Health Preventive Program regarding Skin Diseases for Leather Tanner Workers

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Abstract

Background: Skin diseases are a major occupational health issue in tannery workers because of work related exposure to various toxic chemicals used in tanning process. **Aim of study:** Was to evaluate the effectiveness of health preventive program regarding skin diseases on leather tanner workers. **Research design:** A quasi-experimental design was utilized to conduct study. **Setting**: The study was conducted at leather tanner industry in Quesna Industrial Zone, Menoufia Governorate. **Sample**: A systematic random sample was be used, it included 300 workers from 1500 workers. **Tools:** Two tools was used to collect data: **I:** A structured interviewing questionnaire to assess; a) socio-demographic characteristics and work characteristics of studied work, b) Medical history of the leather tanner workers, c) Workers knowledge about occupational health and safety and skin diseases. **II:** An observational checklist which consists of two parts to observe a) The workers' practices for using personal protective equipment's, b) The environmental condition of leather tanner industry. **Results**: 9% of the studied workers had good knowledge level which increased to 72% of them post program, 40% of them had average knowledge level which decreased to 24% of them post program and 51% of them had poor knowledge level which decreased to 4 % of them post program. 24.3% of the studied workers had satisfaction total practices level preprogram which increased to 63.7% of them post program and 75.7% of them had unsatisfaction preprogram, this percentage was decreased to 36.3% of them post program. **Conclusion**: Leather tanner workers who received prevention program had better knowledge and practice about prevention of skin diseases than before implementation of program. **Recommendation**: Continuous health preventive programs and refreshing courses should be conducted for leather tanner workers to update their knowledge and practice about preventing skin diseases.

Key words: Health Preventive Program, Leather Tanner Workers, Occupational Health Hazards, Skin Diseases.

Introduction

Occupational safety and health hazards in industrial field play a significant role in the lives of workers; also contribute toward their quality of life; leather tanner workforce gets exposed to physical, chemical, biological, and psychological hazards while discharging their duties **(International Labour Organization (LO), 2021).**

All over the world nearly 860,000 people are injured every day and 2.3 million deaths occur annually due to occupational accidents and work-related diseases. The important morbidity that has been commonly observed among workers is respiratory diseases, dermatological problems, eye diseases, and musculoskeletal morbidities. The common

health problem investigated among this working group includes respiratory symptoms, irritation of the skin, nose, and eyes, gastrointestinal problems, fatigue, headache, allergies, musculoskeletal and injury, risks such as strains to sprains, confusions, fractures, and lacerations **(Marahatta, et al., 2018).**

Skin diseases are a major occupational health issue in tannery workers because of work related exposure to various toxic chemicals used in tanning process. The chemicals used to treat the animal hides have the indistinguishable affect on human skin that disturbs immunological barrier of skin anatomy, consequently it rendered to opportunistic skin infections to the sensitized population (**Panjakumar, et al, 2020).**

Occupational Health Nursing (OHN) is a specialized practice that focuses on promoting health, as well as preventing and restoring health in a safe and healthy environment. It provides occupational and environmental health and safety services for workers, and community groups **(El-Ghany & Mahmoud, 2019)**. OHN work with employers and workers to identify health and safety needs in the workplace and to meet those needs. Also, coordinate and deliver services and encourage workers to take responsibility for their own health through health education and disease management programs, such as smoking cessation, exercise/fitness, nutrition and weight control, stress management, control of chronic illnesses and effective use of medical services. OHN monitor the health status of workers **(Thornberry et al, 2020).**

Significance of the study

Occupational health hazards in industries occurs in Egypt as a large proportion it estimated about 64.9 % of injured workers as job strain **(AbouEl-Wafa, 2017).** Occupational skin diseases are groups of skin disease that occur due to chemical, physical or biological exposure at the workplace, in which the working environment plays an important role in disease causation or aggravation. OSD ranks among the three most frequent work related diseases with an estimation 20-30% of all occupational diseases (**Nader et al., 2020)**.

Tannery workers are exposed to harmful chemicals agents rendering workers vulnerable to health problems, especially of skin problems, So this study was conducted to assess occupational health hazards especially, skin diseases on leather tanner workers and give the workers prevention program to avoid skin diseases.

Aim of the study

The study aimed to evaluate the effectiveness of health preventive program regarding skin diseases on leather tanner workers.

Research Hypothesis

Leather tanner workers who receive prevention program would have better knowledge and practice about prevention of skin diseases than before implementation of program.

Tools of data collection:

Two tools were used to collect the data:

Tool I: A structured interviewing questionnaires. It comprised three main parts:

Part one: It was designed to assess socio demographic characteristics and work characteristics of studied workers which included: age, sex, level of education, marital status, income, working hours, training courses and past experience, protective measures which used by workers.

Part two: Medical history of the leather tanner workers which included: chronic diseases, skin

diseases, exposure to occupational hazards during work and duration of exposure.

Part three: workers knowledge about occupational health and safety and skin diseases as (meaning, objectives, types of occupational health hazards) and (definition, types, methods of transmission, high risk workers, signs and symptoms, complications and general prevention of skin diseases). Example about skin diseases as dermatitis (meaning, causes, signs and symptoms, complications and prevention). Example about most common injuries related to chemical hazards on skin as chemical burn (meaning, signs and symptoms, and general prevention). Short notes about skin cancer (meaning & prevention).

Scoring system:

The scoring system for studied worker' knowledge was calculated as follows (2) score for complete correct answer, while (1) score for incomplete correct answer, and (0) for don't know. The score of the items was summed- up and total divided by the number of the items, giving a mean score. The total knowledge score was 40 questions and was considered good if the score of the total knowledge > 75 % equal (> 35 points), while considered average if it equals 50-<75% (35- 23 points), and considered poor if it is < 50% (< 23 points).

Tool II: An observational checklist: (Canadian Centre for Occupational Health & Safety (CCOH). 2018). It was adopted by the researchers based on the review of related literature and composed of two parts:

Part one: observational checklist designed to assess the workers' practices for using personal protective equipment's through demonstrating steps as the following: hand washing, wearing gloves, wearing mask, wearing protective apron, wearing safety face shield, wearing safety overhead, wearing over shoes and wearing ear muffs.

Scoring system:

The scoring system for workers' practices was calculated as following: (1) score for done, (0) score for not done practicing. The total practices score was 25 items and was considered satisfactory if the score of the total practices ≥ 80% (≥20 score), while considered unsatisfactory if it is < 80 % (< 20 score).

Part two: observational checklist designed to observe the environmental condition of leather tanner industry which contained (8 items) to assess the following: general work environment, housekeeping, floors, personal protective equipment, employee facilities, waste handling, storage and disaster management**.**

Scoring system:

The scoring system for works' environmental condition was calculated as follows (1) score for present while (0) score for not present.

Validity of the tools:

The tools validity test was assessed by five members of Faculty experts of from the Community Health Nursing Specialties Faculty of Nursing Benha University who reviewed the tools for clarity, relevance, comprehensiveness, and applicability and easiness for implementation and according to their opinion minor modification were carried out.

Reliability of the tools:

Reliability of the tool was applied by the researchers for testing the internal consistency of the tool, by administration of the same tool to the same subjects under similar condition on one or more occasion. Answers from repeated testing were compared (test-re-test reliability). The reliability was done by using Cronbachs Alpha coefficient test which revealed that each of the two tools consisted of relatively homogenous

items as indicated high reliability of the tools. The internal consistency of the knowledge was 0.978 while practices were 0.852.

Ethical considerations:

The researchers followed all the ethical issues in conducting the research. The oral consent of workers was taken after the purpose of the study was explained. Before data collection, workers were given an opportunity to refuse the participation after explanation of the purpose of the study. Also they were reassured that the information would remain confidential and used for the research purpose only.

Pilot Study:

The pilot study was conducted before starting data collection by using the tools on 30 studied workers (10% of the study sample). The pilot study was carried out to test the applicability, simplicity and clarity of the tool using the interviewing questionnaire and observational checklist as a pre-test sheet. Also, to estimate the time needed to fill the tools, time needed was 30- 45 minutes. No modification was done so the sample was included in the study.

Field work:

The actual field work was carried out for data collection over a period of six months at the beginning of August 2021to the end of January 2022. Worker consent was obtained before collection of data. The researchers visited the industry three days/week (Saturday, Tuesday, and Thursday from 10 Am- 1 Pm) to collect the data from workers. The total studied workers having a simple and full explanation of the aim and process of the study to obtain their verbal informed consent. The needed time for tools ranged between 30-45 minutes. The researchers implemented the health prevention program through sessions, the number of sessions were 8 (4 theoretical and 4 practical), the expected duration of each session was from 30- 45 minutes including periods of discussion, and immediately did post- test. Booklet about skin diseases was given to studied workers.

Health preventive program construction included four phases:

Based on the results obtained from the interviewing questionnaire and observational checklists, as well as literature review, health preventive program developed by the researcher. It was implemented immediately after pre –test. The researcher implemented the health preventive program through 4 phases as the following:

Phase (I): Preparatory and assessment phase: -

In this phase of the program assessed knowledge and practice of leather tanner workers about skin diseases through collection and analysis of baseline data from the filled tools. In this phase the researcher did the pre- test.

Phase (II): Planning phase:

The researcher identified the important needs for target group, set priorities of needs, goals and objectives were developed.

Phase (III): Implementation phase:

In this phase the researcher implemented of the program for workers at the suitable time for them.

Phase (IV): Evaluation phase:

After implementation the health prevention program the researchers applied the post-test immediately to evaluate the knowledge acquired. Evaluation of the program was done by using the post-test questionnaire which was the same formats of pre-test in order to compare the change in the patients' knowledge, practices related to skin diseases immediately after implementation of the program.

Results:

Table (1): shows that; 55.7% of the studied worker aged from 30 < 40 years with mean age 3.415 ± 5.71 years, 87.7% of them were males, 63.3% of the studied workers had secondary

education. Also 87.7% of them were married and 71% had enough monthly income.

Figure (1): Clarifies that; 9% of the studied workers had good total knowledge preprogram which increased to 72% of them post program, 40% of them had average knowledge level which decreased to 24% of them post program and 51 % of them had poor knowledge level which decreased to 4 % of them post program.

Figure (2): Clarifies that; 24.3% of the studied workers regarding total practices had satisfactory level preprogram which increased to 63.7 % of them post program and 75.7 % of them had unsatisfactory level preprogram, this percentage decreased to 36.3 % of them post program.

Table (2): Shows that; 100 % distribution of studied environmental condition of leather tanner industry had good repair building, enough lighting, adequate ventilation, floors were slip resistant and exists clearly marked, meet safety requirement, toilet kept clean & in good repair, chemical & hazardous substances properly and safety removed and stored, enough exist to allow prompt escape, all machines properly grounded and easily reached and switches guarded properly to prevent inadvertent or accidental starting. While housekeeping; the work area not clean & not orderly arranged and spilled materials, trash and debris not cleaned immediately required equipment and personal protective clothing & equipment didn't clean easy and didn't disinfected well, rubbish, empty carton and paper didn't dispose on immediately but disposed after work day and had not enough extinguishers at the work site.

Table (3): Shows that; there were highly statistically significant difference was between the studied workers' total knowledge score and their education, ($P<0.001$) while significant relations between the studied workers' total knowledge score and their income ($p= < 0.05$) preprogram. While there were no significant relations between the studied workers' total knowledge score and their age, sex, marital status and training post program.

Table (4): Shows that; there were highly statistical significant relations between the studied workers' total practice score and their age, education and work income ($p= < 0.05$) preprogram. While there were no significant relations between the studied workers' total practice score and sex, marital status and training post program.

Table (5): Shows that; there was highly statistically significant correlation between the studied workers' total practices and total knowledge about occupational health, safety and skin diseases pre and post program ($P< 0.001$).

Table (1): Frequency distribution of studied workers regarding their socio-demographic characteristics (n=300).

Socio-demographic Characteristics	No	%
Age		
20 < 30	63	21.0
30 < 40	167	55.7
> 40	70	23.3
Mean ±SD	**35.415 ± 5.71**	
Sex		
Male	263	87.7
Female	37	12.3
Educational Level		
Read and write	8	2.7
Basic education	71	23.7
Secondary education	190	63.3
University and more	31	10.3
Marital Status		
Single	26	8.7
Married	263	87.7
Divorced	6	2.0
Widow	5	1.7
Income/ monthly		
Enough and save	57	19.0
Enough	213	71.0
Not enough	30	10.0

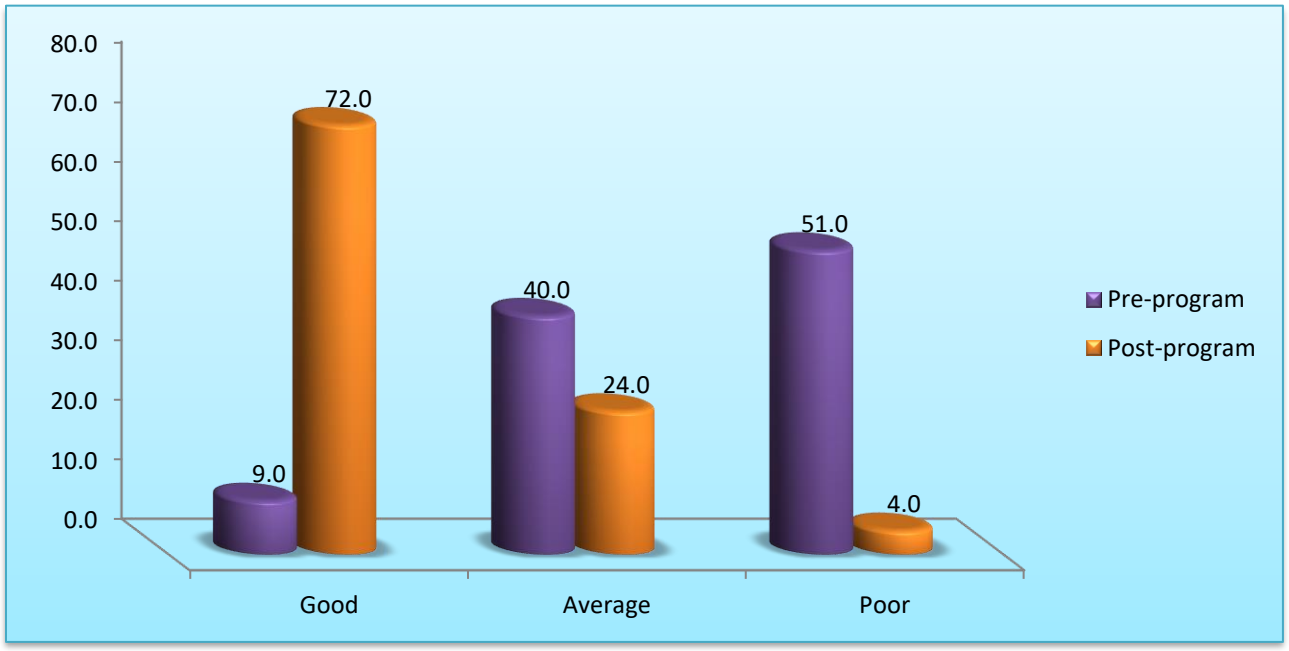

Figure (1): Percentage distribution of studied workers regarding their total knowledge level pre and post program (n=300).

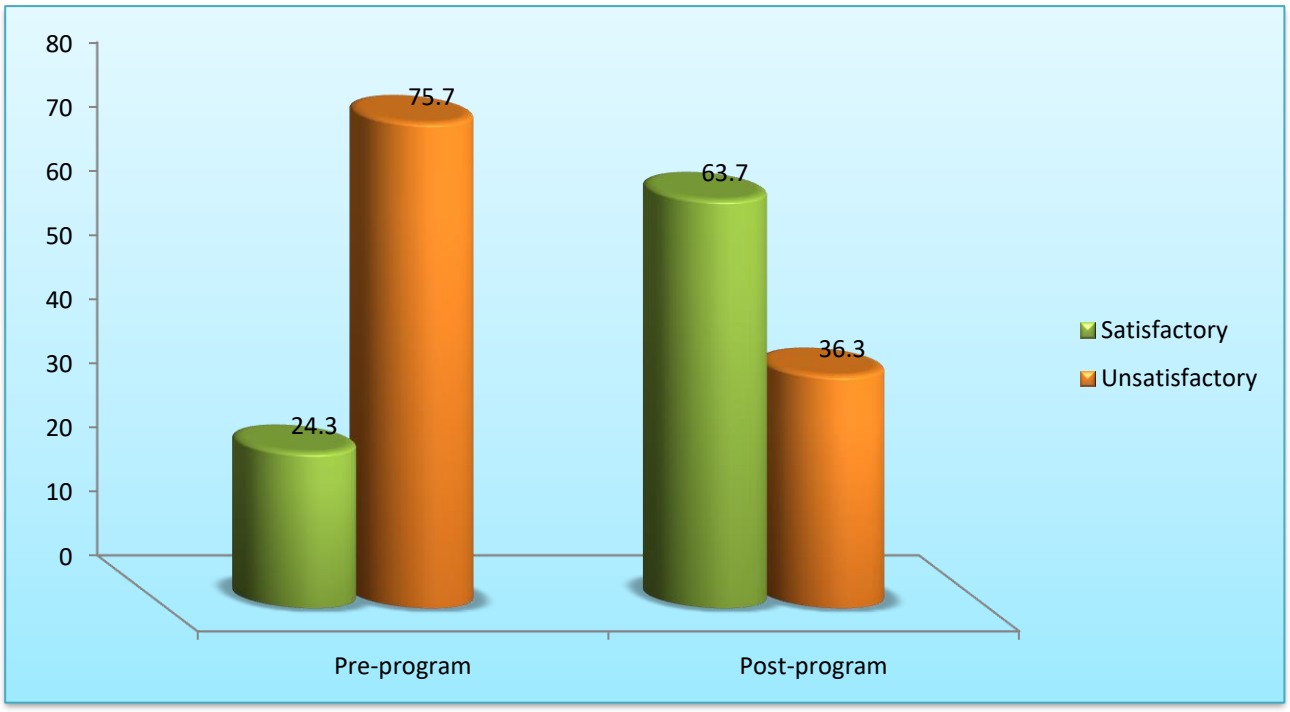

Figure (2): Percentage distribution of studied workers regarding their total practices level about prevention of skin diseases (use personal protective equipment) pre and post program (n=300).

Table (2): Frequency distribution of studied leather tanner industry regarding safety environmental condition (n-1).

Safety environmental condition	Present		Not present	
	No	%	No	%
1- General work environment:				
- Building in good repair.	1	100	0	0.0
- Lighting.	1	100	0	0.0
- Ventilation.	1	100	0	0.0
2- House Keeping:				
- The work area clean & orderly arranged.	0	0.0	1	100
- Spilled materials, trash and debris cleaned immediately.	0	0.0	1	100
3- Floors:-				
- Floors are slip resistant.	1	100	0	0.0
- Exists clearly marked	1	100	0	0.0
4- Personal protective equipment:				
- Required equipment meet safety requirement.	1	100	0	0.0
- Personal protective clothing & equipment cleaned easy and disinfected.	0	0.0	1	100
5- Employee facilities:				
- Toilet kept clean & in good repair.	1	100	0	0.0
6- Waste handling:				
- Chemical & hazardous substances properly and safety removed.	1	100	0	0.0
- Rubbish, empty carton and paper disposed on immediately.	0	0.0	1	100
7- storage:				
- Chemical & hazardous substances properly and safety stored.	1	100	0	0.0
8- Disaster Management:				
a- Means of exist: Enough exist to allow prompt escape.	1	100	0	0.0
b- Fire protection: Enough extinguishers present to do the job.	0	0.0	1	100
c- Electrical safety: - All machines properly grounded and easily reached.	1	100	0	0.0
- Switches guarded properly to prevent inadvertent or accidental starting.	1	100	0	0.0

Table (3): Statistically relation between total knowledge level and socio-demographic characteristics among studied workers pre and post program (n= 300).

Items	Pre						X^2	p-value	Post						X^2	p-value
	Poor (n=153)		Average (n=120)		Good (n=27)				Poor (n=12)		Average (n=72)		Good (n=216)			
	No	%	No	%	No	%			No	%	No	%	No	%		
Age																
20 < 30	62	40.5	1	0.8	0	0.0	174.84	.000**	2	16.7	16	22.2	45	20.8	5.395	0.249
30 < 40	87	56.9	80	66.7	0	0.0			10	83.3	41	56.9	116	53.7		
> 40	4	2.6	39	32.5	27	100.0			0	0.0	15	20.8	55	25.5		
Sex																
Male	120	78.4	117	97.5	26	96.3	24.66	.000**	11	91.7	59	81.9	193	89.4	2.925	0.232
Female	33	21.6	3	2.5	1	3.7			1	8.3	13	18.1	23	10.6		
Education																
read and write	8	5.2	0	0.0	0	0.0	116.56	.000**	0	0.0	3	4.2	5	2.3	23.87	.001**
basic education	71	46.4	0	0.0	0	0.0			9	75.0	22	30.6	40	18.5		
secondary education	64	41.8	108	90.0	18	66.7			3	25.0	40	55.6	147	68.1		
University education	10	6.5	12	10.0	9	33.3			0	0.0	7	9.7	24	11.1		
Marital status																
Single	26	17.0	0	0.0	0	0.0	40.55	.000**	0	0.0	5	6.9	21	9.7	6.513	0.368
Married	116	75.8	120	100.0	27	100.0			11	91.7	63	87.5	189	87.5		
Divorced	6	3.9	0	0.0	0	0.0			0	0.0	2	2.8	4	1.9		
Widow	5	3.3	0	0.0	0	0.0			1	8.3	2	2.8	2	0.9		
Worker income																
Enough And Save	30	19.6	3	2.5	24	88.9	147.21	.000**	0	0.0	8	11.1	49	22.7	10.14	.038*
Enough	123	80.4	87	72.5	3	11.1			12	100.0	57	79.2	144	66.7		
Not Enough	0	0.0	30	25.0	0	0.0			0	0.0	7	9.7	23	10.6		
Training																
Yes	91	59.5	93	77.5	27	100.0			8	66.7	48	66.7	155	71.8	0.752	0.687
No	62	40.5	27	22.5	0	0.0			4	33.3	24	33.3	61	28.2		

Table (4): Statistically relation between total practices and demographic characteristics among studied workers pre and post program (n= 300).

Items	Pre				X^2	p-value	Post				X^2	p-value
	Unsatisfactory (n=227)		satisfactory (n=73)				Unsatisfactory (n=109)		satisfactory (n=191)			
	No	%	No	%			No	%	No	%		
Age												
20 < 30	62	27.3	1	1.4	35.09	.000**	29	26.6	34	17.8	13.144	.001**
30 < 40	127	55.9	40	54.8			67	61.5	100	52.4		
> 40	38	16.7	32	43.8			13	11.9	57	29.8		
Sex												
Male	192	84.6	71	97.3	8.212	.004*	91	83.5	172	90.1	2.767	0.096
Female	35	15.4	2	2.7			18	16.5	19	9.9		
Education												
read and write	6	2.6	2	2.7	28.798	.000**	6	5.5	2	1.0	20.22	.000**
basic education	70	30.8	1	1.4			35	32.1	36	18.8		
intermediate education	133	58.6	57	78.1			65	59.6	125	65.4		
high education	18	7.9	13	17.8			3	2.8	28	14.7		
marital status												
single	25	11.0	1	1.4	10.787	.013*	13	11.9	13	6.8	3.675	0.299
married	191	84.1	72	98.6			91	83.5	172	90.1		
divorced	6	2.6	0	0.0			2	1.8	4	2.1		
widow	5	2.2	0	0.0			3	2.8	2	1.0		
Work income												
enough and save	29	12.8	28	38.4	146.89	.000**	13	11.9	44	23.0	21.52	.000**
enough	198	87.2	15	20.5			94	86.2	119	62.3		
not enough	0	0.0	30	41.1			2	1.8	28	14.7		
Training												
Yes	138	60.8	73	100.0			69	63.3	142	74.3	4.056	.044*
No	89	39.2	0	0.0			40	36.7	49	25.7		

Table (5): Correlation between total knowledge and total practices among studied workers pre and post program

Total practices	Total knowledge			
	Pre		Post	
	r.	p-value	r.	p-value
	.142	.014*	.642	.000**

Discussion:

Regarding to studied workers' socio-demographic characteristics, the present study revealed that; the mean age of the workers was age 35.415 ± 5.71, near about half of the studied worker was from thirty to forty years, this finding agree with **Naher et al., (2020)** who study **"**Health Issues of Tannery Workers at Savar, Dhaka, Bangladesh." who founded that among 266 respondents 45.5% of the respondents aged between 18-30 years. However this finding disagreed with, **Ali, (2017),** who studied "A Study on Occupational Health and Safety for Tannery workers at Khartoum State, Sudan University of Science & Technology" who founded that 34 respondents (from 88 respondents) representing 50% fall within the age brackets 20-30 years.

Regarding to sex, the present study showed that the majority of studied workers were males, this finding agreed with **Islam et al., (2017)** who study" Occupational Health Hazards and Safety Practices among The Workers of Tannery Industry in Bangladesh" who reported that 92.0% of the respondents were male. This might due to most of the factory departments were dangerous and hard so need more men than women.

Regarding to level of education, the present study showed near about two third of the studied workers had secondary education, this finding agreed with **Rabbani et al., (2021)** who study "Factors Associated With Health Complaints Among Leather Tannery Workers in Bangladesh." who reported that the more than half of the workers completed secondary (53%) schooling. However this finding was in contrast with **Rahman et al., (2019)** who studied "Investigation of Hematological and Biochemical Profiles of Tannery Workers Exposed to Chromium in Hazaribagh, Bangladesh" who founded that the level of education of the tanners was as follows: primary (54%), secondary (30%), higher secondary (3%), and the remaining 13% had no education in case subjects. On the other hand, all control subjects received secondary education. This might be due to work entry requirements.

Concerning to marital status, the present study showed that the majority of the studied workers were married, this finding agreed with **Sarmin et al., (2020)** who study "Perceived Workplace Hazards and Health Problems Among the Workers of Tannery Industries in Savar Dhaka, Bangladesh." founded that the majority of the respondents were married.

Regarding workers income less than three quarters of the studied workers had enough monthly income. This finding agreed with **Abd El Rahman et al., (2022)** who studied **"**Occupational Health Hazards among Workers in Glass Manufacture Industries" who reported that more than half of studied workers (55.3%) had enough income. However this finding

disagreed with **Panjakumar et al., (2020)** who study "Prevalence of Occupational Skin Diseases and Its Predisposing Factors in Leather Tanning Workers of Southern India." who reported that almost majority of the workers had lower monthly income.

Regarding total knowledge level less than tenth of the studied workers had good total knowledge level which increased to less than three quarters of them post program, more than one third of them had average knowledge level which decreased to less than one quarter of them post program and more than half of them had poor knowledge level which decreased to less than tenth of them post program. In contrast with the present study there were another study conducted in Kwara State by **Agbana et al., (2016),** about "Knowledge of Occupational Hazards among Sawmill Workers in Kwara State, Nigeria" who found that; 61.5% of the respondents had a poor knowledge on occupation-related hazard.

Regarding total practices less than one quarter of the studied workers regarding total practices had satisfactory level preprogram which increased to less than two third of them post program and about three quarter of them had unsatisfactory level preprogram, this percentage decreased to more than one third of them post program. This finding agreed with **Abdelwahab et al., (2019),** who studied "Effect of Health Education Program on Knowledge and Practice of Workers Regarding Occupational Health Hazards AL Sugar Factory, Qena", found that all workers had unsatisfactory self-reported practice in pretest, while in posttest, 62.3% of workers had satisfactory self-reported practice. This might be due to lack of follow up of training about PPE.

Regarding environmental condition of leather tanner industry all distribution of studied environmental condition of leather tanner industry had good repair building, enough lighting, adequate ventilation, floors were slip resistant and exists clearly marked, meet safety requirement, toilet kept clean & in good repair, chemical & hazardous substances properly and safety removed and stored, enough exist to allow prompt escape, all machines properly grounded and easily reached and switches guarded properly to prevent inadvertent or accidental starting. while housekeeping; the work area not clean & not orderly arranged and spilled materials, trash and debris not cleaned immediately required equipment and personal protective clothing & equipment didn't clean easy and didn't disinfected well, rubbish, empty carton and paper didn't dispose on immediately but disposed after work day and had not enough extinguishers at the work site.

This finding agreed with **Ali, (2017)** who reported that most of respondent (73 representing 89%) said there are ventilation and lighting system in the depot and most of respondent (71 representing 88.8%) said the store floor is non- slip. Majority of respondent (77 representing 93.9%) said there are fire extinguishers in the depot. Most of respondent (74 representing 90.2%) said the flammable materials are stored and tightly closed when not in use. These findings disagreed with **Sarmin et al., (2020),** who founded that the working environment mentioned by the respondents were inadequate lighting (33.5%), poor housekeeping (25.5%), noise (21.5%), dust (19.0%), wet/slippery floor (16.5%), and improper ventilation/heat (15.5%).

Regarding relation between total knowledge level and socio-demographic characteristics

among studied workers pre and post program there was highly statistically significant difference between the studied workers' total knowledge score and their education, (P<0.001). However there was statistically significant relation between the studied workers' total knowledge score and their income (p= < 0.05) preprogram. This finding agreed with **ELsayed et al., (2018)** who studied "Occupational Hazards among Gas Station Workers" reported that there was highly statistically significant difference with (p-vale <0.01) between education level and their knowledge about occupational hazards. This might be due to when education was increased the knowledge was improved.

Regarding relation between total practice level about prevention of skin diseases (use personal protective equipment) and demographic characteristics among studied workers pre and post program there were highly statistical significant relations between the studied workers' total practice score and their age, education and work income (p= < 0.05) preprogram. While there were no significant relations between the studied workers' total practice score and sex, marital status and training post program. The present study agreed with **Al- Kady, (2021),** who revealed that; there were statistical significant relations between the studied workers' total practice score and their education level.

Regarding correlation between total knowledge and total practices among studied workers pre and post program there were highly statistically significant relation between the studied workers' total practices and total knowledge about occupational health, safety and skin diseases pre and post program P< 0.001. This finding agreed with **Shrestha et al., (2020)** who study "Knowledge of occupational health hazards and practice of personal protective equipment among fabrication workers in Kathmandu district, Nepal" who reported that respondents who had good knowledge about PPE had nearly one hundred- and forty-times higher odds of having good practice of personal protective equipment and this association was found to be statistically significant (p<0.001). This might be due to when age, education and income were increased the workers' practices were improved.

Conclusion:

Health preventive program had positive impact on the knowledge and improved health practices of leather tanner workers regarding skin diseases. Near about three quarters of studied workers had good knowledge score post implementation of the program compared by minority pre implantation of the program, more than two thirds of the studied workers had satisfactory practices score post implementation of the program compared by near about one quarter pre implantation of the program.

Recommendation:

Continuous application of educational programs for leather tanner workers regarding skin diseases should be provided in wide range.

1. In-service training programs and refreshing courses should be conducted for leather tanner workers to update their knowledge and practice about preventing skin diseases and safety measures to prevent hazards.
2. Provide leather tanner workers with educational materials as brochure, pamphlets and books to increase awareness about skin diseases and how to use PPE.
3. Safety measures should be checked periodically for ensuring their utility during emergency situations.

Further studies:

- Further research is needed for investigating the effect of preventive program about coping workers with skin diseases and strategies to prevent and manage it and using PPE.

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برنامج وقائي صحي تجاه الامراض الجلدية للعمال بمصابغ الجلود

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تعتبر الأمراض الجلدية من أهم أمراض الصحة المهنية لدى عمال المدابغ بسبب التعرض لمختلف المواد الكيميائية السامة المستخدمة في عملية الدباغة. لذا هدفت الدراسة الي تقييم فعالية البرنامج الوقائي الصحي فيما يتعلق بأمراض الجلد على العمال في دباغة الجلود. تم استخدام تصميم شبه تجريبي (قبل وبعد) لإجراء الدراسة. جرت الدراسة على صناعة دباغة الجلود بالمنطقة الصناعية بقويسنا بمحافظة المنوفية. و تم استخدام عينة عشوائية منتظمة شملت 300 عامل. علي ضوء نتائج الدراسة الحالية يمكن استنتاج أن 9٪ من العمال لديهم مستوى معرفي جيد قبل تنفيذ ارتفع إلى 72٪ بعد البرنامج ، 40٪ منهم لديهم مستوى معرفي متوسط انخفض إلى 24٪ بعد البرنامج و 51٪ لديهم مستوى معرفي ضعيف وانخفض 4٪ منهم بعد البرنامج. بالإضافة الي 24.3٪ من العمال لديهم مستوى مرضي للممارسات قبل البرنامج ارتفع إلى 63.7٪ منهم بعد البرنامج و 75.7٪ منهم لديهم برنامج غير مرضي ، وانخفضت هذه النسبة إلى 36.3٪ منهم بعد البرنامج. كما توجد علاقة ذات دلالة إحصائية عالية بين إجمالي ممارسات العمال والمعرفة الكلية حول الصحة والسلامة المهنية والأمراض الجلدية قبل البرنامج وبعده. كما اوصت الدراسة علي إجراء برامج تدريبية مستمرة ودورات تنشيطية للعاملين في دباغة الجلود لتحديث معارفهم وممارساتهم حول الوقاية من الأمراض الجلدية.