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Assess the Knowledge level of Allergic Disorders among workers of a selected Garment Factory in Bangalore with a view to prepare a self instructional module on prevention and management of Allergic Disorder

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Abstract

Context: About 1.3 billion urban residents are exposed to air pollution worldwide. Air quality in the developing countries has deteriorated because of rising industrial activity. The prevalence of occupational allergies is thought to be in direct proportion to the rate with which allergy occurs in general population. In view of the changing environment and life styles in the developing countries, their communities are expected to be faced with similar negative epidemiological effects concerning allergies. To counter the spreading of negative health effects, the surveillance of work related occupational respiratory disease (SWORD) system implemented in UK. This system ensures effective co-operation between specialists in preventive medicine, occupational hygiene services and research workers dealing with occupational health that enables prompt response to emerging hazards.

Statement of The Problem

- A study on Allergic Disorders among workers of a selected Garment Factory in Bangalore with a view to prepare a self-instructional module on prevention and management of Allergic Disorder

The objectives of the study are:

- To assess the knowledge level of allergic disorders among workers in garment factory.
- To associate the demographic variables with the knowledge, management and prevention of Allergic Disorders.
- To develop health education booklet regarding management and prevention of allergic disorders.

Methodology

The research approach adapted for the study was survey approach using descriptive design. Non probability - purposive sampling technique was used to select the sample for the study. Content validity of the tool was done by giving the prepared instrument along with the objectives and criteria checklist to 10 experts comprising of nursing educators in the field of community health nursing, physician and biostatistics for content validity. According to the expert's opinions and suggestions final tool was prepared. Reliability of the tool was done by using split half method. A structured interview was conducted in a pilot study among ten garment workers in Bangalore. The calculated reliability coefficient value of the tool was r = 0.9093 and statistical validity coefficient value was $\sqrt{r} = 0.9535$. The tool was found to be reliable.

For the main study the sample consisted of the 60 garment factory workers selected from Bangalore, Karnataka. Structured questionnaire & self-instructional module was developed with the help of related literature & after the discussion with the subject experts. The questionnaire consisted of 45 items with maximum score of 45. Data was collected using structured knowledge questionnaire during the month of December 2010.

Results

Findings were presented under the following sections:

Sec- 1: Describes the distribution of socio-demographic variables in relation to age, sex, religilon, area of residence, type of family, marital status, Occupational status, educational status, monthly income and source of information. Based on the age group, out of 50 samples, majority of the samples 38 (76%) were in the age group of 31-50 years and 12(24%) were in the age group of 21-30 years. Based on the sex, out of 50 samples, cent percent were females. Based on religion, out of 50 samples, majority of the samples 36 (72%) were hindus, 12(124%) were Christians and 2 (4%) were muslims.

Based on area of residency, out of 50 samples ,36(72%) were from rural area and 14 (28%) were from urban areas. Based on type of family. out of 50 samples majority of the samples 38 (76%) were from nuclear families and 12(24%) were from joint families. In relation to marital status, out of 50 samples. Majority of the samples 39(78%) were married and 11(22%) were singles. In relation to occupation, out of 50 samples, Majority of the samples 40(80%) were full time workers and 10(20%) were part time workers. In relation to the educational level, out of 50 samples, Majority of the samples 34(68%) studied upto primary school, 12 (24%) studied upto middle school and 4 (8%) studied upto high school.

Based on income, out of 50 samples 39(78%) of their income was between 2000-3000 ,39 (78%) of their income was between 3001-4000 and 2(4 %) of their income was between time 4001-5001rs. Based on source of information, out of 50 samples, 29(58%) of samples received information from books, television, radio, 19 (38%) of samples received from magazines, newspapers and 2(4%) samples received information from health professionals.

Sec-2: Describes an aspect wise knowledge score of the respondents. Percentage, standard deviation (SD) and mean knowledge on allergic problems among garment factory workers is represented in four aspects.

- ★ Knowledge about asthma and allergy was 11.66 (69%) with SD 2.60.
- ★ Knowledge regarding management of allergic disorders was 5.86 (73%) with SD 1.25.
- ★ Knowledge regarding prevention of allergic disorders was 5.58 (80%) with SD 0.83.

Sec-3: Describes the association between knowledge of garment factory workers and allergic problems and the selected demographic variables in relation to age, sex, religion, area of residency, type of family, marital status, occupational status, educational status, income and source of information. Chi – square test was used to study the association between the knowledge of garment factory workers on allergic problems and socio-demographic variables, Chi-square test revealed that there was significant association between the knowledge and socio demographic variables i.e. age, education and area of residency.

Keywords: Level of Knowledge, Allergic Disorder, Garment, Factory workers.

Introduction

Workers at a nylon plant developed pulmonary disease with systemic symptoms. Differentiating between humidifier fever and hypersensitivity pneumonitis (HP) is challenging. Cytophaga, an endotoxin-producing bacteria, was isolated from the

plant air-conditioning system. A number of workers had systemic and pulmonary symptoms. Allergies reflect an overreaction of the immune system to substances that usually cause no reaction in most individuals. These substances can trigger sneezing, wheezing, coughing and itching. A steady increase in the incidence of allergic diseases can be observed since 1950s. For such atrophic diseases as bronchial asthma, pollinosis or atopic dermatitis, a significantly increased morbidity rate in the general population has been found. Strikingly enough, the highest prevalence of asthma and allergy was recorded in highly developed countries. The prevalence of occupational allergies is thought to be in direct proportion to the rate with which allergies occur in the general population. In view of the changing environment and lifestyles in the developing countries, their communities are expected to be faced with similar negative epidemiological effects concerning allergies

Need for the study

Allergy is the 5th leading chronic disease in the U.S. among all ages, and the 3rd most common chronic disease among children under 18 years old. Allergies are the most frequently reported chronic condition in children, limiting activities for more than 40% of them. Modern, non-industrial workplaces may, because of building techniques, widespread use of synthetic materials and artificial ventilation, create risks for the health and well-being of workers. Indoor air pollution by chemical, biological and sometimes physical agents constitutes a significant risk factor, particularly for the respiratory system. Allergic contact dermatitis (ACD) is a common skin disorder that has a high socio-economic impact with regard to the increasing number of industrial allergens that has potential harmful effect on the skin of manual workers. Its management relies on the use of topical anti-inflammatory drugs as well as the avoidance of the allergens inducing the disease. However, with regard to the ubiquitous character of many chemicals in the environment, treatment of the disease remains unsatisfactory. In the view of above facts, in our country, where data regarding Garment factors workers and the health hazards they are facing is limited and only a few studies have been attempted to know about their health problems , this study will add information to available database and latest scenario about needs to improve the working conditions of these workers.

Review of literature

A cross sectional study was conducted among 70 industrial workers, 50 chemical industry workers and 20 garment factory workers in two rural areas of south Korea. Information on occupational hazard knowledge was obtained from an interview based questionnaire for chemical industry workers and self-administered questionnaire from garment factory workers. Results showed that the workers had poor knowledge on occupational hazards with 43.8% of them classified as having unsatisfactory knowledge on hazards, followed by moderately satisfactory (33.7%) very unsatisfactory (15.7%) and good (6.7%).

A study was conducted in Malaysia to assess the knowledge of allergic respiratory problems about of the industrial workers and the relationship of knowledge with education and income. The sample size was 40. The findings revealed that the industrial workers possessed fairly high level of mean percentage knowledge (70.62). Industrial workers with low level of education had the lowest mean knowledge percentage score (36.25). Knowledge of local agarbathi factory worker's elderly problems was assessed with a view to plan a health teaching programme for industrial workers regarding occupational health problems in Delhi. Data was collected from 203 factory

workers. The findings revealed a high knowledge defecit related to physical health problems, its prevention and its management i.e. (80.33%) was noted. A study was carried out to assess the knowledge, attitude and practices of silk industry workers in relation to allergic problems in a silk industry at Norway. The sample consisted of 200 randomly selected employees. The findings of the study revealed that 65.5% lacked basic knowledge about allergic problems and its prevention.

Materials and Methods

The research approach adopted for this study was survey approach. The research design adopted for the present study was cross sectional study design. Independent variable in this study was socio-demographic variables (age, sex, marital status, level of education, previous occupation and socio economic status). Dependent variable is level of knowledge regarding allergic disorders among garment factory workers. The study was conducted in a garment factory in Bangalore.

The target population was workers of selected garment factory in Bangalore city. and non-probability Convenience sampling technique was utilized for the selection of workers. This include 60 samples selected for the study. A structured interview questionnaire was developed to assess the allergic problems among garment factory workers.

The tool was divided into two Sections: Section A and Section B. Section A deals with socio demographic variables consisting of 10 items. Section B deals with structured questionnaire consisting of 45 items in the form of multiple choice questions regarding knowledge related to allergic problems. Scoring key was prepared for part A by coding the socio demographic variables. In part B each item has three options with one correct answer. All the correct options have the maximum score of 45 marks were allotted under knowledge assessment. The knowledge score was interpreted as follows: Inadequate knowledge (<. 50% Score), Moderately adequate knowledge (51-75% Score), Adequate knowledge (>75% Score).

The tools were validated by experts from nursing and a pilot study with 10 workers confirmed feasibility. Reliability of the tool was done by using split half method. The questionnaire was administered to ten workers in a garment factory. The calculated reliability coefficient value of the tool was r = 0.9093 and statistical validity coefficient value was $\sqrt{r}$ =0.9593.

Data was collected in the Month of December, with informed consent and ethical approvals obtained. The data collection tools took approximately 30–40 minutes per participant. The data were analyzed using descriptive and inferential ststistics including frequency distribution, Mean, SD and chi square test. A self-instructional module was developed, based on the review of literature. The steps adopted in the development of self-instructional module were Preparation of first draft of module, Content validity by experts, editing of module, Preparation of final draft of module and Module was prepared on the basis of the review of literature which pertains to the development of module regarding allergic disorders.

Results

Section 1: Demographic characteristics of respondents

Table 1: Classification of respondents by Age, sex, religion, area of residency, type of family, marital status, occupational status, educational status, income status and source of information.

Sn.	Demographic Data	Frequency	Percentage
1	Age		
	21-30	12	24%
	31-40	19	38%
	41-50	19	38%
2	Sex		
	Male	0	0%
	Female	50	100%
3	Religion		
	Hindu	36	72%
	Christian	12	24%
	Muslim	2	4%
4	Area of residency		
	Rural	36	72%
	Urban	14	28%
5	Type of family		
	Nuclear	38	76%
	Joint	12	24%
6	Marital Status		
	Single	11	22%
	Married	39	78%
7	Occupational Status		
	Full time	40	80%
	Part time	10	20%
8	Educational qualification		
	Primary School	34	68%
	Middle school	12	24%
	High school	4	8%
9	Monthly Income		
	2000- 3000	9	18%
	3001-4000	39	78%
	4001-5000	2	4%
10	Source of knowledge		
	Books/ television/ Radio	29	58%
	Magazine/ News Paper	19	38%
	Health Professionals	2	4%

The above table shows the distribution of demographic characteristics of respondents by age, Education Age, sex, religion, area of residency, type of family, marital status, occupational Status, educational status, income status and source of information.

Based on the age group, out of 50 samples, 19 (38%) were in the age group of 31-41 years, 19(38%) were in the age group of 41-50 and 12(24%) were in the age group of 21-30 years.

Based on the sex, out of 50 samples, cent percent of the samples were females. Based on religion, out of 50 samples, majority of the samples 36 (72%) were hindus,12 (24%) were Christian and 2(4%) were Muslims.

Based on area of residency, out of 50 samples, 36 (72%) were from rural areas and 14(28%) were from urban areas.

Based on type of family. out of 50 samples majority of the samples 39 (78%) were from nuclear families and 12 (24%) were living from joint families.

In relation to marital status, out of 50 samples. Majority of the samples 39(78%) were married and11 (22%) were single.

In relation to occupational status, out of 50 samples, Majority of the samples 40(80%) were full time workers and 10(20%) were part time workers.

In relation to the educational level, 34 (68%) of each samples studied up to primary school, 12 (24%) studied up to middle school and 4 (8%) studied up to high school.

Based on income, out of 50 samples 39(78%) of their income was between 2000-3000, 39 (78%) of their income was between 3001-4000 and 2(4 %) of their income was between time 4001-5001rs.

Based on source of information, out of 50 samples, 29(58%) of samples received information from books, television, radio, 19 (38%) of samples received from magazines, newspapers and 2(4%) samples received information from health professionals.

Section II: To assess the pretest and posttest knowledge level of Allergic Disorders in Selected population of workers in Garment factory.

Table 2: Aspect wise pretest and posttest knowledge regarding Allergic disorders in workers of garment factory.

	Statements	Max. score	Mean	Mean%	S.D
Knowledge about Asthma & allergic	24	17	11.66	69%	2.60
Knowledge Regarding management of allergic disorders	11	8	5.86	73%	1.25
Knowledge Regarding prevention of allergic disorders	10	7	5.58	80%	0.83

The above table indicates the results of aspect wise knowledge scores of respondents on Allergic disorders. The table shows the percentage, standard deviation (SD) and mean knowledge about allergic disorders among garment factory workers in three aspects. Knowledge about asthma and allergy was 11.66 (69%) with SD 2.60 knowledge regarding management of allergic disorders was 5.86 (73%) with SD 1.25 knowledge regarding prevention of allergic disorders was 5.58 (80%) with SD 0.83.

Figure 1: Classification of Respondents on Knowledge level regarding allergic disorders

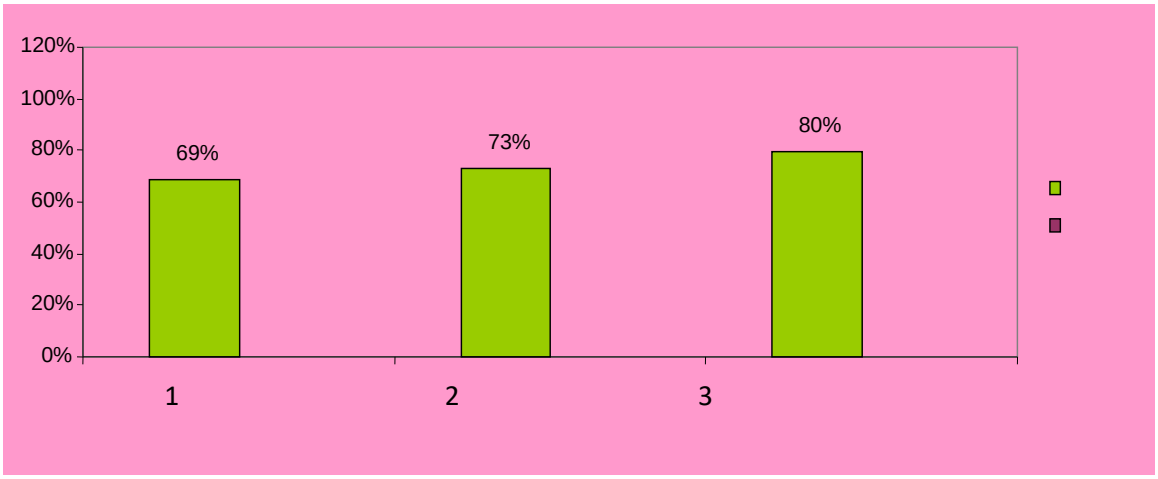

Fig. 1, shows classification of respondents on knowledge level regarding allergic disorders i.e. Majority of the sample (80%) had knowledge on prevention of allergic disorders, (73%) had knowledge regarding management of allergic disorders and (69%) had knowledge about asthma and allergy.

Table 3: Classification of Respondents on Knowledge level regarding allergic disorders

	Mean	S.D	Inadequate		Moderate		Adequate	
			No. of samples	%	No. of samples	%	No. of samples	%
Total	23.10	2.57	46	92%	4	8%	0	0%

The above table shows the classification of respondents on knowledge regarding allergic disorders. Out of 60 samples 46(92%) of the samples had inadequate knowledge, 4 (8%) had moderate knowledge and 0(0%) of the samples had adequate knowledge.

Section III: To find out the association allergic disorders with selected demographic variables.

Null Hypothesis: There will not be significant association between demographic variable and allergic disorders among garment factory workers.

Research Hypothesis: There will be significant association between demographic variable and allergic disorders among garment factory wotkers.

Table 4: Association between demographic variables and allergic disorders among garment factory workers.

Demographic Variables	Category	Respondents knowledge						Total	χ2 value	Critical value
		Inadequate		Moderate		Adequate				
		n	%	n	%	n	%			
Age	21-30	4	33%	5	42%	3	25%	12	3.55	χ2 4d.f, 5% los = 9.49
	31-40	5	26%	6	32%	8	42%	19		
	41-50	6	32%	10	53%	3	16%	19		
Sex	Female	15	30%	21	42%	14	28%	50	0.00	χ2 0d.f, 5% los = 3.84
Religion	Hindu	13	36%	13	36%	10	28%	36	3.23	χ2 4d.f, 5%

	Christian	2	17%	7	58%	3	25%	12		los = 9.49
	Muslim	0	0%	1	50%	1	50%	2		
Area of residancy	Rural	12	33%	15	42%	9	25%	36	0.89	χ^2 2d.f, 5%
	Urban	3	21%	6	43%	5	36%	14		los = 5.99
Type of family	Nuclear	11	29%	16	42%	11	29%	38	0.11	χ^2 2d.f, 5%
	Joint	4	33%	5	42%	3	25%	12		los = 5.99
Marital Status	Single	1	9%	2	18%	8	73%	11	14.04*	χ^2 2d.f, 5%
	Married	14	36%	19	49%	6	15%	39		los = 5.99
Occupational Status	Full time	14	35%	18	45%	8	20%	40	6.67*	χ^2 2d.f, 5%
	Part time	1	10%	3	30%	6	60%	10		los = 5.99
Educational qualification	Primary School	12	35%	17	50%	5	15%	34	14.38*	χ^2 4d.f, 5%
	Middle school	3	25%	4	33%	5	42%	12		los = 9.49
	High school	0	0%	0	0%	4	100%	4		
Monthly Income	2000- 3000	1	11%	3	33%	5	56%	9	10.83*	χ^2 4d.f, 5%
	3001-4000	14	36%	18	46%	7	18%	39		los = 9.49
	4001-5000	0	0%	0	0%	2	100%	2		
Source of knowledge	Books/ television/ Radio	10	34%	14	48%	5	17%	29	7.54	χ^2 4d.f, 5%
	Magazine/ News Paper	5	26%	7	37%	7	37%	19		los = 9.49
	Health Professionals	0	0%	0	0%	2	100%	2		

***Significant at 0.05 level of significance.**

The above table depicts the demographic variables like marital status, occupational status, education and monthly income versus knowledge level are significant and other demographic variables are not significant. The above table shows the association of knowledge on allergic disorders among garment factory workers with demographic variables. In relation to age group, 4(33%) of the samples aged from 21-30 years had inadequate knowledge,5(42%) had moderate knowledge,3(25%) of the samples had adequate knowledge.4(26%) of the samples aged from 31-40 years had inadequate knowledge,6(32%) had moderate knowledge and 8(42%) had adequate knowledge.6(32%) of the samples aged from 41-50 years had inadequate knowledge,10(53%) had moderate knowledge and 3(16%) had adequate knowledge.

In relation sex, 15(30%) of the samples had inadequate knowledge,21(42%) had moderate knowledge and 14(28%) had adequate knowledge. In relation to religion, 13(36%) of the samples who were Hindus had inadequate knowledge,13(36%) had moderate knowledge and 10(28%) had adequate knowledge.2 (17%) of the samples who were Christians had inadequate knowledge,7(58%) had moderate knowledge and 3 (25%) had adequate knowledge.0(0%) of the samples who were Muslims had inadequate knowledge, 1(50%) had moderate knowledge and 1(50%) had adequate

knowledge. In relation to area of residency, in rural area, 12(33%) of the samples had inadequate knowledge,15(42%) had moderate knowledge and 9(25%) had adequate knowledge. In urban area, 3(21%) had inadequate knowledge,6(43%) had moderate knowledge and 5(36%) had adequate knowledge.

In relation to type of family, 11(29%) of the samples who were from nuclear families had inadequate knowledge, 16(42%) had moderate knowledge and 11(29%) had adequate knowledge. 4(33%) who were joint families had inadequate knowledge, 5(42%) had moderate knowledge and 3(25%) had adequate knowledge who were from joint families.

In relation to marital status,1(9%) of the samples who were living as singles had inadequate knowledge,2(18%) had moderate knowledge and 8(73%) had adequate knowledge.14(36%) of the samples who were married had inadequate knowledge, 19(49%) had moderate knowledge and 6(15%) had adequate knowledge.

In relation to occupational status, 14(35%) of the samples who were full time workers had inadequate knowledge, 18(45%) had moderate knowledge and 8(20%) had adequate knowledge. 1(10%) of the samples who were part time workers had inadequate knowledge, 3(30%) had moderate knowledge and 6(69%) had adequate knowledge.

In relation to educational status, 12(15%) who studied upto primary school had inadequate knowledge, 17(50%) had moderate knowledge and 5(15%) had adequate knowledge. 3(25%) who studied up to middle school had inadequate knowledge, 4(33%) had moderate knowledge and 5(42%) had adequate knowledge.0 (0%) who studied upto high school had inadequate knowledge 0(00%) had moderate knowledge and 4(100%) had adequate knowledge.

In relation to income status. 1(11%) of the sample whose were income was between 2000-3000 had inadequate knowledge,3(33%) had moderate knowledge and 5(56%) had adequate knowledge. 14(36%) whose income was between 3001-4000 had inadequate knowledge, 18(46%) had moderate knowledge and 7(18%) had adequate knowledge. 0(0%) whose income was between 4001-5000 had inadequate knowledge, 0(0%) had moderate knowledge and 2(100%) had adequate knowledge.

In relation to source of information 10(34%) of the samples who received information through mass media had inadequate knowledge, 14(48%) had moderate knowledge, 5(17%) had adequate knowledge. 5(26%) who received information through newspaper and magazines had inadequate knowledge, 7(37%) had moderate knowledge and 7(37%) had adequate knowledge.0(0%) who received information through health professionals had inadequate knowledge, 0(0%) had moderate knowledge and 2(100%) had adequate knowledge.

The above table depicts that demographic variables such as marital status, occupational status, education and income have significant association with knowledge level are significant and other demographic variables are not significant. There is no significant association between age, sex, religion, area of residency, and source of information on knowledge of level regarding allergic disorders among garment factory workers . Hence, the research hypothesis is accepted and the null hypothesis is rejected.

Major findings of the study

- ★ Majority of the sample (76%) belonged to age group 21-30 years and 41-50 years.
- ★ Majority of the sample (100%) were female.
- ★ Majority of the sample (72%) were Hindus.
- ★ Majority of the sample (78%) were from nuclear family.

- ★ Majority of the sample (72%) were from rural area.
- ★ Majority of the sample (78%) were married.
- ★ Majority of the sample (80%) were full time workers.
- ★ Maximum number of the sample (68%) had primary school education.
- ★ Majority of the sample (78%) income was between 3001-4000Rs.
- ★ Majority of the sample (58%) received information from media.
- ★ Overall mean knowledge of garment factory workers on asthma and allergies 69%.
- ★ Overall mean knowledge of garment factory workers on management of allergic disorders 73%.
- ★ Overall mean knowledge of garment factory workers on prevention of allergic disorders 80%.
- ★ Majority of the samples 70% had moderate knowledge.

There was a statistical association between socio demographic variables such as age, education, area of residency, and knowledge on allergic problems among garment factory workers.

There is no statistical association between socio demographic variables such as sex, religion, marital status, income, type of family, occupational status and knowledge on allergic disorders among garment factory workers.

Implications of The Study

The findings of the study have implications related to Nursing administration, nursing practice, nursing research and nursing education regarding the increase in the knowledge and practice related to prevention of allergic disorders among the garment factory workers. There are several implications of the present study for nursing practice. Educational programme on prevention of occupational hazards such as allergic disorders are a practical strategy. The vast majority of these causes of allergic disorders can be prevented by using appropriate measures. Health promotion is one of the major roles a nurse has to play; hence its accountability has to be stressed. Health education is a process of assisting people to learn and in corporate health related behavior into everyday life.

Health information can be imparted through various methods like lecture, mass media, pamphlets, self-instructional modules etc. Any teaching strategy which is simple, clear and attractive makes interested learners to follow the instruction easily. Nurses have to impose themselves in all the areas of community health practice, so as to help the garment factory workers in protecting themselves from allergic disorders.

Recommendations for Further Study

a. Similar study can be conducted for a larger group of sample and in different settings.
b. A comparative study can be taken up between urban and rural garment factory workers.
c. A Study can be taken up with true experimental design.
d. A follow up study may be conducted to evaluate the effectiveness of health education module.

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