Impact of an Educational Intervention on Diabetic Patients

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Abstract*: *Introduction* Diabetes mellitus, with its attendant acute and long term complications, and the myriad of disorders associated with it, is a major health hazard. So training in self-management should be an integral component of the treatment modalities of diabetes wherein the patients are made aware of the nature of the disease, its risk factors, its treatment and its complications. *Objective: The objective of the study is to find out the Knowledge Attitude and Practices of diabetic patients pre and post intervention **Materials and methods:** A test instrument was designed for assessment of KAP before and after intervention. The instrument consisted of three sections to assess the knowledge, attitude and practice of the subjects Purposive Sampling was the technique adopted for the selection of subjects, control (n=35) and experimental (n=33). **Results:** The Study observed a highly significant (P<0.01) difference in KAP scores of experimental group after educating them, in all the aspects of diabetes care and management dealt with in the package. The significantly (P<0.01) higher scores on KAP, among experimental group when compared to control group on all aspects of knowledge, attitude and practices, study very clearly indicates that educational intervention had a significant positive impact on KAP of the experimental group*

Keywords: KAP, Educational intervention

1. Introduction

India has a higher number of people with diabetes than any other country, involving 50.8 million people in the age group of 20 to 79 in 2010 and this number is estimated to reach 87.0 million by 2030 (IDF, 2009). The highest rate of diabetes prevalence is in India's southern States (Mohan, 2004) with Kerala takes the top position with a prevalence rate of 16.2 percent (Thankappan *et al.,* 2007). In India, from the limited number of studies focused on diabetes care, it was obtained that the awareness about the disease and its complications among the patients were quite unsatisfactory. Patient education is an essential component of chronic disease care and effective health promotion, and hence awareness creation on diabetes is one of the vital steps, towards its management as well as patient care.

2. Materials and Methods

A test instrument was designed for assessment of KAP before and after intervention. The instrument consisted of three sections to assess the knowledge, attitude and practice of the subjects with the help of a set of questions based on the major concepts dealt with in the intervention package. The KAP of the subjects were assessed by administering the test instrument prior to and 10 days after the completion of the educational programme, on both control (n=35) and experimental (n=33) groups. A three month educational programme was conducted for the experimental group.

3. Results and Discussion

Socioeconomic profile of the subjects

The socioeconomic characteristics of diabetic patients selected for the educational intervention study are furnished in table 1.

Table 1: Socioeconomic Profile of the Subjects

Particulars	Control (n=35)		Experimental (n=33)		Total (n=68)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Gender						
Male	12	34.3	19	57.6	31	45.6
Female	23	65.7	14	42.4	37	54.4
Age group (yrs)						
≤30	2	5.7	3	9.1	5	7.4
31-40	3	8.6	5	15.2	8	11.8
41-50	8	22.9	9	27.3	17	25.0
51-60	15	42.9	12	36.4	27	39.7
>60	7	20.0	4	12.1	11	16.2
Education						
Primary school	14	40.0	3	9.1	17	25.0
Secondary school	12	34.2	17	51.5	29	42.6
Graduation	5	14.3	8	24.2	13	19.1

PG/professional	4	11.4	5	15.2	9	13.2
Occupation					
Service personnel	14	40.0	17	53. 6	31	45.6
Business	5	14.3	6	18.2	11	16.2
Agriculture	3	8.6	3	9.1	6	8.8
House wife	13	37.1	7	21.2	20	29.4
Income (Rs/month)					
2500-4500	6	18.2	5	15.2	11	16.7
4501-7000	4	12.1	7	21.2	11	16.7
7001-9500	11	33.3	8	24.2	19	28.8
9501-15000	6	18.2	9	27.3	15	22.7
≥15001	6	18.2	4	12.1	10	15.2

A total of 68 patients enrolled themselves for educational intervention. They were randomized as the control (n= 35) and experimental (n=33) groups. Out of the total of 68 patients 31 (45.6%) were male and 37 (54.4%) were female. The age group of the majority of subjects ranged between 41to 60 years (64.7%) reflecting same trend on both control and experimental groups.

Education is one of the indicators which determine the health status and quality of person's life. It plays a crucial role in influencing the health behaviour also. The educational status of the group ranged between primary school to PG/ professional education. Majority of the subjects had education up to secondary level. Totally two third of the subjects (67.6%), had education up to school level and only one third (32.3%), reported to have higher education. There were no illiterates at all in the group; may be due to the wider coverage of literacy mission campaign by the government of Kerala.

Occupation is another important socioeconomic variable which determine the economic status, activity pattern and lifestyle of the patients. Government servants and professionals like officers, teachers, nurses and retired hands together constituted 45.6 percent. Second highest group was housewives (29.4%), followed by business men (16.2%) and agriculturists (8.8%).

Income is the best indicator for economic status, as the income increases the comfort in life and consumption of energy rich food also increased but a simultaneous reduction in physical activity of the population. Majority of the subjects (51.5%) reported had a monthly income of 7000 to 15000/- rupees.

Effect of diabetic education on KAP

Before conducting any educational programme, it was necessary to obtain the baseline information or existing trend or behaviour related to the topic of the study. Hence data on the baseline knowledge and practices of the target group on diabetic care and management was collected using a pretested questionnaire. The pre-test scores secured by the experimental and control groups are given in table 2.

Table 2: Pre-test scores on KAP of control and experimental groups

Particulars	Control (n=35)	Experimental (n=33)	t-value
Knowledge			
Causes of diabetes	8.97±2.26	8.42±2.50	0.949[ns]
Symptoms and after effects	6.34±2.13	6.24±2.17	0.193[ns]
Control measures	10.86±3.19	9.64±2.91	1.644[ns]
Total Knowledge	26.17±6.46	24.30±6.48	1.189[ns]
Attitude			
Attitude	17.06±6.98	16.09±5.95	0.612[ns]
Practices			
Dietary practices	17.54±3.97	16.45±3.62	1.178[ns]
Exercise and medication	6.71±2.46	6.09±2.38	1.063[ns]
Total practices	24.26±5.38	22.55±4.50	1.422[ns]

ns- Not significant

Independent 't' test was used for comparing the pre-test scores on KAP of control and experimental groups, and the results showed that at the baseline, there were no significant differences between the two groups with respect to KAP.

Absence of any significant difference in the mean score of the control and experimental groups before educational intervention was also reported by Hazavehei, *et al.* (2010) and Ramesh and Kartheek (2009).

KAP scores of control and experimental groups at pre and post-intervention

Living with diabetes means coping with the regimen of dietary management, physical exercise and periodic testing. Thus, diabetes

A three month educational programme was conducted for the experimental group. Post testing of KAP was done on both control and experimental subjects, at the end of the education programme. The comparison of pre and post-test scores secured from the control and experimental groups are presented in table 3.

Table 3: Pre and post-test scores on KAP of control and experimental groups

Particulars	Control (n=35)			Experimental (n=33)		
	Pre-test	Post-test	t-value	Pre-test	Post-test	t-value
Knowledge						
Causes of diabetes	8.97 ± 2.26	9.00 ± 2.25	1.000[ns]	8.42 ± 2.50	13.76 ± 0.94	13.241**
Symptoms and after effects	6.34 ± 2.13	6.86 ± 1.94	3.431**	6.24 ± 2.17	9.88 ± 0.42	10.222**
Control measures	10.86 ± 3.19	11.17 ± 3.12	1.819[ns]	9.64 ± 2.91	15.73 ± 0.94	12.451**
Total knowledge	**26.17 ± 6.46**	**27.03 ± 6.07**	**3.078****	**24.30 ± 6.48**	**39.36 ± 1.69**	**13.745****
Attitude						
Attitude	**17.06± 6.98**	**17.14 ± 6.83**	**1.000[ns]**	**16.09 ± 5.95**	**23.97 ± 3.14**	**9.68****
Practices						
Dietary practices	17.54 ± 3.97	17.80± 3.94	1.552[ns]	16.45 ± 3.62	24.36 ± 1.85	13.138**
Exercise and medication	6.71 ± 2.46	7.60 ± 2.23	3.96**	6.09 ± 2.38	8.58 ± 1.89	6.918**
Total practices	**24.26 ± 5.36**	**25.40 ± 4.92**	**3.937****	**22.55 ± 4.50**	**32.94 ± 2.95**	**14.483****

*ns- not significant, * significant at 0.05 levels, ** significant at 0.01 levels*

There observed a highly significant (P<0.01) difference in KAP scores of experimental group after educating them, in all the aspects of diabetes care and management dealt with in the package. It was also surprising to note some positive changes in the knowledge and practices of control group; significant at one percent level. But statistically significant attitudinal change was noticed. A close observation of knowledge score of control group further revealed that the significant increase in the post-test scores was mainly due to the improved awareness of symptoms and complications of diabetes.

Comparison of post-test scores on KAP of control and experimental groups
As the post-test scores of both control and experimental groups displayed a significant improvement in the KAP outcomes, further analysis was done to find out whether there is any significant difference in post-scores of control and experimental groups and the results are presented the table 4.

Table 4: Post-test scores on KAP of control and experimental groups

Particulars	Control (n=35)	Experimental (n=33)	t-value
Knowledge			
Causes of diabetes	9.00± 2.25	13.76± 0.94	11.262**
Symptoms and after effects	6.86 ± 1.94	9.88± 0.42	8.746**
Control measures	11.17± 3.12	15.73± 0.94	8.045**
Total Knowledge	**27.03± 6.07**	**39.36± 1.69**	**11.263****
Attitude			
Attitude	**17.14± 6.83**	**23.97± 3.14**	**5.342****
Practices			
Dietary practices	17.80± 3.94	24.36± 1.85	8.873**
Exercise and medication	7.60± 2.23	8.58± 1.89	1.994**
Total practices	25.40± 4.92	32.94± 2.95	7.610**

** Significant at 0.01 levels

The significantly (P<0.01) higher scores on KAP, among experimental group when compared to control group on all aspects of knowledge, attitude and practices, study very clearly indicates that educational intervention had a significant positive impact on KAP of the experimental group. Areas of behavioural modifications included healthy eating (including meal spacing, meal balance and meal regularity, increased consumption of pulses, vegetables and fish as well as reduced intake of fat and simple sugar),

exercise, and regular check-up and medication. Significant improvement of total knowledge score during post-intervention of experimental group when compared to the post-test scores on knowledge of control group has been reported by Sranacharoenpong *et al.* (2009).

4. Conclusion

Patient education is an essential component of chronic disease care and effective health promotion, and hence awareness creation on diabetes is one of the vital steps, towards its management as well as patient care. So training in self-management should be an integral component of the treatment modalities of diabetes wherein the patients are made aware of the nature of the disease, its risk factors, its treatment and its complications.

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