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Assess the Effectiveness of the Information Booklet Regarding Knowledge and Self-Care Practice in Managing Diabetes Among Diabetes Patients

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ABSTRACT

Introduction: One of the prominent noncommunicable diseases (NCDs) that is progressively posing a danger to worldwide public health is diabetes mellitus (DM). Diabetes is a condition that a lot of people never know they have until one of its potentially fatal complications appears. Over 171 million individuals worldwide suffer from diabetes mellitus (DM), an incurable disease that is on an upward trajectory. By 2030, 366 million individuals worldwide are estimated to be susceptible to DM.[1] According to the Indian Council of Medical Research Diabetes Study (ICMR-INDIAB study), 62.4 million Indians had diabetes in 2011.[2] Although diabetes is a chronic condition, controlling it requires an integrated approach in which the patient plays a crucial role. Awareness is essential to the development of any future diseases as well as to the early detection and prevention of them.[3] Recognizing diabetes can help avoid the potential chronic comorbidities of the disease, which have an enormous adverse effect on diabetic patients' lives.[4] Knowledge may encourage individuals to seek appropriate care and treatment, help them estimate their risk of developing diabetes, and encourage them to manage their condition for the rest of their existence.

Objective: Asses the existing level of knowledge and self-care practices regarding diabetes among diabetes patients, Evaluate the effectiveness of the Information Booklet self-care practices regarding diabetes among diabetes patients, Find out the correlation between knowledge and practice scores regarding diabetes among diabetes patients, Find an association between pre-test Knowledge and practice scores with their socio-demographic data.

Methodology: A quasi-experimental design was used. 30 patients were selected by using the non-probability convenience sampling technique was used. Socio-demographic variables and clinical parameters Questionnaires, self-structured knowledge questionnaires, and Self-care practice preventive measures checklists were used.

Result: Mean and standard deviation of pre-test and post-test scores of the Preventive measures checklist, pre-test scores (25.84±8.322) and post-test scores (37.78±6.604) and that conclude the mean practice post-test was higher as compared to the pre-test scores of practice The calculated ‘t’ value (‘t (57)’= 24.411, $p<0.05$) was greater than the table value (‘t(54)= 2.0017) at 5% level, Mean and standard deviation of pre-test and post-test scores of the Practice Evaluation Checklist for Diabetes Control and Management, pre-test scores (25.84±8.322) and post-test scores (37.78±6.604) and that conclude the mean practice post-test was higher as compared to the pre-test scores of practice The calculated ‘t’ value (‘t (57)’= 24.411, $p<0.05$) was greater than the table value (‘t(54)= 2.0017) at 5% level **Conclusion:** The findings showed

that the Information Booklet was significantly effective and boosted diabetic patient's quality of life and minimized complications associated with their condition by enhancing their knowledge and self-care practices.

Keywords: Information Booklet, Self-Care Practice, Diabetes

INTRODUCTION

Diabetes mellitus, a chronic metabolic disease caused by deficiencies in either insulin action or secretion, or both, is the hallmark of diabetes mellitus. It places a heavy load on people, families, and global healthcare systems. Diabetes must be effectively managed with a combination of medical intervention, patient education, and self-care habits. Information booklets are a commonly used tool for empowering patients to take responsibility for their own health management by educating them about their condition. There has been a growing interest in the usefulness of information booklets in enhancing patient understanding and encouraging self-care behaviours among diabetics. These pamphlets seek to offer organised and easily readable information on a range of topics related to diabetes, such as following dietary recommendations, taking medications as prescribed, keeping an eye on blood sugar levels, and identifying signs of problems. These tools aim to improve patients' ability to manage their own health by providing them with accurate information and useful skills. This could lead to better health outcomes and an overall higher quality of life.

MATERIAL AND METHOD

A quantitative research approach with Quasi-experimental (one group) with pre and post-test design was used. A total of 58 diabetic patients from rural areas, in Surat, were selected using the non-probability Purposive Sampling technique. Socio-demographic data questionnaires, Self-Structured Knowledge Questionnaires, and Self-care practice preventive measures checklists research tools were used for Data Collection. For that first Eligibility Assessment (Using Inclusion & Exclusion Criteria) done after that Informed Consent was taken from samples. An information booklet regarding self-practice in managing Diabetes was implemented. Pamphlets and Booklet are Provided to 58 Patients diagnosed with diabetes. After 7 days for Assessing the effectiveness of the information booklet regarding knowledge and self-care practice in managing diabetes among diabetes patients were observed the by same research tools. Data obtained from samples were analyzed and interpreted by using descriptive (frequency, percentage, mean, standard deviations) and inferential statistics (paired ‘t’-test and chi-square test).

RESULT

The Distribution considering the frequency and percentage of samples of socio-demographic variables, that the results show that 28 samples (48.3%) were largely between the ages of 51-70, with 00 samples (0.0%) being younger than 20, and 22 samples (37.9%) falling between the ages of 551-70, and 08 samples (13.8%) falling greater than ages 71. In relation to gender, the majority of samples were male 32(55.2%), preceded by females 26(44.8%), with no transgender samples 00(0.0%). Regarding religion, the greatest number of samples was 33 (56.9%) Hindu, relative to 18 (31.0%) Muslim, and 07 (12.1%) Christian. In view of the Marital status of the sample majorly samples 44(75.9%) were Married, 02(3.4%) were Divorced, 08(13.8%) were Unmarried, and 04(6.9%) Widowers. Regarding occupation, the majority of samples 22 (37.9%) were Farmers also 22 (37.9%) were homemakers, trailed by 08 (13.8%) Jobs, 06

(10.3%) enlist as per the result. According to the Level of education status maximum of 32 samples (55.2%) only had primary or secondary education, 12 samples (20.7%) were graduates, 11 (19.0%) had no formal education, and just 03 samples (5.2%) had completed their postgraduate degrees. Concerning the majority of samples 24 (41.4%) had monthly incomes less than 10,000 rupees, and also 24 (41.4%) had between 10,001-30,000 rupees, 08 (13.8%) had between 30,001 and 50,000 rupees, and just 02 (3.4%) had monthly incomes above 51,000 rupees. As per the results, a total 47 of (81.2%) have no previous information about Diabetes and its management and only 11 (19.0%) have previous information about Diabetes and its management. Only 07 (12.1%) of the healthcare professionals in a sample family have it, whereas a total of 51 (87.9%) do not.

Table-1: The preceding table depicts the Scores from the sample's pre- and post-tests are distributed often in frequency and percentages of knowledge scores. It characterizes the sample scores, where the majority of samples 40 (69.0%) had Average knowledge scores, while 18 (31.3%) had Poor scores, and 00 (0.0%) had good scores. Following the Post-test scores, the majority of samples 47 (81.0%) had good knowledge scores, 11 (19.0%) had Average knowledge scores, and 00 (0.0%) had Poor knowledge scores.

Table-2: The above table illustrates the Pre-test and Post-test scores' frequency and percentage distribution of the practice scores. In Pre-test scores, the majority of samples 35 (60.33%) followed sub-optimal practices, 20(34.5%) samples followed poor practices, and only 03(5.2%) samples followed the optimal level of practices. As followed by the post-test the majority of samples 37(63.8%) were categorized as an optimal level, 21 (36.2%) were categorized as a sub-optimal level and 00(0.0%) were categorized as poor practices.

Table-3: The table shows the Mean and standard deviation of pre-test and post-test scores of Structure knowledge questionnaires, pre-test scores (4.07±21.588) and post-test scores (7.95±1.858) and that conclude the mean knowledge post-test score was higher as compared to the pre-test scores of knowledge. The calculated 't' value ('t (57)'=23.235, $p<0.05$) was greater than the table value ('t (54) =2.0017) at 5% level, the H1 was accepted and concluded that There was a significant difference between the pre-test & post-test knowledge scores regarding diabetes among diabetes patients.

Table-4: The table shows the Mean and standard deviation of pre-test and post-test scores of the Practice Evaluation Checklist for Diabetes Control and Management, pre-test scores (25.84±8.322) and post-test scores (37.78±6.604) and that conclude the mean practice post-test was higher as compared to the pre-test scores of practice The calculated 't' value ('t (57)'= 24.411, $p<0.05$) was greater than the table value ('t(54)= 2.0017) at 5% level, the H1 was accepted and concluded that There was a significant difference between the pre-test & post-test practice scores regarding self-care practice in managing diabetes among diabetes patients.

Table-6: Reveals the association between knowledge scores with socio-demographic variables of selected samples. There was a significant association between selected socio-demographic variables like Age (p-value .000^s), Occupation (p-value. .033^s), Level of Education (p-value .033^s), Monthly income (p-value .002^s), and Level of Education (p-value .058^s). There was no significant association with, gender, Religion, Marital status, Family history of DM, Previous information about Diabetes.

Table-7: Reveals the association between practice scores with socio-demographic variables of selected samples. There was a significant association between selected socio-demographic variables like Age (p-value 0.072^s). There was no significant association with Gender, Religion, Marital status, Occupation, Level of education, Monthly Income, Family history of DM, Previous information on Diabetes, Healthcare professionals in the Family have no significant association with pre-test scores.

CONCLUSION

The intention of the current study was to determine in the event of the information booklet regarding knowledge and self-care practice in managing diabetes among diabetes patients was beneficial in managing diabetes in patients who were diagnosed with diabetes. Based on the study's findings, the conclusion that follows has been drawn. The results demonstrated that the information booklet regarding knowledge and self-care practice in managing diabetes among diabetes patients.

DISCUSSION

The roughly equivalent research conducted by **Anjali Srivastava, Sameer Phadnis, Clinical Epidemiology and Global Health (Jan 2020),** A cross-sectional study was conducted to assess the knowledge and self-care practices about Diabetes among diagnosed Type 2 Diabetes Mellitus patients attending the outpatient facilities of the Medicine Department at selected tertiary healthcare institutions of Udupi Taluk. The data collection occurred from January to March 2017. A total of 166 participants were included in the study and they were selected using consecutive sampling. Knowledge about Diabetes Mellitus was assessed using a structured pre-tested questionnaire. The Diabetes Self-Management Questionnaire-Revised version assessed self-care practices regarding Diabetes Mellitus. Most participants (> 65%) knew about different aspects of Diabetes. The Mean total score of self-care practices among participants without and with intensive insulin treatment was 6.25 ± 1.25SD and 6.20 ± 1.01SD respectively. The mean subscales score related to dietary control, glucose management, and physician contact was almost the same as that of the total mean scale score except for the physical activity subscale score in both group of patients.[5]

TABLES

Table-1: Compression of pre-test and post-test knowledge scores of samples by descriptive analysis (frequency and percentage)

(n=58)

Knowledge Scores	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Poor scores	18	31.3%	00	0.0%
Average scores	40	69.0%	11	19.0%
Good scores	00	0.0%	47	81.0%

Table-2: Compression of pre-test and post-test practice scores of samples by descriptive analysis (frequency and percentage)

(n=58)

Practice Scores	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Poor practices	20	34.5%	00	0.0%
Sub-optimal	35	60.33%	21	36.2%
Optimal	03	5.2%	37	63.8%

Table-3: compression of overall knowledge scores of samples on Diabetes.
(n=58)

Overall knowledge scores	Mean	SD	Mean difference	df	Calculated 't' value	Table 't' value	p Value
Pre-test	4.07	1.588	3.879	57	23.235	2.0017	0.000*
Post-test	7.95	1.858					

***p≤0.05 level of significance, S-significant NS- Not- significant.**

Table-5: compression of overall practice scores of samples on preventive approaches for Diabetes Control and Management.
(n=58)

Overall practice scores	Mean	SD	Mean difference	df	Calculated 't' value	Table 't' value	p Value
Pre-test	25.84	8.322	11.931	57	24.411	2.0017	0.000*
Post-test	37.78	6.604					

***p≤0.05 level of significance, S-significant NS- Not- significant.**

Table-6: Association between pre-test knowledge scores among samples with their socio-demographic variables.
(n=58)

Sr. No.	Variables	Characteristic	Knowledge scores			χ^2 value	df	p Value
			Poor	Average	Good			
1.	**Age in the Years**	> 20	0	0	0	20.683	2	.000*
		21-50	4	18	0			
		51-70	6	22	0			
		> 71	8	0	0			
2.	**Gender**	Male	8	24	0	1.215	1	.270
		Female	10	16	0			
		Transgender	0	0	0			
3.	**Religion**	Hindu	10	23	0	.073	2	.964
		Muslim	6	12	0			
		Christian	2	5	0			
		Other	0	0	0			
4.	**Marital status**	Unmarried	1	7	0	2.305	3	.512
		Married	14	30	0			
		Divorced	1	1	0			
		Widower	2	2	0			
5.	**Occupation**	Home maker	10	12	0	8.729	3	.033*
		Farmer	8	14	0			

Sr. No.	Variables	Characteristic	Knowledge scores			χ^2 value	df	p Value
		Job	0	8	0			
		Business	0	6	0			
6.	**Level of Education**	No formal education	9	2	0	20.131	3	.033*
		Primary/secondary education	9	23	0			
		Graduate	0	12	0			
		Post-graduate	0	3	0			
7.	**Monthly income**	Less than 10,000	14	10	0	15.171	3	.002*
		10,001-30,000	4	20	0			
		30,001-50,000	0	8	0			
		Above 51,000	0	2	0			
8.	**Family history of diabetes**	No	6	17	0	.436	1	.509
		Yes	12	23	0			
9.	**Any previous information about diabetes and its management**	No	16	31	0	1.048	1	.306
		Yes	2	9	0			
10.	**Any healthcare professional members in a family**	No	18	33	0	3.582	1	.058*
		Yes	0	7	0			

***p≤0.05 level of significance, S-significant NS- Not- significant**

Table-7: Association between pre-test practice scores among samples with their socio-demographic variables.

(n=58)

Sr. No.	Variables	Characteristic	Practice scores			χ^2 value	df	p Value
			Poor practice	Sub-optimal	Optimal			
1.	**Age in the Years**	> 20	0	0	0	8.588	4	.072*
		21-50	9	12	1			
		51-70	9	19	2			
		> 71	2	4	0			
2.	**Gender**	Male	11	19	2	.172	2	.918

Sr. No.	Variables	Characteristic	Practice scores			χ^2 value	df	p Value
		Female	9	16	1			
		Transgender	0	0	0			
3.	**Religion**	Hindu	13	18	2	2.416	4	.660
		Muslim	6	11	1			
		Christian	1	6	0			
		Other	0	0	0			
4.	**Marital status**	Unmarried	5	3	0	7.660	3	.264
		Married	14	28	2			
		Divorced	0	2	0			
		Widower	1	2	1			
5.	**Occupation**	Home maker	6	15	1	5.116	6	.529
		Farmer	8	12	2			
		Job	2	6	0			
		Business	4	2	0			
6.	**Level of Education**	No formal education	6	5	0	7.427	6	.283
		Primary/secondary education	7	22	3			
		Graduate	5	7	0			
		Post-graduate	2	1	0			
7.	**Monthly income**	Less than 10,000	8	14	2	2.284	6	.892
		10,001-30,000	7	16	1			
		30,001-50,000	4	4	0			
		Above 51,000	1	1	0			
8.	**Family history of diabetes**	No	9	13	1	.381	2	.826
		Yes	11	22	2			
9.	**Any previous information about diabetes and its management**	No	14	30	3	2.785	2	.248
		Yes	6	5	0			
10.	**Any healthcare professional members in a family**	No	17	31	3	.587	2	.746
		Yes	3	4	0			

***p≤0.05 level of significance, S-significant NS- Not- significant.**

DECLARATION

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Conflict of interests

The authors have declared that no conflict of interest exists.

Author contribution

Ethical permission, data collection, and data analysis were done by the corresponding author. Supervision, guidance, and validation were done by the secondary author.

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