Knowledge, attitude and practice of self care among diabetic patients at Jimma University Medical Centre Diabetic Clinic, Jimma, Oromia region, South West Ethiopia: A survey study

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Citation

ABSTRACT
Objective: To assess knowledge, attitude and practice of self-care among diabetic patients having followed up at Jimma University Medical Centre, Oromia region, southwest Ethiopia. Methods: Institutional study based design was conducted from March to May, 2019 in Jimma university medical centre diabetic follow up clinic. The study populations were all diabetic patients who came to JUMC diabetic follow up clinic during data collection time. Convenient sampling method was used using standardized questionnaires; information was gathered by face-to-face interview. Result: From total of 365 participants, 330 were given full information which is 90.41% respondent rate. From this 130(39.4%) were Type I DM patients and 200(60.6%) were type II DM patients, from the total respondents house wives were most affected groups 71(21.5%) and followed by farmers 73(22.1%). From total or 330 patients with the age groups of 50-59, 79(23.93%) were developed DM and mostly affected from other age groups. Regarding DM knowledge related to education about the diet (diabetic food), store insulin in buried pot with water and insulin injection in the abdomen, 300(90.9%), 90(26.47%) and 44(12.9%) respectively were obtained, from the total patients 300 (90.9%) of DM patients are interested in diabetic diets and 310 (93.9%) are interested in exercises. Conclusion: The commonest age group affected by diabetes mellitus was the age group 50-59 years which indicates most of them are type II DM patients. Significant number of patients learns about diabetic diet. There is gap between diabetic patients who know about diabetic diet and who eat
diabetic diet. Significant number of patient’s participation to exercise was generally poor. Regarding patients attitude, there is favorable (positive) attitude especially on that of diet and exercise.

**Keywords:** Self Care, Diabetic, KAP Knowledge, attitude and practice, DKA Diabetes, Ketoacidosis and End stage renal disease (ESRD)

1. **INTRODUCTION**

Diabetes is a chronic metabolic disorder described by elevated levels of blood glucose (or blood sugar), leading to significant damage to the heart, blood vessels, skin, kidneys, and nerves over time (WHO, 2009). The development of diabetes requires several pathogenic pathways. Deficient insulin action on target tissues is the cause of the defects in carbohydrate, fat, and protein metabolism in diabetes (American Diabetes Association 2004). The signs of diabetes differ based on how high the blood sugar is. Some signs include increased thirst, frequent urination, intense hunger, sudden weight loss, urinary ketones presence Form 1, type 2, gestational diabetes and other particular forms, pancreatitis, hereditary defects in insulin function, trauma, and pancreatectomy are known as Diabetes mellitus (DM). Form 1 and Type 2 are the two broad types of DM. As pathogenic processes proceed, all types of DM are followed by a period of irregular glucose homeostasis. Type 1 diabetes mellitus is the product of complete or near total insulin deficiency. Individuals with type 1 diabetes mellitus face drastic lifestyle changes, including the absolute daily necessity of exogenous insulin, the need to control their own amount of glucose and the need to pay attention to dietary intake (mayoclinic.org; Stephanie Watson 2020).

Acute metabolic derangements and long-term complications that usually affect small and large vessels in adulthood are responsible for morbidity and mortality. Type 2 diabetes mellitus is characterized by a variable level of insulin resistance; insulin affected with uncontrolled DM, glucose, ketone bodies, electrolytes and water is lost by the body. Type 1 adults with diabetes also experience diabetic ketoacidosis. Symptoms of hyperglycemia and ketoacidosis are similar, but typically more severe than in patients without acidosis, when extremely low insulin levels are reached; ketoacids accumulate leading to abdominal discomfort, nausea, and emesis. Dehydration accelerates and polyuria persists, causing fatigue. The degree of dehydration may be underestimated clinically. Type 2 diabetes adolescents are typically obese but do not depend on insulin and seldom develop ketosis during serious infections or other stresses, marked by insulin resistance and sometimes a progressive defect. This will result in dehydration, ketoacidosis and in extreme case may proceed to death (Jemal et al., 1999; Dawit Worku et al., 2010).

DM is the leading cause of end-stage renal disease (ESRD), non-traumatic low-extremity amputations, and adult blindness. Cardiovascular disorders are also predisposed to this. DM is expected to be a significant cause of morbidity and mortality for the foreseeable future. Insulin, diets, exercise, drugs and health education are basics of diabetic management (WHO, 2005; WHO 2014).

**Significance of the Study**

Information on awareness of diabetic care is important because with lack of awareness the social and economic effect of the disease would be extreme against available health facilities and limited resource and man power. Secondly with better awareness it is possible to prevent chronic complications and prevent the acute ones.

2. **METHODS**

This section contains information about the subjects, their mode of recruitment, instruments and the procedure used for this study. Subjects willing to take part in the research were briefed on the research and interventions. After briefing the informed consent was taken, their demographic data was collected and initial evaluation was done.

**Study period**

The study was conducted in between March to May 2019.

**Study design**

Institutional based study was conducted to assess KAP of diabetic’s patient towards diabetes mellitus at clinic of JUMC.

**Study population**

The study was conducted on patients having followed up at Jimma University Medical Centre diabetic clinic which is located in south western Ethiopia.
Sampling technique
Convenient sampling method was used.

Sampling size
Sample size will be determined using single population proportion formula
\[ n = \frac{Z^2 \cdot p \cdot (1-p)}{d^2} \]
\[ Z = 1.96 \] (95% confident interval)
\[ d = 0.05 \] marginal error
\[ P = \text{Prevalent of KAP of DM patient towards home management of their illness} \]
\[ n = \text{minimum sample size} \]
\[ n = (1.96)^2 \cdot 0.5 (1.05) \]
\[ (0.05)^2 \]
\[ n = 384 \]

The minimum sample size for less than 10,000 populations will be
\[ n_f = \frac{N}{1 + n} \]

Total population
\[ N = 365 \]

Inclusion Criteria
Following subjects were included in the study:
- Males, Females and Adolescence
- Both Type I & Type II
- Age group 10-70 years
- Patients who can write and read
- Patients diagnosed for DM and who are on regular follow up during the study period.

Exclusion Criteria
Following subjects were excluded in the study:
- Patients diagnosed for DM, but those who are not on regular follow up
- Patients who are hospitalized during the study period due to complications
- Patients having any other previous associated medical condition like hypertension and kidney disease.
- Patients unable to read and write
- Uncooperative patients

In order to evaluate the clarity of the questionnaire, validity of the instrument and the reaction of the respondent, the questionnaire was pretested in five percent (5%) of the study population done before the beginning of the actual data collection. After the pretest the findings and observations obtained were used to modify the questionnaire and the data collection process accordingly.

Variables
- Independent variables
- Socio demographic Age, sex, religion, ethnicity, occupation, Educational status,
- Medical condition, Type of diabetes, duration, diagnosis
- Dependent variables
- Diabetic Self-Care Skills
- Attitude towards self-care
- Self-care practice
Data analysis
The data was collected using Convenience sampling technique. Data was collected and recorded manually and analyzed using SPSS 19 software.

3. RESULT
Among the total of 365 DM patient participants, of those 330 were given full information which is 90.41% of respondent rate. From this 130(39.4%) were patients with type I DM and 200(60.6%) were with type II DM. Among those 330 respondents 75(22.7%) lived in urban area and 255(77.3%) of them lived around rural area. Regarding age group, 10-19, 40(12.1%), 20-29, 52(15.8%), 30-39, 50(15.2%), 40-49,(14.8%), 60-69, 35(10.6%). The most common affected age group was 50-59, 79(23.9%) and the least affected age group was >69 25(7.6%) (Table 1 & figure 1). Females comprise of 140(42.4%) and male 190(57.6%) with male to female sex ratio 1.4:1 (Table 1 & figure 1).

![Figure 1](image-url) Representation of socio demographic data in Percentage
Regarding occupation,商贩 30(9.09%), 政府工作人员 67(20.3%), 学生 55(16.7%), 家庭主妇 were the commonest 71(21.5%), followed by farmers 73(22.1%). Others like house servants 1, guards 1, drivers 3, 5(1.51%) (Table 1 and figure 1). Regarding religion, majority of them were Muslims 210, (63.6%), and the next were Orthodox 60(18.2%), Protestant 42(12.7%), Catholic 13(3.9%) and others like wakefta 2, only Jesus 3, 5 (1.51%) (Table 1 and figure 1). Oromo was the leading ethnic group 225(68.2%), Amhara 20(6.06%), Gurage 10 (3.03%), Yem 30(9.09%), Tigre 40(12.12%), others like kefa 4, Wolayta 1, 5(1.51%) (Table 1 and figure 1). Regarding Age of onset, <10, 30(9.1%), 10-19, 56(17%), 20-29, 55(16.8%), 30-39, 41(12.4%), 40-49, 52(15.7%), 60-69, 11(3.3%). The commonest onset age were 50-59, 85(25.7%), 60-69 11(3.3%). Address has a significant association with the disease (p<0.05) (Table 1 & figure 1).

Table 1 Distribution of Socio-Demographic Characteristics of Diabetes Patients.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-19</td>
<td>40</td>
<td>12.1</td>
</tr>
<tr>
<td>20-29</td>
<td>52</td>
<td>15.8</td>
</tr>
<tr>
<td>30-39</td>
<td>50</td>
<td>15.2</td>
</tr>
<tr>
<td>40-49</td>
<td>49</td>
<td>14.8</td>
</tr>
<tr>
<td>50-59</td>
<td>79</td>
<td>23.9</td>
</tr>
<tr>
<td>60-69</td>
<td>35</td>
<td>10.6</td>
</tr>
<tr>
<td>&gt;69</td>
<td>25</td>
<td>7.6</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>190</td>
<td>57.6</td>
</tr>
<tr>
<td>Female</td>
<td>140</td>
<td>42.4</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Address</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban area</td>
<td>75</td>
<td>22.7</td>
</tr>
<tr>
<td>Rural area</td>
<td>255</td>
<td>77.3</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation</th>
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<th></th>
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<tbody>
<tr>
<td>Merchant</td>
<td>30</td>
<td>9.09</td>
</tr>
<tr>
<td>Government</td>
<td>67</td>
<td>20.3</td>
</tr>
<tr>
<td>student</td>
<td>55</td>
<td>16.7</td>
</tr>
<tr>
<td>Employ</td>
<td>29</td>
<td>8.8</td>
</tr>
<tr>
<td>Housewife</td>
<td>71</td>
<td>21.5</td>
</tr>
<tr>
<td>Farmer</td>
<td>73</td>
<td>22.1</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>1.51</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Religion</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Orthodox</td>
<td>60</td>
<td>18.2</td>
</tr>
<tr>
<td>Protestant</td>
<td>42</td>
<td>12.8</td>
</tr>
<tr>
<td>Muslim</td>
<td>210</td>
<td>63.6</td>
</tr>
<tr>
<td>Catholic</td>
<td>13</td>
<td>3.9</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oromo</td>
<td>225</td>
<td>68.2</td>
</tr>
<tr>
<td>Amhara</td>
<td>20</td>
<td>6.06</td>
</tr>
<tr>
<td>Gurage</td>
<td>10</td>
<td>3.03</td>
</tr>
<tr>
<td>Yem</td>
<td>30</td>
<td>9.09</td>
</tr>
<tr>
<td>Tigre</td>
<td>40</td>
<td>12.12</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
<tr>
<td>DM Type</td>
<td>Total</td>
<td>100</td>
</tr>
<tr>
<td>------------------</td>
<td>-------</td>
<td>-----</td>
</tr>
<tr>
<td>Type I</td>
<td>130</td>
<td>39.4</td>
</tr>
<tr>
<td>Type II</td>
<td>200</td>
<td>60.6</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age at onset</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10</td>
<td>30</td>
<td>9.1</td>
</tr>
<tr>
<td>10-19</td>
<td>56</td>
<td>17</td>
</tr>
<tr>
<td>20-29</td>
<td>55</td>
<td>16.8</td>
</tr>
<tr>
<td>30-39</td>
<td>41</td>
<td>12.4</td>
</tr>
<tr>
<td>40-49</td>
<td>52</td>
<td>15.7</td>
</tr>
<tr>
<td>50-59</td>
<td>85</td>
<td>25.7</td>
</tr>
<tr>
<td>60-69</td>
<td>11</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
</tbody>
</table>

Others: A. Occupation, others like House servants (1), Guards (1), Drivers (3)
Others: B. Religious, others like Wakefta (2), only Jesus (3)
Others: C. Ethnicity, others like, Kefa (4), Wolita (1)

**Table 2** Distribution of diabetic patients by total duration on treatment

<table>
<thead>
<tr>
<th>Total years on treatment</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5</td>
<td>90</td>
<td>27.3</td>
</tr>
<tr>
<td>5-10</td>
<td>230</td>
<td>69.7</td>
</tr>
<tr>
<td>11-15</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>100</td>
</tr>
</tbody>
</table>

Most of the patients were on treatment for 5-10 years, 230 (69.7%), 11-15 years 10 (3%) and less than 5 years were 90 (27.3%) (Table 2 and figure 2)

**Figure 2** Distribution of diabetic patients by total duration on treatment

**Table 3** Distribution of diabetic patient by type of medication they are taking, diabetic mellitus clinic

<table>
<thead>
<tr>
<th>Type of treatment</th>
<th>Type I</th>
<th>Type II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>(%)</td>
</tr>
<tr>
<td>Insulin</td>
<td>170</td>
<td>51.5</td>
</tr>
<tr>
<td>Oral hypoglycemic agent</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
<td>51.5</td>
</tr>
</tbody>
</table>
From the total of 330 respondents, 170 (51.5%) were taking insulin and 160 (48.5%) were taking oral hypoglycemic agent (Table 3 and figure 3).

![Figure 3](image1.png)

**Figure 3** Distribution of diabetic patient by type of medication they are taking, diabetic mellitus clinic

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Distribution of diabetic patient by education the obtained about diabetic diet, and DM clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Frequency</td>
</tr>
<tr>
<td>About diabetic food</td>
<td>330</td>
</tr>
<tr>
<td>How to take medication</td>
<td>330</td>
</tr>
</tbody>
</table>

Regarding the education, 330 (100%) of the diabetic patients had learned about diabetic diet and how to take medication (Table 4 and figure 4).

![Figure 4](image2.png)

**Figure 4** Distribution of diabetic patient by education the obtained about diabetic diet, and DM clinic

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Distribution of diabetic patients by their knowledge about diabetic food, insulin, and storing and injection site at diabetic mellitus clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge about</td>
<td>Frequency</td>
</tr>
<tr>
<td>Diabetic food</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>300</td>
</tr>
<tr>
<td>No</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
</tr>
<tr>
<td>Carry insulin by</td>
<td></td>
</tr>
<tr>
<td>Pocket</td>
<td>80</td>
</tr>
<tr>
<td>Bag</td>
<td>57</td>
</tr>
<tr>
<td>Others</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
</tr>
<tr>
<td>Store insulin</td>
<td></td>
</tr>
<tr>
<td>Refrigerator</td>
<td>70</td>
</tr>
<tr>
<td>In buried pot with water</td>
<td>90</td>
</tr>
<tr>
<td>Others</td>
<td>10</td>
</tr>
</tbody>
</table>
The patients who were aware of types of diabetic food were 300(90.9%). Those who know how they should carry tablets in pocket were 80(24.2%), in bag 57(17.4%) and other 33(9.9%). Those who store in refrigerator were 70(21.2%), I buried pot with water 90(27.3%), and others were 10(3%) (Table 5 and figure 5). Regarding injection site 44 (13.3%) of them has knowledge about injection on abdomen, 50 (15.1%) on thigh, 76 (23.1%) about injection on arm.

<table>
<thead>
<tr>
<th>Injection site</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdomen</td>
<td>44</td>
</tr>
<tr>
<td>Thigh</td>
<td>50</td>
</tr>
<tr>
<td>Arm</td>
<td>76</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
</tr>
</tbody>
</table>

**Table 5** Distribution of diabetic patients by their knowledge about diabetic food, insulin, and storing and injection site at diabetic mellitus clinic

**Table 6** Distribution of diabetic patients by interest to food and exercise

<table>
<thead>
<tr>
<th>Interest of diabetic patients</th>
<th>Interested</th>
<th>Non Interested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic Food (n=330)</td>
<td>300</td>
<td>30</td>
</tr>
<tr>
<td>Exercise (n=330)</td>
<td>310</td>
<td>20</td>
</tr>
</tbody>
</table>

Regarding the interest for diabetic food were 300(90.9%) interested for it, and 310(93.9%) of the patients interest to exercise (Table 6), (figure 6)
Figure 6 Distribution of diabetic patients by interest to food and exercise

Regarding the complication of DM by literacy status: from total of surveyed people who know about diabetic complication were 66(20%) above grade 12, 48(14.5%) between grade 9-12, 35(10.6%) between grade 1-8, 33(10%) only read and write and 3(0.9%) were literate. Those who didn’t know about its complication were 60(18.18%) between grade 1-8, 42(12.72%), cannot read and write, 33 (10%) between grade 9-12 and 5(1.51%) of them were illiterate. It has statistically significant association (p<0.05) (Table 7 and figure 7).

Table 7 Association between diabetic patients knowledge about complication by their educational status, DM clinic

<table>
<thead>
<tr>
<th>Literacy status</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
<th>P. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Literate</td>
<td>3</td>
<td>0.9</td>
<td>5</td>
<td>1.51</td>
</tr>
<tr>
<td>Read &amp; write</td>
<td>33</td>
<td>10</td>
<td>42</td>
<td>12.72</td>
</tr>
<tr>
<td>Grade 1-8</td>
<td>35</td>
<td>10.6</td>
<td>60</td>
<td>18.18</td>
</tr>
<tr>
<td>Grade 9-12</td>
<td>48</td>
<td>14.5</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>Above grade 12</td>
<td>66</td>
<td>20</td>
<td>5</td>
<td>1.51</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>56.06</td>
<td>145</td>
<td>43.9</td>
</tr>
</tbody>
</table>

The relationship of respondent’s dietary knowledge level and control of blood sugar level was not statistically significant (P >0.05) (Table 8).

Table 8 Association between knowledge about diabetic food and last fasting blood sugar record, DM clinic

<table>
<thead>
<tr>
<th>Last record of blood sugar</th>
<th>Dietary knowledge</th>
<th>Good control</th>
<th>Poor control</th>
<th>Total</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Yes</td>
<td>140</td>
<td>42.42</td>
<td>160</td>
<td>48.48</td>
<td>300(90.9%)</td>
</tr>
<tr>
<td>No</td>
<td>15</td>
<td>4.54</td>
<td>15</td>
<td>4.54</td>
<td>30(9.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>155</td>
<td>46.96</td>
<td>175</td>
<td>53.03</td>
<td>330(100%)</td>
</tr>
</tbody>
</table>

Table 9 Distribution of patients by attitude towards diabetic care, diabetic mellitus clinic

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Positive</th>
<th>Negative</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Diabetic Care</td>
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<td></td>
<td></td>
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<tr>
<td>Oral Hypoglycemic agent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>100</td>
<td>30.3</td>
<td>75</td>
</tr>
<tr>
<td>No</td>
<td>75</td>
<td>22.7</td>
<td>80</td>
</tr>
<tr>
<td>Total</td>
<td>175</td>
<td>53.03</td>
<td>155</td>
</tr>
<tr>
<td>Diet</td>
<td>280</td>
<td>84.84</td>
<td>50</td>
</tr>
<tr>
<td>Exercise</td>
<td>300</td>
<td>90.9</td>
<td>30</td>
</tr>
<tr>
<td>Food Care</td>
<td>140</td>
<td>42.42</td>
<td>190</td>
</tr>
</tbody>
</table>

From total respondents 300(90.9%) of them has positive attitude on doing exercise, 280(84.84%) on diabetic diet, 140(42.42%) on foot care and 100(30.3%) on oral hypoglycemic agent while 190(57.57%) had negative attitude on foot care, 50 (15.15%) on diet, 75(22.7%) on oral hypoglycemic agent and 30(9.09%) on exercise (Table 9).
Figure 7 Distribution of patients by attitude towards diabetic care, diabetic mellitus clinic

Table 10 Association between respondent’s sex and skill on self-care

<table>
<thead>
<tr>
<th>Skill</th>
<th>Good Frequency</th>
<th>Poor Frequency</th>
<th>Total Frequency</th>
<th>%</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>110</td>
<td>90</td>
<td>200</td>
<td>60.60</td>
<td>0.0097</td>
</tr>
<tr>
<td>Female</td>
<td>90</td>
<td>40</td>
<td>130</td>
<td>40.3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>130</td>
<td>330</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

From total of 330 respondents 110 (33.33%) were male with good skill on self-care and 90(27.27%) were female with good skill on self-care. The other 90(27.27%) were male and 40(12.12%) were female with poor skill on self-care. There is a significant association between self-care and sex of respondents (p<0.05) (Table 10).

4. DISCUSSION

Diabetes is a chronic illness with distinct complications involving a wide variety of conditions awareness and needs self-care. Extensive awareness, mindset and good practice may be the means of managing and avoiding the ill effects associated with diabetes. With this aim, this institutional-based study was conducted at Jimma University Medical Center to evaluate the level of awareness, attitude and self-care practice about diabetic patients. Overall, patients who were the in this study were found to have inadequate knowledge of the symptoms, prevention and regulation of their disease status. The score was at a medium level for the
majority of patients. The result showed a good understanding, attitude and practice score among diabetic patients in comparison to a study from Malaysia (Shooka Mohammadi et al., 2015).

The potential explanations for such discrepancies in the outcomes of the studies may be due to variations in the degree of education achieved by diabetic patients and the availability of knowledge and data on diabetes. It is a known fact that the contribution of patients to the better treatment of diabetes is very significant. Patients’ lack of knowledge of diabetes treatment can have adverse effects on their ability to control the disease. Heart disease has been shown by 70 % of patients to be the most common complication of diabetes. There was insufficient understanding of interventions to detect primary diabetes complications, such as monitoring of blood pressure, frequent eye examination, which shows the need for certain aspects to be based on diabetes education programs. We noted that most patients did not know the cause of diabetes and its effects during the awareness evaluation (nearly 80 percent). Only a few of the patients (6 %) understood that kidney failure is one of the commonest complications of diabetes. There was a very strong lack of understanding of complications and the significance of lifestyle change among patients, and only 2% of them had good knowledge of diabetes. A number of studies from developed countries have reported low knowledge of diabetes (Farmer et al., 2006)

In this research, the level of primary education was significantly correlated with a low KAP score for diabetes. The argument that educated people have greater access to multiple sources of written insightful content may explain this. It is a theory that good KAP affects adequate regulation of diabetes. However, in this analysis, there was no important association between the KAP score and glycemic regulation (Badrudin et al., 2002). Most patients in this study indicated a physician-only check of blood sugar every three months; this low blood sugar monitoring frequency could have an effect on blood sugar regulation. In this study, awareness of lifestyle change in weight control had been weak. Some studies have shown that greater understanding has been substantially associated with higher education (Elizabeth Paz-Pacheco et al., 2010; Murata et al., 2003).

In this report, the poor understanding of diabetes patients may be attributed to the low level of education obtained by the respondents and the lack of coordinated diabetes education services in the hospital’s diabetes clinic. In the majority, attitudes toward dietary change and daily physical activity were appropriate. This study showed that diabetic patients depend more on medications to regulate their diabetes. Thus, it is very important to improve management and more efficient use of health services.

There are various obstacles to improving the quality of treatment for diabetes. This may be linked to patients’ financial statements, lack of information among patient care providers and sufficient access to special care (Upadhyay et al., 2008; Gupta et al., 2015). Among the patients in this sample, understanding of diabetes complications was not strong. This may be due to certain factors, such as improper ways to provide data and lack of time due to patient loads and lack of well-trained personnel (Bibbi Smide et al., 2002; Anderson et al., 1995). This illustrates the needs of developing countries, such as Ethiopia, for successful diabetes education programs. Total of 330 participants fulfilling the inclusion criteria were included in this study. Males comprise 190(57.6%) and females were 140(42.4%). When duration of diabetes was assessed participants of 90(27.3%) had a history of 5 years and below, the majority of 230(69.7%) were in the category of 5 to 10 years and remaining 10(3%) had it for 11to15years.

The commonest age group where diabetes mellitus prevails were between 50-59 years, 85(25.7%);170(51.5%) participant were taking insulin for managing diabetes. Almost 3(0.9%) were literate but the majority 5(1.51%) of them not educated after primary level 29(8.8%) were employed, House wives were the most affected one, followed by farmer and the least were others Guards, House servants, and Drivers were respectively 1, 1 and 3. Previous study done in Jimma Hospital showed that farmers were in most affected category (Dawit Worku et al., 2010). From the total 330 patients, The most religious group of diabetic patients who are attending the diabetic clinic were Muslims 210(63.6%), followed by Orthodox 60(18.2%) and the least Protestant 42(12.8%) and Catholic 13(3.9%). Regarding ethnicity majority of them were Oromo 225(68.2%) and followed by Tigre 40(12.12%), 66 (20%) above grade 1 the diabetic clinic were Muslims 210(63.6%), followed by Orthodox 60(18.2%) and the least Protestant 42(12.8%) and Catholic 29(8.8%) were employed, House wives were the most affected one, followed by farmer and the least were others Guards, House servants, and Drivers were respectively 1, 1 and 3. Previous study done in Jimma Hospital showed that farmers were in most affected category (Dawit Worku et al., 2010). From the total 330 patients, The most religious group of diabetic patients who are attending the diabetic clinic were Muslims 210(63.6%), followed by Orthodox 60(18.2%) and the least Protestant 42(12.8%) and Catholic 13(3.9%). Regarding ethnicity majority of them were Oromo 225(68.2%) and followed by Tigre 40(12.12%), 66 (20%) above grade 12, followed by grade 9–12 48(14.5%) while illiteracy status was 5(1.51%). Regarding education about diabetic diet and how to take medication 330(100%) of them attended. This result as compared to a research done in Tikur Anbessa Hospital the number of patients who attend is higher this may be attributed to difference in sample size (Jemal et al; 1999).

Amongst the 30.100% of patients who know about diabetic diet mostly know that, high sugar diet should not be taken. From the observed 330 DM patients 130 (39.4%) type I and 200 (60.6%) were type II. Thus this study result is nearly similar to previous study done in Jimma Hospital (15) of the 160 (48.5%) patients who take oral hypoglycemic agent 80 (24.2%) of them said tablet is carried in the pocket followed by 57 (17.4%) in the bag and 33 (9.9%) in others. Regarding storage of insulin, 90 (27.3%) of the respondents store in buried pot with water while 70 (21.2%) said in refrigerator. Of those 330 DM patients, 300 (90.9%) have interest to diabetic food while 310 (93.9%) have interest to exercise. 280 (84.84%) the patients had a favorable outlook towards the diet they eat. There was statistically significant association between literacy status and their knowledge about complication of diabetic mellitus (P<0.05) (Endalew Hailu et al., 2012).
5. CONCLUSION
The commonest age group affected by diabetes mellitus was the age group 50-59 years which indicates most of them are type II DM patients. Significant number of patients learns about diabetic diet. There is gap between diabetic patients who know about diabetic diet and who eat diabetic diet. Most of the patients carry insulin in buried pot with water in any container. Significant number of patient’s participation to exercise was generally poor. Regarding patients attitude, there is favorable (positive) attitude especially on that of diet and exercise.

Acknowledgment
We are thankful to the Department of Nursing and Midwifery and Department of Physiotherapy, Jimma University, Ethiopia, for helping in carrying out this research to a fruitful outcome.

Author’s contributions
Both the authors played a key role in carrying out the study to a fruitful outcome. Ethical approval, implementation of the research, and data collection were done by the first author. Study design, data analysis, and interpretation with proof reading were done by the second author. Both the authors contributed in conceptualization of the research, revisions of the article and final approval of the version to be published.

Funding
This study did not receive any external fund.

Conflict of interest
The authors declare that there are no conflicts of interests.

Ethical approval
Data was collected from routine clinical practice and the same was approved by the Department of Nursing and Midwifery Ethical Committee at Jimma University School of Nursing and Midwifery, Jimma, Ethiopia. Ethical code: NUR/52/2020

Informed consent
Written & Oral informed consent was obtained from all individual participants included in the present study.

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Peer-review
External peer-review was done through double-blind method.

Article History
Received: 16 October 2020
Reviewed & Revised: 17/October/2020 to 26/November/2020
Accepted: 27 November 2020
E-publication: 06 December 2020
P-Publication: November - December 2020

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