

Impact of Use of Patient Counselling in Diabetic Patients: A Review Article

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ABSTRACT

Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose which leads over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves. Diabetes management for both short- and long-term can influence quality of life negatively or positively depending on a variety of factors. QoL is largely affected by microvascular and macrovascular complications and the longer duration of illness associated with the disease. The declining quality of life and depression of a patient can also negatively affect their commitment to controlling their condition. In various countries, pharmacist intervention programs have been established to improve clinical outcomes and quality of life. Pharmacists implemented these programs in cooperation with physicians and other health care providers. Pharmacist interventions and the expanded role of pharmacists are associated with many positive diabetes-related outcomes, including improved clinical measures, improved patient and provider satisfaction, and reduced the treatment cost. Patient counselling is a process that improves patient's ability to cope up and make informed decisions regarding their disease and medication and motivate the patients to change their dietary habits and lifestyle, which are harmful for their current health status. Patient counselling is important for pharmacists to provide appropriate, understandable and relevant information to patients about their medication.

KEYWORDS: Diabetes mellitus, Health related quality of life, Patient counselling, Diabetic management.

I. INTRODUCTION

Diabetes mellitus is a disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced. Such a deficiency results in increased concentration of glucose in the blood,

which in turn damage many of the body's systems, in particular the blood vessels and nerves.⁽¹⁾

Type II diabetes mellitus is a chronic condition which is otherwise known as non-insulin dependent diabetes mellitus that impair the metabolism of glucose. The health problems associated with diabetes mellitus are arterial hypertension, overweight, ischemic cardiopathy, cardiac infarction, cerebro-vascular accidents, diabetic foot ulcers, blindness and secondary chronic renal failure.⁽²⁾

Patient counselling is a broad term which describes the process through which health care professionals attempt to increase patient knowledge of health care issues. Patient counselling may be verbal or written performed on an individual basis or in groups, & provide directly to the patient or caregiver. Patient should understand and recognize the importance of each medication given for diabetes.⁽³⁾

Patient counselling can motivate them for better quality of life. Patients' motivated behaviour helps them to follow better way for better health. Counselling can motivate patient to comply with advices on disease management and lead to fit life in remaining days.⁽⁴⁾

Patient counselling helps to improve medication adherence, self-management of adverse effects, improve the quality of life and provide professional rapport between the patient and pharmacist. Counselling should be given in a private area where confidentiality can be maintained, clear and understandable language must be used and opportunity must be provided for the patients to ask doubts without hesitation.⁽³⁾

Patient's instructions for different drugs provided by pharmacists to improve compliance and awareness were as follows.

Insulin

1. Insulins must be injected at proper time. They should be administered 15-30 mins before meal. Patient should not to miss the meal after taking insulin.

2. Patient must carry a source of sugar such as candy at all times, so that it could be used in case of hypoglycaemia. Hunger, sweating, palpitations and tremor are autonomic hypoglycemic symptoms and are observed at plasma sugar level of 60-80 mg/dl.

3. When long-acting insulins are given twice day, they show steady state plasma profile and decreased chance of hypoglycemia than other types of insulin like "NPH insulin". T2 diabetic patients also may require intermediate acting insulin or long-acting insulin, to be used at bedtime for controlling basal blood glucose.

4. Storage: Insulin should be stored in "a refrigerator at cold temperature of 2-80C". If refrigerator is unavailable, it should be stored in the coldest place of the house.

5. Route: Subcutaneous administration is preferred. Injection should be given with maintaining angle of 45°. Patients must rotate the site of injection to prevent the problem of lipo-hypertrophy.

Sulfonylureas

1. Hypoglycaemia is prominent side-effect and related to the potency and duration of the drug, and to the physiological status of liver and kidney. So, patients must check their liver and kidney once a year.

2. Glibenclamide may be more sensitive to hypoglycaemia, especially in elderly patients. They must carry sugar containing products all the time.

3. Patients must check their plasma glucose level often (once a week). Acute neurological problem along with cerebrovascular accident may occur in elderly patients due to severe hypoglycemia.

4. Patients must know that dose adjustment is necessary as some patients may develop resistance and require high dose.

Metformin

1. The common side-effects are abdominal discomfort, **diarrhea** diarrhoea, nausea, anorexia and metallic taste (in 20% of cases). These effects can be reduced by decreasing dose. The dose of the drug must be increased slowly and drug must be taken with meals.

2. Patient's renal function should be assessed before using metformin and then-after annually. In cases of hepatic disease, it may lead to lactic acidosis, cardiac failure requiring drug therapy, or chronic hypoxic lung disease. So, if patient develops a condition associated with hypoxemia or dehydration, he/she must visit clinic, because, then the drug should be discontinued immediately.

3. Metformin must be discontinued for a certain time before any surgical process or before administrating any i.v contrast media. The drug should not be taken before 2 days of such surgeries.

4. Intestinal absorption of vitamin B12 and folate may be decreased during metformin therapy. So, patients were advised to consume food containing Vit. B12 in regular basis.

5. Metformin doesn't increase weight and it decreases triglycerides level by 15 to 20%. Thus, metformin is the only drug that is proved for preventing macrovascular complications in T2 diabetes. Thus, patient should take it regularly without any misses.

α -Glucosidase Inhibitors

1. α -glucosidase inhibitors may result in flatulence, diarrhoea and mal-absorption since they baffle carbohydrate digestion, but do not cause hypoglycaemia.

2. Antacids should not be taken with this drug to overcome the side-effects of acarbose/ voglibose.

3. In case of hypoglycaemia, when used with insulin, glucose (rather than sucrose or starch) must be provided.

4. Insulin therapy must be started if combinations of four drugs are insufficient to control BG. Yoga and morning walk (life-style modifications) has become popular and was advised to patient.

Meglitinides

1. Their primary therapeutic effect is to reduce postprandial blood glucose elevation (causing insulin release by closing ATP-dependent K⁺ channels in pancreatic β -cells), but they can cause hypoglycaemia.

2. It is mandatory to discontinue them in emergency cases of myocardial infarction or sepsis.

3. Patients suffering from nephropathy needs precaution. Dose adjustments are needed in those patients.

Thiazolidinediones

1. It is found to decrease HbA1c value by 1 to 1.5%. They must be taken once daily at proper time.

2. They are metabolized in liver so they must not be given to the patient with hepatic impairment or in cases of significant hepatic transaminases (AST and ALT) elevations. Patient must check liver function before taking this drug.

3. Thiazolidinediones may cause increased weight, edema and sometimes anaemia. Plasma volume rise or the edema problem is increased if

thiazolidinedione is used along with insulin. Heart condition must be monitored regularly.

Glucagon-like Peptide 1 (DPP 4 inhibitors)

1. If taken regularly, they (Tenelegliptin, Sitagliptin etc.) are effective in lowering Hb1Ac up to 1-1.3%, so it must be taken regularly.

2. Hypoglycemia may be seen when DPP-4 inhibitors are used in combination with other insulin secretagogues. Patient must take candy or sugar in case of hypoglycaemia.

3. Self-limiting nausea may be present in 15-30% patients.

Thus, while dispensing these drugs, pharmacist must be well-versed with all key information of these drugs and counselled it to patients taking enough time.

II. DISCUSSION

The study by Wiwiet Nurwidya Hening et al suggest that Both IG and CG were shown to have behavioural changes, becoming more compliant because each respondent in both groups continued to feel supervised by health professionals during the study period. A result of interactions with health practitioners so that patients tend to improve their habits in taking medicine. The group that received counselling had a higher proportion of adherence than controls. Improvement in adherence might be due to an increase in the respondent's understanding as a result of education provided through counselling. One of the main requirements in order to achieve treatment compliance is by increasing patients' knowledge about their disease and treatment. The majority of respondents understood the importance of taking medication and recognized the importance of getting adequate information about their illness, comorbidity, and benefits of the medicine.⁽⁵⁾

According to the study done by Aulia Iskandarsyah et al the overall HRQoL of the patients in the intervention group was significantly improved when compared with the control group. The results of this study are consistent with the research reported in India by Prasanth (2018), who concluded that counselling provided by clinical pharmacists can be very beneficial for the management and monitoring of patients with metabolic syndrome, to improve their QoL. In this study, there was a significant difference in the level of education between the control and intervention groups. The control group tended to have higher education than intervention group, the QoL of the intervention group was better than the control group. This revealed that education in the

intervention group played a role in increasing QoL. In this study, patients who received the intervention experienced a significant improvement in the dimension of self-care. This might be attributed to the counselling material about the self-management of symptoms, treatment, and lifestyle changes in patients with T2DM. This finding confirms the result of another study that reported that patient who participated in medical appointments was associated with better understanding of self-care.⁽⁶⁾

Dr. Sabyata Gautam et al suggested that Patient counselling on timely intake of medicine, knowledge on their side-effects and controlling weight and other life-style modifications are the key points for diabetic patients for managing disease. Patient themselves had admitted that counselling motivates them to increase medication on time, as well as make them serious on regular blood glucose monitoring. So, family and peer members of diabetic need them to motivate them for regular checking and monitoring of blood glucose. Care and concern can become important asset to them to have controlled glucose level. researcher wants to tell that physician must also be involved more in counselling and compliance studies and get regular feedbacks, for monitoring the success of overall treatment strategy. Thus, Physician, Pharmacist and Patient (3 P's) must all work in collaboration for implementing health programs effectively.⁽⁴⁾

From the study by Ranadheer Chowdary Puvvada et al, it is a Prospective interventional study. Patients selected were divided into control and test groups. Patients in the test group were counselled and given information about the management of disease, whereas control group received the information only at the end of the study. The follow-up was carried out over a period of 6 months in which the KAP and quality of life of the patients was assessed. The scores were evaluated and statistically analysed. It is evident that the impact of pharmacist-provided counselling in terms of diabetic patients with hypertension understanding of their disease, drug therapy and Lifestyle changes i.e., disease management (blood sugar and blood pressure levels) and quality of life. improvement in knowledge of the disease and its management had positive impact on treatment outcomes and quality of life. At the same time, it is noticed that counselling had no effect on mental component summary of the patient's quality of life. This study thus emphasizes the impact of patient counselling on KAP and QOL in patient with diabetes and hypertension.⁽¹⁾

D.A. Satpute et al suggested that the management of Diabetes Mellitus not only requires the prescription of the appropriate nutritional and pharmacological regimen by the physician but also intensive education and counselling of the patient. The chronic complications of diabetes are known to affect the quality of life of diabetic patients. Various factors like understanding of the patients about their disease, socioeconomic factors, dietary regulation, self-monitoring of blood glucose are known to play a vital role in diabetes management. Patient adherence to medication and lifestyle modifications plays an important role in diabetes management. The majorities of individuals with type 2 diabetes were overweight, did not engage in recommended levels of physical activity, and did not follow dietary guidelines for fats, fruits and vegetable consumption. Additional measures are needed to encourage regular physical activity and improve dietary habits in this population. This study provides evidence that a community-based patient counselling regarding Disease, medication and Life style modification for type 2 diabetic patients.⁽⁷⁾

The study by Antonio Nicolucci et al revealed that psychological well-being and QoL are considered important treatment goals in people with diabetes, in addition to traditional medical outcomes. Moreover, they represent main factors for achieving optimal diabetes self-management, including the adoption and maintenance of an active lifestyle, which in turn might affect psychological factors.⁽⁸⁾

R. Adepu et al suggested that, if diabetes is not controlled at this age, it leads to early complications and which in turn affects the patient's quality of life, patients' family life, patients' productivity and at large the society. Most of the patients knew that blood glucose testing is a reliable method to assess their improvement. But due to financial constraints many patients confine to urine testing because it is cheap and self-testing is possible. Patient counselling also motivated the patients to quit smoking and practice healthy life styles. Poorly controlled diabetes mellitus affects the end organs such as kidneys, heart and eyes. These complications have a tremendous impact on quality of life and health care costs of the individual and at large to the society. Effective treatment of chronic diseases like diabetes mellitus requires lifelong adherence to medication regimen, exercise and diet. Pharmacists' involvement in patient care has shown reduced number of hospital admissions and emergency department visits, and

improved health status of the patients and their quality of life. This study reveals that patient counselling by pharmacists not only improves the knowledge, attitude and practices of the patients towards their disease management but also increases their quality of life.⁽⁹⁾

The study by Winifred Aitalegbe Ojieabu et al suggested that the disease and economic burden diabetes places on its sufferers, communities and nations at large are enormous that all healthcare professionals need to harness their training in the fight against this devastating scourge. Pharmacy services have exceeded the traditional dispensing duties to encompass pharmaceutical care services in the healthcare team. Through the efforts of the clinical pharmacists' educational and counselling sessions, we obtained favourable clinical variables such as FBS level, both systolic and diastolic BP control in the intervention group. The improved clinical variables clearly indicate the benefits of including pharmacists into consultation teams in hospital settings. Clinical pharmacists could employ patient education and counselling as two important non-pharmacological intervention methods to bring about patient positive health outcomes. This is because education can influence knowledge that could empower patients to rise up and be effectively involved in the management of their health. Patients understanding of their disease conditions, blood glucose monitoring and lifestyle modifications could be factored into patient education and counselling to optimise diabetes management outcomes.⁽¹⁰⁾

The study by Aparna Jayadevi Rajendran et al found that pharmacist play an important role in improving the disease condition by providing adequate knowledge regarding daily activities, food habit and supremely, compliance to medications. Adequate care must be given to diabetic patients regarding the rational use of therapy and should check the blood glucose level every 2 weeks. It is mandatory to provide adequate information regarding the drugs to patients while dispensing. Here, the study showed complete benefit from the patient counselling to improve the patient's knowledge as well as their disease state. It is required to have regular appraisal of prescribed diabetic medication and timely monitoring of patient adherence in clinical and homely setting.⁽³⁾

T. Aghamolaei et al suggested that the 40 patients assigned to the control group gave the appropriate consent and completed questionnaires at baseline and after 4 months. During the study,

the patients in both the intervention and control group were visited by their physicians as usual, and the physicians prescribed medications according to their clinical judgment.⁽¹¹⁾

III.CONCLUSION

The studies mentioned above clearly suggest that the health-related quality of life was improved by patient counseling and patient counselling aids in geriatric diabetic patients. Patient counselling on timely intake of medicine, knowledge on their side-effects and controlling weight and other life-style modifications are the key points for diabetic patients for managing disease. Patient themselves had admitted that counseling motivates them to increase medication on time, as well as make them serious on regular blood glucose monitoring. Hence, these types of study regarding management of diabetes and the impact of counseling are of great asset and more research works is to be done in future in developing countries. ~~Lawton Brody scale scoring techniques were used in the study.~~ During the study, it is found that the patient counselling aids is more effective in geriatric diabetic patients. The results of the study also suggests that pharmacist counseling may have an impact in improving the perception about disease, diet, and lifestyle changes and thereby on glycemic control and the complications of diabetes.

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