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A Study to Assess the Knowledge on Self- Management of Insulin Therapy among Patients with Diabetes mellitus, Puducherry

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ABSTRACT

Objective: The main purpose of the study is to assess the knowledge on self-management of insulin therapy among patients with diabetes and to associate the knowledge with selected demographic variables of diabetes mellitus patients on self-management of insulin therapy in Puducherry. **Materials and methods:** The research design adopted for this was descriptive design was adopted for this study. A total number of 30 diabetic patients were selected by using purposive sampling technique and also with inclusion criteria. All subjects were assessed by self -structured questionnaire consist of socio demographic variables, questions regarding knowledge about self-management of insulin. **Results and conclusion:** The results predicted that out of 30 subjects, **20 (66.7%) subjects were found to have moderately adequate knowledge, 7 (23.3%) had inadequate level of knowledge and 3 (10%) had adequate level of knowledge on** self-administration of insulin therapy among patients with diabetes in diabetic clinic. The researcher concluded that certain practice and attitude and similar intervention needed to improve the knowledge on self-management of insulin therapy among diabetic patients in future.

KEYWORDS

Diabetes mellitus, self-management, Insulin therapy, Knowledge

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INTRODUCTION

Diabetes mellitus is a leading endocrine disorder in present scenario Characterized by hyperglycaemia that is, high blood sugar levels. Diabetes mellitus is caused by an impregnable insulin deficiency, which is a hormone produced by the pancreas[1]. Diabetes is a predominant cause for highest morbidity and mortality, though this is not due to the immediate effect of the disorder. Some of the diseases, which develop as a complication of chronic diabetes mellitus such as, heart disease and peripheral vascular disease (large blood vessel; disease) and Retinal and renal vascular disease (small blood vessel diseases), as well as Nerve disorders[2].

Insulin is highly necessary for normal metabolic process of macronutrients such as carbohydrate, protein, and fat in order to produce energy. People with type 1 diabetes mellitus unable to produce insulin adequately to sustain life and therefore to meet out the energy demand of our body, it needs to depend on exogenous insulin for survival[3].

Diabetes mellitus has appeared to be a one of the biggest challenging public health problems for the developing country like India in this twenty-first century. It is one of the multidimensional non-communicable disease and it accounts for currently over 366 million people worldwide and is likely to double by 2030[4].

Globally, WHO estimated that around 422 million adults were living with diabetes in 2014, whereas it was only108 million in 1980. The global prevalence of diabetes has nearly doubled, rising from 4.7% to 8.5% in the adult population from 1980 to 2014. It was also highlighted that the overweight or obese are main associated risk factors for DM for most of the time.

Wild et al. conducted a study on the prevalence of diabetes and it is estimated approximately to double from 171 million in 2000 to 366 million in 2030 globally and with a maximum increase would be in India. It is also predicted that 79.4 million individuals in India would be with DM by 2030 which would be a biggest burden for developing country like India, while developed countries like China (42.3 million) and the United States (30.3 million)[5]. it is remarkable increase and would be a biggest challenge for India

A study conducted by **Yusuf gerada, et al** (2016) revealed that the factors influencing the non-adherence to insulin self-managements were forgetting time of injection, deliberately feeling better and feeling worse[6].

In the year 2000, India (31.7 million) ranked topmost in the world with the highest number of diabetic people followed by China (20.8 million) and United States (17.7 million) in second and third place respectively[7].

Education is likely to be effective if we know the level of knowledge. The outcome of any disease basically falls on the decision that they make on self-management. Hence the researcher felt that the Diabetic patients especially with insulin therapy need to be overwhelmed with knowledge on their disease and its management. Also, they should have positive attitude on their medical management which will help them to overcome the barriers through which they come across. This will help in avoiding complications besides improving quality of life of the patients. Therefore, the investigator took an initiative on this.

MATERIALS AND METHODS

The Quantitative research approach and Descriptive research design was adopted for this study. A total number of 30 samples were selected for this study by using Non probability purposive sampling technique and also with the help of inclusion criteria such as the persons who are specifically on insulin therapy are included in the study. Self-structured questionnaire was used in this study after obtaining formal permission from the author and the tool structured in 2 sections. Section A consists of demographic variable, Section B consists of questions regarding knowledge on self-administration of insulin therapy and is divided into 2 main parts. Part A consists of Statement related to General information regarding insulin therapy. Part B consists of Statement on self-management of insulin therapy. The semi structured questionnaire was used with multiple choice form of questions. One mark was given for each correct response and for incorrect response, zero mark was graded. The patients who are all not willing to participate in the study, oral hypoglycaemic agents are excluded from the study. The ethical clearance was obtained from my own institution (MTPG&RIHS) and the diabetic clinic, Puducherry. Prior to the data collection, permission was obtained from the patients. The subjects who were on insulin therapy were selected and for these subjects' the required data was collected.

RESULTS

The incidence of obesity is becoming pandemic of 21st century and it has reached very important proportions in the global statistics. Obesity alone doesn't be a cause for poor quality of life and it

increases the risk of non-communicable diseases. DM is one among such common non communicable disease in India[8].

Among the 30 patients Majority of the study population 12 (40%) were belong to the age group between 51-60 years, Most of the diabetes mellitus patients 18 (60%) in the study were males, 14 (46.7%) samples had basic level of education that is primary school education, 12 (40%) were unemployed, 26 (86.7%) samples from the study were Hindu and 26 (86.7%) samples are married, Per capital family monthly income was less than Rs.2500/- for majority of the samples in this study. Among 30 samples, half of the study population 16 (53.3%) are having diabetes mellitus for past 4-6 years and 10 (33.3%) diabetes mellitus patients are under insulin therapy for 5-6 years. Surprisingly there is no history of diabetes mellitus for 18 (60%) study subjects.

The present results showed that the two third of samples that is **20 (66.7%) were having moderately adequate knowledge,7 (23.3%) had inadequate level of knowledge and surprisingly only 3 (10%)** samples found to have **adequate knowledge on** self-management of insulin therapy. (fig.1) further, the data was analysed by using the mean and standard deviation. The mean knowledge is 7.5 with the standard deviation of 2.374 (fig.2).

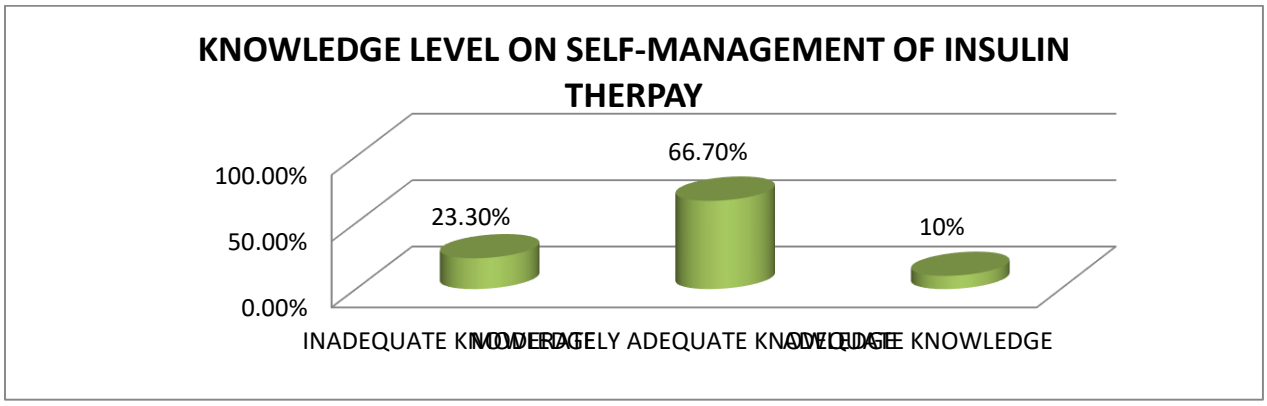

Figure 1 Knowledge regarding self-management of insulin therapy

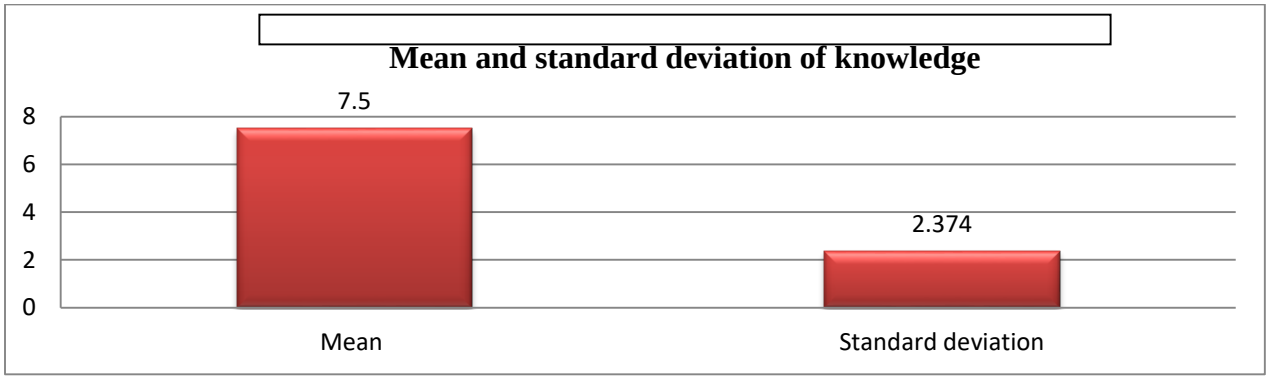

Figure 2 Mean and standard deviation of knowledge

The results of this present study are consistent with the recent study conducted by **Surendranath A et al (2012)** which is clearly picturized that the risk of mortality increases with the higher grade of obesity [8].

The study findings also revealed that the demographic variables such as duration of disease and family history of DM had shown statistically significant association with the knowledge on self-management of insulin therapy **(χ^2=12.8, d. f=6)** at **p<0.05 level** and the other demographic variables had not shown statistically significant association on the knowledge on self-management of insulin therapy among patients with diabetes in diabetic clinic.

DISCUSSION

Worldwide DM is broadly considered as one of the leading causes for disability. Knowledge regarding self-management of DM is an only key could lead to better management and good quality of life. Therefore, knowing the amount of knowledge acquired by an individual is an integral part of life.

The current study results revealed that out of 30 samples, **most of the** adults found to have **moderately adequate knowledge, inadequate level of knowledge and only few had adequate level of knowledge on** self-management of insulin therapy among patients with diabetes in diabetic clinic. The findings are consistent with study conducted by **Mayara sausa vianna, et al (2017),** which showed that the self-care competence in the administration of insulin was only about 35.1%[9]. Among 30 samples majority of the diabetes mellitus patients 12 (40%) of study population were between the age group of 51-50 years, most of the diabetes mellitus patients come under male 18 (60%), most of the diabetes mellitus patients come under the basic level of education 14 (46.7%), majority of the diabetes mellitus patients come under occupational in unemployed 12 (40%), most of the diabetes mellitus patients were belongs to the Hindu religion 26 (86.7%), majority of the diabetes mellitus patients 26 (86.7%) were belongs to married, majority of the diabetes mellitus patients come under less than rs.2500 in family income 9 (30%), most of the diabetes mellitus patients were belongs to the diagnosis of diabetes mellitus 4-6 years 16 (53.3%), majority of the diabetes mellitus patients come under 5-6 years on insulin therapy 10 (33.3%), most of the diabetes mellitus patients were belongs to no history of diabetes mellitus 18 (60%).

CONCLUSION

DM is one of the chronic diseases presented a worldwide burden. Insulin therapy is a powerful and lifesaving medication but if it is handled wrongly in the administration of insulin therapy would even cause harm to a person. A quiet lot of errors are happening due to insufficient patient's knowledge and can also cause adverse patient outcomes as hypoglycaemia leading to patient death[10].

The present study shows that there are lot of subjects found to have inadequate knowledge on self-management of insulin therapy. In addition, this study findings concludes that there is a massive need of education on self-management of insulin therapy which will help them to increase the quality of life.

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