Management of Diabetes Mellitus among Elderly Men and Women – Impact of Intervention Programme

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Abstract

The present research aimed at studying the effect of an educational module as an intervention programme in the management of Diabetes Mellitus among the elderly with regard to the improvement in their knowledge, attitude and practices. The sample constituted 80 elderly of whom 40 were men and 40 were women in the age group of 65 to 76 years. Structured Interview Schedule (SIS) developed by the investigators on knowledge, attitude and practices (KAP) with regard to diabetes was used for assessment. The module of educational programme was developed by the investigators for the benefit of diabetic people covering different aspects in the management of the disease. A repeated measure design was followed; accordingly, the sample were administered SIS to assess their initial KAP and they were provided intervention programme for a period of two months. Later, two months after the intervention, post assessment was conducted administering the same SIS. A comparison of pre and post test scores on KAP regarding diabetes was made. The statistical significance of mean difference in the scores was carried out using 't' ratios. The findings revealed that both men and women respondents and the two age groups showed higher scores after intervention, on KAP regarding diabetes, than the pre intervention scores and individual differences in the score was also reduced considerably during post test.

Keywords: Management, elderly, intervention, diabetics, knowledge, attitude and practice.

Introduction

Longevity in people has increased over the last few decades due to advances in medical science. Today a 65 year old person can expect to live for another two decades. However, many of them live with more than one serious health problem. Data indicate that more than half have three or more chronic diseases and thereby meet the criteria for multi morbidity[1].

Treating the elderly meet with many challenges as their reactions to medication will be different from that of the younger group. The anatomical and physiological changes in the elderly are often not appropriately represented in clinical trials, especially those with multiple conditions; thus, resulting in challenges for diagnosis and treatment. This is true of type-2 diabetes and hypertension which have emerged as important public health problems of the 21st century. Increasing age combined with life style changes has resulted in an enormous growth worldwide in the number of people with diabetes. The number of people with type 2 diabetes is increasing in the world at large and Asian Indians have the highest prevalence[2]. Diabetes mellitus is a metabolic disorder characterized by hyperglyceamia, glycosuria, hyperlipemia, negative nitrogen balance in some times ketone urea. Diabetes affects the body's ability to use energy. In diabetes either body does not make enough insulin or it does not respond to the action of the insulin[3].

Although Diabetes mellitus is a non communicable disease, it is considered to be one of the five leading causes of death universally[4]. WHO projects death due to diabetes to become double between 2005 and 2030. The prevalence of diabetes for all age-groups worldwide was estimated as 2.8% in 2000 and will be 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030[5,6].

Diabetes has emerged as a major health care problem in India. According to Diabetes Atlas published by the International Diabetes Federation (IDF) there were an estimated 40 million persons with diabetes in India in 2007 and this number is predicted to rise to almost 70 million people by 2025. It is estimated by International Diabetetic Federation that by 2025 every fifth diabetic subject in world will be an Indian[7,8].

Diagnosis of diabetes in the elderly is difficult because of lack of manifestation of specific symptoms. General symptoms of old age like weakness, feeling tired, being not able to focus on tasks or lack of concentration and the like, delay the process of medical consultation as well. A regular blood sugar test, a verification of life style and the genetic predisposition for diabetes come a long way in the process of diagnosis.

Studies also reveal that at old age people with diabetes are twice at risk compared to others of the same age. For people

diagnosed as diabetic at 60 years, Narayan, et. al, have estimated a reduction in life expectancy and number of quality-of-life years of 7.3 and 11.1 years, respectively, for men, and 9.5 and 13.8 years, respectively, for women[9].

Several conditions like, counselling for physical and mental health, for diet and medication, supply of proper medicines, care to reduce side effects and motivation to adhere to guidelines provided by health care professionals, may reduce these risks. Maintenance of near normal blood sugar level reduces the complications and severity of diabetes. This was possible for many patients with rigorous efforts and education regarding control of diabetes. Knowledge of diabetes, treatment and its management is necessary among diabetic patients [10]. Information about regular food habits, exercise, need for control of certain habits like smoking and drinking, knowledge of health conditions related or influencing diabetes, come a long way in the control of the disease. An educational programme along these lines may be developed for the benefit of diabetics.

An attempt was made in this study to develop a module of educational programme as an intervention for the benefit of diabetic people and to examine its impact on knowledge, attitude and practices (KAP) of elderly in management of the disease.

Objectives: i. To study the prevailing knowledge, attitude and practices (KAP) of managing diabetes mellitus in elderly and to compare men and women as well as two age groups of elderly on KAP. ii. To develop a module of educational program for old age people for better management of the disease and to improve their health. iii. To assess the impact of the intervention program (Application of the module of educational program developed in the study) on improving the knowledge, positive attitude, good practices in the management of the disease among the experimental group of respondents.

Hypothesis: There will be a positive impact of educational program on KAP for i. Men and women respondents and ii. Two age groups of elderly.

Methodology

Selection of Sample: In the study purposive random sampling was used. The selected sample consisted of elderly diabetics belonging to the age group of 65 to 76 years. A total sample of 80, of which 40 were men and 40 women, constituted the experimental group. Table -1 shows the schematic breakup of the sample.

Table-1
Schematic breakup of the sample

Age Groups In Years	Old Age People		
	Men	**Women**	**Total**
65-70	24	26	50
71-76	16	14	30
Total	40	40	80

Tool: The tool used for the study was a Structured Interview Schedule (SIS) developed by the investigators containing items on demographic profile of the respondents and KAP with regard to diabetes mellitus.

Procedure: The study involves co-operative action research with an initial exploration of knowledge, attitude and practices in the management of diabetes mellitus among the elderly people. Formulation of a module of intervention program for educating elderly people with regard to diabetes was also a part of the study. The study was carried out in five phases.

First phase: As the study focused on the elderly with diabetes, old age people belonging to the age group 65 to 76 years were identified from three areas in Bangalore city. The sample constituted 80 elderly diabetics of whom 40 were men and 40 were women. Further they were classified into two groups, viz., 65 -70 years and 71 – 76 years age groups.

Second phase: Once the respondents were identified, rapport was established and time was fixed as per their convenience to collect the data. The SIS on KAP in management of diabetes mellitus was administered. Both English and Kannada versions of the SIS were used for data collection according the requirement.

Third phase: A module of educational programme was developed by the investigators. The educational program was planned to cover all the aspects relevant to the management of diabetes mellitus; life style management, food and nutrition, diet plan and counselling, stress management, acupressure, health, active aging, importance of physical exercise / activities, laughing yoga, etc.

Forth phase: The respondents were informed to participate in the educational programme. A good rapport was built with the respondents. The program was scheduled for a period of two months from 6th January 2013 to 24th February 2013 on Sundays from 10.30am to 1.30 pm at the rate of one session per week.

Attendance was encouraged by making the program relevant and interesting for the group. Almost 95 percent of the respondents were regular and attended all the session. A session on osteoporosis and Bone Mineral Density (BMD) test was also organized since the respondents complained about the joint pains. Diabetic camp was also organized for the respondents. Blood sugar level test, Blood pressure test, foot sensation, test and eye test were done in the camp for the respondents.

Fifth Phase: In the fifth phase of study, the impact of the intervention program was assessed using the same SIS on KAP in the management of diabetes with an interval of two months between intervention and reassessment. Convenient time and venue near their residence were fixed for re-assessment. During the post test the respondents expressed their desire to attend

such type of educational programs which help them to gain knowledge and improve their health.

The data obtained during pre and post assessment was analyzed with a view to verify the hypothesis set for study.

Results and Discussion

An important objective of the study was to develop an educational program for the benefit of diabetic people and to examine its impact on the knowledge, attitude and practices of elderly people. A repeated measure design was followed here. A hypothesis was set for verification stating that there will be a positive impact of educational program on i. men and women respondents, and ii. two age groups of old people with regard to their KAP.

The mean scores and SD of scores on KAP regarding diabetes for men and women are given in table-2. The 't' values for

significance of difference between the mean score for before and after intervention assessment suggest that these differences were statistically significant. The post test scores on KAP were higher than the pre test scores and suggested better knowledge, more positive attitude and better practice for management of diabetes. Further, individual differences in the scores were also reduced considerably during post test both for men and women respondents. Men compared to women showed a lower score on KAP during the pre test. However, these differences were considerably reduced during the post test suggesting that the gain shown by men was more than the gain shown by women. Generally a high score at the base line leads to a lower gain. This ceiling effect was noticed here as well.

The pre and post test mean scores on KAP for men and women respondents is shown in figure-1.

Table-2
Impact of the programme on KAP Scores of men and women respondents on diabetes mellitus

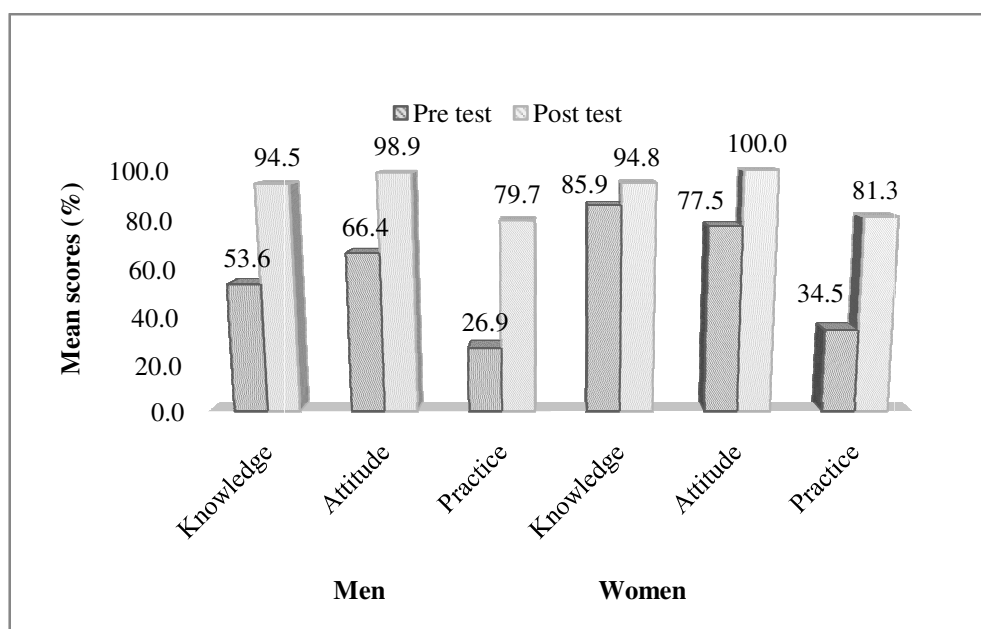| Gender	Sample (n)	Aspects	Response						Paired 't' Test
			Pre test		Post test		Difference		
			Mean	SD	Mean	SD	Mean	SD	
Men	40	Knowledge	53.6	29.7	94.5	3.4	40.9	30.9	8.37*
		Attitude	66.4	25.5	98.9	4.9	32.5	24.2	8.49*
		Practice	26.9	13.5	79.7	7.7	52.9	14.4	23.23*
Women	40	Knowledge	85.9	6.1	94.8	2.4	8.9	4.9	11.49*
		Attitude	77.5	15.8	100	0	22.5	15.8	9.01*
		Practice	34.5	11.3	81.3	8.9	46.8	15.0	19.73*

*Significant at 5% level

Figure-1
Impact of programme on diabetic KAP score of men and women respondents

The mean scores and SD of scores on KAP regarding diabetes for the two age groups are given in table -3. The 't' values for significance of difference between the mean score of pre and post assessment suggest that these differences are statistically significant. The post test scores on KAP were higher than the pre test scores and individual differences in the scores were also reduced considerably during post test for both the age groups. Younger among the aged as compared to the older age group showed a lower score on KAP during the pre test. However the difference was considerably reduced during the post test suggesting that the gain shown by younger group was more than the gain shown by older respondents among the aged. The pre and post test mean scores on KAP for the two age group of respondents is shown in table 3 followed by figure-2.

Conclusion

In both the group of men and women respondents, their score on KAP regarding diabetes was higher after intervention than during the pre test. This suggested better knowledge, more positive attitude and better practice for management of diabetes. Individual differences in the score was also reduced considerably during post test. The gain shown by men was more than the gain shown by women. The gain shown by younger group was more than the gain shown by the older group among the aged.

Acknowledgement

Table-3
Impact of the programme on KAP scores of the two age groups of respondents on diabetes

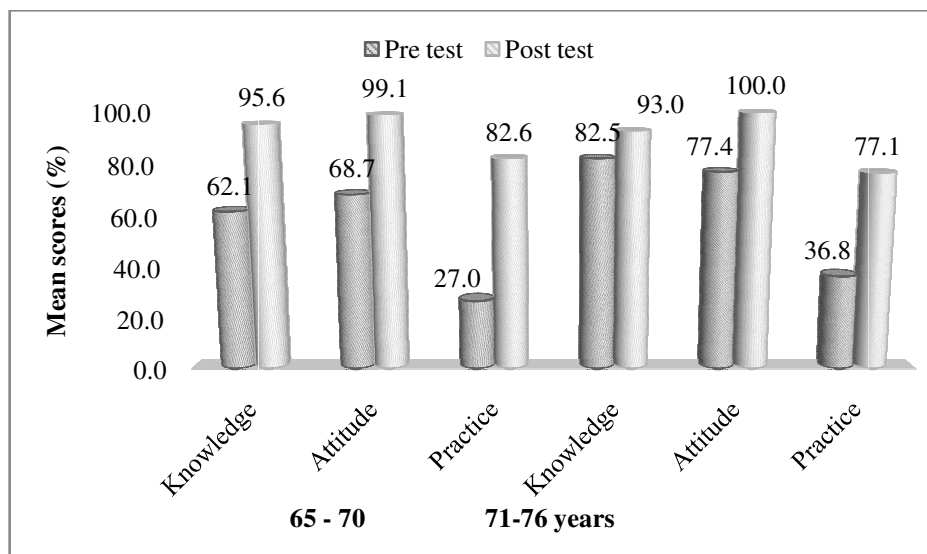| Age group (years)	Sample (n)	Aspects	Response						Paired 't' Test
			Pre test		Post test		Difference		
			Mean	SD	Mean	SD	Mean	SD	
65-70	50	Knowledge	62.1	31.2	95.6	2.4	33.5	31.3	7.57*
		Attitude	68.7	23.4	99.1	4.4	30.4	22.2	9.68*
		Practice	27.0	12.4	82.6	8.9	55.5	13.3	2.95*
71-76	30	Knowledge	82.5	5.6	93.0	3.1	10.5	4.9	11.74*
		Attitude	77.4	17.9	100	0	22.6	17.9	6.92*
		Practice	36.8	11.7	77.1	6.0	40.3	12.7	17.38*

*Significant at 5% level

Figure-2
Impact of programme on KAP score of two age group of respondents on diabetes

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