	Female	Male	Total
< 5 y	2	8	10
6–10 y	5	27	32
11–14 y	7	78	85

Table 2 Main reason for working

To gain experience	11 (8.7%)
To appreciate value of work	10 (7.9%)
To supplement family income	14 (11%)
To help pay own family debt	73 (57.5%)
To pay own schooling	3 (2.37%)
To help in own household enterprise	16 (12.5%)

Table 3 Place of employment

Farm	25 (19.7%)
Industrial school	5 (3.9%)
Industrial workroom	74 (58.2%)
Household workroom	16 (12.6%)
Masonry	7 (5.6%)

Table 4 Mechanisms of injuries

Falling	56 (44%)
Detrition	15 (11.8%)
Cutting	41 (32.3%)
Contest	3 (2.36%)
Animal related	12 (9.54%)

Discussion

Child labor refers to the employment of children in any work that deprives children of their childhood, interferes with their ability to attend regular school, and that is mentally, physically, socially or morally dangerous and

Table 5 Anatomic sites and type of injuries

	Burn	Contusion, bruises, hematoma, abrasion	Cuts	Fractures, sprains, dislocation	Crushing
Head and neck	–	2	13	–	–
Chest	–	1	–	–	–
Abdomen	–	2	–	–	–
Upper extremity	–	5	5	4	–
Lower extremity	–	80	5	4	–
Multiple	1	–	–	–	1

harmful.[11] In 1999, National Research Council comprehensive consensus report noted the inadequacy of information currently available about childhood occupational injuries and identified the need for research in several critical areas.

In 2001, of 12.6 million, approximately 12 million children in India were in a hazardous job. UNICEF estimates that India with its larger population has the highest number of laborers in the world, which are less than 14 years of age, while sub-Saharan African countries have the highest percentage of children who are deployed as child labor.[12] ILO estimates that agriculture at 60% is the largest employer of child labor in India, while United Nation's Food and Agriculture Organization estimates 70% of child labor is deployed in agriculture and related activities. Outside of agriculture, child labor is observed in almost all informal sectors of the Indian economy.

In 2010, sub-Saharan Africa had the highest incidence rates of child labor, with several African nations witnessing over 50% of children, aged 5 to 14 years, working.[13] In sub-Saharan Africa, one in four children aged 5 to 17 years work, compared with one in eight in Asia Pacific and one in ten in Latin America.[14] Despite the decrease of child labor from 25 to 10% between 1960 and 2003 according to the World Bank,[13] this practice is still common in many countries.

In this study, we evaluated child labor in the central part of Iran. Our results showed that industrial workrooms are hazardous place for working children. In a study, Beyer[13] confirmed that agriculture was a hazardous industry for working children. It was also the most hazardous industry in the United States for young workers.[15] It seems that the type of hazardous industry might be different in different parts of the world. In central part of Iran, nonagricultural industrial workrooms are more common due to desert type of climates in these region and agriculture activities are so limited.

The findings of the study of Lilley et al[16] in New Zealand indicated that children contribute significantly to the overall burden of work-related fatal injuries in New Zealand, especially as bystanders to other people's work. Their results also indicated that work-related incidents contribute to the total burden of child injury deaths. The high contribution to workplace bystander deaths by children aged $<$ 15 years indicated that hazard control in certain work settings was lacking.

Studies from other developed countries (e.g., the United States, Australia, Finland, and Canada)[17–20] have also shown that agriculture is among the most dangerous occupational sectors.

Other finding of our study showed that males are more injured than females. This finding is similar to the results of the study of Gerberich et al[21] that discovered 40% increased adjusted odds of injury among males. Of course, our religious believing might be an important factor for this difference. In Iranian society, most of the female child workers are in household activities such as household loom and parents supervision are more for these children.

This study found that "falling" was an important mechanism of trauma. Castro and Hunting[22] showed that the cuts were the most commonly reported injuries in agricultural industries. It seems that in nonagricultural industries, the types of equipment or clothing chats, long-sleeve t-shirts, pants, and gloves, are more important for protection from an injury. In our community, task masters should provide the equipment to workers, but as our findings showed, none of our patients had them at injury scene. It seems that task master supervision will protect the children from injuries.

In conclusion, our study showed that child labor injury in the central part of Iran mainly occurred in nonagricultural sectors due to falling. These injuries are nonfatal and might be prevented by protective equipment.

Conflict of Interest

The author reports no conflict of interest.

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