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EFFECTIVENESS OF SELF-INSTRUCTIONAL MODULE (SIM) ON KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING AUDITORY ACUITY AMONG WORKERS OF MARBLE INDUSTRY

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ABSTRACT

Occupational health is primarily preventive medicine. The highest level of worker physical, mental, and social well-being should be promoted and maintained as a goal of occupational health. **Objective**s: The objectives of the study is to assess the knowledge, attitude and practice regarding auditory acuity and determine the effectiveness of self-instructional module on knowledge, attitude and practice regarding

auditory acuity among worker of marble industry at, Tamilnadu. **Methods:** The research design used for this study was quasi experimental research design (one group pre-test and post-test). 60 samples were selected through purposive sampling technique who met the inclusion criteria. The marble factory workers were assessed for the knowledge, attitude and practice on auditory acuity with the use of self instructional module and structured self-administered questionnaire respectively. 4 point Likert's scale was used to assess their attitude through structured interview questionnaire. After pre-test self instructional module on auditory acuity was provided. The data were analyzed by using descriptive and inferential statistics. **Results:** The comparison the effectiveness of self instructional module on auditory acuity over a period of time the results was revealed that the statistically significant difference at **p<0.001** found in knowledge, attitude and practice of marble industry workers regarding auditory acuity after administration of self instructional module. **Conclusion:** The early prevention of hearing losses through early assessing auditory acuity among workers of marble industry by enhancing the adequate knowledge and appropriate measures on auditory acuity which helps in preventing hearing loss as well as reducing the burden of hearing loss among workers, their family, industry and the society.

Keywords: Effectiveness, Self-Instructional Module, Knowledge, Attitude, Practice, Auditory Acuity, Workers of Marble Industry

INTRODUCTION:

The noise is "wrong sound, in the wrong place, at the wrong time" which is called as a "unwanted sound". When man living in noisy environments which act as a stress factor in the environment of man. The noise pollution produces the health hazards of auditory, physical and mental health level.

Noise levels are particularly acute near railway junctions, traffic round, bus terminuses and airports. Other methods of creating noise include the use of pressure horns and loudspeakers used for entertainment, especially at night. The domestic noises from the radios, transistors & Television as well as industrial workers were exposed to chronic noise has the hearing loss it can be temporary or permanent loss stated by, Marron K (2015).

The noise exposures are of two types auditory and non-auditory. The auditory fatigue it appears in the 90 dB region and greatest at 4000 Hz associated with side effects such as whistling and buzzing in the ears and deafness the most serious pathological effect of deafness or hearing loss. Most temporary hearing loss occurs in frequency repeated or continuous exposure to noise around 100 decibels may result in a permanent hearing loss; in this, the inner ear damage may vary from minor changes in the hair cell endings to complete destruction of the organs of Corti. When this occurs as a result of occupation in industries, it is called

'occupational hearing loss' may rupture the tympanic membrane and cause permanent loss of hearing. The non-auditory effects interference with speech, annoyance, irritable, short tempered, rise in blood pressure, rise in intracranial pressure, an increase in heart rate and breathing, increase in sweating, giddiness, nausea and fatigue, interferes with sleep, visual disturbance. It is said to cause a narrowing ofpupil, affect colour perception and reduce night vision stated by, WHO (2014).

Statically around 10 of the 28 million people who have experienced hearing loss were working in industrial areas. Occupational workers who have experienced loud work environment are questioned regarding their hearing activities which revealed that higher rate on hearing loss revealed by, WHO (2017). NIHL is relatively new public health problem of industrial society. Developments of automatic machines in industries reduce the physical burden of workers and increase the productivity of industrial enterprises which was explained by, Marilia Rabelo (2004).

Occupational safety and health management recommended that all workers exposed to noise more than 85 dB should be screened for NIHL annually[14]. Since 1948, NIHL has been a compensable illness in India. By implementing required education and training programmes, it is important to raise awareness among employees about the damaging effects of noise on the hearing and other bodily systems.

Therefore, nurses are playing a major responsibility in preventive and control measures on hearing loss among workers of marble industry who were exposure to uncontrolled noisy working environment through structured self instructional module regarding auditory acuity.

MATERIAL AND METHODS:

A quantitative research approach of quasi experimental (one group pre-test and post-test) research design was adopted in this study to assess the effectiveness of self-instructional module on knowledge, attitude and practice regarding auditory acuity among workers of marble industry at, Tamil Nadu. Institutional ethical committee approval and consent from subjects were obtained for conducting study. 60 samples were selected through purposive sampling technique who met the inclusion criteria. The subjects were assessed their knowledge and practice on auditory acuity by using structured self-administered questionnaire and 4 point Likert's scale was used to assess their attitude after the pretest distribution of self instructional module on auditory acuity after

the posttest were analyzed by using descriptive and inferential statistics like frequency, percentage, mean, median, standard deviation, paired T-Test, Chi-Square test and Spearman rho test.

OBJECTIVES:

- To assess the Knowledge, Attitude and Practice regarding Auditory Acuity among Worker of Marble Industry.
- To determine the Effectiveness of Self-Instructional Module on Knowledge, Attitude and Practice regarding Auditory Acuity among Worker of Marble Industry.
- To associate the selected Demographic Variables with Knowledge, Attitude and Practice regarding Auditory Acuity among Worker of Marble Industry.
- To correlate the Knowledge, Attitude and Practice regarding Auditory Acuity among Worker of Marble Industry.

HYPOTHESES:

H1-There is a significant difference in Knowledge, Attitude and Practice of Marble Industry Workers on Auditory Acuity after Self Instructional Module.

H2-There is Association between Selected Demographic Variables and Knowledge, Attitude and Practice of Marble Industry Workers on Auditory Acuity.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA:

- Marble industry workers who are currently working at Sri Balamurugan Industry, Mailam, Tamil Nadu
- Marble industry workers who are willing to participate.

EXCLUSION CRITERIA

- Marble industry workers who are willing are not willing to participate in the study.
- Marble industry workers who are not available at the time of data collection.

DESCRIPTION OF THE TOOL:

SECTION I: Demographic Variables.

This section consists of demographic variables of the Marble industry workers like age, sex, Education, Monthly income, Religion, Type of family, No. of years working in marble factory and Previous exposure to knowledge, attitude and practice on Auditory acuity

SECTION-II: Structured interview questionnaire to assess the knowledge, attitude, practice regarding auditory acuity among workers of marble industry

It consists of 25 questions related to knowledge regarding meaning, cause and

spread, risk factors, sign and symptoms, diagnosis, complication, treatment, prevention of hearing loss. All the correct answer will be given the score of one and the wrong answer will be given the score of zero. This maximum score was 25.

SECTION III: 4-Point Likert's scale for assessing the attitude on auditory acuity among marble industry workers.

It consists of 10 statements related to attitude of marble industry workers towards auditory acuity. The item no.1, 3&8are negative statement and 2, 4, 5, 6, 7, 9and 10 are positive statements.

SECTION IV: Structured interview questionnaire to measure the practice on auditory acuity among marble industry workers

It consists of 10 questionnaires related to the practice among marble factory workers on auditory acuity. The subject was instructed to mark (✓) in each item. All response of desirable practice was given the score of one and undesirable practice was given the score of zero. The maximum score is 10. The total score each subject was converted into percentage and interpreted.

DATA COLLECTION PROCEDURE

The data collection was done over a period of one month. They study was conducted in Sri Balamurugan marble industry, Mailam at Tamil Nadu. The investigator visited the marble industry workers and selected 60 workers through purposive sampling technique who met the inclusion criteria. Good rapport was developed with marble industry workers to get co-operation for the study and obtained written consent. The marble industry workers were assessed (pretest) for the knowledge, attitude and practice on auditory acuity through structured tools and distribution of self-Instructional module on auditory acuity followed by posttest was conducted after the gap of 28 days. The descriptive and inferential statistics were used to analyze the data using SPSS version.

RESULTS:

Table 1 Assess the knowledge, attitude and practice of marble industry workers on auditory acuity.

Table 1 shows the pretest and posttest knowledge level of subjects were revealed that 50 (83.3%) had inadequate knowledge and 10(16.7%) had moderately adequate knowledge on auditory acuity in pretest whereas in the posttest 60(100%) had adequate Knowledge on auditory acuity which resulted on effectiveness of self instructed module on auditory acuity among subjects.

Table 2 shows the pretest and posttest attitude level of subjects were revealed that 47(78.3%) had unfavorable attitude and 7(11.7%) had neutral attitude and 6(10.0%) had favorable attitude on auditory acuity in pretest, whereas in the posttest 22(36.7%) had unfavorable attitude and 1(1.7%) had neutral attitude and 37(61.7%) had favorable attitude on auditory acuity which resulted on effectiveness of self instructed module on auditory acuity among subjects developing about positive attitude.

Table 3 shows the pretest and posttest practice level of subjects were revealed that 59 (98.3%) had fair practice and 1(1.7%) had good practice on auditory acuity in pretest, whereas in the posttest 4(6.7%) had practice and 56(93.3%) had excellent practice on auditory acuity which resulted on effectiveness of self instructed module on auditory acuity among subjects developing about safe practice on protecting from hearing loss.

Table 4 shows that the Post-test level of knowledge mean 21.78 with median 22 among the marble industry workers on auditory acuity was significant high at $p<0.001$ when compared to pre-test level by Wilcoxon Signed Ranks Test. It indicates that the self-instructional module was effective to marble industry workers on auditory acuity supported by Rohit Avasthi *et al* (2018).

Table 5, shows that the post-test level of attitude mean 2.68 with median 2 among the marble industry workers on auditory acuity was significant high at **$p<0.001$** when compared to pre-test level by Wilcoxon Signed Ranks Test. It indicates that the self-instructional module was effective to marble industry workers on auditory acuity and developing positive attitude on auditory acuity.

Table 6 shows that the post-test level of practice mean 8.32 with median 8 among the marble industry workers on auditory acuity was significant high at **$p<0.001$** when compared to pre-test level by Wilcoxon Signed Ranks Test. It indicates that the self-instructional module was effective to marble industry workers on auditory acuity and developing good practice on auditory acuity of regular checkup.

Table 7 result show that there is no correlation between marble industry workers on their knowledge, attitude and practice on auditory acuity.

Table 1: Knowledge of marble industry workers on auditory acuity (n=60)

Knowledge	Interpretation	No of Persons	Percentage
Pretest Knowledge	Inadequate Knowledge	50	83.30%
	Moderately Knowledge	10	16.70%
Posttest Knowledge	Adequate Knowledge	60	100.00%

Table 2: Attitude of marble industry workers on auditory acuity (n=60)

Attitude	Interpretation	No of Persons	Percentage
Pretest Attitude	Unfavorable Attitude	47	78.30%
	Neutral	7	11.70%
	Favorable Attitude	6	10.00%
Posttest Practice	Unfavorable Attitude	22	36.70%
	Neutral	1	1.70%
	Favorable Attitude	37	61.70%

Table 3: Practice of marble industry workers on auditory acuity (n=60)

Practice	Interpretation	No of Persons	Percentage
Pretest Practice	Fair	59	98.3%
	Good	1	1.7%
Posttest Practice	Good	4	6.7%
	Excellent	56	93.3%

Table 4: Effectiveness of self-instructional module on knowledge of marble industry workers on auditory acuity (n=60)

Knowledge	Mean	Median	Percentile 25	Percentile 75	Wilcoxon Signed Ranks Test
Pre-Test	11.27	12	11	12	<0.001
Post Test	21.78	22	21	22	

Table 5: Effectiveness of self-instructional module on attitude of marble industry workers on auditory acuity (n=60)

Attitude	Mean	Median	Percentile 25	Percentile 75	Wilcoxon Signed Ranks Test
Pre-Test	-2.33	-2	-4	-1	<0.001
Post Test	2.68	2	-1	7	

Table 6: Effectiveness of self-instructional module on practice of marble industry workers on auditory acuity (n=60)

Practice	Mean	Median	Percentile 25	Percentile 75	Wilcoxon Signed Ranks Test
Pre-Test	2.27	2	2	2.5	<0.001
Post Test	8.32	8	8	9	

Table 7: Correlation between the knowledge, attitude and practice of marble industry workers on auditory acuity (n=60)

Spearman's rho		Knowledge Score	Attitude score	Practice score
Knowledge score	Correlation Coefficient	1		
	p-value	.	-	-
Attitude score	Correlation Coefficient	0.142	1	
	p-value	0.278	.	-
Practice score	Correlation Coefficient	-0.094	-0.226	1
	p-value	0.476	0.082	.

DISCUSSION:

The investigator found that most of the auditory acuity people (60.0%) were in age group of 51-60 years. Most of them are male (100%) people where working in marble industry. Among the subject 44(73.3%) belonged to Hindu religion. Majority of subject were Nuclear family 40(66.7%) and 48(80%) are illiterate half of the subject 38 (63%) of the persons getting information on auditory acuity from Newspapers, Television, Internet and Health personal and 22(37%) of

the persons getting information on auditory acuity from others.

First objective of the study was to assess the knowledge, attitude and practice regarding auditory acuity among worker of marble industry:

1. Knowledge on auditory acuity among worker of marble industry

50(83.3%) had inadequate knowledge, 10(16.7%) had moderately adequate Knowledge and none of them have adequate knowledge on prevention of hearing loss, where at in the post-test 60(100%) had adequate knowledge and none of them have moderately knowledge and none of them had inadequate knowledge supported by Rohit Avasthi *et al* (2018).

2. Attitude on auditory acuity worker of marble industry

47(78.3%) had unfavorable attitude 6(10.0%) and had favorable attitude on prevention of hearing loss, where at in the post-–test unfavorable attitude had 22(36.7%) and 37(61.7%) had favorable attitude.

3. Practice on auditory acuity among worker of marble industry

59(98.3%) had fair practice and 1(1.7%) had good practice on auditory acuity, where at in the posttest 4(6.7%) had practice and 56(93.3%) had Excellent practice on auditory acuity.

Second objectives of this study were determining the effectiveness of Self-Instructional Module on knowledge, attitude and practice regarding auditory acuity among worker of marble industry.

There was a significant difference shown that p <0.001) in knowledge, attitude and practice of auditory acuity among marble industry after administration of self instructional module 57 had adeq1uate knowledge, 57 had favorable attitude and 57 had adequate practice on prevention of hearing loss supported by Rohit Avasthi (2018).

Effectiveness on knowledge, attitude and practice on auditory acuity:

Results revealed that the pretest and posttest score of knowledge, attitude and practice on auditory acuity after administration of self instructional module was found to be statistically significant p<0.001 level it indicates that module was effective in gaining knowledge, developing positive attitude and effective practice on auditory acuity among marble workers supported by Anubhuti Jain *et al* (2017).

Third objective of the study was associate the selected demographic variables with knowledge, attitude practice regarding

auditory acuity among worker of marble industry

The result shown there was no significant association found between the selected demographic variables with knowledge, attitude and practice on auditory acuity among marble industry workers supported by Anubhuti Jain *et al* (2017).

Fourth objective of the study was correlate the knowledge, attitude and practice regarding auditory acuity among worker of marble industry.

The result revealed that there is no correlation found between knowledge, attitude, and practice on auditory acuity among marble industry workers.

CONCLUSION:

This study was done to determine the effectiveness of self instructional module on knowledge, attitude and practice regarding auditory acuity in order to prevention of hearing loss among high risk people of workers working in marble industry. Result was shown that there is an improvement in knowledge, attitude and practice of marble industry workers after administration of self instructional module. So, the marble industry workers can take part in protecting them from hearing loss which helps in preventing them from permanent hearing loss.

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STATEMENT CONFLICT OF INTEREST:

We report no conflict of interest

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