A Study to Evaluate the Effectiveness of Planned Teaching Programme on Knowledge and Practises Regarding Prevention of Health Hazards among Domestic Flour Mill Workers in Urban Areas

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Abstract: _Background: The place of work is an important part of man's environment. The health and efficiency of workers working in any organization get influenced in large measures by condition prevailing in their work environment. The prevailing conditions are related to physical, biological, chemical and social agents. A worker is usually exposed to these agents for about 6 – 8 hours daily. Recently industrialization and globalization are changing the Indian occupational morbidity drastically. Objectives: 1. To assess the existing knowledge and practices of domestic flour mill workers regarding prevention of health hazards in selected urban area.2. To evaluate the effectiveness of PTP on knowledge and practices on prevention health hazard among domestic flour mill workers in selected urban area. 3. To find association between demographic variables and pre-test score of knowledge and practices among domestic flour mill workers in selected urban areas. Method: A study was conducted in selected flour domestic mills to assess the effectiveness of planned teaching programme on knowledge and practises regarding prevention of health hazards among domestic flour mill workers. The 30 samples were selected by using Sample random sampling technique. The socio demographic data was collected by using questionnaire method on age, gender, education, hours of work per day. The pre- test was taken prior to planned teaching programme, after that planned teaching programme was administered post test was conducted after 7 days. Results: The overall pre-test mean knowledge scores is 8.96 whereas, post-test mean knowledge scores had increase to 15.13 after administration of planned teaching programme. The pre-test mean practice scores was 3.26 whereas, post-test mean practices scores was increase to 5.83 after administration of post-test. The calculated paired 't' test value (16.077) is less than tabulated value. Hence H_1 is accepted this indicated that gain in knowledge score is statistically significant as $p< 0.05$ levels. Therefore, the PTP on knowledge is effective to improve the knowledge among domestic flour mill workers. The calculated paired 't' test value (11.4) is less than tabulated value. Hence H_1 is accepted this indicated that gain in practices was statistically significant as $p< 0.05$ levels. Therefore, the PTP on knowledge is effective to improve the knowledge and practice among domestic flour mill workers. Thus, H_1 was accepted. Conclusion: The study was a good learning experience for, investigator. The result of this study showed that. Planned teaching programme was effective on knowledge and practices regarding domestic flour mill workers. Thus, null hypothesis (H_o) is rejected and alternative hypothesis (H_1) is accepted that PTP on knowledge and practices regarding prevention of health hazards among domestic flour mill worker in selected urban area was effective. Thus, H_2 was rejected._

Keywords: Assess, Effectiveness, Planned teaching programme, Knowledge, Practise

1. Introduction

There are about 1200 Roller Flour Mills in India which grind about 18 to 20 million tonnes of wheat per year into wheat flour. About 45 to 50 million tonnes of wheat is ground into whole wheat flour (Atta) on job-work basis in villages, towns and even in large cities by small electric or diesel driven stone mills, known as chakkis. Domestic packaged branded atta market, is estimated at 2 million tonnes is about 2% of total atta market.[1]

Occupational illness develops over a period because of workplace conditions. Such conditions might include exposure to disease-causing bacteria, viruses, chemical, dust, etc. Under the occupational Health and Safety Act, occupational illness is defined as a condition that results from exposure in a workplace to a physical, chemical, or biological agent to the extent that the normal physiological mechanisms are affected and the health of the worker is impaired.[2]

There is increase in industrialization. The workers working in the industries suffer from various types of air way diseases like Pneumoconiosis, Farmer's Lung, Chronic bronchitis, pulmonary fibrosis and Asthma.[3]

An occupational hazard is a hazard experienced in the workplace. Occupational hazards can encompass many types of hazards, including chemical hazards, biological hazards (biohazards), psychosocial hazards, and physical hazards.[4]

The risk associated with inhalation of grain dust including wheat, rye, millet, barley, oats or corn cereals or a combination of these which have been processed by milling and commonly referred to as flour dust include -changes in lung function Increased prevalence of chronic bronchitis and Occupational Asthma and respiratory symptoms. Symptoms from flour dust exposure include cough, wheeze, dyspnoea, hoarseness, asthma, eye problems, conjunctivitis, rhinitis, and sinusitis. After 30 years asthma can occur in industrial workers. Compared with the general population the increased prevalence of occupational asthma attributable to bakers appears to be 2-3 cases per 1000 person-years.[3]

Exposure to flour mill causes COPD and it is the major cause of mortality and morbidity. As per WHO estimation it is the seventh cause of death and disability in the world.[4]

2. Statement of the Problem

A study to evaluate the effectiveness of planned teaching programme on knowledge and practises regarding prevention of health hazards among domestic flour mill workers in urban areas".

3. Objectives of the Study

1) To assess the existing knowledge and practises of domestic flour mill workers regarding prevention of health hazards in selected urban area.
2) To evaluate the effectiveness of PTP on knowledge and practises on prevention health hazard among domestic flour mill workers in selected urban area.
3) To find association between demographic variables and pre-test score of knowledge and practises among domestic flour mill workers in selected urban are

Hypothesis
H0:- There will be no significant effect of PTP on knowledge and practices regarding prevention of health hazards among domestic flour mill workers in selected urban area.
H1- There will be significant effect of PTP on knowledge and practices regarding prevention of health hazards among domestic flour mill workers in selected urban area.
H2- There will be significant association between Pre-test knowledge score and selected demographic variables among domestic flour mill workers in selected urban areas.

4. Methodology

Research approach: An evaluative research approach

Research design: Was Quasi experimental i.e. one group pre-test post-test design.

Setting of the study: Study was conducted in urban area of Miraj city.

Research variables:
1) Independent variables:In this study the planned teaching programme was independent variable.
2) Dependent Variables

Knowledge of domestic flour mill workers regarding prevention of health hazards.

Knowledge of practices regarding prevention of health hazards

Demographic variables: This includes age, gender, education, hours of work, any disease.

Target population: The target population is aggregate of cases about which the researcher would like to generalize.

Accessible population: The accessible population for this study were the subjects domestic flour mill workers residing in urban area.

Sample size: The sample size of the present study was 30 subjects domestic flour mill workers resending in urban area.

Sampling Technique
In this study Sample random sampling technique was used for selection of flour mill workers. Simple random sampling was a probability sampling technique where subjects were chosen to be part of the sample with a specific purpose in mind. Lottery method was used to choose the samples from the population.

Criteria for Samples Selection:
a) Inclusion criteria
Subjects able to understand Marathi, English.

b) Exclusion Criteria
• Domestic Flour mill worker who are not willing to participate in the study.
• Workers who are not available during the study.

Description of Tool

Part I: -Socio demographic variables
Information on socio demographic variable of the subjects containing five items, which included age, gender, education, hours of work per day.

Part II: - Planned teaching programme
Consist of knowledge of domestic flour mill workers regarding selected health hazards

Scoring mode: -
Each correct answer was a score of 1 and incorrect was score of 0. Maximum scoring possible was 24 in knowledge questionnaire and minimum was 0.

Part III: - observational Check list: -
Check list was used to observe the practices that are been followed in domestic flour mill.

Scoring mode
Three categories were done not using, present, using.
Not using =0 score, present =1, using= 2.
The maximum score that could be scored was 15.

Reliability
The reliability of the tool was estimated by using Karl Pearson's coefficient of co-relation formula. It was done by test and retest method. This is done by evaluating questions and checklist based on difficulty index and discriminative index. The reliability index of structured questionnaire was r= **0.7802** and reliability of observational check list was **r=0.7841.**

Data collection procedure
Data was collected by using following tools.
1) Informed consent was taken from flour mill workers.

2) simple random technique was used for selection of flour mill workers.
3) Practices were observed with check list
4) The pre-test of workers was done to assess their previous knowledge regarding prevention of occupational health hazards y using P.T.P.
5) Planned teaching programme was given on occupational health hazards.
6) Post-test was done after 7 days.
7) Practices were observed with check list to look for use of safety equipment's.

Plan for data analysis

Statistical analysis is the organization and analysis of quantities data using statistical procedures including both descriptive and inferential statistics.

Ethical consideration

The study was approved by research committee of the institution. Assurance was given to the subjects that anonymity of each individual would be maintained.

5. Result

Section I: - Descriptive statistics of demographic variables on knowledge and practices among domestic flour mill workers using frequency and percentage

Table 1: Frequency distribution of domestic flour mill workers according to demographic characteristics, n=30

Variables	Frequency	Percentage
I) Age in years		
a) 31-40	13	43.33%
b) 41-50	8	26.66%
c) 51-60	5	16.66%
d) 60>	4	13.33%
II) Gender		
a) Male	18	60%
b) Female	12	40%
III) Education		
a) Primary	6	20%
b) Secondary	10	33.33%
c) Underweight	12	40%
d) Graduate	2	6.66%
IV) Hours of work		
a) 2 to 3 hrs.	5	16.66%
b) 4 to 5 Hrs.	12	40%
c) 6 to 7 hrs	6	16.66%
d) More than 8 hrs.	7	23.33%
V) Any disease		
a) Yes	16	53.33%
b) No	14	46.66%

Section II: Findings on knowledge and practice regarding prevention of health hazards among domestic flour mill workers.

Table 2: Mean and standard deviation of knowledge scores of knowledge regarding prevention of health hazards among domestic flour mill workers, n= 30

Areas of analysis	Mean	Median	Standard deviation
Pretest	8.96	9.5	2.748
Post-test	15.13	15	2.24
Difference	6.17	5.5	0.508

Table no 2: Reveals that over all pretest mean knowledge scores is 8.96 whereas, post-test mean knowledge scores had increase to 15.13 after administration of planned teaching programme.

Table 3: Mean and standard deviation of practice scores of practice regarding prevention of health hazards among domestic flour mill workers

Areas of analysis	Mean	Median	Standard deviation
Pretest	3.26	3.5	0.855
Post-test	5.83	6.5	1.416
Difference	2.57	3	0.561

Table no 3: Reveals that over all pre-test mean practice scores is 3.26 whereas, post-test mean knowledge scores had increase to 5.83 after administration of post-test.

Table no 4: Frequency and percentage distribution of pre-test and post-test knowledge scores regarding prevention of health hazards in domestic flour mill workers, n=30

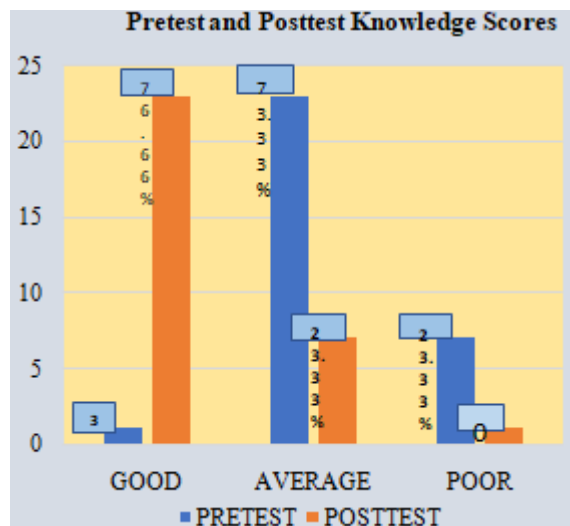| Knowledge scores	Pre-Test		Post-Test	
	Frequency	%	Frequency	%
Good knowledge (14-15)	1	3.33%	23	76.66%
Average (8-13)	22	73.33%	7	23.33%
Poor knowledge (0-7)	7	23.33%	0	0%

Table 4: Reveals that in pre-test majority of subjects 22 (73.33%) had poor knowledge and 7(23.33%) had poor knowledge and 1 had (3.33%) had good knowledge; Whereas in post-test it show that majority of subjects had good knowledge 23(7.66%) and 7 (23.33%) of them had average knowledge and none had poor knowledge.

Table 5: Frequency and percentage distribution of pretest and posttest practice scores regarding prevention of health hazards in domestic flour mill workers, n=30

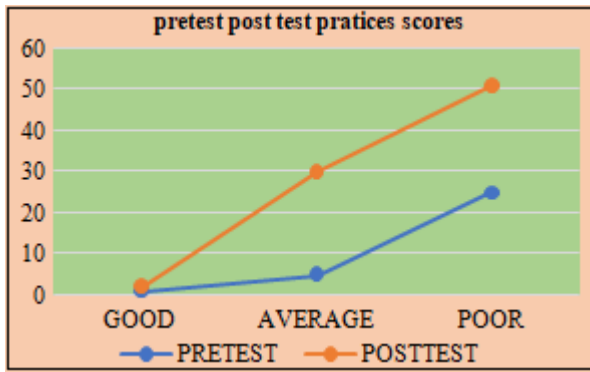| Practice scores	Pre-Test		Post-Test	
	Frequency	%	Frequency	%
Good (9-14)	0	0%	0	0%
Average (5-8)	5	16.67%	6	20%
Poor (0-4)	25	83.33%	26	80%

pretest post test pratices scores

Table 5: Reveals that in pre-test majority of subjects were having poor practices 25(83.33%) and 5(16.667%) were having average practices and none of the had good practices. Whereas in post-test it show that majority of subjects had average practice 24(80%) and 6 (20%) of them had poor practice and none had good practice regarding prevention of health hazards.

Section III: Evaluation of the effectiveness of planned teaching programme on knowledge and practice regarding prevention of health hazards.

The research hypothesis tested this section was the mean post-test knowledge scores of domestic flour mill workers will be significantly higher than mean pre-test knowledge scores at 0.05 level of significance.

Table 6: Mean difference (d), standard error and paired 't' values of knowledge scores of domestic flour mill workers, n=30

Mean difference	Standard error (SE)	Paired 't' value	
		Calculated value	Table value
6.17	4.04	16.077	2.45

(P< 0.05)

Table no. 6 Reveals that calculated paired 't' test value (16.077) is less than tabulated value. Hence H_1 is accepted this indicated that gain in knowledge score is statistically significant as p< 0.05 levels. Therefore, the PTP on knowledge is effective to improve the knowledge among domestic flour mill workers.

The mean post-test practice scores of domestic flour mill workers will be significantly higher than mean pre-test knowledge scores at 0.05 level of significance.

Table 7: Mean difference (d), standard error and paired 't' values of knowledge scores of domestic flour mill workers, n=30

Mean difference	Standard error (SE)	Paired 't' value	
		Calculated value	Table value
2.57	2.02	11.4	3.18

(P< 0.05)

Table no. 7 Reveals that calculated paired 't' test value (11.4) is less than tabulated value. Hence H_1 is accepted this indicated that gain in practices is statistically significant as p< 0.05 levels. Therefore, the PTP on knowledge is effective to improve the knowledge and practice among domestic flour mill workers.

Table 8: Association between knowledge and socio-demographic variables regarding prevention of health hazards among domestic flour mill workers, n=30.

Sr. No.	Socio-demographic Variables			Calculated val.	Table Val.	Value of.
1.Age	Good	Average	Poor			
• 31 to 40	0	3	5			
• 41 to 50	0	3	10	32.024	3.18	3 (NS)
• 51 to 60	0	0	5			
• 60 and more.	0	1	3			
2. Sex						
• Male	0	14	4	117.2	12.71	1 (NS)
• Female	0	8	4			
3. Education						
• Primary	0	10	2			
• Secondary	0	10	0	38.68	2.45	6 (NS)
• Undergraduate	0	4	2			
• Graduate	0	1	1			
4. Hours of works						
• 2 to 3 hrs.	0	2	4			
• 4 to 5 hrs.	0	1	11	40.58	3.18	3 (NS)
• 6 to 7 hrs	0	0	5			
• 8 hrs and more	0	2	5			
5. Any disease						
• Yes	0	4	12	12.71	38.68	1 (NS)
• No	0	4	10			

S= Significant, NS= Non-significant

The findings of the table no. 8 revels that the demographic variables with pre-test knowledge scores of preventions of health hazards among domestic flour mill workers were not significantly associated. That means the demographic various age, sex, education, hours of work with pre-test knowledge scores of domestic flours mill work are independent of each other.

Table 9: Association between practices and socio-demographic variables regarding prevention of health hazards among domestic flour mill workers, n=30

Sr. No.	Good	Average	Poor	Calculated val.	Table Val.	Value of.
1. Age						
• 31 to 40	0	2	6			
• 41 to 50	0	2	11	71.991	3.18	3 (NS)
• 51 to 60	0	0	5			
• 60 and more.	0	1	4			
2. Sex						
• Male	0	3	15	95.76	12.71	1 (NS)
• Female	0	2	12			
3. Education						
• Primary	0	0	6			
• Secondary	0	0	12	463.216	3.18	3 (NS)
• Undergraduate	0	2	4			
• Graduate	0	1	6			
4.Hours of works						
• 2 to 3 hrs.	0	0	6			
• 4 to 5 hrs.	0	0	12	108.486	3.18	3 (NS)
• 6 to 7 hrs	0	2	4			
• 8 hrs and more	0	1	6			
5. Any disease						
• Yes	0	2	14	72.521	12.71	1 (NS)
• No	0	3	11			

S= Significant, NS= Non-significant

The findings of the table no. 9 revels that the demographic variables with pretest practices scores of preventions of health hazards among domestic flour mill workers were not significantly associated. That means the demographic

Nursing Implications
The results of the study have several implications for the nursing professionals including nursing education, nursing administration, nursing research and nursing practice.

Nursing Administration:
The domestic flour mills are unorganized sector in urban areas. Thus, there are no health-related facilities available in mills. Thus, community health nurse plays a major role in developing policies, procedure and creating awareness by giving health education.
1) He can be a part of accident investigation team, as he is the first person to receive the injured person at work.
2) Advisor to safety committee.
OHN updates emergency policies and procedures, inspect and maintains the emergency equipment's

Nursing practice
The findings of the study revealed that despite of increase in the knowledge regarding occupational health hazards, the flour mill workers are still encounter and fail in of preventive measures. The role of a nurse is prevention of those occupational initiation of preventive measures.

Thus, the important role of nurse is prevention of those occupational hazards by encouraging flour mill workers to adopt this practice like
Environmental sanitation of work place and provision of safety measures.
- Protecting the domestic flour mill workers worker against occupational hazards, carcinogenic allergens air pollution and noise control by participating in health survey, environmental survey and implementing measures to protect health of the domestic flour mill workers.
- Protecting the domestic flour mill workers against accidents by providing Protective measures helmet. gloves. mask, body protector etc.

Nursing Education
- In present curriculum programme the occupational health nursing information is very less, It is important need to start courses like occupational health Nursing in Speciality.
- As a student investigator found that there is very less information regarding prevention of occupational health hazards among domestic flour mill workers. Thus, this plan-teaching programme will be helpful for students to prepare health education programme.

This information will helpful for students to improve knowledge on prevention of occupational hazards.

6. Conclusion

The study was a good learning experience for, investigator. The result of this study showed that. Planned teaching programme was effective on knowledge and practices regarding domestic flour mill workers. Thus, null hypothesis

various age, sex, education, hours of work with pre-test knowledge scores of domestic flours mill work are independent of each other.

(H_o) is rejected and alternative hypothesis (H_1) is accepted that PTP on knowledge and practices regarding prevention of health hazards among domestic flour mill worker in selected urban area was effective. Thus, H_2 was rejected.

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