

# Diabetes Mellitus in Family Practice, Optimal Treatment of Diabetes Mellitus; Systematic Review

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**Abstract:** Type 2 diabetes mellitus is a major public health issue worldwide. Nearly 10 % of the world's population is anticipated to have diabetes by 2030. The aim of this systematic review was to assess and evaluate the attitude of the family physicians (FPs) toward diabetic patients and their different approaches in management of diabetes, and finally possible interventions to improve the diagnosis and management of Diabetes in family practice. We conducted a systemic review study that performed through Comprehensive literature search was performed in MEDLINE/PubMed and Cochrane Central Register of Controlled Trials according to the validated methods of the Preferred Reporting Items for Systematic Reviews (RRISR). Family physicians keen to implement lifestyle interventions for Diabetes mellitus are hampered by barriers and use of ineffective strategies.

**Keywords:** Diabetes Mellitus, Optimal Treatment.

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## 1. INTRODUCTION

Type 2 diabetes mellitus is a major public health issue worldwide. Nearly 10 % of the world's population is anticipated to have diabetes by 2030 <sup>(1,2)</sup>. Way of life and pharmacologic interventions are declared to cut in half the advancement of type 2 diabetes amongst people at high danger <sup>(3,4)</sup>. The World Health Organization (WHO) tasks that diabetes will be the 7th leading cause of death in 2030 <sup>(5)</sup>, which most of the cases of diabetes will be type 2 <sup>(5)</sup>. Type 2 diabetes (T2D) is a persistent metabolic illness arising from flaws in insulin secretion and insulin action and glucagon suppression, which trigger hyperglycaemia <sup>(6)</sup>. Anybody with diabetes, consisting of type 2 diabetes, needs to make numerous everyday options about the management of their condition, such as proper dietary consumption, exercise, and adherence to drugs, typically with very little input from a health care specialist <sup>(7)</sup>. Over the last few years, programs to inform individuals about self management have actually ended up being the focus of attention amongst health care experts and are promoted for individuals with type 2 diabetes as a way to obtain the abilities essential for active obligation in the everyday self management of their condition <sup>(7,8,9,10,11)</sup>. In addition, it has actually been recommended that education on self management might play a critical function in dealing with beliefs about health therefore enhance metabolic control, concurrence with drug choices, danger elements, and lifestyle <sup>(12,13,14)</sup>.

Worldwide, self management education is acknowledged as an essential element for the management of type 2 diabetes; the American Diabetes Association specifies that it needs to be used from the point of diagnosis <sup>(15)</sup>. In the United Kingdom, where this research study was carried out, the 2008 National Institute for Health and Clinical Excellence standards for diabetes, <sup>(16)</sup> nationwide service structure for diabetes, (10).

The formula of scientific standards alone is inadequate to guarantee optimal diabetes care. Scientific audits as a procedure of enhancing quality of patient care and results by examining care versus particular requirements and after that examining the modification can assist in enhancing <sup>(17)</sup>. Various research studies from other nations have actually revealed that carrying out audits is among the approaches of enhancing performance, responsibility and the quality of care in diabetics <sup>(18,19,20)</sup>. In industrialized nations like the United Kingdom, federal government sponsored yearly National Diabetes Audit

is performed to determine the efficiency of diabetes health care which works in causing modifications and enhancing the quality of services and health results for individuals with diabetes <sup>(21)</sup>.

The family doctor remains in a special position of affecting and dealing with individuals with diabetes, towards the adoption of way of life modifications and the avoidance of illness problems <sup>(22,23)</sup>. Household physicians face many difficulties when caring for individuals. With diabetes, which are similar across international and health system borders <sup>(24,25)</sup>.

The aim of this systematic review was to assess and evaluate the attitude of the family physicians (FPs) toward diabetic patients and their different approaches in management of diabetes, and finally possible interventions to improve the diagnosis and management of Diabetes in family practice.

## 2. METHODOLOGY

We conducted a systemic review study that performed through Comprehensive literature search was performed in MEDLINE/PubMed and Cochrane Central Register of Controlled Trials according to the validated methods of the Preferred Reporting Items for Systematic Reviews (RRISR) <sup>(26)</sup> (using combinations of the following search terms: "General practice, family physicians, diabetes mellitus, management of diabetes, family medicien guideline for diabetes" " our search was ended on October 2016. Extracted data from individual studies were summarized according to the main objects that our study is concerning about diabetes in family practice.

This search was limited to English languages studies, we excluded all case reports, comments, reports, and we included reviews, cross sectional studies and all randomized control studies which met the criteria of our search which is every study discussing the incidence and causes of corneal ulcers from different populations worldwide published in English language.

**Data collection:** Using a structured data abstraction form, different authors extracted the data from the included studies, and another independent author checked the extracted data. Disagreements were resolved through discussion and if necessary by involving another independent author.

## 3. RESULTS AND DISSCUSION

It is estimated that the majority of patients with diabetes get their care from a family doctor <sup>(27)</sup>. The intricacy and chronicity of diabetes provides unique obstacles for family doctor, whose significant duty is the screening and avoidance of diabetes-related issues. To help physicians in this regard, professional advisory committees in Canada, the USA and the UK have actually established treatment standards for medical care physicians to promote thorough care and efficient management of patients with diabetes. The significant benefits of diabetes scientific practice standards (CPGs) are the standardization of care and enhanced patient results <sup>(28)</sup>. Early literature on doctor practice behaviour shows that CPGs are not extensively used in everyday practice <sup>(29-34)</sup>.

We have actually recognized numerous research studies that have actually argued that efficient advancement and dissemination of standards need to determine and attend to barriers to execution in practice settings <sup>(35,36,37,38,39)</sup>. Barriers mentioned in the literature particular to adherence to standards for diabetes management consist of: a requirement for education;<sup>(37)</sup> absence of time and uncertainty in scientific abilities; <sup>(40)</sup> intricacy; <sup>(41)</sup> a requirement for efficient charting systems (e.g. circulation sheets) to enhance quality control and paperwork in practice settings; <sup>(32,41)</sup> and the absence of organizational systems to support diabetes management (i.e. registries, automatic recall systems and reminder systems) <sup>(40,42)</sup>.

### *Family physicans Attitudes Toward Patients with Diabetes:*

Much of the debate surrounding diabetes control has actually concentrated on patient non-compliance <sup>(44)</sup>. Luftey and Wishner <sup>(45)</sup> motivate specialists to make a paradigm shift by changing their terms-- moving from medical-centred language, such as compliance, to language which highlights patient autonomy, such as adherence. This modification in interaction design will effect on the interaction in between the patient and doctor <sup>(46)</sup> and might impact their adherence to a management strategy.

Systemic elements connect with the patient through service availability and financing for medication and avoidance management. Changes in the system can affect patient elements, as proof from the UK shows. Murphy et al. <sup>(47)</sup>

discovered that when an arranged basic practice-based system of diabetic security was presented, patient participation for diabetes tracking increased 42% (56% pre- and 98% 1 year post-introduction). This was likewise related to the significance patients credited to their diabetes and its management.

Doctor aspects highlight: understanding; application of CPGs; and practice company obstacles. Acknowledgment of that have to set up modifications in the organizational structure of family medicine in the treatment/ management of persistent illness has actually been kept in mind by other authors<sup>(43)</sup>. Griffin and Kinmonth<sup>(48)</sup> conclude, in their Cochrane evaluation, that obligation for diabetes by family doctor will just prosper with appropriate assistance in the workplace practice such as electronic, triggered recall and evaluation of patients with diabetes

We also included in our review a very recent and important study<sup>(49)</sup> which were involving family physicians working in primary care family health they have established a survey that includes age, practice period, area of practice, kind of practice (whether they work solo or remain in group practice), variety of patients seen in a week, concerns concerning mindsets towards screening, diagnosis, treatment, patient education, and self-evaluations of proficiencies concerning diabetes management. Research study results program that PCPs were basically positive about starting OADs in patients however 12.6% did not feel comfy with OAD treatment. A small number of individuals felt great with both heightening and starting insulin treatment. An 84.6% of FPs reported that they take the diabetes management standards into account throughout their practice. And 76.2% of the FPs mentioned that they might magnify OADs when required, whereas 56.6% mentioned that they might magnify insulin treatment. Considering that FPs primarily refer their patients to professionals, patients get accustomed to being subsequented by experts. In this research study, amongst the factors for not heightening insulin, 39.2% of the FPs specified that patients chosen to be followed up by experts<sup>(49)</sup>. An 84.6% of FPs reported that they take the diabetes management standards into account throughout their practice. The analysis results likewise revealed that medical professionals practicing in the metropolitan locations offered more appropriate responses in the section of Attitude (53% vs. 43%,  $p=0.05$ ) and Practice (52% vs. 41%  $p=0.03$ ). Relating to the scientific experience, physicians with practice period of 6-10 years offered more right responses in the section of Knowledge and Attitude, than those with either less or more ( $p=0.01$ ).

Another identified cross-sectional research study<sup>(50)</sup> was carried out on FPs in Pakistan, through an interview by a trained individual and filling a survey concentrated on diagnosis, treatment and problems of diabetes. The analysis results likewise revealed that medical professionals practicing in the city locations offered more appropriate responses in the section of Attitude (53% vs. 43%,  $p=0.05$ ) and Practice (52% vs. 41%  $p=0.03$ ). In the Knowledge variable, the medical professionals of the backwoods scored much better (62% vs. 56%). This nevertheless did not accomplish analytical significance ( $p=0.2$ ). The differences in Practice and Knowledge were unimportant. Concerning the medical experience, physicians with practice period of 6-10 years offered more right responses in the sector of Knowledge and Attitude, than those with either less or more ( $p=0.01$ ). The research study topics who did not have diabetes themselves had a much better mindset to their patients. There was no noteworthy distinction in the section of Knowledge and Practice. Comparing the technique of insulin injection, it was observed that FPs seeing a larger number of patients and spending lesser time with them, knew the correct technique compared to their counterparts. Here the clinical experience factor was insignificant. The time spent with the patient had an inverse correlation with the results of the Knowledge Attitude and Practice (KAP). FPs spending 5-8 minutes with each patient, scored better than those giving more than 10 minutes. Overall 62% of answers were correct. However in each area, the mean proportion of correct answers varied, being the highest in Sindh (66%) and the lowest in the Federal Capital (54%). The questions that were answered correctly by less than 50% of the doctors pertained to diagnostic blood values of glucose, treatment of diabetics of less than 2 years of age, pregnant diabetics, monitoring of diabetics and technique of insulin injection. The questions that were answered correctly by more than 50% of the doctors pertained to diagnosis of Impaired Glucose Tolerance, use of Insulin in pregnancy, importance of education in diabetics and Diabetes complications, screening and management<sup>(50)</sup>.

currently there was cross-sectional descriptive study<sup>(51)</sup> between April and October 2010. The study group was GPs working at the different PHCs of the Al Hasa Region of Saudi Arabia and were involved in the care of patients with diabetes. The results regarding attitude toward type 2 diabetic patients and their management, showed more than 90% of the physicians agreed that DM is an important Public Health Problem and primary prevention is the desired means to control it (**Table1**)<sup>(51)</sup>. However, only 23.2% of them considered that they are professionally well prepared to manage type 2 diabetes on diagnosis for the initiation of therapy, and 64% of them preferred to refer to a diabetologist for this. As far as the availability of CPG issued by the Ministry of Health is concerned, 58.6% ( $n=58$ ) of the physicians reported that they did not have the CPG in their clinic and 90.90% ( $n=90$ ) of those who had the CPG in their clinic found it to be

helpful in the management and follow-up of diabetic patients and believed that it should be used in daily practice. Only 43% of the physicians disagree with the fact that uneducated people have a greater prevalence of type 2 DM than the educated people, and 76.8% of the physicians blamed obesity as the cause of diabetes. As far as the complications of diabetes are concerned, more than 50% of the physicians did not agree with the fact that there is no need to worry about diabetic complications once diabetes is controlled<sup>(51)</sup>.

**Table1: Evaluation of primary health care physicians' attitude on type 2 diabetes management <sup>(51)</sup>**

Statement	Response in no./percentage		
	Agree No. (%)	Neutral No. (%)	Disagree No. (%)
DM is an important public health problem	91 (91.91)	3 (3.03)	5 (5.06)
Believe in primary prevention of DM	90 (90.91)	9 (9.09)	0 (0.0)
All newly diagnosed type 2 diabetes should be referred to the diabetologist for initiation of therapy	64 (64.64)	11 (11.11)	23 (23.23)
As long as the diabetes is kept under control, there is no need to worry about diabetic complications	30 (30.31)	16 (16.16)	53 (53.53)
Do you believe in nondrug treatment of DM?	90 (90.91)	9 (9.09)	0 (0.0)
DM is caused by obesity	76 (76.77)	14 (14.14)	9 (9.09)
More uneducated people have diabetes than those who are educated	43 (43.43)	13 (13.14)	43 (43.43)
CPG is applicable to the management of diabetic cases	90 (90.91)	4 (4.04)	5 (5.05)
CPG should be used in daily practice	90 (90.91)	4 (4.04)	5 (5.05)
Do you believe that the guidelines should be implemented?	90 (90.91)	4 (4.04)	5 (5.05)
Does CPG help in the management of diabetes?	90 (90.91)	4 (4.04)	5 (5.05)

#### 4. CONCLUISON

Recent literature clearly demonstrates the benefits of lifestyle intervention for prevention of T2D. Our findings indicate that family physicians not only understand the importance of lifestyle interventions for preventing and managing DM, but are eager to deliver them. Family physicians do not, however, use effective strategies to bring about lifestyle behaviour change. What is more, there is strikingly little evidence evaluating these initiatives in primary health care.

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