

Research Article

A Quasi-Experimental Study to Evaluate the Effectiveness of Self-Instructional Module (SIM) regarding Non-Communicable Diseases (NCD) among Nursing Officers in Terms of Knowledge

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A B S T R A C T

Introduction: As a part of the Government of India's commitment to ensure availability of quality services through public health institutions, National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCs) was launched in 2010 in 100 districts across 21 states of India in order to control and prevent the major non-communicable diseases. It provided a platform for augmentation of the knowledge of health personnel involved in the health services across public health institutions.

Objective: The present study was conducted to evaluate the effectiveness of Self Instructional Module (SIM) regarding Non-Communicable Diseases (NCD).

Materials and Methods: A quasi-experimental research design, experimental and control group pre-test and post-test design was used to synthesize research findings related to effectiveness of SIM among 80 Nursing Officers from Jag Pravesh Chandra Hospital & Swami Dayanad Hospital, Delhi through a Structured Knowledge Questionnaire. Data were analyzed using descriptive and inferential statistics.

Result: Findings revealed that 41 (55%) had average knowledge, 25 (31.25%) had good knowledge and 11 (13.75%) had poor knowledge regarding non-communicable diseases in both experimental and control group in pre-test. z-value in experimental group was 10.17, which is statistically significant; whereas, z-value in control group was 0.48 at 0.05 level of significance.

Conclusion: The present study revealed that most of Nursing Officers had average to good knowledge, but due to over burden, patients and lack of time to study, they were not able to retain their knowledge. They require regular rebooting of their knowledge. It was observed that Self Instructional Module on NCD was effective teaching material for Nursing Officers working in Government Hospitals.

Keywords: NPCDCS, SIM, Nursing Officers, NCD

Introduction

India is a vast, heterogeneous country with an approximate population of 1.3 billion people,¹ a complex socio-economic milieu, and immense diversity in culture, diets and customs. Behavioral and social science insight are the burden of non-communicable diseases in the India.² Primarily cardiovascular disease, diabetes, hypertension, stroke, cancers, and obesity were prevalent among the higher income groups. But now the burden of non-communicable diseases shifted to the developing world.³ NCDs are strongly influenced by social and behavioral factors.² Non-Communicable Disease (NCDs) is a medical condition or disease that is not caused by infectious agents (non-infectious or non-transmissible).⁴

The increasing bad impact of behavioral practices on mortality highlights the importance of a lifestyle changing approach to lowering the risk of developing NCDs among the young people.⁵ At a time of rising concern about the current and future burden of NCDs in the developing world, there are a number of opportunities involving data, research, programmatic and policy initiatives centered on the role of nursing officers that should be pursued.⁶

Nursing officers are increasingly being recognized as a crucial part of the health workforce in India and worldwide. They have provided health care to communities for many decades and have assumed a variety of roles, including community empowerment, provision of services and linking communities with health facilities.⁷ Roles of nursing officers are better understood in the different areas. The present study was conducted with the following objectives.

- To develop a self-instructional module on Non-Communicable Diseases for Nursing Officers
- To evaluate the effectiveness of the module in terms of knowledge on Non-Communicable Diseases

Materials and Methods

A quantitative research approach was used in this study to explore the effectiveness of SIM on NCD among nursing officers of Swami Dayanand Hospital⁸ and Jag Pravesh Chandra Hospitals (1st oct to 20th oct 2018) and Jag Pravesh Chandra Hospital (10th oct to 30th oct 2018) in Delhi, India. Quasi experimental non-equivalent pre-test post-test control group design was used. A convenient sampling technique was used to select 80 participants who were allocated into experimental and control (n1+n2=80) groups. Nursing officers working in casualty, OPD and O.T were exclude from the study. The research instrument was structured knowledge questionnaire on NCD, which was developed on the basis of literature review and expert consultation.

The material is sequentially arranged in units and allowed self-paced to participants for the independent learning. A formal permission was obtained from the authorities of both

hospitals, to conduct this study. Participants were given full explanation regarding the objective of the study and written consent taken measure of confidentiality maintained. The structured knowledge questionnaire has 2 parts including 6 sections. In the first part, socio demographic information of nursing officers was included whereas the second part consisted of 6 sections regarding general information on NCD, hypertension, diabetes mellitus, cancer, stroke and obesity. There were 40 MCQ items with each question comprised of three distracters and one correct option. A score of 1 was assigned to each correct option and zero was assigned to incorrect option selected by the participants. The overall score was used to judge participants knowledge level as good knowledge (31-40), average (20-30) and below 20 is poor knowledge.

Pre-test conducted on the same day, followed by posttest at the gap of 7 days by using same tool in both the groups. Data were analyzed using SPSS. Descriptive analysis such as percentage, frequency, mean, SD, as well as z value was calculated.

Result

Finding Related to Demographic Data of Nursing Officers

Data presented in Figure 1, depicting the demographic profile/ characteristics pertaining to age, work experience, educational qualification, BMI and health status of nursing officers in both experimental and control group. Majority (57.5%) of participants who were in 31-40 years of age. About 37.5% of the participants had 11-15 years of working experience in Government Hospitals and 60% of the participants possess Diploma in Nursing. The BMI of 43.7% of the participants were found in overweight category. Only 5% of the subjects were likely to developed any non-communicable diseases.

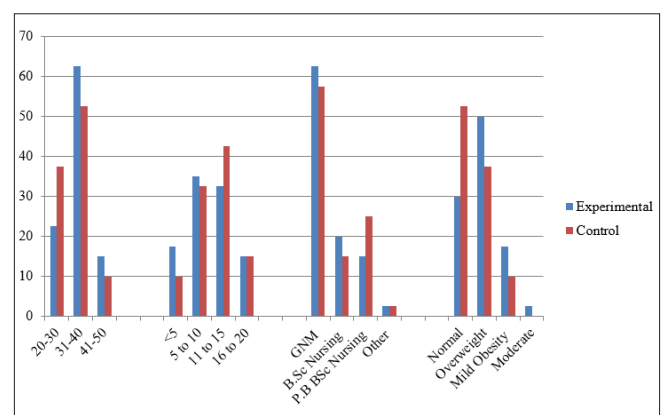


Figure 1. Simple Bar diagram depicting percentage frequency and demographic profile of experimental and control group

Findings related to evaluation of effectiveness of SIM in terms of knowledge of Nursing Officers

Table 1, depicts that, only 22.35% of participants in experimental group had good knowledge, whereas 57.5% had average knowledge and 20% had poor knowledge. On the other hand, in control group 40% of participants had good knowledge whereas 52.5% had average knowledge. Only 7.5% had poor knowledge.

Data presented in Table 2, depicting that the z value is 10.17* in Experimental group, which is greater than the table value. z i.e.1.64 at 0.05 level of significance, thus we reject null hypothesis and accept the research hypothesis, which is there will be a significant difference in the mean pre-test & post-test knowledge scores of Nursing Officers regarding Non Communicable Diseases after administration of SIM as evident from the structured knowledge questionnaire at 0.05 level of significance. This indicates that the significance was due to the SIM and not by chance.

Data presented in Table 2, Shows that the calculated z-value compression of in Experimental Group (n1) was 10.17* than the control group (n2) z-value compression 0.48, which was significant at 0.05 level.

Data presented in Table 3, Shows that the calculated z-value compression of in Experimental Group (n1) Control group (n2) was $|z|=7.425 > z_c=1.96$, it is then concluded the null hypothesis is rejected which is statistically significant. (p-value=0). Hence the SIM is effective.

Discussion

The present study findings revealed that there was a

significant increase in the post- test knowledge score after administration of Self-Instructional Module in Experimental group, z-value is 10.17*.

The present study aimed to evaluate the knowledge of nursing officer's regarding non communicable diseases was found similar to a study conducted by Nwozichi CU et al to assess⁹ the effectiveness of Self-Instructional Module (SIM) in enhancing knowledge of Ebola virus diseases among 60 Nigerian students. The results were the mean pre-test score was 16.03 with an SD of 22.951, while the mean posttest knowledge score was 28.22 with SD of 3.273. The calculated t-value was 21.432 (P <0.001).

The study revealed findings was similar to the findings of research study conducted by Jose S and Solomon SG¹⁰ to evaluate the effectiveness of self-instructional module on knowledge regarding learning disabilities of primary school children among 60 primary school teachers of selected schools in Indore by using purposive sampling method. Pre-test and post-test knowledge score in experimental group in pre-test mean score and standard deviation was 16.6±3.03 respectively and post-test mean score and standard deviation was 33.3±2.01. The p-value was 22.61 and P=0.001, in these primary school teachers have improved their knowledge from 16.62 to 33.3 on learning disabilities. The comparison of pre-test and post-test knowledge score was in control group in this pre-test mean score and standard deviation was 17.23±2.06 and post-test mean score and standard deviation was 19.13±2.11 and t=1.93, P=0.06 in this the primary school teachers lightly improved their knowledge.

Table 1. Categories of pre-test knowledge scores, possible range, obtained range, frequency and percentage obtained

Categories of pre-test knowledge scores	Possible range of pretest knowledge scores	Obtained range of pre-test knowledge scores	Experimental group (n1)		Control group (n2)	
			Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Poor Knowledge (Below 20)	0 – 40	16 - 39	8	20	3	7.5
Average Knowledge (20-30)			23	57.5	21	52.5
Good Knowledge (31-40)			9	22.35	16	40

Table 2. Mean, Standard Deviation Obtained from data and Z Value for Experimental and Control Group

Group	Knowledge Score	Mean Knowledge Score	SD	z-value
Experimental Group (n1)	Pre-test Knowledge Score	26.27	5.36	10.17*
	Post-test Knowledge Score	36.05	3.12	
Control group (n2)	Pre-test Knowledge Scores	28.27	4.84	0.48
	Post-test Knowledge Score	28.82	5.31	

z (38)=1.64 p< 0.05 significant at 0.05 level of significance.

Table 3. Mean \pm SD and Z value for posttest in experimental and control group

(n1 + n2=80)

Group	Mean \pm SD Post-test Scores	Mean difference	Z-Value
Experimental Group (n1)	36.05 \pm 3.12	7.23	7.425
Control Group (n2)	28.82 \pm 5.31		

The study revealed findings were similar to the findings of research study evaluated the effectiveness of a self-instructional module developed by the Mary-Charles Santo Pietro for nursing student for dealing human sexuality counseling of male myocardial patients in United States. Total 161 nursing student were selected by using convenient sampling techniques and pre-post testing of subjects on a knowledge inventory and behavioral intentions/comfort inventory. Following administration of module, experimental subjects score indicated significant increase in knowledge of sexuality counseling of MI patients (p less than 0.001) and comfort in dealing with patients' sexuality concerns (p less than 0.001).

Conclusion

The study revealed that presently most of the nursing officers working in government hospitals were GNM and due to constraint of time they are unable to study regularly. Self-instructional module on Non-Communicable Diseases was effective as a way of teaching in present study and helped them in adopting to health-related information in clinical practice.

Conflict of Interest: None

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