

ROLE OF PHARMACIST IN PREVENTION & MANAGEMENT OF DIABETICS

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ABSTRACT

In the last three decades role of pharmacist has changed dramatically. Presently, the pharmacists are becoming more patient oriented than product oriented. Patient counseling by pharmacist deals with providing information to the patients regarding the diseases, medications and lifestyle modifications. In diabetes, self management and patient adherence to the prescribed medication and lifestyle modifications is very essential and pharmacist can play an important role in counseling. A study was carried out to assess the influence of pharmacist provided patient counseling on patients' perception about quality of life in type 2 diabetes. 70 type-2 diabetes mellitus patients (48 males and 22 female) were enrolled and randomized into test and control groups. Mean capillary blood glucose levels were decreased in test group where as non-significant increase of capillary blood glucose

levels was observed in the control group patients. Pharmacist provided patient counseling might be considered as an important element in implementing the disease management program.

KEYWORDS: Role of Pharmacist, Patient Counseling, Diabetes management, Diabetes Mellitus.

INTRODUCTION

The role of pharmacist has changed dramatically over the past three decades. The later stage of 1960s revealed the growth of a new development that changed the concept of pharmacy from a product oriented to a patient focused one, called Clinical Pharmacy. The clinical pharmacy grew with the concept of pharmaceutical care.^[1] It involves the pharmacist's decision to avoid, initiate, maintain, or discontinue drug therapy, both of prescription and

non- prescription drugs. It is thus practiced in collaboration with patients, physicians, nurses, and other health care workers. The ultimate goal of pharmaceutical care is to optimize a patient's quality of life.^[2]

Diabetes

Diabetes is a heterogeneous metabolic disorder characterize by common feature of chronic hyperglycemia with abnormalities of protein, carbohydrate and fat metabolism (as per WHO) India had 69.2 million people living with diabetes (8.7%) as per the 2015 data. Of these, it remained undiagnosed in more than 36 million people By the year 2030, over 100 million people in India are likely to suffer from diabetes.^[3]

Type and Symptoms

Type 1- •Also known as Juvenile diabetes (IDDM).

- It occurs when the immune system mistakenly attacks and kills the beta cells of the pancreas.
- No or very little insulin is produced by the body.^[4]

Type 2- •Occurs when the body can't properly utilize the insulin that is released (NIDDM)

- Glucose builds up in the blood instead of being used as energy
- It can be managed by physical activity, meal planning and medications.^[5]

Prevention of Diabetes from Prediabetic Stage--

More nutritious eating

Regular physical activity

Moderate weight loss (7% of body weight)^[6]

Prevention of Diabetes

Four dietary changes can have a big impact on the risk of type 2 diabetes.

1. Choose whole grains and whole grain products over highly processed carbohydrates.
2. Skip the sugary drinks, and choose water, coffee, or tea instead.
3. Choose good fats instead of bad fats.
4. Limit red meat and avoid processed meat; choose nuts, whole grains, poultry, or fish instead.^[7]

Control on Weight

Excess weight is the single most important cause of type 2 diabetes. Being overweight increases the chances of developing type 2 diabetes seven fold. Being obese makes you 20 to 40 times more likely to develop diabetes than someone with a healthy weight.^[8]

Get Moving—and Turn Off the Television

Inactivity promotes type 2 diabetes. Working muscles more often and making them work harder improves their ability to use insulin and absorb glucose. This puts less stress on your insulin-making cells.^[9]

Patient Counseling -Patient counseling is an important means for achieving pharmaceutical care. It is defined as providing medication related information orally or in written form to the patients or their representatives, on topics like direction of use, advice on side effects, precautions, and storage, diet and life style modifications.^[10] Patient counseling is interactive in nature and involves a one-to-one interaction between a pharmacist and a patient and/or caregiver. The ultimate goal of counseling is to provide information directed at encouraging safe and appropriate use of medications, thereby enhancing therapeutic outcomes. Several guidelines specify the points to be covered by the pharmacist while counseling the patients.^[11]

Diabetes Patient & Pharmacist: Diabetes mellitus (DM) is a group of metabolic disorders characterized by hyperglycemia. It is associated with abnormalities in carbohydrate, fat and protein metabolism, and results in chronic complications including microvascular, macrovascular, and neuropathic disorders. The worldwide prevalence of DM has risen dramatically over the past two decades.^[12] It has been projected that the number of individuals with DM will continue to increase in the near future. The one has to understand the following for better management of patient care. Need for counseling in diabetes, Patient knowledge, self- confidence and support. To improve self- management, By proper control of blood glucose.^[13] The proper control is dependent on the patient's adherence to medications, life style modifications, frequent monitoring of blood glucose, etc and can be influenced by proper education and counseling of the patient. Diabetes, if untreated, can lead to various complications such as neuropathy, nephropathy, retinopathy, hyperlipidemia, diabetic foot ulcers, infections, etc. These complications adversely affect the quality of life of the patient.^[14]

Role of pharmacists in diabetes management

The pharmacist can Educate The Patients about the proper use of medication, screening for drug interactions, explain monitoring devices, and make recommendations for ancillary products and services.^[15]

The pharmacist, although not the health care professional to diagnose diabetes, is important in helping The Patient maintain control of their disease. The pharmacists can also Counsel the Patients Regarding Insulin Administration Regularly so that the onset of complications can be postponed by having tight glycemic control.^[16]

Essential components of diabetic counseling -Since diabetes is a chronic complication affecting the diabetic patient at various levels, the counseling should focus on the nature of the disease, lifestyle modifications, medications, and acute and chronic complications.^[17]

I. Counseling regarding the disease^[18,19]

II. Counseling regarding lifestyle modifications

A) Diet: 1. Carbohydrates, 2. Fat, 3. Fiber, B). Exercise and physical activity C). Alcohol intake, D. Smoking

III. Counseling regarding medications

1. Oral hypoglycemic agents (OHAs): If the patient is diagnosed with Type 2 diabetes, he/she is more likely to be prescribed OHAs. Some of the commonly prescribed oral hypoglycemic agents and the important counseling points are discussed below.

2. Insulin: All patients with type 1 diabetes require insulin. Some patients with type 2 diabetes who initially respond to dietary modification and/ or oral anti diabetic medications eventually require insulin therapy.

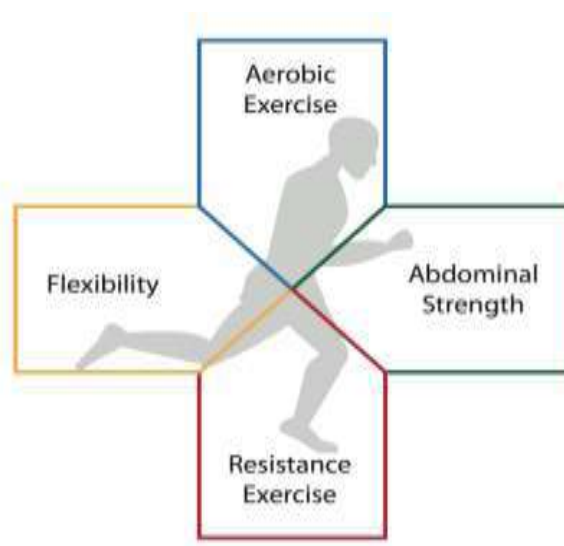
Strategies to Improve Counseling in Diabetes Patients^[20,21,22,23]

- 1. Patient information leaflets (PILs):** Patient information leaflets can help the patients in getting the information regarding diabetes. The PILs should focus on the lifestyle modifications and the medications.
- 2. Compliance aids:** The compliance aids like medication envelopes and medication calendars can help in making the patient understand the different dosing schedule of the medication, especially the OHAs.
- 3. Use of audiovisual aids:** A study by Wedman and Kahan found that a group of patients with diabetes counseled by a dietitian who used graphic teaching aids, complied with

health care advice better than did a control group advised by the same counselor without the use of graphic teaching aids. Similarly the counseling pharmacist can also use audiovisual aids in order to improve the outcome of counseling.

4. **Establishing patient counseling center:** Establishing a separate counseling area near the dispensing area of the pharmacy can be beneficial for effective counseling. It can also improve the quality and the outcomes of the counseling process.
5. **Requirements for the counseling pharmacist:** In addition to the desired qualities of a good counseling pharmacist, the pharmacist should also have adequate knowledge about diabetes. Such a pharmacist is a vital member in a diabetes management program.

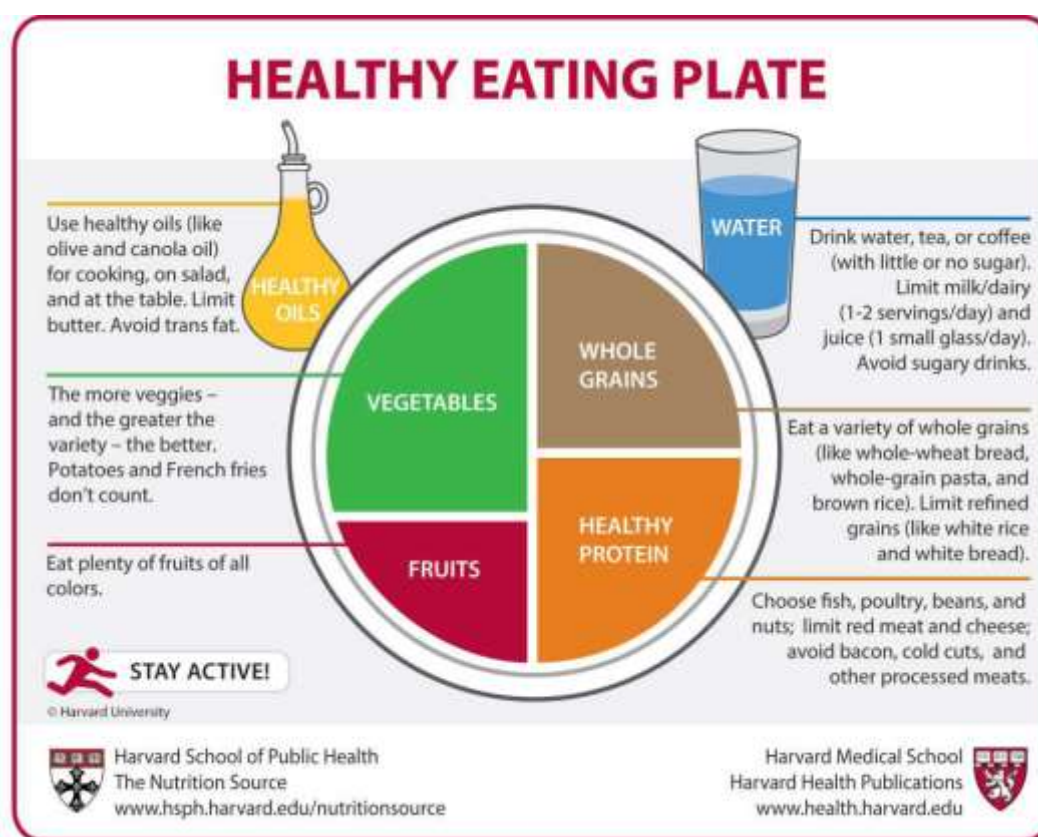
Non –Pharmacological therapy^[24]



Exercise

- What kind of exercise is best?
- Aerobic exercises
- Aerobic exercise is continuous exercise such as walking, bicycling or jogging that elevates breathing and heart rate.
- Resistance exercises
- Resistance exercise involves brief repetitive exercises with weights, weight machines, resistance bands or one's own body weight to build muscle strength. If you decide to begin resistance exercise, you should first get some instruction from a qualified exercise specialist, a diabetes educator.^[25]

Diet



- Dietary fat should provide 25-35% of total intake of calories but saturated fat intake should not exceed 10% of total energy. Cholesterol consumption should be restricted and limited to 300 mg or less daily.^[26]
- Protein intake can range between 10-15% total energy (0.8-1 g/kg of desirable body weight). Requirements increase for children and during pregnancy. - Carbohydrates provide 50-60% of total caloric content of the diet so carbohydrates should be complex and high in fibre.
- Excessive salt intake is to be avoided. It should be particularly restricted in people with hypertension and those with nephropathy.^[27]
- Artificial sweeteners are to be used in moderation. Nutritive sweeteners (sorbital and fructose) should be restricted.

Pharmacist specific points

- Pharmacists can help in early detection and monitoring of Diabetes by checking your blood glucose in the pharmacy.
- Pharmacist can give advice regarding the best use of medicines, whether to take before/after or with food, its possible side effects, storage etc

- Pharmacist can also help to take your medicines as per the treatment schedule.
- There are various types of Insulins and Its important to use the type and dose of insulin prescribed to you by your doctor. Pharmacist can help you to use Right Insulin, Right Dose, Right Syringe, Right Injection technique.^[28]

Pharmacist's role in diabetes (Disease state management)-DSM

Pharmacists are ideally placed to contribute to DSM programs and assist in the detection, education and referral of individuals at risk of diabetes.^[29]

- Provide targeted education
- Monitor blood pressure, weight and lipids
- Remind patients of the importance of regular exams
- A disease management educator and tutor
- Support of self blood glucose monitoring (SBGM)
- Monitor & promote patient adherence
- Identify and resolving drug-related problems

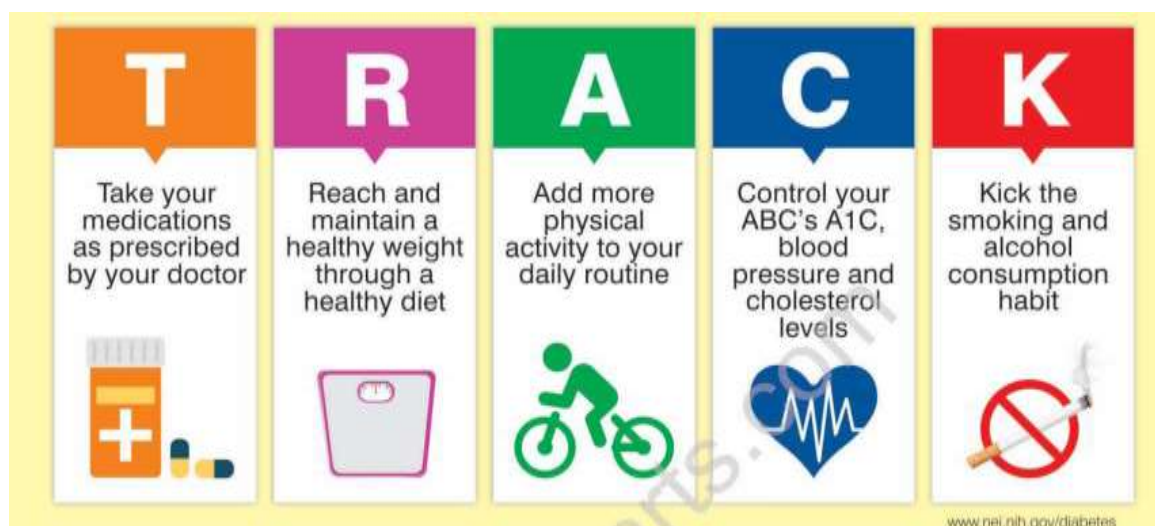
Ideal diabetes care program^[30]

- Based on national standards for diabetes self-management education programs-Life with Diabetes
- Pharmaceutical care + Education + Nutrition
- Multidisciplinary program/ Dietitian
- Advisory Board that oversees the Program

Session outcomes

- Improvement in Clinical Markers -•Blood glucose, HbA1c, BP, weight, etc.
- Improvement in patient's quality of life
- Improvement in patient's knowledge of the disease
- Patient's satisfaction with the services
- Decrease in overall health care cost, hospitalizations, ER visits and complications of diabetes

CONCLUSION



Diabetes is a chronic illness that requires a combination of pharmacological & non-pharmacological measures for better control. Patient adherence to medication and lifestyle modifications plays an important role in diabetes management. Pharmacists being an important member of the healthcare system have an immense responsibility in counseling these patients.

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