“Knowledge And Attitude on Self Monitoring of Blood Glucose (Smbg) Among Diabetic Patients Belongs to Waghodia Taluka”

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Abstract:

**Background:** Self-monitoring of blood glucose (SMBG) has been accepted as an important instrument that empowers people with diabetes to achieve and maintain therapeutic goals. This study is an attempt to assess the level of knowledge on self-monitoring of blood glucose (SMBG) among diabetic patients. The aim is to assess the attitude on self-monitoring of blood glucose (SMBG) among diabetic patients.

**Aims & Objective:**
1. To assess the level of knowledge on self-monitoring of blood glucose (SMBG) among diabetic patients.
2. Assess the attitude on self-monitoring of blood glucose (SMBG) among diabetic patients.
3. Find out the correlation between level of Knowledge and Attitude on self-monitoring of blood glucose (SMBG) among diabetic patients.
4. Find out the association between levels of knowledge with selected demographic variables of diabetes mellitus patients.
5. Find out the association between attitudes with selected demographic variables of diabetes mellitus patients in Waghodia Taluka.

**Methods:** The interventional study was conducted with a sample of 200 patients of selected area of Waghodia Taluka. The tools used for data collection were a set of demographic variables and interview scales to assess knowledge and attitude on SMBG. A planned teaching program on knowledge and attitude on SMBG among diabetic patients belongs to Waghodia Taluka was the intervention of the study. Content validity of the tool was ensured by verifying it with experts from the field of medicine and nursing. In the data gathering process, a pre-test was administered to assess the knowledge level of the sample. After 7th day post-test was administered using the same set of questionnaires to assess the knowledge level again.

**Interpretation:** The result showed a negative correlation between knowledge and attitude on SMBG in diabetic patients.

**Conclusion:** The motivated diabetic patient about knowledge and attitude on SMBG in diabetic patient. It has given a new avenue to the researcher to widen the horizon on move research aspect of knowledge and attitude on SMBG in diabetic patient.

**Key words:** Assess, Effectiveness, Knowledge and attitude, SMBG, DM patient.

I. Introduction

Diabetes mellitus is a chronic multi system disease related to the abnormal insulin production, impaired utilization of insulin or both. Diabetes mellitus is a serious health problem in the world and its prevalence is increasing rapidly. Self-monitoring of blood glucose (SMBG) has been accepted as an important instrument that empowers people with diabetes to achieve and maintain therapeutic goals. The WHO estimates 177 million people with diabetes mellitus worldwide. In India, there are nearly 35 million diabetic patients and the number would go up to 80 million by 2030. If unchecked the diabetes can cause disease related to kidney, heart and nerve system at later stage.

II. Need For Study

The WHO estimated 30 million people worldwide had diabetes mellitus in 1985. A decade later, the global burden of diabetes mellitus was estimated to be 135 million. In the year 2006 it was 246 million. This is likely to increase at least 366 million by 2030. Around 3.2 million deaths every year are attributable to complications of diabetes; six deaths every minute. The top 10 countries, in numbers of sufferers are India, China, USA, Indonesia, Japan, Pakistan, Russia, Brazil, Italy, and Bangladesh. At present in India 41 million patients suffering with diabetes mellitus and this number will reach 79.4 million by 2030.
III. Statement Of The Study

Objectives Of The Study
1) To assess the level of knowledge on self-monitoring of blood glucose (SMBG) among diabetic patients of Waghodia Taluka.
2) Assess the attitude on self-monitoring of blood glucose (SMBG) among diabetic patients of Waghodia Taluka.
3) Find out the correlation between level of knowledge and attitude on self-monitoring of blood glucose (SMBG) among diabetic patients belongs to Waghodia Taluka.
4) Find out the association between levels of knowledge with selected demographic variables of diabetes mellitus patients in Waghodia Taluka.
5) Find out the association between attitudes with selected demographic variables of diabetes mellitus patients in Waghodia Taluka.

Hypothesis
⇒ H₁: There was significant association between existing level of knowledge score on SMBG with their socio-demographic variables
⇒ H₂: There was significant correlation between Knowledge and Attitude score on SMBG.

Assumptions
• Community people may have limited knowledge on SMBG.
• DM patients may have positive or negative attitude on SMBG.

Operational Definition
⇒ Knowledge: It refers to level of understanding regarding self-monitoring of blood glucose (SMBG) among diabetic patients belongs to Waghodia Taluka.
⇒ Attitude: It is considered predisposition or a tendency to respond positively or negatively towards SMBG by diabetes mellitus patients.
⇒ SMBG: Self-monitoring of blood glucose is a blood test monitor by self with a specialized device.
⇒ Diabetes patients: Person suffering from diabetes mellitus type 2 regarding at geographical area of Waghodia Taluka.

IV. Research Methodology

Methodology of research indicates the general pattern of organizing the procedure for the empirical study together with the method of obtaining valid and reliable data for problem under investigation.

Research Approach:- A Quantitative Research Approach Is Adopted For The Study.
Research Design: - Non Experimental Descriptive Design
Research Variables
Dependent variable
⇒ Knowledge on SMBG of patients with diabetes mellitus.
⇒ Attitude on SMBG of patients with diabetes mellitus.

Socio-Demographic variable
Age, gender, marital status, education qualification, occupational status, monthly income demographic area, BMI, duration of the DM, previous source of health information, family history, abdominal girth.

SETTING OF THE STUDY: The study will be conducted in the rural area of Waghodia Taluka.

Target Population: Diabetic Patients.
Sample Size: 209 Diabetic Patients (N=209)
Sampling Technique: Non Probability Convenient Sampling

Method Of Data Collection
Self-Structured & Administered Interview Scale And Self Modified Likert Scale

Sampling Criteria
Sampling criteria is the list of characteristics essential for inclusion or exclusion in the target population.
Inclusion Criteria
1. Diabetic Patients from a Waghodiataluka.
2. Those who are willing to participate in the study.
3. Those who know Gujarati, Hindi or English Language.

Exclusion Criteria
1. The Diabetic Patients who are not available at the time of data Collection.
2. The Diabetic Patients who are not willing to participate in the Study.

Pilot Study
Small scale version or a trial run done in preparation for a major study. The tool was used for pilot study to test feasibility and practicability. 20 Diabetic Patients were selected from the Piparia village Vadodara. The convenient sampling technique was used to select samples. The findings showed that the study is feasible and practical.

Development And Description Of Tool
An instrument selected in a research should be as far as possible, the vehicle that would best obtain data for drawing conclusion, which were pertinent to the study.

⇒ Section A Socio demographic variables: Age in years, gender, marital status, educational qualification, occupational status, monthly income of family (rupees), family history of diabetes, duration of diabetes mellitus in years, and previous sources of health information

⇒ Section B Knowledge interview scale: This section consists of 15 statements to assess the level of knowledge self-monitoring of blood glucose (SMBG) among diabetic patients.
- Inadequate knowledge: score less than 50%
- Moderately adequate knowledge: score 50% -75%
- Adequate knowledge: score more than 75%

⇒ Section C Attitude Scale: This section consist of 10 items to assess the attitude on self-monitoring of blood glucose (SMBG) using 3 point likert scale such as “Strongly Agree”, “Agree”, “Disagree”. The maximum score is 30.

V. Result

Table 1: frequency and percentage distribution of diabetic patient according to demographic variables

<table>
<thead>
<tr>
<th>Sr. no</th>
<th>Demographic variables</th>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age in years</td>
<td>30-40 years</td>
<td>22</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>41-50 years</td>
<td>43</td>
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<td></td>
<td></td>
<td>51-60 years</td>
<td>123</td>
<td>58.9</td>
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<td></td>
<td></td>
<td>60 and above</td>
<td>21</td>
<td>10.0</td>
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<tr>
<td>2</td>
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<td>1.0</td>
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<td>Divorced</td>
<td>7</td>
<td>3.3</td>
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<tr>
<td></td>
<td></td>
<td>Separated/widowed</td>
<td>00</td>
<td>00</td>
</tr>
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<td>20.6</td>
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<td>42.1</td>
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<td>Higher Secondary</td>
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<td>29.7</td>
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<td></td>
<td></td>
<td>Graduate &amp; above</td>
<td>16</td>
<td>7.7</td>
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<td>5</td>
<td>Occupational Status</td>
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<td>133</td>
<td>63.6</td>
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<td>Business</td>
<td>49</td>
<td>23.4</td>
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<td>Government employee</td>
<td>6</td>
<td>2.9</td>
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<td>Self-employee</td>
<td>21</td>
<td>10.0</td>
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<td>00</td>
<td>00</td>
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<td>Monthly Income of Family (Rupees)</td>
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<td>130</td>
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<td>20000 and above</td>
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<td>2.9</td>
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<td>7</td>
<td>Family History of diabetes</td>
<td>Present</td>
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<td>9.1</td>
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<td>Not Present</td>
<td>190</td>
<td>90.9</td>
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<tr>
<td>8</td>
<td>Duration of diabetes mellitus in years</td>
<td>0-5 years</td>
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<td>78.5</td>
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<td>5-10 years</td>
<td>34</td>
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<tr>
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<td>10-15 years</td>
<td>8</td>
<td>3.8</td>
</tr>
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</table>

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Analysis Of Knowledge And Attitude

A) Assessment of knowledge on self-monitoring of blood glucose (SMBG) among diabetic patients

Table 2: Mean, SD, and mean% score for the test knowledge level

<table>
<thead>
<tr>
<th>SCALE</th>
<th>MAX SCORE</th>
<th>MEAN</th>
<th>SD</th>
<th>MEAN%</th>
</tr>
</thead>
<tbody>
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<td>15</td>
<td>10.10</td>
<td>2.07</td>
<td>67.33%</td>
</tr>
</tbody>
</table>

Table 2: illustrates that overall knowledge score was found to have a mean of 10.10, standard deviation of 2.07 and mean% of 67.33%.

Figure 1: Bar graph represents that 52.2% is having adequate knowledge, 41.6% is having moderately adequate knowledge and 6.2% having inadequate knowledge.

Table 3: Mean, SD and mean% of attitude scale

<table>
<thead>
<tr>
<th>SCALE</th>
<th>MAX SCORE</th>
<th>MEAN</th>
<th>SD</th>
<th>MEAN%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTITUDE</td>
<td>30</td>
<td>18.35</td>
<td>2.77</td>
<td>61.16</td>
</tr>
</tbody>
</table>

Table 3: illustrates that overall attitude score was found to have a mean of 18.35, standard deviation of 2.77 and mean% of 61.16%.

Figure 2: Bar graph represents that majority 73.3% is having moderately attitude, 25.4% is having mild attitude and 3.3% having adequate attitude.
Table 4: relationship between knowledge and attitude on self-monitoring of blood glucose (smbg) among diabetic patients

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>Mean%</th>
<th>SD</th>
<th>Correlation between knowledge and attitude</th>
<th>REMARKS</th>
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<td>10.10</td>
<td>67.33%</td>
<td>2.07</td>
<td>-0.153</td>
</tr>
<tr>
<td>Attitude</td>
<td>30</td>
<td>18.35</td>
<td>61.16%</td>
<td>2.77</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: illustrates that the correlation between knowledge and attitude is r=-0.153 is found moderate negative correlation.

Table 5: Association of socio demographic variables with knowledge

<table>
<thead>
<tr>
<th>Sno</th>
<th>Variables</th>
<th>Ia</th>
<th>Ma</th>
<th>A</th>
<th>Total</th>
<th>X²</th>
<th>Df</th>
<th>Level Of Significance</th>
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<td>Age (In Years)</td>
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<td></td>
<td>30-40 years</td>
<td>5</td>
<td>17</td>
<td>0</td>
<td>22</td>
<td>3.80</td>
<td>6</td>
<td>(3.80&lt;12.59) NS</td>
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<tr>
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<td>41-50 years</td>
<td>11</td>
<td>30</td>
<td>2</td>
<td>43</td>
<td>2.10</td>
<td>4</td>
<td>(2.10&lt;9.48) NS</td>
</tr>
<tr>
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<td>51-60 years</td>
<td>29</td>
<td>89</td>
<td>5</td>
<td>123</td>
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<tr>
<td></td>
<td>60 and above</td>
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<td>13</td>
<td>0</td>
<td>21</td>
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<tr>
<td>2</td>
<td>Gender</td>
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<td>33</td>
<td>90</td>
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<td>127</td>
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<td>59</td>
<td>3</td>
<td>82</td>
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<td>34</td>
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<td>43</td>
<td>20.25</td>
<td>6</td>
<td>(20.25&gt;12.59) S</td>
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<td>62</td>
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<td>6</td>
<td>0</td>
<td>16</td>
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</table>

KEY= ”S” is significant, “NS” is not significant. DF= Degree of freedom

H₃: There was significant association between existing level of knowledge score on SMBG with their socio-demographic variables. So here to test the hypothesis, chi-square test has been used. Data have been analyzed with the use of SPSS version 20.0 and the outputs are depicted in the above table. The table reveals that there is no significant association between pre-test knowledge score and selected demographic variables with 0.05 level of significant except educational qualification, and occupational status of sample’s P calculated value is greater than 0.05 level of significance

VI. Discussion & Conclusion

This chapter includes conclusion, implication, limitations and recommendations. The following conclusions were drawn from the finding of the present study. The research approach adopted in the present study is quantitative research approach & design was Non Experimental Descriptive design. The motivated the diabetic patient about knowledge and attitude on SMBG in diabetic patient. It has given a new avenue to the
researcher to widen the horizon on move research aspect of knowledge and attitude on SMBG in diabetic patient.

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