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Occupational Health Program on Preventing Hazard among Child Labor

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Abstract: *Background: Child labor is a dominating phenomenon in Egypt. The aim of this study was to evaluate the effect of occupational health program on preventing hazards among child labor. A quasi - experimental design was used. The study was conducted at the Garment factories at Benha City. Egypt.: A convenient sample of (89) child labor .Two tools I- Interviewing questionnaire to assess socio-demographic characteristics for child labor and family, past history of occupational hazards, child knowledge about safe working environmental, and practices regarding first aid practices regarding occupational health. II-Observational checklist sheet of OHSAS application to evaluate factory environment. Results: showed that the majority of the child labor were had poor knowledge about different types of personal protective equipment . Also, the majority of child labor were had poor practices about first aid measures in case of exposure to different occupational hazards. There were statistically significant difference between before and after occupational health program.The study concluded thatoccupational health program will improve the child labor knowledge and practices regarding safety measures to preventing hazard among child labor . The study recommended that periodic occupational health program for all children at work place to prevent occupational health hazards.*

Keywords: *Occupational health program, Child labor, Occupational hazards , protective equipment .*

I. Introduction

Children represent a very large group of the Egyptian population pyramid, The distribution of the population by age indicates that a relatively high percentage of the population is young: those below the age of 15 years represent about 37.5 percent of the total population. It was estimated that 7 percent of Egyptian children, were engaged in child labor in 2009. This constitutes for 8 percent of male children population and 5 percent of female children population.[1]

Child labor is a worldwide phenomenon which is considered inhumane by many international organizations. The term "child labor" is often defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development. In its most extreme forms, child labor involves children being enslaved, separated from their families, exposed to serious hazards and illnesses and/or left to fend for themselves on the street – often at a very early age. .[2]

Worldwide, the number of child labors is very large. An estimated 215 million children (under 18 years of age) carry out economic activities which qualify as child labor across occupational sectors,Children often start to work at a very young age, from as young as five, in both urban and rural areas. An estimated 115 million children carry out hazardous child labor.An estimated 115 million children carry out hazardous child labor .[3]

Child labor is a complex and growing problem in developing countries of Africa, Asia and Latin America. Although the Convention on the 'Rights of the Child' clearly underscores the need to protect children from economic exploitation and from performing any work that is likely to be hazardous, child employment still continues to prevail in many developing countries. Recent, ILO estimates show that some 250 million (140 million boys and 110 million girls) children between the ages of 5–14 are obliged to work with 61% (152 million) being in Asia, 32% (80 million) in Africa, and 7% (18 million) being in Latin America .[4]

Hazardous child labor is work in dangerous or unhealthy conditions that could result in a child being killed or injured/maimed (often permanently) and/or made ill (often permanently) as a consequence of poor safety and health standards and working arrangements. The **International Labour Organization** estimates that 22,000 children are killed every year at work, but figures for non-fatal accidents involving child labors or ill health caused by work are currently unavailable. Every year there are 270 million accidents at work and 160 million cases of ill health due to work and child labors, .[3]

Hazardous work includes any work in designated hazardous industries or occupations, work for long hours (i.e. more than 43 hours per week) or work under hazardous working conditions. Hazardous working conditions include working in an environment containing dust or fumes, fire gas or flames, loud noises of vibrations, extreme cold or heat, insufficient lighting or ventilation or in confined spaces; work with dangerous tools, chemicals or explosives; work underground, in high places, or under water; and work that involves

exhaustion, bending for a long time or workplaces with no bathrooms. Based on this definition 1.59 million of the 1.81 million employed children in Egypt (88.2%) are engaged in child labor, .[5][3]

Child labor expose them to different hazards, which may have tremendous harmful effect on their health. These hazards may result from physical, chemical or mechanical agents .[6]**.** Garment factories can cause ill health by skin and eye contact, or inhalation. Risk of injury depends on duration and level of exposure and individual sensitivity. Dust causes lung function impairment, chronic obstructive lung disease, restrictive lung disease, pneumoconiosis and carcinoma of the lung, stomach and colon .[7].

The factory is consists of six sectors and it produces about 8000 thousand piece of garment every years. There are about 280 workers and employees. The work system in the factory is one shift and its shift is 9 hours every day as well as the work is 5 days/week.[8]

The chemical hazards arise from excessive air born concentrations, chemicals could occur through either inhalation, dermal or ingestion and through contaminated hands. These toxic chemicals may have acute or chronic effects on the workers. Acute effects such as dizziness, headache, nausea, vomiting, sleepiness, fatigue, slurred speech, disequilibrium, loss of consciousness, respiratory tract irritation, acute pneumonitis, a plastic anemia, leukemia, kidney, bladder, lung cancer, lymph sarcoma, and pulmonary edema.[9].Occupational injuries as trauma, fracture and wounds represent the leading cause of morbidity and mortality among workers.[6]

Occupational health and safety affect not only the children but also on his family and significant others and his community. In addition to, occupational health nursing is the specialty practice that focuses on the promotion, prevention, and restoration of health within the context of a safe and healthy environment; this includes the prevention of adverse health effects from occupational and environmental hazards. It provides also delivering occupational and environmental health and safety services to children, work populations, and community groups,.[10].[11]

1.1. Significance of the Study:

In Egypt, still the number of child labor rising. There are no official statistics, but estimates range from 90,000 to 2 millions,.[5]

Improving primary education and legislation steps to prevent child labor, it is still an integral part of recent Egyptian economic activity. Few studies have attempted to create a health profile of Egyptian working child, especially that this stage of life has traditionally been assumed to be relatively free of serious health problems **,**.[12]Hence, there is a need for analyzing, in more detail, the lifestyle of the working child, especially in rural area, in Egypt. This would possibly enabling appropriate actions to be taken by policy makers to protect the children in general, and working children in particular.

Occupational health nurse has a major role in identifying occupational hazards, determining children health problems, early case finding, management and referral to the appropriate community health resources .[9].[13].As well, the occupational health nurse analyzes each job task to detect task situations that place employee at risk through assessment and surveillance of the workplace to identify potential hazards increasing with the work, reducing risk, and minimizing risk problems.[14].

1.2. Aim of the Study:

The study was carried out toevaluate the effect of Occupational health program to improve preventing hazards among child labor in Garment factories, through:

- Assessing the health status of child labor towork safety measures to detect child needs .
- Assessing occupational risk factors and the occurrence of occupational health hazards.
- Developing and implementing occupational health program based on the previously detected needs of children labor toward safety devices.
- Evaluating the occupational health program on improving the child labor knowledge and practice toward safety measures.
- Measuring the extent the Occupational Health and Safety Assessment Series (OHSAS,2008) have application in the field of work.

1.3. Study Hypothesis:

Occupational health program may have direct or indirect effect on improve the child labor knowledge and practice toward safety measureto preventing hazard among child labor.

II. Subjects and Methods

2.1. Study Design: AQuasi-experimental design was used in carrying out the study.

2.2. Study Setting: This study was conducted in the Garment factories in north west of Banha city, Qalyubia governorate, the factory is divided into six departments for spinning and two department for weaving , total number of workers 280, which included large number of children working.

2.3. Subjects: The purposive sample consisted of 280 of workers and employees. (89) which includes all children below 18 years ,according to the certain criteria:child who accepted to participate in the study, child age below 18 years old, and free from chronic medical problems and disability.

2.4. Study Tools:
Two tools were used for data collection:
Tool I: A structured interview questionnaire was designed and utilized by the researchers to collect the necessary data. It is divided to five parts and entailed the following items:
1- Includes questions related to socio-demographic characteristics of the child labor and family such as age, gender, residence, education level , child ranking , working hours /daily , income, smoking, mother education, mother occupation ,father education, father occupation , family stability and causes of child labor working .
2- Include questions related to past history of occupational injuriesduring 2014,their management and outcomesuchas; types of exposure to occupational hazards during the working day, first aids providers ,place of treatment ,injury complication, psychological problems ,sexual abuse and excessive fatigue.
3- Includes questions related to their risk exposure to the various occupational hazards. This part is composed of open-ended questions to collect data from child labor and health records. It covers the physical hazards, accidents ,exposure to fracture, chemical hazards and other health problems.
4- Includesquestions related to child labor knowledge about safe working environment, personal protective equipment ,how to protect themselves from occupational hazards and importance of using it, ventilation and sufficient light

Scoring System: for knowledge items, a correct complete answer was scored (Two points) and a correct incomplete answer was scored (One point), while the wrong answer or don't know was given (Zero), according to child labor answers, their knowledge was categorized into (Good knowledge) ≥ 75%, (Average knowledge) ≥ 50% - < 75% and (Poor knowledge) < 50%.
5- Included questions related to child labor practices as regards first aid measures in case of exposure to different occupational hazards using a rating scale of 2 levels; a know (1) mark, an unknown (0) because it is a positive practice when contact between chemical materials, eye and skin surface, flying dust in the eye, toxic ingestion, falling of a person from height, asphyxiation, bleeding and fire accident.

Scoring System:
Measuring the score of child labor practices toward occupational hazards: A known item was scored one point (1) , An unknown item was scored zero (0).
These scores were converted into percent score. The child labor practice was considered good:if the percent score was ≥ 75% , while was considered average if the percent was less than 75% and more than 50% and poor if percent score was less than 50%.

Tool II: Observation checklist sheet of OHSAS (2008). [15] Application
Checklist observation sheet was modified to evaluate the extent of OHSAS application in the field work. This part is composed of 26 closed-ended questions which cover the ventilation, lighting, hazard identification, risk assessment and risk control, training, documentation and records, emergency readiness, accident and incident investigation, corrective and preventive action, application and relevance in the factories. In addition to improved company image by demonstrating a commitment to manage and minimize risks to employees.[15]

Scoring System:
Evaluating the score of observational checklist sheet of OHSAS(2008) application, it was as follows: a good applicable items was scored one point(1) , and poor application item was scored zero (0).

The elements of OHSAS 18001(2008) include :

1. Policy and commitment
2. Hazard identification, risk assessment& risk control**.**
3. Legal requirement.
4. Objective and programs.
5. Organization and personal.
6. Training, communication and consultation.
7. Documentation and records.
8. Operational controls.
9. Emergency readiness.
10. Measurement and monitoring.
11. Accident and incident investigation, corrective and preventive action.
12. Audit and review.
13. Application and relevance in the factory.

Improved company image by demonstrating a commitment to manage and minimize risks to employees and customers.[15].

Content validity of the tool was checked by a panel of five expertsCommunity Health Nursing specialty and modifications were done based on their opinions.

Reliability: Reliability coefficients were calculated for questionnaire items. The coefficient alpha was 0.81

2.5. A Pilot Study was carried out on 10 child labor from three departments in order to test clarity and applicability of the tool. The pilot study was also used to estimate the time needed for each subject to fill in the questions. Modifications were done based on the results of the pilot study. Those who shared in the pilot study were excluded from the main study sample.

2.6. Ethical Consideration: All relevant ethical aspects were considered for ensuring the confidentiality of the collected data through; gaining oral consent for participation in the study, explaining the purpose of the study, right to refuse to continue participation at any time without giving any reasons.

2.7. Field Work:

The actual field work started from January 2015, to July, 2015. A formal letter was issued from the Faculty of Nursing, at Banha & Helwan University to the Chairman of the Board of garment factory requesting approval for conducting this study. Following, the researchers explained the purpose and process of the study to the child labor and got their oral consent to participate in it. The researchers emphasized strongly that the information collected would be used for scientific research only, would be confidential, will be studied to improve their case prevalence related to exposure to occupational hazard.

The interviewing questionnaire was held with each child labor with the researchers to obtain the exact meaning from them for about 20-30 minutes in the foreman room, after that the researchers read questionnaires then explained each element simply and briefly.

The occupational health program was developed based on reviewing of related literature and the result of the assessment tools (pretest).

III. Occupational Health program construction

It consisted of three phases:

3.1. Preparatory Phase:

The agreement for the participation of the subjects was taken after aims of the study have explained to the women's they were given as an opportunity to refuse to participate. The researcher was reassuring the women's that all the issues discussed will be confidential, used for research purpose only and for the sake of his loved one.

3.2. Planning and Implementation Phases:

- General objective: The objective of occupational health program were to improve the health child labor through improving their knowledge, and practices towards first aids, safety measures in factory environment.
- Content of the program : important of use PPE, types, how to protect themselves from occupational hazards , availability of PPE, safe work environment, and first aid in case of occupational hazards.

- The program was implemented over a period of 7 months; it was carried out in 7 sessions (time allowed 8 hours distributed on 7 sessions: 5 hours for theory and 3 hours for practice. The duration of each session ranged from 30 - 60 minutes.
- At the beginning of each session, the researchers started by a summary about what was given through the previous sessions and objectives of the new one, taking into consideration using simple and clear language to suit the participants level of understanding.
- Different teaching methods were used including lectures, group discussion, demonstration and re-demonstration, and role-play to implement the program.
- The educational media were brochures, colored posters, laptop screen show and real objects.
- At the end of each session, the child labor were informed about the content of the next session and its time

3.4. Evaluation Phase:
Evaluation was based on scores of acquired knowledge and practices in pre-test and immediate post-test.

3.5. Statistical Design
The calculated data was analyzed and tabulated using appropriate statistical test as "chi square" for number and percentage distribution, by using SPSS, version 18 to determine if there are statistically significance relations.

IV. Results

Table (1): showed that 66.3% aged less than 12 years with the mean age 10.5±2.1, 47.2 of the study sample were males, while 55.1% of them live in rural areas. Regarding educational level 55.1% leaved the school during preparatory school. The table clarified also 56.2% of study sample were middle child in the family, 96.6 % of them working more than 6 hours daily and 39.3 having more than 500 pound/month.

Table (2): showed that around half (47.2%) of study sample mothers can read and write only and 62.2% were housewives'. The majority(80.7%) of study sample fathers' were not working and 48.3% of child labor were living with separation of family.

Figure (1): illustrated that 24.9% were working for family helperwhile12.5%were working for learning skills and 42.5% were working for more than one reasons.

Table (3): clarified that 95.5% of study sample suffering from poor health status during working days followed by 91.0%of them having psychological and physical health problems, while 55.1% exposed to sexual abuse.

Table (4): showed that 45.5% of child in Sweet factory suffering from Muscular- skeletal complain compared by 33.3% in Garment factory while 34.8% of all children suffering from respiratory problems and only 18.0% suffering from nervous system problems.

Figure (2): illustrated that 95.5% were facing extreme temperature degree during working hours while71.9%were facing fire and gases, and. 60.7% of children faces dust and fumes.

Table (5): demonstrated that there are improvement of child regarding their knowledge after implementing the program with statistically significant differences

Table (6): showed that around one quarter having healthy lifestyle regarding sleep and nutrition 28.1, 27.0 respectively pre program compared by 36.0 and 32.6 post program. The table showed also no statistically significant differences between all items of lifestyle pre and post program except for recreational activity.

Table (7): showed that 50% of factories environment having good applicable of sanitation, ventilation and lighting while 100.0% had poor applicable for presence of safety measure and precaution sign

Table (1): Frequency Distribution Of Study Sample Regarding Demographic Characteristics (N=89).

Demographic characteristics	**Total (n=89)**	
	No	%
Age / years		
≤12	59	66.3
>18	30	33.7
Mean ±SD	10.5±2.1	
Gender		
Boys	42	47.2
Girls	47	52.8
Residence		
Urban	40	44.9
Rural	49	55.1
Educational level		
read and write	12	13.5
Primary	49	55.1

Preparatory	28	31.5
Child ranking		
Older	29	32.6
Middle	50	56.2
Younger	10	11.2
Working hours/ daily		
<6 hours	3	3.4
≥6 hours	86	96.6
Income		
200-500 pounds	54	60.7
>500 pounds	35	39.3
Smoking	49	55.1
Yes		
No	40	44.9

Table (2): Frequency Distribution Of Study Sample Regarding Family Characteristics (N=89).

	Total (n=89)	
Family characteristics	No	%
Mother education		22.5
Illiterate	20	
read and write	42	47.2
Primary	15	16.9
Preparatory	12	13.5
Mother occupation		37.7
Working	29	
House wife	48	62.2
Father education		42.7
Illiterate	38	
read and write	19	21.3
Preparatory	32	36.0
Father occupation		19.3
Working	11	
Not working	46	80.7
Family stability		48.3
Separation of the family	43	
Divorced	38	42.7
one parent family	8	9.0

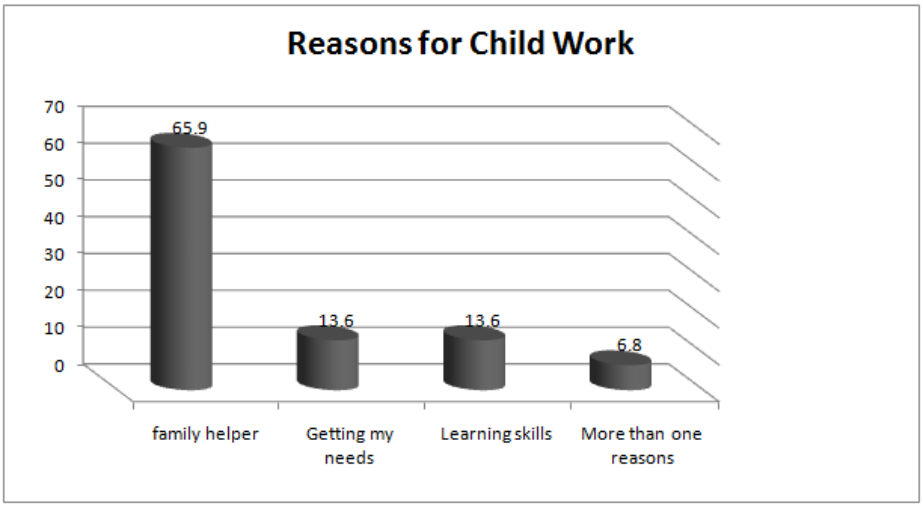

Figure (1): Frequency distribution of study sample regarding reasons for child work

Table (3): distribution of the child labor according to past history of occupational health injury during yeas 2014 , their mange and outcome (n=89).

Health problems related work	**Total (n=89)**	
	No	%
Types Injury Trauma, fractures and wounds	54	60.7
First aid provider Physician Colleagues	24 65	26.9 73.1
Place of first aid Factories Injuries site Hospital	 55 20 14	61.3 22.4 12.3
Injury complications	27	30.4
Psychological problems	81	91.0
Sexual abuse	49	55.1
Excessive fatigue	81	91.0

Table (4): Distribution of study sample regarding to their risk of exposure to the various occupational hazards (n=89).

Occupational hazards	**Total (n=89)**	
Physical hazards	No	%
Noise	31	34.8
Ear problems	35	39.3
High blood pressure	16	18.0
Accidents	28	31.5
Exposure to fracture	22	24.7
Falling to fall from heavy objects	27	30.3
Moving mechanical machines	12	13.5
Chemical hazards		
Eye irritation or allergy	28	31.5
Skin problems	22	24.7
Other health problems		
Eye disorders	16	18.0
Cardiovascular problems	16	18.0
Partial or complete deafness	35	39.3
Nothing	8	9.5

Figure (2): Frequency distribution of child complaint from health problems related work

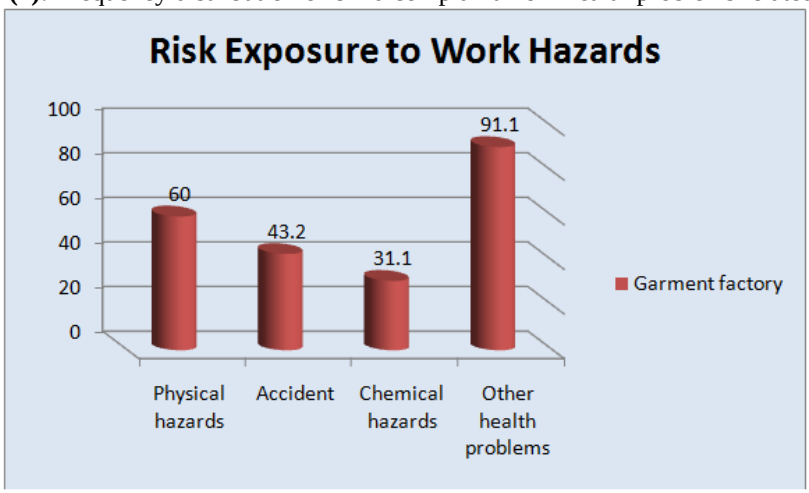

Table (5) distribution of the child labor according to their knowledge regarding safe working environment (n=89)

Child knowledge	Pre test		Post test		X^2	p-value
	Correct		Correct			
	No	%	No	%		
Ventilation	26	29.2	64	71.9	32.4	0.000
Sufficient light	10	11.2	82	92.1	116.6	0.000
Important of use PPE, types of PPE	11	12.4	72	80.9	84.0	0.000

Table (6) : Percentage distribution of the children according to their pre and post practice as regards first aid measures in case of exposure to different occupational hazards (no=89).

Practice in case of occupational hazards	Good %		Average %		Poor %		X^2	P-value
	pre	post	Pre	post	pre	post		
Contact between chemical material and eye								
	16.9	51.7	37.1	25.8	46.1	22.5	24.76	0.000
Entry of flying dust in the eye								
	13.5	41.6	31.5	38.2	55.1	20.2	27.67	0.000
Contact between chemical materials and skin								
	15.7	50.6	38.8	30.3	49.4	19.1	28.51	0.000
Ingestion of toxic material								
	19.1	44.9	29.2	38.2	51.7	16.9	26.10	0.000
Falling of a person from height								
	19.1	57.3	34.8	29.2	46.1	13.5	33.30	0.000
Person with bleeding								
	21.3	49.4	37.1	34.8	41.6	15.7	20.35	0.000
Exposure to fire accident								
	22.5	52.8	40.4	32.6	37.1	14.6	20.33	0.000

Table (7): Distribution of Sweet and Garment Factories According to Checklist (OHSAS Checklist Parameters)

Item	A	Present %
Good ventilation	1	100
Sufficient light	1	100
Enough space between machines	0	0
Fire extinguisher	1	100
Ambulance car	0	0
Medical clinic inside facility	0	0
Periodic medical examination	0	0
Pre employment examination	1	100
Presence PPE	1	100
Enough PPE	0	50.0
Training on use of PPE	0	50.0
Periodic checking of PPE	0	0
Punishments for those not using PPE	0	0
Leisure time journeys or activates	1	100
Periodic workers training on occupational safety	0	0
Emergency plan in cases of emergency	0	0
Application of emergency plan on real ground	1	100
Explanation of change of policy to workers	1	100
Presence of specific employees to identify occupational risks	0	0
Procedures factory follow after recognition of danger	1	100
The workers know these procedures	0	0
Presence of internal auditors to check safety	1	100
Role of internal auditors is played	0	0
Part time during working day	1	100
Presence of medical records for each worker	1	100
Computerized of medical records	0	0

A= garment factors

V. Discussion

Child labor is rapidly growing globally. It involves children being enslaved, separated from their families, exposed to serious hazards and illnesses depends on the child's age, the type and hours of work performed.[1]

According socio-demographic characteristics the present study showed that about more than two third of them than ≤ 12 years with the mean age 10.5±2.1, more than half of the study sample were girls , while more than half of them live in rural areas. Regarding educational level more than half leaved the school during primary school. The majority of them working hours daily more than six hours**(Table 1).** This results in line with. **Rajir(2014).[**16]**,**which revealed that one in every four of the working children was below the age of nine years when he joined the labor force and the majority of them working hours daily more than six hours every days.

Regarding educational level of mothers, the present study result showed that, less than half of them can read and write only, while minority of them were preparatory education **(Table 2).** This finding was in congruent with .**Wanke (2014)**[17]**.** who mentioned that, less than two thirds of the mothers had read and write .This may be due to more than half of children living in rural areas. Regarding mother occupation nearly less than two thirds of mothers were housewife. This finding agreed with **Datt and Parul (2014)**.[18]**.** who found that, more than two thirds of mothers were housewife. Regarding educational level of father, the present study result showed that, less than half of them had illiterate, while one thirds of them were preparatory education **(Table 2).** This finding was in accordance with**Wanke (2014)**.[17]**.**who mentioned that, less than half of them of the father had preparatory education. Nearly more than two thirds of father were not working . This finding agreed with. **Dott and parul(2014)**[18]who found that, more than two thirds of fathers were not working. As regard the family stability as reported less than half of them separation of the family and divorced **(Table 2**). This result in line with. **Taylor (2010)[**19]**.**Family stability is also of great importance in the perpetuation of child labor. This is obvious from the present study. Where about around half of them were from broken families. Divorce or deaths of one or both parents were the main reasons reported for child separation from his family.

Regarding reasons of child labor working the present study, revealed that around half of child working for more than one reasons, while more than two third were working for family helper and the minority of them were working for learning skills **(Figure 1)**This results agreement with **WHO (2013)**.[20]which reported that the perpetuation of child labor is mainly due to social, economic and educational factors with many physical and psychological consequences.

Regarding the past history of occupational injuries during years 2014,the present study, revealed that the studied sample suffered from work injuries, and around less than two thirds of child labor complain the injuries resulted from trauma, fractures and wounds. For nearly three quarter of first aid was provided by the colleagues and one quarters of them by the physicians. Regarding the place of first aid almost less than two thirds, it was in the factory clinic and for only, less than one fifth in the injury site. Regarding to injury complication , one thirds of them of reported record had temporary disability. On the contrary, **Tay, (2010)**.[21], who carried out a retrospective study to elicit the profile of workers who suffered from work injuries, trauma, fractures and wounds were notified to the Department of Industrial Health. This result was supported by **Ghosh (2012).**.[22] In Italy, nearly one fifth of the industrial accidents were reported among working children**.** This result in line with**, ILO, (2011)** .[23].In Malaysia, working children has six-fold greater hospitalization rate than non working children**.** Also the study supported by **WHO (2013)** .[20]**and Shah (2012**) .[24]In Mexico 25% of child workers suffer a disabling injury each years. Also the study supported the results by **Marphy & Sloan (2011),**.[25] analyses of the impact of work on children (less than 15 years) from various counters, revealed that deaths from injuries associated with machines is at least four time graters than from other causes**.** This may be due to lack of training, lack of attention span of young children, unavailability of protective equipment and use of sharp and unsuitable instruments in their work.

Regarding the psychological problems of child labor, the majority of them complained from psychological problems **(table 3)**. This results agreement with **WHO, (2010)**.[26] **and Elkind and Weiner (2010).**[27].Night mares, temper tantrums, anger, despair, aggressive behavior, running away and even attempting suicide were reported in other studies. This finding supported by **Abu Shosha (2014)**.[28]. who reported that psychological status score regarding quality of life for children with was affected because children with feel different from their peers and elaborate negative through about their life. This could be indicated that the child labor may cause aching in the child general appearance especially her/his face leading to feeling of shame and rejection. Also, may be due to their exposure to different stressful events experienced during the day.

Regarding the effect of work on child health, the present study revealed that more than half suffering from sexual abuse, and the majority of them complain extreme fatigue**(Table 3)**. The study findings in line with **WHO, (2013)**.[20] **and ILO (2011)**.[23], who reported that lack of training of child workers was the main cause of work injuries and physical problems. **Mansour (2010)**.[29]reported that up to 80 to 90% of children labor around the world suffering from physical punishment in their home and sexual abuse during work. **UNS.**

(2011).[30]**and WHO, (2010)**.[26]who stated that Long hours of strenuous and monotonous work result in excessive fatigue and exhaustion

As regards the studied workers' exposure to the various occupational health hazards that might affect the child labor health, these are physical, chemical or accidental due to mechanical hazards and other health problems. The physical hazards show that ear problems are the most common physical hazards observed in the work area. In addition, one fourth of the studied sample was exposed to eye problems due to chemical hazard and there were highly statistically significant differences regarding to the risks of exposure to health problems and accidents. This is consistent with **Rantanen, (2014).[**31], who reported that still 20% - 30% of the workers in the industrialized countries, and up to 50% of the working people in developing countries are exposed to the traditional physical, chemical, ergonomic and safety hazards. On the contrary, **Bazroy, et al., (2013).[**32], found that in the work site, the majority of the workers are exposed to fractures in garment factories .According to **Beach, (2011),.[**2] age actually had stronger effect upon accident rate than did time on the job. The United States Department of Health and Human Services **USDHHS, (2010**), .[33]reported that workers having years of experience more than 10 years were more exposed to hearing loss, eye problems, high blood pressure, respiratory damage resulting from dust, thermal stress from high temperature and occupational traumatic injuries including amputations, fractures, lacerations and death.

Concerning child labor ' knowledge, relatively high percentages of the studied children had poor knowledge about types of PPE, types of occupational diseases. However, child labor knowledge improved after implementation the program .This finding may be explained by the lack of training and insufficient safety measures in the factory which improved after the occupational health program. There were highly statistically significant differences ($P < 0.001$) between pre and post program implementation. This supports the results of **Bazroy, et al., (2013),.[**32] who found that less than half of the child labor were not using PPE which improved to less than two thirds after the training program of workers.. On the contrary **Akbar-Khanzazdeh, et al**., **(2015**).[34]found that the child labor were wearing safety measures with comfort in average range ; 52% aprons, 51% safety glasses, 42% rubber gloves, and 36% hearing protectors.

Concerning child labor 'practice , relatively high percentages of the studied children had poor practice regarding to first aids about of exposure to fire accidents, entry of flying dust in the eye, contact between chemical materials and skin, contact between chemical materials and eye ,ingestion of toxic material ,falling of a person from height and person with bleeding .child labor practice improved after implementation the program .There were highly statistically significant differences ($P < 0.001$) between pre and post program implementation. These results were incongruent with **Ryan and Lawer, (2014**),.[35]who clarified that the practice about first aid and medical emergencies can literally mean the difference between life and death and can help in prevention of disability or injury, and first aid skills will increase workers confidence in dealing with both minor and major emergency and will be reassuring the injured person.

The present study result showed that the factory did not give periodic training to workers about the occupational safety which is contradicting with **Levy and Wegman,(2010),** .[36]who stressed that the education and advice concerning specific work hazards are essential.

The present study showed that ventilation, light, and periodic medical examination inside the factories were not available which may be explained by lack of safe working environment and no application the Occupational Health and Safety Assessment Series (OHSAS). In this respect, **Levy & Wegman, (2010),[**36] reported that the good lighting enhances the ability of workers to perceive and react to these hazards. As well, **Rosenstock, et al., (2015),** mentioned that the ventilation is a central component of hazard.

VI. Conclusion

According to the findings and research hypothesis, occupational health program will improve the child labor knowledge and practices regarding first aid .safety measures ,that showed statistically significant improvement before a and after implementation of the occupational health program regarding knowledge, and practice

VII. Recommendations

Based on the finding of the study, the following recommendations were suggested:

- Periodic health education and training program for all children at work place to prevent occupational health hazards.
- Periodic checkup of health status for children early detection of occupational hazards to monitor their health status physically and psychologically.
- Future researches to detect the long term effect of work on the studied children

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