



EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING PREVENTION OF OBESITY AMONG SEDENTARY WORKERS

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ABSTRACT

Prevention of obesity among sedentary workers is the core concept of this study. The present study is aimed to assess the effectiveness of self-instructional module on knowledge regarding prevention of obesity among sedentary workers. The objectives were to assess the knowledge of sedentary workers regarding prevention of obesity before and after administration of self- instructional module, evaluate the effectiveness of self-instructional module among the sedentary workers regarding prevention of obesity by comparing pre-test and post-test knowledge scores and find out association between pre-test knowledge scores and selected socio demographic variables. It was a pre-experimental one group pre-test post-test design. 100 study participants were selected by non-probability convenient sampling. Structured questionnaire was used to assess the pre-test knowledge level. Self -instructional module also distributed on the same day of pre-test. After one week post-test was conducted with the same tool. Results revealed that the mean pre-test knowledge score and mean post-test knowledge score was 13.62 and 17.44 respectively. This shows that there was a significant difference in mean pre-test and mean post- test knowledge scores with p value is < 0.001 . Hence self-instructional module was effective on knowledge regarding prevention of obesity among sedentary workers. And also there is association present between pre-test knowledge scores and selected socio demographic variables like sex, monthly income, occupation and diet. Self-instructional module can improve the level of knowledge regarding prevention of obesity among sedentary workers.

Keywords: Assess; Sedentary workers; Effectiveness; Knowledge; Prevention of obesity; Self- instructional module.

INTRODUCTION

Over the past decade there has been an increasing concern about the impact of chronic, non-communicable diseases on the health of developing world populations. Traditionally major causes of illness and death in developing countries have been linked to infectious diseases under nutrition, there are still major problem in several regions of the world. Obesity is recognized as an underlying risk factor for many of the chronic conditions. The risk for obesity in developing countries is also strongly influenced by diet and lifestyle, which are changing dramatically as a result of the economic and nutrition transition. The obesity in developing world and provides some specific examples from countries facing increasing prevalence of that condition(1).

According to WHO global estimates, about 13% of the world's adult population (11% of men and 15% of women) were obese in 2014(2). Prevalence of obesity varies according to age, sex and region. In India the percentage of

married women aged 15-49 years who are overweight or obese increased from 11% in National Family Health Survey (NFHS)-2 to 15% in National Family Health Survey (NHFS)-3 (2006)(3).

According to National Family Health Survey-4 (2016) reported that number of obese people doubled in past 10 years. The percentage of women who are overweight or obese is highest in Punjab (29.9%), followed by Kerala (28.1%) and Delhi (26.4%)(4).

Obesity is caused by multi factorial, making effective treatment a challenge. The most important factors are: a) Genetic Tendency: genetic factors such as neurotransmitters and peptide levels that may control and regulate food intake and affect the development of obesity. b) Social factors: like a more sedentary lifestyle. c) Diet : The intake of a high caloric-dense diet can increase the likelihood of obesity. Nowadays, the recent life style pattern itself causes overweight and obesity that lead to significant health problems and social difficulties for people(5). Obesity is a serious illness that can lead to many medical problems like hypertension, heart diseases, type-2 diabetes, stroke, arthritis, dyslipidemia and psychosocial problems such as depression and lack of self- esteem(6).

Obesity is a global problem and World Health Organization predicts that by 2015 approximately 2.3 billion adults worldwide will be obese. According to National Obesity Observation Committee in 2011, compared with general population, the prevalence of obesity is lower in men in worldwide. A study was published in Bio Med Central (2015), on „prevalence of obesity and overweight among financial institution workers“, the study revealed that the overall prevalence of obesity among bank workers was 55.6% (17.8% obese and 37.8% overweight)(7)

Obesity is very common in people living in higher income group in India and other developing countries. The incidence is higher in person who leads sedentary lives as they consume excess food and do less physical work than the low income groups. Obesity occurs rarely among persons who do hard physical work. It is very common in those who lead sedentary lives. With extensive use of transport facilities and mechanization of industry, the proportions of people who lead sedentary lives have been increasing. Some occupations predispose to obesity like sedentary working conditions.

Obesity is more prevalent in middle age, in which men gain in weight between 29 to 35 years, while women gain in weight during 45 to 49 years of age² Obesity can affect the quality of life through limited mobility and decreased physical endurance. All societies have a very negative view of obesity. The complete answer to the problem of obesity has not been in the numerous instant slimming centers that are springing up in the cities in India. It is also observed that weight reduction mostly depends on one’s self determination. Only an intensive education module on obesity, designed to promote healthy dietary practices, and regular physical exercises, is a positive strategy to combat obesity². Hence, investigator has chosen to assess the sedentary worker’s knowledge on obesity prevention in selected offices, before and after the administration of the self-instructional module. If sedentary workers understand how obesity develops, they can avoid factors that can lead to obesity which in turns reduces the occurrence of obesity.

Statement of the problem : A study to assess the effectiveness of self-instructional module on knowledge regarding prevention of obesity among sedentary workers.

Objectives

1. Assess the knowledge of sedentary workers regarding prevention of obesity before administration of self-instructional module.
2. Assess the knowledge of sedentary workers regarding prevention of obesity after administration of self-instructional module.
3. Evaluate the effectiveness of self-instructional module among the sedentary workers regarding prevention of obesity by comparing pre-test and post-test knowledge scores.
4. Find out association between pre-test knowledge scores and selected socio demographic variables.

Operational definitions

1. Assess: It refers to evaluation of knowledge regarding prevention of obesity among sedentary workers through questionnaire.
2. Sedentary workers: Sedentary workers are defined as those who lead a way of life characterized by much sitting, less physical activity and only 2 hours or less standing and walking in a working day.
3. Effectiveness: It refers to the improvement of knowledge regarding prevention of obesity through self-instructional module among sedentary workers.
4. Knowledge: It refers to the awareness of sedentary workers regarding prevention of obesity, which is assessed through structured knowledge questionnaire.
5. Prevention of obesity: It refers to the measures taken to maintain healthy body weight through adaption of healthy diet and regular exercise.

6. Self-instructional module: Self-instructional module is refers to the self - contained information booklet developed by the investigator to impart knowledge regarding prevention of obesity among sedentary workers

Hypotheses

H1: There will be a significant difference between the pre-test and post –test knowledge scores of sedentary workers regarding prevention of obesity.

H2: There will be a significant association between the pre-test knowledge scores and the selected socio demographic variables.

Conceptual framework

The present study is aimed to assess the effectiveness of self-instructional module on knowledge regarding prevention of obesity among sedentary workers. The conceptual framework for this study was derived from the health promotion model proposed by Nola J Pender (1982; revised, 1996) which was designed to be a “complementary counterpart to models of health protection.” It defines health as a positive dynamic state not merely the absence of disease. Health promotion is directed at increasing a client’s level of well- being¹⁴. The health promotion model describes the multi-dimensional nature of persons as they interact within their environment to pursue health¹⁴.

The model focuses on following three areas:

- Individual characteristics and experiences
- Behavior-specific cognitions and affect
- Behavioral outcomes

Individual characteristics and experiences:

In this study, the prior related behavior like knowledge regarding prevention of obesity among sedentary workers assessed by pre-test. Personal factors such as age, sex, education, income, occupation, marital status, food habits, type of family that affect subsequent actions were also assessed through questionnaire.

Behavior specific cognitions and affect:

The set of variables for behavioral specific knowledge and affect have important motivational significance. These variables are modified through actions. Here, perceived benefits of actions are anticipated positive outcomes that will occur from health behaviour including awareness about prevention of obesity. Perceived barriers to action include lack of time, lack of family support, socio cultural influences, type of job, economic status. Perceived self-efficacy means ability to organize, healthy life style practices.

Activity related affect including positive or negative feelings that occur before, during and following activity or behavior. It includes posture feelings following regular exercise, healthy dietary habits and life style. Interpersonal influences are concerning behaviors, beliefs or attitudes of the others. Here, primary sources of interpersonal influences are encouragement by family members, peers and health care providers. Situational influences include knowledge on prevention of obesity gained from various sources as mass media, and so on.

Behavioral outcome:

Immediate competing demands like changing awareness, exercise pattern, healthy food habits, weight control measures will lead to high control and low control alternative behaviors. Commitment to plan of action includes giving self-instructional module and conducting post-test. Health promoting behavior is an outcome directed towards attaining positive health like adequate awareness leading to adoption of healthy life style practices.

Feedback

Here, effectiveness of self-instructional module on knowledge regarding prevention of obesity among sedentary workers is assessed by comparing the pre-test and post-test knowledge scores.

MATERIAL AND METHODS

Research approach : Quantitative approach

Research design : Pre experimental one group pre-test post-test design

Variables

A variable is a characteristic of a person, object or phenomenon which can take on different values.

Dependent variable - Level of knowledge regarding prevention of obesity

Independent variable - Self-instructional module

Socio demographic variables - It includes age, gender, education, income, marital status, occupation, food habits, type of family, exercise and source of information regarding prevention of obesity.

Setting of the study - Setting is the location and the condition in which data collection takes place in a study.

The present study was conducted in MES Medical college hospital, LIC office, St. Mary’s college and Co-operative bank, Perinthalmanna.

Target population - Population is the entire set of individual in study.

The target population of the study was sedentary workers including officers, finance employers and drivers working in the selected settings, Perinthalmanna.

Sample and sampling technique - In this study study participants consists of 100 sedentary workers who met the sampling criteria. Sampling technique adopted for selecting the study participants was non-probability convenient sampling technique.

Criteria for sample selection:

Inclusion criteria

- Those who lead a way of life characterized by much sitting, less physical activity and only 2 hours or less standing and walking in a working day.
- Sedentary workers both male and female.
- Sedentary workers who are willing to participate.
- Sedentary workers who know to read Malayalam.

Exclusion criteria

- Sedentary workers who are on leave at the time of data collection.
- Sedentary workers who don't know to read Malayalam.

Tool / instruments

Structured knowledge questionnaire was used to collect data from the study participants.

Description of tool

The tool used for the data collection consisted of two sections as section A and B. They are as follows, Section A ; Deal with socio demographic characteristics of sedentary workers such as age, gender, education, income, marital status, occupation, food habits, type of family, exercise and source of information regarding prevention of obesity.

Section B ; It consisted of 25 questions to assess the knowledge regarding prevention of obesity.

Grading of knowledge score:

- Inadequate knowledge: less than 50%
- Moderate knowledge: 50-75%
- Adequate knowledge: more than 75%

Intervention:-

The intervention in this study was administration of self-instructional module. Self-instructional module was formulated in the form of a booklet. It consists of information regarding obesity, causes of obesity, complications, prevention and treatment measures. The booklet was given on the same day after filling the knowledge questionnaire and instructed to read the booklet within seven days. After seven days post- test conducted.

Data analysis

Descriptive statistics:- It includes frequency, percentage, mean and standard deviation.

Inferential statistical analysis is by using;

1. Paired t-test to find out the significant difference between pre-test and post-test knowledge scores.
2. Chi-square test to find out the association between pre-test knowledge scores and selected socio demographic variables

ANALYSIS AND INTERPRETATION

The findings are presented under the following sections:

Section I: Distribution of sedentary workers based on socio demographic variables.

Section II: Assessment of the knowledge of sedentary workers regarding prevention of obesity before administration of self-instructional module.

Section III: Assessment of the knowledge of sedentary workers regarding prevention of obesity after administration of self-instructional module.

Section IV: Analysis of effectiveness of self-instructional module on prevention of obesity among sedentary workers by comparing pre-test and post-test scores

Section V: Association between pre-test knowledge scores and selected socio- demographic variables.

The data collected were edited, tabulated, analyzed, interpreted, and findings obtained were presented in the form of tables and figures represented under following sections:

Section I: Distribution of sedentary workers based on socio demographic variables.

Table 1: Frequency and percentage distribution of sedentary workers according to age, sex, education, monthly income, occupation, marital status, diet, family type, exercise and source of awareness about prevention of obesity

Sl no	Variables	Category	Frequency	Percentage
1	Age in years	30-39	52	52
		40-49	32	32
		50-59	16	16
2	Sex	Male	60	60
		Female	40	40
3	Education	Secondary and below	19	19
		Higher secondary	11	11
		Graduate	46	46
		Post graduate and above	24	24
4	Income	<10000	28	28
		10000-15000	29	29
		15000-20000	18	18
		20000-25000	16	16
		>25000	9	9
5	Occupation	Office staff	56	56
		Finance employer	20	20
		Driver	24	24
6	Marital status	Married	81	81
		Unmarried	15	15
		Widow	1	1
		separated	3	3
7	Diet	Vegetarian	11	11
		Non-vegetarian	7	7
		Mixed diet	82	82
8	Family type	Nuclear family	70	70
		Joint family	30	30
9	Exercise	Regular	23	23
		Irregular	35	35
		No exercise	42	42
10	Source of awareness	Newspaper	27	27
		Television	33	33
		Internet	13	13
		Friends	26	26
		Any other (magazines)	1	1

Section II : Assessment of the knowledge of sedentary workers regarding prevention of obesity before administration of self-instructional module

Table 2 : Frequency and percentage distribution of level of knowledge of sedentary workers regarding prevention of obesity before administration of self-instructional module

Pre-test knowledge	Frequency	Percentage
Inadequate	32	32
Moderate	61	61
Adequate	7	7
Total	100	100

Section III : Assessment of the knowledge of sedentary workers regarding prevention of obesity after administration of self-instructional module

Table 3 : Frequency and percentage distribution of level of knowledge of sedentary workers regarding prevention of obesity after administration of self-instructional module

Post-test knowledge	Frequency	Percentage
Inadequate	17	17
Moderate	38	38
Adequate	45	45
Total	100	100

Section IV : Analysis of effectiveness of self-instructional module on prevention of obesity among sedentary workers by comparing pre-test and post-test scores

Table 4 : Effectiveness of self-instructional module on prevention of obesity among sedentary workers

Knowledge score	Mean	Standard deviation	Standard error mean	t value	p value
Pre-test	13.62	3.58	0.358		
				6.837	.001*
Post-test	17.44	4.25	0.425		

*significant at 0.001 level

Section V : Association between pre-test knowledge score and selected demographic variables

Table 5 : Association of knowledge scores regarding prevention of obesity with the age and sex of sedentary workers

Variables	Category	Frequency based on pre-test knowledge			Chi square value	p value
Age in years	30-39	Inadequate	moderate	adequate	0.676	0.686
	40-49	14	35	3		
	50-59	11	18	3		
Sex	Male	7	8	1	0.017	0.015
	Female	25	33	2		
Education	Secondary and above	7	11	1	0.739	0.653
	Higher secondary	5	6	0		
	Graduate	12	29	5		
	Post graduate and above	8	15	1		
Income	<10000	5	19	4	0.001	0.001*
	10000-15000	4	24	1		
	15000-20000	10	8	0		
	20000-25000	10	6	0		
	>25000	3	4	2		
Occupation	Office staff	8	42	6	0.001	0.001*
	Finance employer	13	7	0		
	Driver	11	12	1		
Marital status	Married	28	46	7	0.288	0.171
	Unmarried	2	13	0		
	Widow	0	1	0		
	Separated	2	1	0		
Diet	Vegetarian	2	5	4	0.001	0.005*
	Non-vegetarian	5	2	0		
	Mixed diet	25	54	3		

Family type	Nuclear	26	39	5	0.223	0.207
	Joint	6	22	2		
Exercise pattern	Regular	5	15	3	0.615	0.635
	Irregular	12	21	2		
	No exercise	15	25	2		
Source of awareness	Newspaper	9	16	2	0.605	0.461
	Television	14	16	3		
	Internet	2	11	0		
	Friends	7	17	2		
	Any other(magazines)	0	1	0		

*level of significance (p value)=<0.05

Hypotheses formulated in this study were

H1: There will be a significant difference between the pre-test and post –test knowledge scores of sedentary workers regarding prevention of obesity.

H2: There will be a significant association between the pre-test knowledge scores and the selected socio demographic variables.

Hypotheses testing;

The following null hypothesis was used to evaluate the effectiveness of self-instructional module on knowledge regarding prevention of obesity among sedentary workers.

H01: There is no significant difference between the pre-test and post –test knowledge scores of sedentary workers regarding prevention of obesity.

The analysis reveals that the mean knowledge score on prevention of obesity among sedentary workers after administration of self-instructional module is significantly higher than the corresponding score before administration of self-instructional module. Therefore, the null hypothesis H01 was rejected and the research hypothesis H1 was accepted. Hence, it was evidenced that the intervention of administration of self- instructional module on prevention of obesity among sedentary workers was effective.

The other null hypothesis was to find the association between the pre-test knowledge scores and the selected socio demographic variables.

H02: There is no significant association between the pre-test knowledge scores and the selected socio demographic variables

The analysis reveals that there was a significant association with knowledge with sex, monthly income, occupation and diet. Therefore, null hypothesis H02 was rejected and H2 was accepted

RESULTS

Section I : Distribution of sedentary workers based on socio demographic variables.

The characteristics of study population were as follows.

Reveals the percentage distribution of subjects according to the baseline variables like age, sex, education, income, occupation, marital status, diet, family type, and exercise and awareness source.

❖ With regard to age, most of the sedentary workers (52%) belonged to 30-39 years, 32% sedentary workers belongs to the age between 40-49years, and 16% sedentary workers belonged to the age between 50-59years.

❖ With respect to sex, majority of sedentary workers (60%) were males, and 40% sedentary workers were females.

❖ With regard to education, 46% sedentary workers were graduates, 24% sedentary workers were post graduates, 19% sedentary workers had secondary education, and 11% sedentary workers had higher secondary education.

❖ With respect to monthly income, 28% sedentary workers had monthly income belongs to <10,000, 29% sedentary workers had monthly income between 10,000- 15,000, 18% sedentary workers had monthly income between 15,000-20,000, 16% sedentary workers had monthly income between 20,000-25,000, and rest of the 9% sedentary workers had monthly income >25,000.

❖ With regard to occupation, 56% sedentary workers were office staffs, 20% sedentary workers were finance employers and 24% sedentary workers were drivers.

❖ With respect to marital status, 81% sedentary workers were married, 15% were unmarried, 1% widow, and 3% sedentary workers were separated.

- ❖ With regard to diet, 11% sedentary workers were vegetarian, 7% were non-vegetarian, and 82% were mixed diet.
- ❖ With respect to type of family, 70% sedentary workers belonged to nuclear family, and 30% sedentary workers belonged to joint family.
- ❖ With regard to pattern of exercise, 23% sedentary workers were doing regular exercise, 35% were doing exercise irregularly, and 42% of sedentary workers had no exercise.
- ❖ With respect to source of awareness about prevention of obesity, 27% sedentary workers gained knowledge from newspaper, 33% from television, 13% from internet, 26% from friends, and 1% from magazines.

Section II: Assessment of the knowledge of sedentary workers regarding prevention of obesity before administration of self-instructional module.

In pre-test out of 100 study participants, 61% of sedentary workers had moderate knowledge, 32% sedentary workers had inadequate knowledge and 7% of sedentary workers had adequate knowledge.

Section III: Assessment of the knowledge of sedentary workers regarding prevention of obesity after administration of self-instructional module.

In post-test, 17% of sedentary workers had inadequate knowledge, 38% sedentary workers had moderate knowledge and 45% sedentary workers had adequate knowledge.

Section IV: Analysis of effectiveness of self-instructional module on prevention of obesity among sedentary workers by comparing pretest and posttest scores.

The results show that mean pre-test knowledge score was 13.62 with standard deviation 3.58 and mean post-test knowledge score was 17.44 with standard deviation 4.25. The t value of pre-test and post-test is 6.837 and p value is 0.001, this shows there is a significant difference in mean pretest and posttest knowledge scores.

Section V: Association between pre-test knowledge scores and selected socio-demographic variables.

The results show that there is a significant association between pre-test knowledge scores and certain socio-demographic variables like sex, income, occupation and diet.

DISCUSSION

The study findings revealed that out of 100 study participants, only 7% had adequate knowledge regarding prevention of obesity, 61% had moderate knowledge and 32% had inadequate knowledge in the pre-test. The post-test was conducted after 7 days of administration of self-instructional module. The findings revealed that 17% of sedentary workers had inadequate knowledge, 38% had moderate knowledge and 45% had adequate knowledge. The mean pre-test knowledge score was 13.62 and the mean post-test knowledge score was 17.44. The difference in the mean scores between post-test and pre-test was 3.82. The paired, "t" value was 6.837, showed a significant difference in mean pre-test and post-test knowledge scores at $p < 0.001$. Hence, the administration of self-instructional module was found to be effective in enhancing knowledge regarding prevention of obesity among sedentary workers.

The findings of the study was comparable with the findings of the pre-experimental one group pre-test post-test study undertaken by Solipeta sailaja, to assess the effectiveness of structured teaching programme on obesity among female employees in selected offices in Hyderabad and Andhra Pradesh. The results showed that t-value was 28.64 with 0.01 level of significance. It showed that the intervention was very effective. The findings of the above study clearly revealed that implementing an intervention regarding prevention of obesity increased their knowledge and adherence to healthy life style.

Similar findings were noticed in an evaluative study conducted by Mr. Girish Degavi to assess the effectiveness of self-instructional module on knowledge of healthy life style among sedentary workers from selected Banks of Belagavi. The results showed that majority 66.67% of Bank employees had inadequate knowledge and 16.67% had moderate knowledge before administration of self-instructional module. After administration of self-instructional module, majority 60% of Bank employees had reported adequate knowledge and 33.33% Bank employees reported moderate knowledge level. Paired t value was 13.65 showed at significant at the level of $p < 0.05$. It evidenced that developed self-instructional module was effective in improving the knowledge of Bank employees regarding healthy life style.

SUMMARY

In present study, the investigator investigated the effectiveness of self-instructional module on knowledge regarding prevention of obesity among sedentary workers. A quantitative research approach with pre-experimental one group pre-test post-test design was used to find out the effectiveness of self-instructional module on knowledge regarding prevention of obesity among sedentary workers. Investigator found that there is a significant difference in the level

of knowledge after administration of self-instructional module. The findings of the study revealed that administration of self- instructional module on knowledge regarding prevention of obesity among sedentary workers was very effective.

CONCLUSION

The difference between mean pre-test and post-test knowledge scores indicated that administration of self-instructional module was effective among sedentary workers. And also found pre-test knowledge scores among sedentary workers was significantly associated with some socio demographic variables such as sex, monthly income, occupation and dietary pattern.

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