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Impact Of Pharmacist's Intervention On Patient's Knowledge And Attitude Towards Their Diabetes Management In A Tertiary Hospital In India.

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ABSTRACT

The reason of the study was to decide the result of patient counselling on medication adherence and knowledge towards diabetic in a settlement. A randomized proscripted study was conduct from March 2017 to February 2018 to assesses medication adherence between diabetic patients by use the Morisky Medication Adherence Scale (MMAS). The study inhabitants integrated both genders with diabetic patients in the age group of 35-75 years. Out of 100 diabetics, 42 male, and 58 female. Blood glucose was calculated using by glucometer. Patient counselling be known to diabetic patients related to their medication, disease and routine modification after obtain their baseline data similar to information blood glucose and adherence score. After third, sixth and ninth months, the equal data's be collect The denote fasting blood sugar levels at baseline and at last follow-up of the group be 196.42 ± 26.84 mg/dL and 141.74 ± 20.07 mg/dL correspondingly. It show that there was a important reduction in mean blood glucose levels in the involvement group from baseline to final follow-up when compare to group manage ($p < 0.001$). At baseline, medication adherence score for equally the groups were non-supporter to their treatment. After being educated at the subsequent follow-up, there was an development in their information and medication adherence score. The study concluded of pharmacist intervention had a helpful impact on humanizing the disease condition, information and medication adherence. This study also decorated the significance of having an educator in primary fitness care.

Keywords: Diabetes, Knowledge, Medication adherences, Blood glucose.

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INTRODUCTION

Diabetes mellitus (DM) is a main rising scientific as well as public fitness difficulty. According to WHO estimate in 2007, 190 millions peoples suffers as of diabetes global and about 330 million are likely to be diabetic were the year 2025 [1]. It is the important cause of blindness, and of lower-limb amputations. Regarding mortality, adults by diabetes include charge of blow and loss from heart diseases that are as regards 2 to 4 times advanced than adults not including diabetes [2] Reduced adherence to prescribe treatment is a increasing anxiety which undermine the profit of present medical care [3]. On an regular, one-third to one-half of the patient for whom suitable therapy are prescribe do not obtain the full advantage since the prescribe beneficial routine for the reason that of insufficient adherence [4]. Overall, it is predictable the intention of only 7% of patients with diabetes be supporter by all aspects of their cure plan [5]. Poores adherences to cure recommendation between diabetes patient usually result in best possible glycemic controls. However, poor glycemic controls have been establish to be associate with increase risk of micro and macro-vascular complication, diseases succession morbidity and humanity by increase cost of care [6]. Possibles reason for the constants increases in the prevalences of DM might includes lacks of information with unacceptable approaches with practice towards DM amongs diabetic patient as well in the wide-ranging populations. information is the greatestes weapons in the fights againsts DM with can helps peoples review their danger of diabetes promote them to capture charges of their diseases, with motivates them to look for time to time treatments with concern. Good Analysis managements, with treatments protocol are leading for peoples by diabetes [7]. Self-managements is the basis for good managements of patient among diabetes, and patients educations on diabetes play a essential role in improve medical outcome [8] Information and attitudes of the patient and include a important contact on the adherence, assembly the patient feels that the consequence of the diseases could include a stern impacts on their well-beings. Behavior change and adherences to pharmacological treatments are essential for improve the prediction of DM. Patient among goods adherences to diabetes managements be report to have helpful healths outcome and lesser humanity compare to individuals by poor adherences [9]. Non-adherences, lack of information, poorer follows up with deficiency is the significant factor usually observe in meager controls of diabetes [10]. Diabetes is a disease that dreadfully need extra pharmacists' involvements. Pharmacist who are specialize in this increasing chronic conditions can makes a important, positives impacts on the patients, the health care system, and themself [11]. Therefore, the current studies be undertake to evaluates the impacts of a pharmacists lead diabetes managements programmes on type 2 diabetes patient on FBG (Fasting Blood Glucose), KAP (Knowledge, attitude and Practice) and medications adherences in rural communities.

Case Study

The randomized controlled study was conducted for a period of one year from March 2017 to February 2018 in rural areas of Valayakaranur and Vattamalai, villages near Komarapalayam town, Salem district, Tamil Nadu. Both gender of already diagnosed diabetic patients with diabetic medications in the age group of 35-75yrs were included and patients who were not willing to or unable to give consent to participate and if they were diagnosed with any concurrent endocrine disorders (such as thyroid disorders and gestational diabetes), cardiac heart failure, end stage renal disease, hepatitis or cancer were excluded from the study. After getting clearance from Institution Ethical committee, a separate questionnaire form for incorporating demographical data, KAP for DM was designed. FBG was measured by using glucometer. Initially, medication adherence among diabetic patients was assessed by using Morisky Medication Adherence Scale (MMAS-8). Diabetic patients who scored low from MMAS, has been further considered for the study. These diabetic patients were randomized into control and intervention group based on simple randomization technique. The study design was divided into baseline, 1st, 2nd and 3rd follow up visit with a difference of three months between each visit. After the collection of baseline data (socio demographic datas, FBS, KAP, medication adherence score), patient counseling was provided for diabetic patients in intervention group alone at regular intervals in visual formats as well as orally by using suitable patient counseling leaflets. The effect of pharmacist interventions was assessed based on KAP questionnaire scores along with screening of FBS level at 1st, 2nd, 3rd follow up intervals for both the groups. The gathered datas were characterized into different groups and statistically analyzed by paired t-test using statistical software package for social sciences (SPSS) version 16.1 with level of significance (*p < 0.001). Datas were presented as mean (SD) or as percentages within groups.

Table 1: Demographic details of diabetic patient

Parameter	Diabetic patients (100)	
	Control (n-50)	Intervention (n-50)
Gender		
Male	24(48%)	18(36%)
Female	26(52%)	32(64%)
Age distribution in years		
35-45	5(10%)	04(8%)
46-55	17(34%)	19(38%)
56-65	18(36%)	24(48%)
66-75	10(20%)	3(6%)

Table 2: Shown educational status of diabetic patients

Education level	Control (n-50)	Intervention (n-50)
No education	29(58%)	30(60%)
Lower education	15(30%)	18(36%)
Upper secondary	3(6%)	2(4%)
1 st stage of tertiary education	2(4%)	1(2%)
2 nd stage of tertiary education	-	-

Table 3: Comparison of blood glucose levels of diabetic patients in control and intervention group.

Groups	Control (n-50)	Intervention (n-50)	P -Value	Significance Level
Baseline	194.52±18.70	196.42±26.84	0.645	Non- Significant
1 st Follow up	186.54±20.40	181.54±21.27	0.010	Significant
2 nd Follow up	192.24±18.24	170.62±18.45	0.000	Highly significant
3 rd Follow up	197.15±24.56	141.74±20.07	0.000	Highly significant

Table 4: Knowledge, attitude and Practice(KAP) score of diabetic patients in control and intervention group.

KAP	Control (Mean ± SD)	Intervention (Mean ± SD)	t-value	p-value	Significance Level
KNOWLEDGE					
Baseline	7.18 ±2.310	7.38 ±2.230	2.858	0.006	Non-significant
1 st follow up	7.54 ±2.296	8.00 ±2.040	3.496	0.001	Significant
2 nd follow up	8.18 ±2.154	8.58 ±1.980	3.742	0.000	Highly significant
3 rd follow up	8.54±2.052	9.38±2.127	5.838	0.000	Highly significant
ATTITUDE /PRACTICE					
Baseline	2.70±1.298	2.80±1.294	0.351	0.727	Non-significant
1 st follow up	2.72±1.266	2.94±1.268	2.717	0.009	Significant
2 nd follow up	2.74±1.291	3.42±1.553	5.699	0.000	Highly significant
3 rd follow up	2.84±1.330	3.72±1.654	7.550	0.000	Highly significant

Table 5: Morisky Medication Adherence Scale (MMAS) score in diabetic patients. Value expressed as number (%)

Groups	Review	Score		
		Low	Medium	High
Control	Baseline	50(100)	0	0
	1 st follow up	37(74%)	9(18%)	4(8%)
	2 nd follow up	35(70%)	9(18%)	6(12%)
	3 rd follow up	30(60%)	12(24%)	8(16%)
Intervention	Baseline	50(100)	0	0
	1 st follow up	27(54%)	13(26%)	10(20%)
	2 nd follow up	8(16%)	16(32%)	26(52%)
	3 rd follow up	0	9(18%)	41(82%)

RESULTS

Patients (104) with low Morisky Medication Adherence Scale scores were include. From this, 100 diabetics have been randomized into control (50 each) and intervention (50 each) group based on simple randomization technique and the remaining 4 patients were dropped out due to irregular follow up and unwillingness. The total diabetic subject was 100, of which 42% were males and 58% were females (Table 1). It shown that most of them were in the age range of 46-55 (54%) and 56-65 (32%). The majority of the participants (59) were uneducated. The mean reduction in blood glucose levels from baseline (196.42±26.84) to final follow-up (141.74±20.07) in intervention group was found to be highly significant when compared to control group (Table 3). In this study, both the intervention and control group patients had poor knowledge, attitude and practices at baseline (Table 4). Scores of Intervention group from baseline to final follow up revealed that mean increases in knowledge from 7.38 ±2.230 to 9.38±2.127 which was clinically significant (p<0.001) where as in control group the score from baseline to final follow up was 7.18 ±2.310 to 8.54±2.052 which was statistically non-significant (p 0.05). Scores of Intervention group from baseline to final follow up showed that mean increases in attitude from 2.80±1.294 to 3.72±1.654 which was clinically significant (p<0.001) where as in control group the score from baseline to final follow up was 2.70±1.298 to 2.84±1.330 which was statistically non-significant (p

0.05). According to MMAS score both the groups in diabetic patients had low adherence at baseline (table 5).

DISCUSSION

The random control study focus on the impacts of pharmacists provide patients counselling and educations on patient's KAP and medications adherences among diabetic patient. In our study, female diabetic patient were higher than male. This may be due to increase BMI, hormonal imbalances and sedentary life styles in female [12]. Bhagat et al., has also report that the postmenopausal women are at higher risk of cardiovascular problems in India as well as globally and this risk increases with age [13]. More number of diabetic patients was in the age group of 56-65 years. This may be due to the fact that age probably represents accumulation of environmental influences and the effect of genetical programmed senescence in the body systems [14]. The proportions of DM patients as well as their blood glucose levels were found to increase steadily with a increase in age [15]. In the present study, subjects with no formal education were found to have higher prevalence of diabetes compared with the educated group, which is in agreement with previous studied [16]. Imparting knowledge about diabetes to the community is the first step in prevention and early detection of the disease and prevention of its complications [17]. The mean fasting blood sugar (FBS) levels at baseline and at final follow-up of the intervention group were 196.42 ± 26.84 mg/dl and 141.74 ± 20.07 mg/dL, respectively, whereas in the control group the mean FBS level at the baseline was 194.52 ± 18.70 mg/dL and at the follow-up was 197.15 ± 24.56 mg/dL (table 3). It shows that there was a significant reduction in mean blood glucose levels in intervention group from baseline to final follow-up when compared to control group ($p < 0.001$). Several studies were reported that patient counselling, lifestyle modification improves the patient knowledge about disease, reduces the blood glucose levels and also reduces the risk of complications [18, 19]. KAP scores of the diabetic patients were poor at baseline due lack of patient education about disease, drugs and life style modification which reduces self-management skills and further complications. Subish et al., were reported that the need for teaching diabetic patients about their illness is obvious, because the success of the diabetes treatment depends on lifestyle modifications in addition to the drug therapy [20]. Ana et al. reported that there is a need for extensive education and behavior change to manage the conditions. Lifestyle changes must incorporate careful dietary planning, use of medication, and home blood glucose monitoring techniques for all diabetic patients [21]. After instigated patient counselling, a small number of the patients had indicated progressed adherence towards medication. With constant patient counselling till final follow up, low adherence had sort through medium and high adherence. It indicated that improved adherence resulted in better disease control. A significant improvement in adherence was observed from the baseline to the third follow-up in the intervention group when compared with control group. At baseline, medication adherence scores for both the groups were non-adherent to their treatment mainly due to lack of knowledge and awareness about the consequences of the uncontrolled disease. After being educated at the subsequent follow up, there was an increase in the level of adherence and a significant improvement was observed in intervention group. These findings suggest that educating patients about their medications and their role in the management of disease helped them to improve the adherence levels, which in turn improved the health outcomes. A similar finding was also noted by Adepu et al., and Ponnusankar et al., which stated that there was a significant improvement in medication knowledge and adherence level on continuous patient counselling [22, 23]. Another similar study done by Ramanath et al., also showed a significant improve in medication adherence in intervention group when compared to control group [24].

CONCLUSION

The study concludes that the pharmacists intervention had significant impacts in improve the diseases conditions, information and medications adherences. A important decrease in the FBS level was observe from the baselines to final follow-up which indicates a optimistic impacts of continue patients educations in the managements of DM. Pharmacist who are specialize in these chronic condition can makes important, positive impacts on the patient health care.

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