

## STUDY ON ASSESSMENT OF SELF CARE PRACTICES IN DIABETIC PATIENTS IN RURAL AREA OF SALEM DISTRICT TAMILNADU

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### ABSTRACT

Diabetes care requires a multipronged approach, wherein the patient has an important role to play. This study was undertaken to explore self-care practices of diabetic patient residing in Salem district. A cross-sectional study, involving 100 diabetic patients was conducted in 2015-2016. The mean age of the patients was 58.23. The mean duration of their diagnosis was 84.13 months. 52% of the patients had a family history of Diabetes Mellitus and 24% of the patients were suffering from diseases other than Diabetes Mellitus. Out of the diabetes patients who participated in the study, low level of self-care recorded in domain of medication adherence (83.34% males, 93.10% females), consulted the physician (50% males, 72.41% females), blood glucose level (38.09% males, 58.62% females), diabetic diet (73.80% males, 68.96% females), physical activity (38.09% males, 51.72% females), foot care (69.04% males, 60.34% females), diabetic retinopathy (33.34% males, 32.75% females). Females had a higher percentage (93.10%) of medical compliance than that of males (83.34%). It was also found that females had better diabetic self-care practicing behavior than males.

**Keywords:** Self-care practices, Diabetic patients, Salem.

### INTRODUCTION

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, nerves, heart, and blood vessels.<sup>1</sup> Type 2 DM is becoming increasingly common among children as childhood obesity has become epidemic: 40 to 50% of new-onset DM in children is now type 2. Over 90% of adults with DM have type 2 disease. There are clear genetic determinants, as evidenced by the high prevalence of the disease within ethnic groups (especially American Indians, Hispanics, and Asians) and in relatives of people with the disease. Although several genetic polymorphisms have been identified over the past several years, no single gene

responsible for the most common forms of type 2 DM has been identified<sup>2</sup>.

Self-care in diabetes has been defined as an evolutionary process of development of knowledge or awareness by learning to survive with the complex nature of the diabetes in a social context. Because the vast majority of day-to-day care in diabetes is handled by patients and/or families, there is an important need for reliable and valid measures for self-management of diabetes. There are seven essential self-care behaviors in people with diabetes which predict good outcomes. These are healthy eating, being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviors. All these seven behaviors have been found to be positively correlated with good glycemic control, reduction of complications and

improvement in quality of life. In addition, it was observed that self-care encompasses not only performing these activities but also the interrelationships between them. Diabetes self-care requires the patient to make many dietary and lifestyle modifications supplemented with the supportive role of health care staff for maintaining a higher level of self-confidence leading to a successful behavior change.<sup>3</sup>

#### MATERIAL AND METHODS

It was a cross-sectional study carried out from November 2015-April 2016. The study participants were identified from three villages in Salem district, Tamilnadu. The sample size was 100 diabetic patients are selected from the field practicing area of a tertiary care hospital in Salem based on quota sampling. The inclusion criteria for the participants were age of  $\geq 18$  years, person reporting as suffering from diabetes, resident of Salem district. Exclusion criteria were identified as patients diagnosed with type 1 diabetes mellitus, pregnant and lactating women, and patients who are not willing to give informed consent. Seven domains of self-care practices were assessed in our study including the patients following a regular medication adherence, frequency of consultation with the physician, frequency of the blood glucose testing, following a diabetic diet, regular physical activity, proper foot care and whether they visit the ophthalmologist for diabetic retinopathy. An informed written and signed consent for participation in the study was taken from all the participants, in Tamil (local vernacular) language. All the entries were double checked with the physical formats for rectification of any possible errors. Data validation checks were introduced during the data entry process to minimize errors during the process of data entry. The association of self-care practices in different domains was tested with demographic analysis.

#### RESULTS AND DISCUSSION

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, nerves, heart, and blood vessels. A cross sectional study was done to analyse the drug compliance and the self-care practices among 100 diabetic patients in the rural areas of Attayampatty, Periya Pudur and Kondappanaickenpatty, Salem, Tamilnadu.

Out of the 100 patients studied, 42 were male patients and 58 were female, and all are in the age group of 30-80 years. Mean age of the patients were  $58.23 \pm 23.82$ . Mean duration of their diagnosis was 84.13 months. 52% of the patients had a family history of Diabetes Mellitus and 24% of the patients were suffering from diseases other than Diabetes Mellitus. All the patients were given oral hypoglycemic treatment.

Seven domains of self-care practices were assessed in our study including the patients following a regular medication adherence, frequency of consultation with the physician, frequency of the blood glucose testing, following a diabetic diet, regular physical activity, proper foot care and whether they visit the ophthalmologist for diabetic retinopathy.

Domain 1 defined the patient following regular medication adherence. 83.34% male patients and 93.10% female patients followed regular medication adherence. Domain 2 defined the frequency at which they consulted the physician. 50% male patients and 72.41% female patients consulted with their physician once every month. Domain 3 defined the frequency at which the patient tested their blood glucose levels. 38.09% male patients and 58.62% female patients tested their blood glucose levels once every month. Domain 4 defined the patients following a diabetic diet. 73.80% male patients and 68.96% female patients followed a diabetic diet. Domain 5 defined the patients engaging in regular physical activity. 38.09% male patients and 51.72% female patients engaged in regular physical activity. Domain 6 defined the patients who took proper foot care. 69.04% male patients and 60.34% female patients took proper foot care. Domain 7 defined the patients who consulted an ophthalmologist for diabetic retinopathy. 33.34% male patients and 32.75% female patients consulted with an ophthalmologist. The results were depicted in Table No. 1.

Hence, the drug compliance and self-care among diabetic patients in Attayampatty, Kondapanickenpatty and Periya Pudur was found to be good and moderate respectively. Research has shown that improved glycemic control reduces the rate and number of diabetes-related complications. Evidence suggests that patients who are more knowledgeable about diabetes self-care may be more likely to achieve better glycemic control. None of the patients followed a self-monitoring glucose method due to lack of proper knowledge. But this proved to help attain better drug compliance. Self-care is measured by the behaviors undertaken by people with or

at risk of diabetes in order to successfully manage the disease on their own. Self-care was assessed using the seven domains ; following a regular medication adherence, frequency of consultation with the physician, frequency of the blood glucose testing, following a diabetic diet, regular physical activity, proper foot care and whether they visit the ophthalmologist for diabetic retinopathy. Females had a higher percentage (93.10%) of medical compliance than that of males (83.34%). It was also found that females had better diabetic self-care practicing behavior than males.

Subjects who underwent regular blood glucose monitoring had better glycaemic control. Diabetes is a silent killer. Many patients become aware that they have diabetes only when they develop one of its life-threatening complications.<sup>4</sup> Self-care in diabetes has been defined as evolutionary process of development of knowledge or awareness by learning to survive with the complex nature of the diabetes in a social context.<sup>5, 6</sup> There are seven essential self-care behaviors in people with diabetes which predict good outcomes. These are healthy eating, being physically active, monitoring of blood sugar, complaint with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviors.<sup>7</sup> Self-care encompasses not only performing these activities but also the interrelationships between them. All these seven behaviors have

been found to be positively correlated with good glycemic control, reduction of complications and improvement in quality of life.<sup>8-11</sup>

Karam Padma et al.<sup>12</sup> found following a controlled diet and compliance with drugs were significantly associated with the achieving glycemic control which is similar to the findings in our study. Recent research has increased the emphasis on tight metabolic control as several large intervention studies have indicated maintaining good metabolic control can delay or prevent the progression of complications associated with diabetes.

### CONCLUSION

The various reasons for not following diabetic self-care practices in rural areas were age, lower educational qualification and economic status, not enough energy and work capacity, more pain and discomfort. The diabetes team (doctors, nurses, pharmacists, dieticians, psychologist and social assistant) must provide instructions to the patients to fully understand how to manage the illness autonomously and how to prevent short and long term complications. The introduction of free blood glucose lowering medication, educational and counseling interventions designed to facilitate the development of diabetes- specific coping skills, can improve glycemic control, better drug compliance and self-care practices in people with diabetes.

**Table 1: Assessment of Self-care practices in Diabetic patients**

Sl. No	Description	Gender (%)	
		Male	Female
1	No. of patients who took medication regularly	35(83.34)	54(93.10)
2	No. Of patients who consulted physician once every month.	21(50)	42(72.41)
3	No. of patients who tested their blood glucose once every month	16(38.09)	34(58.62)
4	No. of patients who followed diabetic diet	31(73.80)	40(68.96)
5	No. of patients who did physical exercise regularly	16(38.09)	30(51.72)
6	No. of patients who were aware of foot care	29(69.04)	35(60.34)
7	No. of patients who visited an ophthalmologist atleast once	14(33.34)	19(32.75)

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