Results

Results of this study were presented into four parts:

Part I: Socio-demographic characteristic, medical history and physical condition of study sample: Tables (1-4), figure 1

Part II: Distribution of the workers according to their health Problems: Tables (5)

Part III: Distribution of the workers according to their knowledge: Table (6)

Part IV: Characteristic of physical environment in the work place: Table (7-8)

Part VI: Relation between socio-demographic characteristics of the workers and their knowledge about occupational hazards: Tables (9-12**)**

Part I: Socio-Demographic Characteristic of Study Sample.

Table (1): Distribution of the workers according to their socio-demographic characteristic (n = 200)

Items	No	%
Age		
40-	150	75
50-and more	50	25
Level of education		
Illiterate	24	12
Primary	76	38
Intermediate	60	30
High	40	20
Marital status		
Married	190	95.00
single	10	5.00
Family size		
2 members	4	2
3-5 members	134	67
more than 5 members	62	31
Monthly income		
Sufficient	106	53
insufficient	94	47
smoking		
Cigarettes	102	51
Shisha	30	15
Nothing	68	34
years of experience		
Less than 5 years.	10	5.00
5 -10 years.	79	39.50
Above 10 years.	111	55.50

Table I : showed that 75% of studied sample their age were from 40-50, in relation to educational level it was found that 38% of workers had primary school and 30% of workers had intermediate school, in relation to marital status 95% were married, 67% 3-5 family members, 47% their income insufficient to meet their demands of their lives. 51% smoked cigarettes. In relation to years of experience 55.50% of workers were above 10 years experience.

Table (2): Distribution of the workers according to their medical history (n=200**)**

Items	No	%
Diabetes	66	33
respiratory diseases	24	12
kidney disease	26	13
high blood pressure	80	40
Nothing	68	35
Surgery		
Tonsillectomy	48	24
Hernectomy	30	15
Hemorrhoids	28	14
Appendicitis	8	4
Other states	8	4
Nothing	78	39

Table 2:Showed that 40% and 33% of workers were suffering from high blood pressure, diabetes respectively, while 24% and 15% had tonsillectomy ,hernectomy respectively.

Figure (1): Distribution of the workers according to their physical condition (n=200)

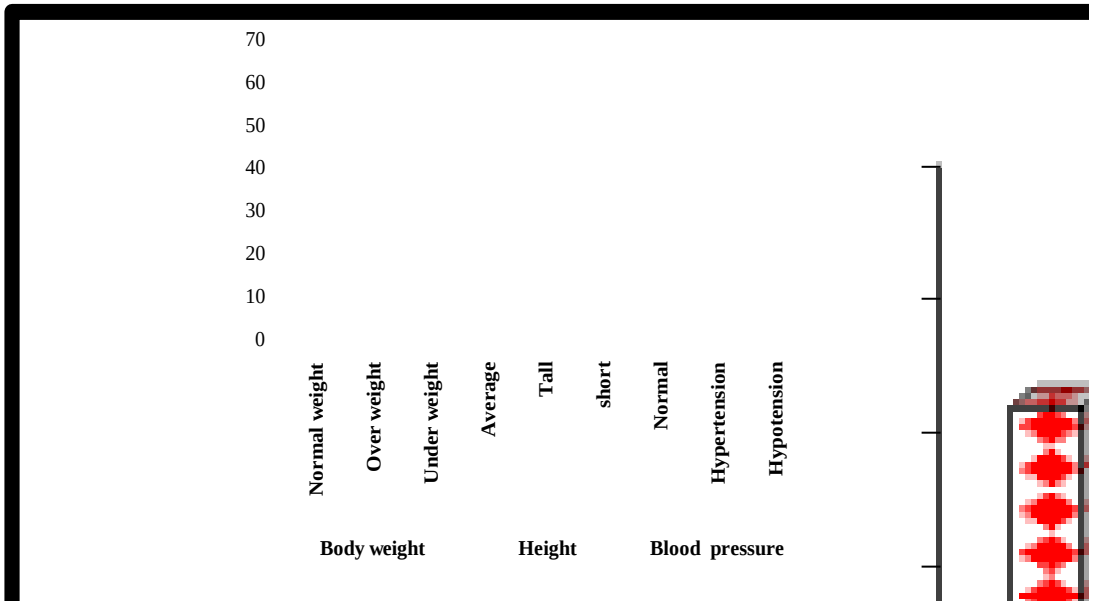

Figure (1): showed that 51% , 70% , 57.5% ,had normal weight-height, and blood pressure , respectively.

Table (3): Distribution of the workers according to their daily working hours, type of work, types of machines, services provided for workers, training and work satisfaction (n=200).

Items	N	%
Daily working hours		
6 to 8 hours a day (shift work).	194	97
more than 8 hours a day.	6	3
Type of work		
Packaging .	60	30
pickles department .	50	25
Freezer section.	58	29
Administration.	12	6
production.	20	10
Types of machines		
sharp cutting machines	68	34
welding machines	60	30
Machinery fill & Mixers	60	30
Not using machines	12	6
Services provided for workers		
Security measures.	200	100
PPE equipment.	200	100
Meal during work.	178	89
Rest during working	10	5
hours.	180	90
Regular checkup.	190	95
Health insurance.	-	-
Transportation.		
Training		
Risks occur while operating machines	167	83.5
PPE	80	40
Safety Measures	100	50
Work requirements	78	39
First-aid*.	88	44
Work satisfaction		
Satisfied	104	52.0
Un satisfied	96	48.0

Table 3: showed that 97% of workers were working 6-8 hours/day,30% were working in packaging department, and 25% in pickles while

29%worked in freezer section, 34% were used sharp cutting machines, 100% provided with services such as security measures-PPE , 89% had meal during work ,also 90% , 95% had regular checkup-health insurance , 83.5% & 50% had received training about risks from machines, safety respectively. Also 52% were satisfied of their work.

Table (4): Distribution of the workers according to their exposure to occupational hazards, methods of protection from occupational hazards in the study sample (n=200).

Items	No	%
Physical hazards		
Noise	130	65.0
Soil and dust	60	30.0
High temperature	60	30.0
Shipments of high electricity	51	25.5
Accidents and injuries	100	50.0
Carrying heavy objects	98	49.0
Position at work		
Sitting	31	15.5
Standing	148	74.0
Bend back	21	10.5
Biological hazards		
Wounds	70	35.0
Herniated Disc	81	40.5
Asphyxia	7	3.5
Eye Inflammation	88	44.0
Skin Inflammation	55	27.5
Ear Pain	102	51.0
Nothing	69	34.5
Methods of protection		
Safety workplace	130	65.0
Good ventilation	130	65.0
Wear PPE	110	55.0
Healthy nutrition	130	65.0
Good body alignment	90	45.0
Maintaining healthy life style	90	45.0

Table 4: Showed that 65% , 74% , 35% , 40.5% , 3.5% , 44% , 51% ,34.5% were exposed to noise ,standing position, wounds, herniated disc, asphyxia, eye inflammation, skin inflammation , ear pain respectively.

While according to question **No (4)**: Is the worker using the Personal Protective Equipment (PPE) showed that 55% had followed the methods of protection from occupational hazards.

<u>Part II:</u> Distribution of the workers according to their health problems associated with exposure to hazards of food industry according to research question No(3) (table 5)

Table (5): Distribution of the workers according to their common health problems in the study sample (n=200).

Physical condition	No	%
Eye		
Conjunctivitis	28	14.0
Lacrimation	32	16.0
Discharge	60	30.0
Itching	82	41.0
Redness	43	21.5
Ears		
Tinnitus	45	22.5
Pain	102	51.0
Itching	88	44.0
Skin		
Dryness	135	67.5
Burning sensation	55	27.5
Irritation	102	51.0
Eczema	35	17.5
Cracked nail	88	44.0
Respiratory system		
Nose irritation	65	32.5
Cough	36	18.0
Sore throat	33	16.5
Productive cough	42	21.0
Dyspnea	80	40.0
Chronic bronchitis	20	10.0
Tightness of chest	24	12.0
Digestive system		
Gingival problems	18	9.0
Loss of appetite	35	17.5
Hyperacidity	80	40.0
Dysphagia	42	21.0
Epigastricpain	90	45.0
Constipation	65	32.5
Diarrhea	20	10.0

Vomiting	12	6.0
Distention	102	51.0

Table 5**:** showed that regarding eye condition 41% of workers had itching. 51% had pain ear. 67.5% had dryness. regarding respiratory system condition 40% had dyspnea.Regarding digestive system condition 51% had distention.

Table (6): Distribution of the workers according to their knowledge about first aid in the study sample.(n=200)

Knowledge items	No	%
Fractions		
Repair Fractures	120	60
Fix the Fracture by any support.	120	60
Wounds		
Stop external bleeding by pressing by	103	51.5
piece of cloth.	103	51.5
Wash the wound with soap and water	80	40.00.
Clean the wound by the iodine.	103	51.5
Put a bandage on the wounds.	100	50
Transfer to the hospital.		
Burns		
Remove from smoke	118	59
Remove clothing.	118	59
Wash the burn by water.	118	59
Cover the place of burn by sterile Vaseline gauze.	98	49
Shocks		
Raise the leg and lower the head.	110	55
Place ice water on the forehead.	110	55
Poisons		
Drink large quantities of water and salt.	122	61
Eye injuries		
Wash eyes well with water and soap.	120	60
C.P.R		
Call an ambulance immediately.	88	44
Maintain the airway open.	70	35
Began CPR immediately.	70	35
Put the victim in the recovery position if there is vital sign.	60	30
The source of information		
previous readings	30	15
Previous training courses	90	45
audio visual aids	100	50

Table 6 **:** showed that 60%, 51.50%-50%, 59%, 55%, 60%-65% and 44%-35%-30% had knowledge about fractions, wounds , burns, Shocks, poisons, eye injuries and C.P.R respectively, while 50% had the information through audio visual aids.

Part III:

Table (7): characteristic of physical environment in the work place according to Egyptian Occupational Health Standers (2005).

General physical work environment	Industry level	T score	%	Standers of the Egyptian industrial safety
Lightening	450 wat	2	75	The minimum level allowed is 200-500 wat
Temperature	41°C	1	50	The maximum level allowed is 40°C
Noise	115 DB	1	50	The maximum level allowed is 90 decibel
Dust	9-11mg/m²	2	75	Within the allowed level by the environment law (5-10 mg/m²)

Table 7: Illustrates that general work environment as temperature and noise were not acceptable but dust and lightening were with acceptable level according to Egyptian's standards of the industrial safety.

Table (8): characteristics of physical environment of workplace according to safety and sanitation.

Safety and Sanitation	T. Score	%
• **House keeping**		
- Work are cleaning: orderly arrange clean and toilet	1	50
• **Floors free from**		
- Protruding nails, holes, splinters	1	50
- Passage ways properly marked and kept clear of obstruction	2	75
• **Stairs**		
- All stair ways have hand rail	2	75
- Stair ways strong enough and adequately illuminated	2	100
- Door opening properly guarded by railing	2	75
• **Emergency Exit**		
- Exits enough to allow prompt escapes	2	100
- Exits clearly marked	2	100
• **Employee facilities**		
- Facilities kept clean and proper repair	2	75
• **Fire protection**		
- Fire extinguishers suitable for all types of fire	2	100
- Fire extinguishers enough	2	100
- Fire extinguishers locations clearly marked	2	100
• **Electrical**		
- All machines properly grounded	2	100
Portable hand tools grounded and isolated		

Table 8: it showed that fire protection, electrical and storage were in good condition, some other points such as floors free from protruding nails, holes, splinters passage ways properly marked and kept clear of obstruction stairs all stair ways had hand rail stair ways strong enough and adequately illuminate while door opening properly guarded by railing floors were not free from protruding nails, passage ways were not clearly marked, while stairways were not strong enough or adequately illuminated, means of exit were not enough to allow prompt escapes, employee facilities were not kept clean, and clinic inside the factory were not prepared with emergency equipment and ambulance was not enough.

Part IV: According to research question No (1) relation between socio-demographic characteristics of the workers and their knowledge about occupational hazards. (tables 9_12)

Table (9):The relation between years of experience of workers and occupational hazards.

Occupational hazards	Years of experience of workers (N=200)							
	Less than5 years		5-10years		Above 10years		Chi-Square	
	N	%	N	%	N	%	X^2	P-value
Noise								
Complaint	9	56.25	50	63.29	71	63.96	0.359	0.836
No complaint	7	43.75	29	36.71	40	36.o4		
Soil and dust								
Complaint	6	37.5	13	16.46	41	36.94	9.968	0.007
No complaint	10	62.5	66	83.54	70	63.06		
Heat								
Complaint	10	62.5	18	22.78	32	28.83	10.177	0.006
No complaint	6	37.5	61	77.22	79	71.17		
shipments of electrical high								
Complaint	3	18.75	15	18.99	33	29.73	3.195	0.202
No complaint	13	81.25	64	81.01	78	70.27		
Accident and injuries								
Complaint	9	56.25	21	26.58	70	63.06	25.002	0.000
No complaint	7	43.75	58	73.42	41	36.94		
Carrying heavy objects								
Complaint	8	50	42	53.16	48	43.24	1.862	0.394
No complaint	8	50	37	46.84	63	56.76		

Table 9: Showed that there was an insignificant differences between each group of experience and exposure to occupational hazards regarding noise, shipments of electrical high, carrying heavy objects ,while there was significant differences between each group of experience and exposure to occupational hazards regarding soil and dust, heat and Highly significant differences between each group of experience and exposure to occupational hazards regarding accident and injuries.

(**Table 10**): The relation between occupational hazards and Level of education of the workers.

Occupational hazards.		Level of Education: Illiterate (N=24)	Primary (N=76)	Intermediate (N=60)	High (N=40)	Chi-square X^2	Chi-square P-value
Noise (N=130)	N	15	50	38	25	0.180	0.981
	%	62.50	65.79	63.33	62.50		
Soil and dust(N=60)	N	9	31	11	9	9.816	0.020
	%	37.50	40.79	18.33	22.50		
High temperature (N=60)	N	8	29	13	10	4.996	0.172
	%	33.33	38.16	21.67	25.00		
Shipments of electrical high(N=51)	N	7	20	10	14	4.561	0.207
	%	29.17	26.32	16.67	35.00		
Accidents and injuries(N=100)	N	17	45	18	20	16.346	0.001
	%	70.83	59.21	30.00	50.00		
Carrying heavy objects(N=98)	N	15	49	18	16	18.996	0.000
	%	62.50	64.47	30.00	40.00		
not touch(N=10)	N	0	3	1	6	11.265	0.010
	%	0.00	3.95	1.67	15.00		

Table 10: showed that there was a insignificant differences between occupational hazards and level of education of the workers.

Table (11): The relation between occupational hazards and age of the worker.

Occupational hazards.		Age of the workers		
		from 40-49 (N=150)	50-More than 50(N=50)	Total
Noise(N=130)	No	118	32	150
	%	78.67	64.000	75.00
Soil and dust(N=60)	No	42	18	60
	%	28.00	36.00	30.00
High temperature(N=60)	N	43	17	60
	%	28.67	34.00	30.00
Shipments of electrical high(N=51)	N	38	13	51
	%	25.33	26.00	25.50
Accidents and injuries(N=100)	N	79	21	100
	%	52.67	42.00	50.00
Carrying heavy objects(N= 98)	N	83	15	98
	%	55.33	30.000	49.00
Not touch(N=10)	N	4	6	10
	%	2.67	12.00	5.00
Chi-square	X^2	14.241		
	P-value	0.027 S		

Table 11**:** showed that there was a significant differences between occupational hazards and age of the workers

Table(12): The relation between occupational hazards and and training courses of the workers

Training		The type of occupational hazards								
		noise	soil and dust	high temperature	shipments of electrical high	accidents and injuries	carrying heavy objects	not touch	Chi-square	
									X^2	P-value
Session on the risks that can occur while operating machines	**NO**	55	13	8	3	32	25	31	79.341	<0.001* HS
	%	32.93	7.78	4.79	1.80	19.16	14.97	18.56		
A course on how to deal in a state of emergency for Occupational Safety	**NO**	43	7	9	4	33	25	39	68.813	<0.001* HS
	%	26.88	4.38	5.63	2.50	20.63	15.63	24.38		
A course on knowledge of the needs and requirements of the work	**NO**	43	7	9	4	35	27	36	67.043	<0.001* HS
	%	26.71	4.35	5.59	2.48	21.74	16.77	22.36		
A special session of first-aid	**NO**	52	9	9	4	33	22	30	76.755	<0.001* HS
	%	**32.70**	**5.66**	**5.66**	**2.52**	**20.75**	**13.84**	**18.87**		

Table 12**:** showed that there was a highly significant differences between occupational hazards and training courses.

<u>Part VII:</u> According to research question No (2) Relation between environmental factors of the workplace and types of occupational hazards

The relation between environmental factors (General physical work environment) safety was good and the total score is 6 out of 10, the percentage was 60%. Regarding safety and sanitation was good because total score was 34 out of 40, so the percentage was 85% because they were fallowing the Egyptian Standard for Safety.