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A pre-experimental study to assess the effectiveness of structured teaching plan on diabetes mellitus among people of rural area in Barouli, district Ambala (Haryana)

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Abstract
Objectives: In this study, we tried to assess pre-test and post-test knowledge on diabetes mellitus among people of rural area in before and after implementation of self-teaching plan, to compare the knowledge on diabetes mellitus among people of rural area in Baroli before and after implementation of self-teaching plan and To fine out the association on diabetes mellitus among people rural area in after Baroli implementation of self-teaching plan with their selected variables.
Methodology: A quantitative study by using pre-experimental pre-test and post-test design, A sample size of 30 Rural People were selected by using random sampling technique, semi structured questionnaire was used process the level of knowledge of Rural People on diabetes mellitus.
Result: The finding of the study reveals that mean of pre-test level of knowledge score is 5.57. and mean of post-test level of knowledge score is 9.4.

Keywords: Assess, effectiveness and diabetes mellitus, rural area

Introduction
Diabetes has become a global disease, it is fourth leading cause of death in most of the developed and developing countries, diabetes has been excesses more than 200 million this figure is predicted to reach 333 million by 2025 as a consequence of longer life expectancy, sedentary lifestyle ad changing dietary patterns. Diabetes is the global epidemic of 21st century, according to World Health Organization presently there are 34 million diabetes patients in India with projected increase to 79 million by 2030. World Health Organization estimated that every 5th diabetic is an Indian. Quality of life is multidimensional construct consists an individual subjective perception of physical, emotional well-being, includes both cognitive and emotional components. Quality of life is important for the people with diabetes, as the patients suffer from poor quality of life, often diabetic patient take a '...to hell with it.' attitude towards their self- care and does less than should be done to manage diabetes. Poor quality of life in diabetes leads to diminished self- care, poor glycemic control, increased risk for complications and exacerbation of diabetes. Thus, quality of life is crucially important, as a powerful prediction of an individual capacity to manage his/her disease will help in maintain a long-term health and well- being.

Physicians of the utmost fame, were called at once, but when they came, They answered, as they took their fees, there is no cure for this disease Hilary belloc. Diabetes mellitus is a group of metabolic disorder arising either due to relative or absolute deficiency of a digestive hormone called insulin or inability or resistance of body cells to use the available insulin. Diabetes mellitus is a silent disease and is now recognized as one of the fastest growing threats to public health in almost all countries of the world. Every 5th person who suffer from diabetes in the world today is an Indian

Diabetes mellitus is a group of metabolic disorder characterized by elevated levels of glucose in the blood (hyperglycaemia), resulting from defects in insulin secretion, insulin action or both. American nurses association expert committee and classification of diabetes mellitus (2003).

The main underlying causes of the disease are genetic and environmental factors, such as urbanization and industrialization, as well as increased longevity and changes in lifestyle from a traditional healthy and active life to a modern, sedentary, stressful life and over-consumption of energy-dense foods. The prevalence of diabetes mellitus varies among populations due to differences in genetic susceptibility and social risk factors such as change in diet, obesity, physical inactivity and, possibly, factors relating to intrauterine development. Migrants are especially affected.

Diabetes mellitus needs to be treated by a holistic approach through dietary adjustment, exercise, medication (if needed), education and self-care measures. Type 2 diabetes mellitus is a preventable disease. These need to focus on health promoting activities to raise awareness among healthy people of the risk factors for diabetes mellitus.

Diabetes is one of the most frequently occurring chronic diseases in the world affecting nearly 2-4% of the population (world health organization, 1998) research studies have shown that the progress of diabetes is also associated with a high risk of developing vascular, renal, retinal and neuropathy complication leading to premature disability and death.

Diabetes mellitus (DM) is one of the most common non-communicable illnesses worldwide. The world prevalence of DM among adults is increasing and is estimated reach 7.7% by 2030. The overall prevalence of DM among adults in Jordan was 17.1% in 2008.

Problem statement: A pre-experimental study to assess the effectiveness of structured teaching Plan on diabetes mellitus among people of rural area in Baroli, Ambala (Haryana).

Objectives

1. To assess pre-test knowledge on diabetes mellitus among people of rural area in before implementation of self-teaching plan.
2. To assess the post-test knowledge on diabetes mellitus among people of rural area in Baroli after implementation of self-teaching plan.
3. To compare the knowledge on diabetes mellitus among people of rural area in Baroli before and after implementation of self-teaching plan.
4. To fine out the association on diabetes mellitus among people rural area in Baroli after implementation of self-teaching plan with their selected variables.

Material and Methods: A pre-experimental pre-test and post-test research design was used to conduct the study in Baroli Ambala (Haryana). A sample size of 30 rural people were selected by using random sampling technique. Permission was obtained from the research committee of Himalayan School of nursing Kala-amb, Ambala (Haryana).and Sarpanch of Village Baroli. The informed consent was taken from rural people who were willing to participate in the study. Self-structured questionnaire was used to assess the level of knowledge rural people on diabetes mellitus.

Tools of data collection

The tool consists of 3 parts

- **Demographic data profile sheet:** Demographic data profile sheet was used for assessment of demographic variables such as age, gender, religion, place, occupation, source of information.

1. **Self-Structured Questionnaire:** Self-Structured Questionnaire was used to assess the knowledge on diabetes mellitus among people of rural area.

Result

Table 1: Frequency and percentage distribution of demographic characteristics of rural peoples.

Sr. No.	Selected demographic variables	Frequency (f)	Percentage (%)
1.	Age		
1.1	25-35	10	33.3%
1.2	36-45	5	16.7%
1.3	46-55	6	20%
1.4	56-65	5	16.7%
1.5	66-75	4	13.3%
		Total=30	Total=100%
2.	Gender		
2.1	Male	19	63.3%
2.2	Female	11	36.7%
		Total=30	Total=100%
3.	Religion		
3.1	Hindu	28	93.3%
3.2	Muslim	2	6.7%
3.3	Christian	0	0%
3.4	Sikh	0	0%
		Total=30	Total=100%
4.	Place		
4.1	Rural	30	100%
4.2	Urban	0	0%
		Total=30	Total=100%
5.	Occupation		
5.1	Farmer	12	40%
5.2	Housewife	10	33.3%
5.3	private job	5	16.7%
5.4	Government job	3	10%
		Total=30	Total=100%

6.	Source of information		
6.1	Elders in family	10	33.3%
6.2	Friends	5	16.7%
6.3	News paper	5	16.7%
6.4	TV-Computer	10	33.3%
		Total=30	Total=100%

Table 1 depicts that

The frequency distribution of demographic variables of rural people according to age majority of the rural people 33.3% were in the age group of 25-35 years following by 16.7% were in age group of 36-45 years, 20% were in the age group of 46-55 years and 16.7% were in age group of 56-65years and 13.3% were in age group of 66-75.

The frequency distribution of demographic variables of rural people according to gender majority of rural people i.e 63.3% were females following by 36.7% were males.

The frequency distribution of demographic variables of rural people according to religion majority of rural people 93.3% were from Hindu following by 6.7%were from Muslim following by 0% were from Sikh & Christian.

The frequency distribution of demographic variable of rural people according to Place majority of the rural people 100% were from rural area following by 0%urban area.

The frequency distribution of demographic variables of rural people according to the Occupation majority of the rural people 40% were from Farmer following by 33.3% were from housewife and following by 16.7% were from private job following by 10% were from government job.

The frequency distribution of demographic variables of rural people according to the source of knowledge majority of the rural people 33.3% get information from elders in the family following by 16.7% through friends and 16.7% through newspaper and 33.3% from TV- computers.

Table 2: Mean, median, standard deviation and range was used to assess the knowledge on Diabetes mellitus among rural area people in Baroli district Ambala (Haryana).

Group	Mean		Difference of mean	Standard Deviation		Paired t-test and df
Rural people	Pre-test	Post-test	3.83	Pre-test	Post-test	t-test=.000 df=3
	5.57	9.4		29.475	49.77	

Table 2 Data in the table no.2.1represents that mean post-test knowledge score x_2=9.4 was apparently higher than the mean pre-test knowledge score x_1=5.57 the difference between the mean is 3.83 and SD in pre-test 29.475 in post-test 49.77 and the paired t-test value .000i.e. Non -significant.

Table 3: Frequency and percentage distribution of pre-test level of knowledge on Diabetes mellitus among rural area people in Baroli district Ambala (Haryana). N=30

Level of knowledge pre-test	Frequency	Percentage%	Mean	Median	SD	Range
Poor (1-4)	10	33.33	5.57	6	29.475	7
Average (5-9)	20	66.66				
Good (10-14)	0	0				
Very Good (15-25)	0	0				

Table 3.The data presented in table no.3.1fullfil the objective 1 as out of 30 (100%) samples, majority 20(66.66%), had average knowledge, 0(0%) had good knowledge, 10(33.33%) had poor knowledge, no rural people had very good or good knowledge regarding Diabetes mellitus. The mean, median, SD, and range also justify the knowledge of rural peoples.

Post -test knowledge

Table 4: Frequency and percentage distribution of post-test level of knowledge on Diabetes mellitus among rural area people in Baroli district Ambala (Haryana). N=30

Level of post-test knowledge	Frequency	Percentage%	Mean	Median	SD	Range
Poor (1-4)	0	0	9.4	9	49.77	10
Average (5-9)	16	53.33				
Good (10-14)	13	43.33				
Very Good (15-25)	1	3.33				

Table 4 The data presented in the table no.3.2 fulfill the objective as out of 30(100%) samples, majority 13(43.33%) had good knowledge, 16(53.33%), had average knowledge, 1(3.33%) had very good knowledge, 0(0%) poor level of knowledge on Diabetes mellitus. The mean, median, SD and range also justify the knowledge of rural peoples.

Table 5: Chi square showing the association of knowledge on diabetes mellitus among rural area people in Baroli district Ambala (Haryana). N=30

SR. No.	Selected demographic variables	Frequency (f)	Percentage (%)	Chi-Square, Df, P-Value
1.	Age			8.000, 6 0.238103 NS
1.1	25-35	10	33.3	
1.2	36-45	5	16.7	
1.3	46-55	6	20	

1.4	56-65	5	16.7	
1.5	66-75	4	13.3	
2.	Gender			
2.1	Male	19	63.3	2.000, 1 .157299 NS
2.2	Female	11	36.7	
3.	Religion			
3.1	Hindu	28	93.3	
3.2	Muslim	2	6.7	8.000, 6 0.238103 NS
3.3	Christian	0	0	
3.4	Sikh	0	0	
4.	Place			
4.1	Rural	30	100	2.000, 1 .157299 NS
4.2	Urban	0	0	
5.	Occupation			
5.1	Farmer	12	40	
5.2	Housewife	10	33.3	12.000,9.213309. NS
5.3	private job	5	16.7	
5.4	Government job	3	10	
6.	Source of information			
6.1	Elders in family	10	33.3	
6.2	Friends	5	16.7	4.000, 3 .261464. NS
6.3	News paper	5	16.7	
6.4	TV-Computer	10	33.3	

(*S) Significant {p≤0.05}, (NS) Non-Significant {≥0.05}.

Table 4 Shows that chi-square test for association between the post-test knowledge score with the selected demographic variables.

The data revealed that age (8.000), Gender (2.000), Religion (8.000), Place (2.000), occupation (12.000) and level of Source of information (4.000) were found statistically non - significant because p value more than {≥0.05}.

Conclusion

The finding of the study had showed that in pre-test knowledge score majority of the rural peoples had average level of knowledge i.e. 66.66% followed by 0% had good level of knowledge and 0% had poor level of knowledge.

In post-test knowledge score majority of rural peoples had good level of knowledge i.e. 43.33% following by 53.33% had average level of knowledge, 3.33%had very good level of knowledge, 0% had excellent and poor level of knowledge.

It was concluded that there is increased in post-test knowledge score as compared to pre-test knowledge score. It was the result of Self-structured teaching plan on knowledge regarding Diabetes mellitus.

It was found that all the socio-demographic variables like age, gender, Religion, Place, Occupation and source of information on Diabetes mellitus.

Conflict of interest: There was no such conflict and bias during the study.

Source of finding: It is self-funded research study.

Ethical consideration: No ethical issue exists.

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