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Assessment on Diabetes Knowledge among Type 2 Diabetes Mellitus Patients and Their Relation to Compliance of Life Style Measures

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Abstract:
Diabetes is world-wide in distribution and the incidence of type 1 and 2 diabetes is rising to epidemic proportions in both developed and developing countries. This global pandemic mainly involves type 2, and is associated with several contributory factors such as increased longevity, sedentary lifestyles, unhealthy dietary habits, obesity and increasing urbanization, and globalization. Type 2 diabetes is characterized by insulin resistance and relative insulin deficiency, either of which may be present at the time of diagnosis. The present study was undertaken to study the compliance of lifestyle measures and diabetes knowledge. A sample of 150 Type 2 diabetes mellitus patients both males and females of 18 years or older, visiting the outpatient department of Dr. Mohan's Diabetes Specialties Center, Chennai have been randomly selected for the research study. A standard pre-tested questionnaire was used for interviewing the selected subjects the diabetes knowledge test scores were found to be 62.1± 13.6 percent. The subjects in the compliant group had better diabetes knowledge that is around 80 percent of mean knowledge than the partially compliant group about 57 percent the data showed that subjects with good dietary adherence also had greater diabetes awareness knowledge.

Keywords: *Type 2 diabetes mellitus, diabetes knowledge, life style measures*

1. Introduction

Diabetes is a chronic debilitating disease affects large numbers of people of all socio-economic class throughout the world. The individual and public health burden of the disease, already of vast proportions, continues to grow despite interesting advances in the past few years in virtually every field of diabetes research and in patient care including improved treatment, protection against complications, improved lifestyles and even, primary prevention of the disease (WHO, 2005). Public knowledge about diabetes does not commensurate with the magnitude of the problem in India. Educational approaches to enhancing non-adherence generally begin with providing the patient with a general understanding of the importance of the medical recommendations. Although information and increased knowledge is necessary for the behavior to take place, it is often insufficient to sustain or reinforce the behavior over time (Straka et al., 2006). There is very little data on the level of awareness and prevalence about diabetes in developing countries like India (Welschen et al., 2007). It is important to know about the awareness levels about a condition in a population, as knowledge is a critical component in behaviour change, there is still inadequate awareness regarding the various facets of the disease amongst public in India. Also not much work has been done focusing on the actual dimension of the problem. (Pinhaas et al., 2006).

2. Materials and Methods

The study was undertaken to assess the diabetes awareness knowledge among the selected type 2 diabetes mellitus patients and to compare and contrast the relation between compliance of lifestyle measures and diabetes awareness knowledge among type 2 diabetes mellitus patients.

In the present study, purposive and convenient sampling methods were used for the selection of one hundred and fifty type 2 diabetes mellitus patients visiting the outpatient department of Dr. Mohan's Diabetes Specialties Center, Chennai. Both male and female patients aged above 18 years and had two diet reviews prior to current visit were included in the study. A standard pre-tested questionnaire was used for interviewing the selected subjects. Diabetes prevention and awareness knowledge test was conducted among the selected subjects. The knowledge assessment was based on the cause of diabetes, types of diabetes, and its complications, prevention of diabetes. Compliance scores were measured by using compliance index of lifestyle measures in diabetes scores. This index was adapted on the lines of the DASH study compliance indices. Statistical analysis was done using Windows based SPSS

statistical package (Version 19.0, Chicago, IL). Continuous variables were presented as mean and standard deviation (S.D). Spearman Correlation analysis was adopted for finding out the relation between variables.

3. Results and Discussion

A sample of 150 Type 2 diabetes mellitus patients both males and females of 18 years and above, who visited the outpatient department of Dr. Mohan's Diabetes Specialties Center, Chennai has been randomly selected for the research study. One hundred and fifty self-administered questionnaires distributed to the randomly selected Type 2 diabetes mellitus subjects had resulted in a response rate of 100 percent. The collected data were coded and included in the data analysis. The diabetes knowledge test comprised of 15 questions. The questions were based on the

1. General knowledge of diabetes (6 items),
2. Risk factors (3 items),
3. Symptoms and complications (2 items),
4. Treatment and management (2 items),
5. Prevention (2 items).

The response options were "Yes," "No," and "Don't know." The "Don't know" option was included to reduce the amount of guesswork from respondents. The respondents were awarded one point for each correct response, and zero for each wrong or "Don't know" response. Percentage scores were converted from raw scores using the following formula: (raw score * 100)/15. The interpretation of scores was performed by a Delphi panel of experts and defined as poor (<50percent), fair (_50–<80percent), and good (_80percent) (Tipaporn et al., 2009).

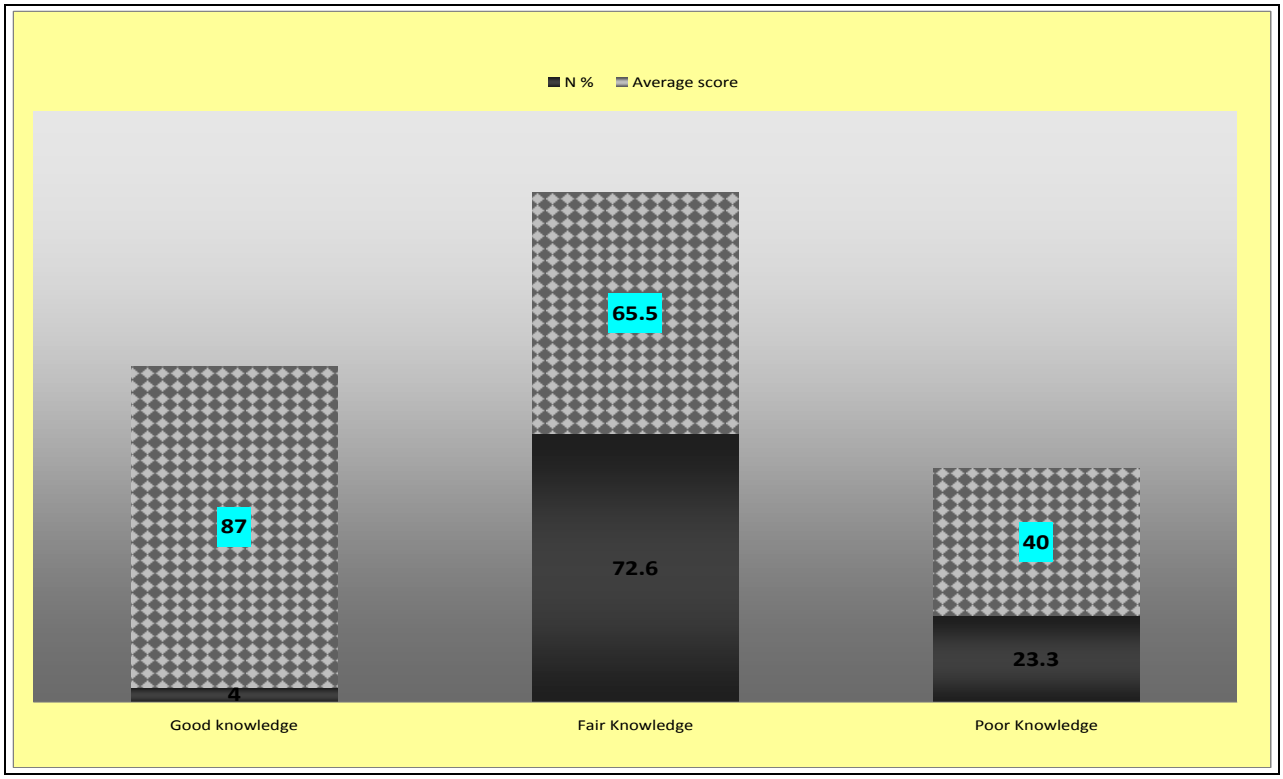

Figure1: Diabetes Knowledge Test – Total N and Mean Score in percentage

Figure 1 shows the diabetes knowledge test in terms of mean score and percentage. According to the grading criteria established, 4 percent (Mean score -87 percent), 72.6 percent (Mean score- 65.5 percent) , 23.3 percent (Mean score- 40 percent) were considered to have "Good", "Fair," and "Poor" knowledge of diabetes respectively.

Sl. no	Questions	Respondents Mean score (Percentage)
1	Diabetes knowledge section (6 Items)	41.4
2	Risk factors (3 Items)	95.5
3	Symptoms and complications (2 Items)	39.3
4	Treatment and Management (2 Items)	69
5	Diabetes prevention (2 Items)	76.9

Table 1: Mean percentage of respondents about diabetes knowledge test

Table 1 shows the mean percentage of respondents about general knowledge test where in the diabetes section, the mean score was less than 50 percent. The respondents performed best in the risk factor section with a mean percentage of 95.5 percent and worst in the section on symptoms and complications with a mean percentage of 39.3 percent. About treatment and management, 69 percent of the respondents were answered correctly and about 77 percent of respondents given correct answer for diabetes prevention. A good understanding of diabetes symptoms and complications would allow the public to detect the disease early. Slow healing of cuts and wounds, and frequent urination and thirst are signs of high blood sugar, shaking and sweating are signs of low blood sugar, diabetes can damage kidneys were generally less well recognized as symptoms and complication of diabetes by the subjects.
The diabetes awareness knowledge among the type 2 diabetes subjects belonging the "compliant group" and "Partially compliant group" was assessed. The data were represented in the quartiles distribution in table 2

Quartiles	Compliant group – knowledge percentage	Partially compliant group- knowledge percentage
1st Quartile (More knowledge)	70.3	56.8
2nd Quartile (Less Knowledge)	29.7	43.2

Table 2: Diabetes awareness knowledge among compliant and partially compliant groups

Table 2 shows that majority of the subjects, that is, 70.3 percent belonging to the compliant group had fallen in the 1st Quartile which represents more knowledge and whereas only 56.8 percent had fallen from the partially compliant group. Less than 30 percent of the subjects were belonged to the 2nd Quartile that indicates less diabetes knowledge in the compliant group whilst more number of subjects nearly 43 percent was from the partially compliant group. Thus the table shows the significance with p-value <0.001 with respect to the diabetes awareness knowledge and compliance to lifestyle measures.

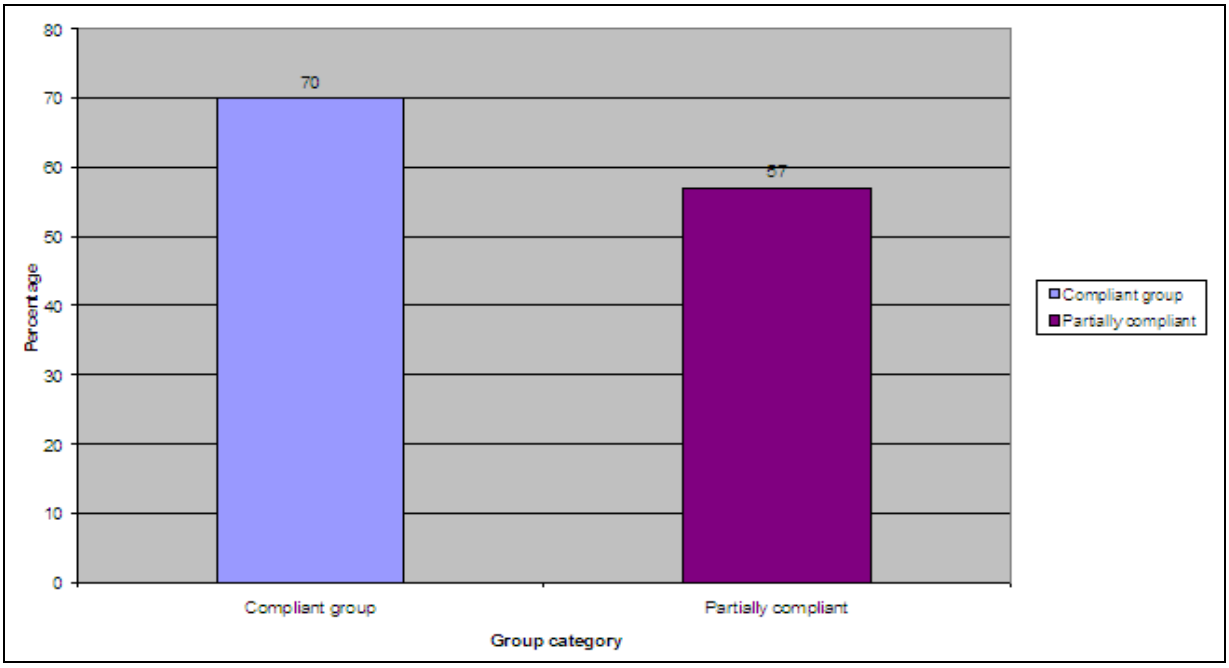

Figure 2: Comparison of Diabetes awareness knowledge among the compliant and partially compliant group

Figure.2 shows that the subjects in the compliant group had better diabetes knowledge that is around 80 percent of mean knowledge than the partially compliant group about 57 percent. From the data, it shows that subjects with good dietary adherence also had greater diabetes awareness knowledge.

4. Conclusion

A good understanding of diabetes symptoms and complications would allow the public to detect the disease early. The diabetes knowledge test comprised of 15 questions. The questions were based on the general knowledge of diabetes (6 items), risk factors (3 items), symptoms and complications (2 items), treatment and management (2 items), prevention (2 items). The response options were "Yes," "No," and "Don't know". The mean diabetes knowledge score were found to be of 62.1± 13.6 percent.The subjects in the compliant group had better diabetes knowledge that is around 80 percent of mean knowledge than the partially compliant group about 57 percent. From the data, it was evident that subjects with good dietary adherence also had greater diabetes awareness knowledge. Compliance to the lifestyle measures and additionally proper diabetes awareness knowledge would definitely contribute to the better blood glucose status among the Type 2 Diabetes subjects.

5. References

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