Assessment of workplace hazards among working children in al amen city, Baghdad

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Abstract

Back ground: One out of six children in the world today is involved in child labor, doing work that is damaging to his or her mental, physical and emotional development.

Objective: Assessment of some health problems among the studied working children.

Method; A cross-sectional study was conducted in Al Amen Primary Health Care (PHCC) during the period from January to August 2009, a sample of 6048 children were selected randomly(3218girls and2866 boys age between 5-17 years) and interviewed to collect information using a structured questionnaire form, information related to different aspects of child labor prevention were included in the form as well as a general medical examination and laboratory assessment.

Results:. The frequency of child labor was 10.95% among the children study, and the detection of work related illnesses among working children was observed in 402 working children(60.36%).While work related accidents was 264(39.63%).Both sexes showed difference in frequency of labor (77% boys and 23% girls).there was association between malnutrition and child labor(x^2=64.11 ,df=1,p-value<0.05)also such a association with smoking habit (x^2=98.53,df=1,p-value <0.05) .The highest frequency of child labor (32%)was found among 15-17 years age group of boys. While the highest frequency of child labor (11.71%)was found among 9-11 years age group of girls. Out of 666 working children there are 26 child with lead poisoning(3.90%).

Conclusion: Child labor can induce many health problems among the studied working children

Key words: child labor, work related illnesses, work related accidents, Al-amen

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Introduction

Child labor is defined as paid employment of children younger than 18 years and the International Labor Organization (ILO)and its partners stand for a world where no girl or boy is forced to work at the expense of their health and development or their future prospects of decent work[1,2]. International Labor Organization(ILO), the United Nations Children's Fund (UNICEF)and world health organization(WHO) estimates that in developing countries alone there are more than 158 million children between the age of 5 and 14 years who are fully employed also the ILO observes in rural children, in particular girls ,tend to begin their economic activity at an early stage, at 5,6,7 years of age[3] . In May 2002, the ILO issued a new global report on Child labor that describes the extent of the problem. Almost 250 million children, about one in every six children aged 5 to 17yrs on the face of the globe, are involved in child labor. Of these, some 179 million (one in eight) are trapped in the "worst forms" of child labor. The worst form are those that endanger the child's physical, mental or moral well-being. Children can be found in almost any economic sector. However, at a global level, most of them are in agriculture (70%) ,Children working in agriculture are the ones suffering most injuries. For children working as domestic laborers, the hazards are sometimes not that obvious. Here, it can be the psychological hazards,

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like isolation, abuse, exploitation that make this form dangerous. Domestic labor is often called "hidden" and it is often difficult to find those children. Other sectors where children are working (although not in large proportion) are mining (1%) and construction (2%). The work done is generally very dangerous for children. Children are often "achievers", they want to perform well, go that extra mile, and are inexperienced and untrained in dealing with hazards[4]. Tools are not made for them, and thus pose more hazards. There are no personal protection devices for children. Additionally, they are also not organized and powerless. Girls are at special risk. They often begin to work at a younger age and have a double work burden (at home and in the fields). They frequently work longer hours, and in different cultural settings may get poorer nutrition. Occupational hazards cause not only short-term health effects (mainly injuries, skin problems, etc), but most effects are long-term and will only become evident in adulthood[5]. Therefore, they are difficult to measure and to quantify. Cancer, infertility, chronic back pain and IQ reduction are some of the expected long-term outcomes. Health professionals are in a key position to identify children at risk, advise the parents on ways to reduce this risk and recommend action to policy-makers. They should be able to recognize and assess the occupational and environmental health threats present in the places where children live, learn and play, and work, in the urban and rural communities[6]. They should also know that these threats increase in low-income populations and minority communities, and in degraded environments. In combating hazardous child labor, the most important challenge is the translation of knowledge and legislation into action, moving good intention and ideas into protecting the health of the children. For this, the involvement of the relevant stakeholders like health and safety experts (they know about hazards and health outcomes), labor inspectors (they know how to enforce the law) and general health experts (they know about the vulnerability and health outcomes in the child and are the first-line care givers), is absolutely essential. The elimination of child labor is a long-term objective. However, in the meanwhile, we cannot allow that children are injured or harmed at work in their struggle for survival, especially when we have the knowledge and means to prevent this[7] . Absence of these data in Iraq and neighborhood is a major impediment to collect information.

Methods:

Setting: Al Amen Primary Health Center is located in al amen area ,new Baghdad, and cover around 200,000 population, most of them are middle and lower class people

Research methodology: **study design and sampling procedure:**

the research approach adopted descriptive study (cross-sectional), the interview and general medical examination and laboratory assessment was carried out by researcher in Al Amen Primary Health Center in Baghdad for 3 working hours\day and for 5 days\week, for the period from January-August 2009, a total sample of 6048 children between age5-17 years (2866 boys and 3218 girls) were included in the study and interviewed to collect information using a structured questionnaire form, information related to different aspects of child labor prevention were included in the form as well as a general medical examination and laboratory assessment. The laboratory tests included a general stool examination, hemoglobin level, widal test for typhoid fever and portable haematofluorometer test for measuring zinc protoporphyrin (ZPP) for lead poisoning ,using (AVIV Bio medical inc., USA). Zinc protoporphyrin level of more than 35mcg /dl considered as lead poisoning[8]. By

WHO criteria, anemia is defined as a hemoglobin concentration lower than 13 g/dL in men and lower than 12g/dL in women [9].Iron deficiency anemia used as indicator for malnutrition status .

Inclusion criteria: children between age 5-17 years old of both sexes

Exclusion criteria for selection of cases:

1-Some children or their parents who were not cooperated to the interview to fill the questionnaire.

2- Children with repeated attending consultations to the health center

Construction of questionnaire form:

An English language questionnaire form was prepared by researcher, translated to Arabic. the information was obtained by direct interview with children or their parents after taking their consent. The questionnaire form contain information as follow:

1-Demographic and socio economic characteristics of children includes :sex ,age, children smoking status , educational level, type of work and duration of employment

2- Demographic and socio economic characteristics of parents include: educational status of both parents and parent's employment.

Pilot study:

Before starting to collect information, a pilot study was carried out for two weeks to find out what difficulties were likely to be met. the pilot study done in Al Amen health center for two weeks in December 2008 aims at:

a-Testing the reliability of questionnaire form to reveal any modifications needed.

b-estimate the time needed to collect the required data. The pilot sample consisted of 100 children and were excluded from the study sample. On average, the questionnaire took about a 10 minutes to be filled.

Data analysis

Statistical analysis was done by using:

1-Descriptive statistically: Graphs ,tables (frequency and percentage)

2-Inferential statistically: Chi test was used to find the assessment of association between the variables studied .

Data was entered and analyzed by statistical package for social sciences(SPSS)

-**P**-value of less than 0.05 was considered statistically significant.

Results:

a total of 6084 study subjects were enrolled into the study, 2866 boys (47.20%)and 3218(52.80%)were girls (Figure1). The frequency of child labor was 11% among the children study (figure 2). The study shows that both sexes showed difference in frequency of labor (516 boys and 150 girls)(Figure3)The study working children were arranged in to five age groups. We found that the highest frequency of child labor (32%) was among 15-17 years age group of boys while in girls the highest frequency of child labor (11.71%)was found among 9-11 year age group(figure 4). Table 1 shows the number and percentage of working children according to type of job and we found that the highest frequency of working children in smelting scrap materials, building services and seller scrap materials(27%,23%and 17% respectively) . Table 2 shows the detection of work related illnesses among working children was observed in 402 working children(60.36%)of total working children while work related accidents was 264(39.63%)as shown in table 3 . Table 4 shows statistically significant association between malnutrition and child labor(x^2=64.11 ,df=1,p-value<0.05). Table 5 shows statistically significant association with smoking habit (x^2=98.53,df=1,p-value<0.05.. Table 6 shows that there is 26 child had lead poisoning with (0.43%) of total working children .

Figure 1: pie chart of the distribution of percentage of 6084 sample according gender status.

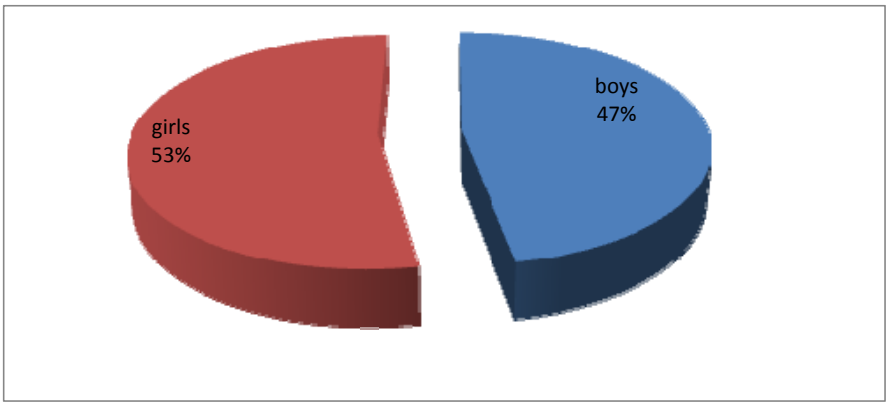


Figure 2: Pie chart of the distribution of percentage of 6084 sample according to the working status.

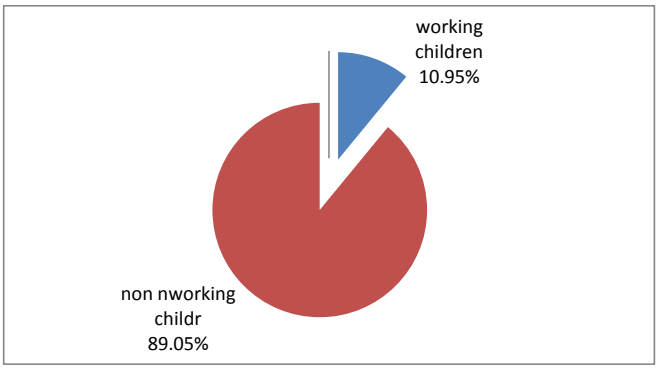


Figure 3: Bar chart of the frequency distribution of 666 working children according to the gender .

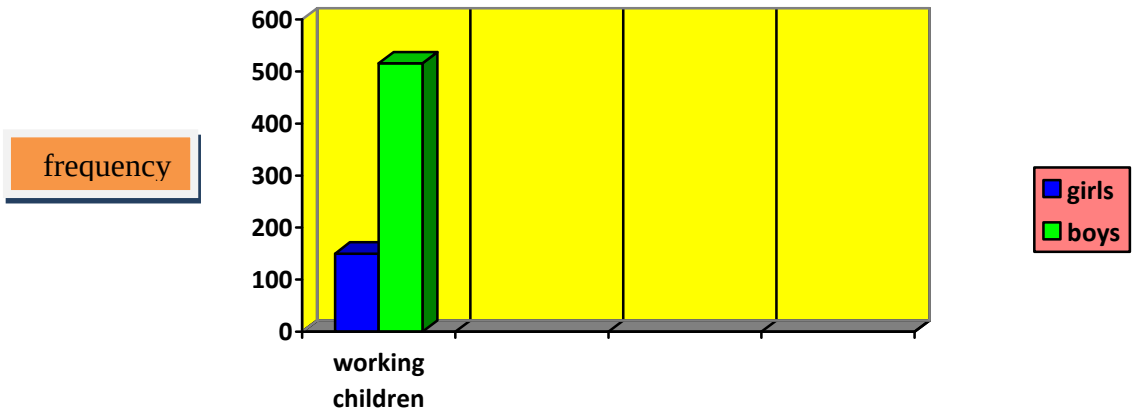
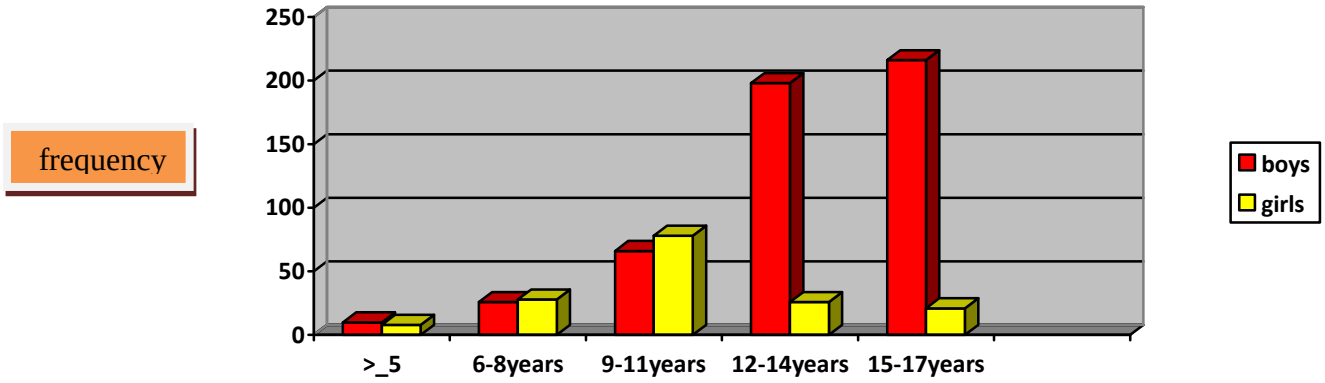


Figure 4: Bar chart of the frequency distribution of 666 working children according to the age interval .



Table(1) Distribution of working children according to type of job

occupation	number	Percentage (%)
Seller scrap materials	112	16.816
Building services	154	23.123
occupational services	96	14.414
Seller food materials	28	4.204
Industrial food processing	94	14.114
Smelting scrap materials	182	27.327
Total	666	100,00

Table(2) shows distribution of working children according to type of illness

Type of disease	number	Percentage (%)
Iron deficiency anemia	140	36.81
Amebic dysentery	108	27.86
Typhoid fever	30	7.46
Food poisoning	16	3.98
Low back pain	48	11.94
Bronchial asthma	34	5.47
Lead poisoning	26	6.46
Total	402	100.00

Table 3-shows distribution of working children according to type of accident

Smoking habit	Work status		
	work	Non work	Total
Smoking	132	250	382
Non smoking	534	2584	5702
Total	666	5418	6084
	X^2= 98.53 df=1 p<0.05 (significant)		

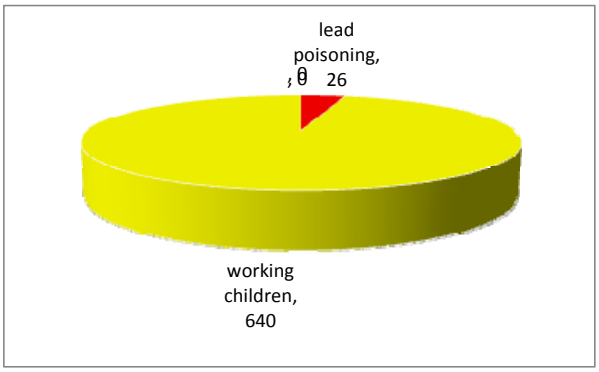
Table(4): shows the association of work status with Iron deficiency anemia of working children

Work status	Iron deficiency anemia		
	positive	negative	total
work	140	526	666
Non work	414	5004	5418
total	554	5530	6084
	X^2=64.11 df=1	p<0.05(significant)	

table(5): shows the association of smoking habit with work status of children

Type of accident	number	Percentage (%)
Different fractures	12	**4.54**
Dislocation of joint areas	38	**17.42**
Skin lacerations	96	**37.12**
Wounds and abrasion	90	**34.09**
burns	28	**7.57**
total	264	**100.00**

figure 5: pie chart of the frequency distribution of lead poisoning among working children in AL-Amen city for 2009.



Discussion

child labor is enormous social and public health problem.[10] **A**ccurate assessment of health problems of child labor can only assess by reliable benchmark statistics about the extent and severity of child labor and to develop survey methodologies to collect such data.[11] there is clear evidence that child labor, especially boys, is common among children and adolescents especially the later ten years ,a result being in agreement with other reports [12]**.** Our result showed a low prevalence among teenage girls (groups12-14 and 15-17 years old) which could be attributed to the social and cultural factors of society, also a result being in agreement with WHO report [13] . Also in this study we found that the both sexes showed difference in frequency of labor which could be related to the cultural beliefs which prevent the girls to work . our result showed highest occurrence of child labor (27.32%) has been found in Smelting scrap materials followed by Building services and Seller scrap materials (23.12% and 16.81 %respectively). Different findings with higher occurrence rates of illnesses in relation to the type of job have been reported elsewhere[14]. In this study we found that the iron deficiency anemia and amebic dysentery (36.81 %and 27.86% respectively) have highest occurrence rates among working children of our study, this could attributed to the poverty of children and low environmental hygiene at workplace .also in this study we found that the Skin lacerations , Wounds and abrasion (37.12 %and 34.09% respectively) have highest occurrence rates of accidents among working children in our study, this could attributed to the type of job and absence of occupational safety at workplace. Different findings with higher occurrence rates of accidents in relation to the type of job have been reported from other parts of the world such as U.S.A [15]. Our study showed statistically significant association between iron deficiency anemia and child labor that due to iron deficiency anemia .this is inconsistent with the finding of other authors who described different health problems[16]. Also this study showed statistically significant association with smoking habit this finding was supported by the studies of others authors who found that child labor can be an important causal association factors in

smoking habit[17] . also in this study we found 3.90% of working children with lead poisoning this is inconsistent with the finding of other authors who described different health problems[18]

Conclusion

1-The frequency of child labor was 11% among the children study

2-Both sexes showed difference in frequency of labor

3-The study shows an association between malnutrition and child labor

4- The study shows an association between child labor and smoking habit

5-.The highest frequency of child labor was found among 15-17 years age group of boys. while the highest frequency of child labor was found among 9-11 years age group of girls. the highest frequency of working children in smelting scrap materials followed building services then seller scrap materials

6-All the cases of lead poisoning among working children in smelting scrap materials

Recommendations:

1-Development of better data to define the extend and severity of the problem of child labor and it is associated injuries and illnesses. Absence of these data in Iraq is a major impediment to prevention. their collection will permit identification of particularly dangerous industries and occupations and help target prevention.

2-Education of children ,parents ,teachers, physicians, and the business community about the hazards of child labor.

physicians and other health providers must learn to inquire routinely about work as a possible source of trauma in any injured child or adolescence .

3-. Offering assistant to poor family and develop social and health care system and provide general services without complimentary.

4-Strictor enforcement of existing law and regulations by governorate and federal agencies.

References

1.International Labor Office(ILO) . Child labor: World Day against Child Labor. Geneva: ILO ,12 June 2009 www.ilo.org/communication

2- Philip JL, Susan HP ,and Renate B. Child labor. In: William NR and Steven B M editors. Environmental and Occupational Medicine.4nd ed. Philadelphia: Lippincott –raven publisher;2006.P.1725-30.

2- Pollack SH, Landrigan PJ, Mallino DL. Child labor in 1990: prevalence and health hazards. Ann Rev Public Health1990 ;11:359-375.

3- the United Nations Children's Fund(UNICEF). the state of the world's Children, annual publication.2009. WWW.unicef.org

4-World health organization (WHO):hazardous child labor,2009

5-U.S.Department of labor, Bureau of international labor Affairs .forced labor: the prostitution of children. Washington ,DC:US Department of labor, 1996.

6-Boste SK ,Hansen DA, Strand RL, Steuland DT. Hearing loss among high school farm students. Am J Public Health1989;79:619-622.

7-Cooper SP, Rothstein MA. Health hazards among working children in Texas. South Med J 1995;88:550-554.

8-U.S. Centers for Disease Control). Blood lead levels—United States, 1999–2002. MMWR, 2005; 54(20): 513–516.

9- Charves et al. "What constitutes normal hemoglobin concentration in community dwelling disabled older women?" Journals of Gerontology Society(2004; **52**(11): 1811-6.

11-national institute for occupational safety and health, division of safety research ,FACE program ,Jan,1988.

10-Dunn KA, Runyan CW. Deaths at work among children and adolescents. Am J Dis Child 1993;147:1044-1047.

12-Waller A E, Baker SP, Szocka A. Childhood injury deaths: national analysis and geographical variation. Am J Public Health1989;79:310-315.

13-International labor office. Child labor: targeting the intolerable. Geneva: ILO ,1996 www.ilo.org/child labor

14- Brooks DR, Davis LK, Gallagher SS.Work-related injuries among Massachusetts children: a study based on emergency department date Am J Ind Med 1993;24:313-324.

15-Derstine B..Job-related fatalities involving youths, 1992-95.compensation and working conditions 1996(December);40-42.

16-Swanson JA, Sachs MI, Dahlgren KA, Tinguely SJ. Accidental farm injuries in children. Am J Dis .Child1989 ;141:1276-1279.

17-Cogbil TH, Bush HM, Stiers GR. farm accidents in children. pediatrics1988;562-566.

18-landriganPJ,BelvilleR,.The dangers of illegal child labor.Am.J Dis.Child 1993;147:1029-103