

Original Article

## Self-Care Challenges among Diabetic Patients in a South-Southern Teaching Hospital, Nigeria

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### Abstract

**Background:** World Health Organization has reported that the number of people with diabetes mellitus rose from 108 million in 1980 to 422 million in 2014.

**Objective:** The aim of our study was to examine the self-care challenges amongst diabetic patients in a Teaching Hospital. Specific objectives of the study were to evaluate the respondents' knowledge of Diabetes Mellitus, examine the self care challenges experienced by the respondents and assess the effect of these self-care challenges on the respondents

**Methodology:** Simple random sampling method was used to collect quantitative data from one hundred and twenty six respondents that represented the study population after approval for collection was sort from appropriate committee. The data was collected using self-administered standardized instruments. Analysis was both manually (scoring) and with statistical software (SPSS17), presented in frequency tables, percentages and graphs.

**Results:** Results show that majority of respondents have a fair knowledge of Diabetes Mellitus, also it was discovered that majority of respondents were severely challenged in caring for self about the disease and most of which were women.

**Conclusions:** The study concludes that there is significant relationship between gender (p value  $\leq 0.000$  CI 95%), age (p value  $\leq 0.000$  CI 95%), marital status (p value  $\leq 0.000$  CI 95%), level of education (p value  $\leq 0.000$  CI 95%), occupation (p value  $\leq 0.000$  CI 95%) and income (p value  $\leq 0.000$  CI 95%) of the patients and challenges experienced and the self-reported effects of self-care challenges respectively. It is however essential to alleviate the burden of self-care from these patients and implementation of recommendations.

**Key Words:** diabetic patients, knowledge of Diabetes Mellitus, self-care challenges effects

### Background of the study

Diabetes mellitus is one of the chronic diseases that affect both the young and old. World Health Organization (2010) reported that 1.71 million people suffered from diabetes mellitus in the year 2000 and the number is projected to double by

2030. The estimated numbers affected in Nigeria and Africa was reported to be 1.7 million and 7 million people respectively (WHO, 2010). There are also further published data that supports the prevalence of the disease, which is increasing especially in developing countries following the

trend of urbanization and lifestyle (WHO, 2008; Shaw., Sicree & Zimme, 2010;).

Diabetes Mellitus is an endocrine disorder that affects nutrient metabolism, or results from lack of body resistance to the hormone (insulin) that is responsible for carbohydrate metabolism and utilization in the body. The disease has symptoms that range from tiredness, thirst, frequent urination to dehydration and weight loss. It debilitates the sufferers and renders them helpless most of the time. It is a chronic illness that requires continuing medical care and patient self-management education in order to prevent complications and to diminish the incidence of long-term complications. The self-care involved is complex and requires commitment, beyond glycemic control (American Diabetes Association, 2003). The stress of dealing with diabetes mellitus and its treatment can cause depression for the patient as well as serious short term conditions such as when blood glucose level falls too low (hypoglycemia) which results from drug therapy, or when blood glucose level is too high (hyperglycemia), this can lead to unconsciousness and death (Iwueze, 2007). When poorly managed or undiagnosed, diabetes mellitus presents with severe complications like stroke, blindness, heart attack kidney failure, hypertension and amputation (American Diabetes Association, 2003; Campbell & Martin, 2009).

The exorbitant cost of managing diabetes mellitus drains both the patients and non-formal care-givers financially. Many patients suffering from diabetes are faced with challenges ranging from lack of education on the illness, the need for diagnosis, myths and misconceptions around diabetes, lack of appropriate medical infrastructure, insufficient number of diabetologists and endocrinologists, financial inability to procure the basic diabetic management supplies, ignorance around diabetes management, absence of well co-ordinated networks among diabetics in the country and absence of support from government and family members amongst others.

In health care, self-care is any necessary human regulatory function which is under individual control, deliberate and self initiated. The patients suffering from diabetes face serious self-care challenges as regards the cost of financing their treatment, occupational limitations that might

render them handicap. The reaction of the family members especially for the aged to their illness affects their self care abilities and they sometimes experience social stigmatization. A large number of these patients battle psychological problems as regard their condition (Skulmin, 2014).

Lubke et al., (2014) concluded that self care includes all health decisions people (as individuals or consumers) make for themselves and their families to ensure they are physically and mentally fit. Many patients admitted on the wards in UBTH receive negative reactions from their families as regards their illness and such reactions include negligence which usually leads to a fall in financial support for these patients. In this category of patients, the diabetics are not left out as family members shy away from the high cost of drugs and treatment procedures.

Clark (2004); Francoeur and Elkins (2006) have affirmed that people with diabetes who are not able to overcome their self care challenges may not be able to effectively manage the condition which could then lead to complications such as eye problem, numbness in the feet and even deadly complications like stroke. There are seven essential self-care behaviours 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 behaviours (Paterson & Thorne 2011). These proposed measures can be useful for both clinicians and educators treating individual patients and for researchers evaluating new approaches to care. Self report is by far the most practical and cost effective approach to self care assessment.

#### **Objective of the study**

- To evaluate the knowledge of diabetic patients about diabetes mellitus
- To examine the self-care challenges experienced by diabetic patients.
- To assess the effect of these self-care challenges on the patient.

#### **Research Hypothesis**

Is there relationship between socio-demographic data of the patients with diabetes mellitus and the challenge experienced?

There is no difference in severity of effects self-care challenges faced between male and female patients.

### Methodology

**Research design:** The research is a descriptive study that examines the self care challenges amongst patients with diabetes mellitus in the University of Benin Teaching Hospital. It is a non experiment evaluation of the patient's knowledge about diabetes mellitus. The design of this study enables the patients to respond to questions regarding the self care challenges they face as diabetics.

**Research setting:** The research setting was University of Benin Teaching Hospital which is located in Ugbowo of Egor Local Government Area along the Benin- Lagos expressway. It was established in 1973 and has facilities for over 900 patients. The consultant outpatient department receives many patients on their various clinic days.

**Target population:** The target population for this study was patients with diabetes mellitus; such patients attend clinics every Tuesday in the consultant outpatient department in University of Benin Teaching Hospital. The diabetics recruited for the study also included patients admitted to the medical wards who are being treated for diabetes mellitus as well as those readmitted primarily for the same condition.

**Inclusion:** Diabetic patients without co-morbid conditions and are primarily admitted or attending out-patients unit were recruited.

### Sample size calculation

The sample size was obtained by sample size probability calculation of

$$nr = \frac{Z^2 P(1-P)}{e^2}$$
 Where :  $Z^2 = 1.96$  Constance level of confidence

P = prevalence, the prevalence of diabetes mellitus in Nigeria as concluded by Ogbera et al (2014) is 8 to 10% averaged at 9% = 0.09

e = margin of error (5% = 0.05) constant    nr = required sample size

$$\begin{aligned} nr &= \frac{1.96^2 \times 0.09 (1 - 0.09)}{0.05^2} \\ &= \frac{3.8416 \times 0.09 (1 - 0.09)}{0.0025} \\ &= \frac{0.345744 (1 - 0.91)}{0.0025} = \frac{0.314627}{0.0025} \\ &= 125.85082 = 126 \end{aligned}$$

The required sample size is 126 respondents the number of patients were selected from the consultant outpatient department on their clinic days and on the wards. Purposive/accidental sampling was used to distribute these questionnaires to them and same collected on the spot.

**Instrument of data collection:** A Questionnaire was the instrument for data collection. The sections are section A was intended to elicit socio demographic data, section B was to examine level of knowledge of these patients about the disease with 20 questions and finally Section D helps provide information about the effect of these self care challenges on the patient and contains 9 questions.

**Reliability of instrument:** The reliability of the questionnaire was ensured by making use adapted standardized questionnaire (instruments) which have been validated from other developing countries to cull the questions contained in the questionnaire. Diabetes knowledge was assessed with the adapted version of Diabetes Knowledge Questionnaire (DKQ) and Diabetes Knowledge Test - (DKT).

**Method of data collection:** The method of data collection was cross sectional. The process of data collection lasted for a period of ten weeks.

**Method of data analysis:** Only completed questionnaire were coded for analysis. Respondents knowledge of diabetes was analysed thus; there were 9 negative questions and 11 positive questions 2 marks was allotted for a yes answer to a positive question, 1 mark for a No answer to a positive question. 2 marks also allotted to a No answer for a negative question, 1 mark for a Yes answer to a positive question, nil mark or 0 (zero) was allotted to don't know answer in either case. There was a total some of 40 maximum

marks obtainable. 0-15 marks = poor knowledge (PK), 16-25 marks = fair knowledge (FK), 26-40 marks = good knowledge (GK), Self-care challenges experienced by the respondents with diabetes mellitus was rated thus; Mild challenges 1 – 10 score, Moderate challenges 11 – 20 score, Severe challenges 21 – 30 score. Self-reported effects of diabetes on the patients (respondents) was rated thus; The least score was 8 and the highest was 32. Mild effect 8 – 15, Moderate effect 16 – 23, Severe effect 24 – 32

## Results

The Mean age of the participants was 41.7 and higher level of diabetic knowledge observed in the age 40-46 and the lowers at the age less than 18. Married people, women, graduates of Tertiary education, Business persons, and low earners had a higher level of diabetic knowledge

**Table 1: Socio demographic data and relationship with diabetic knowledge**

	Frequency	Percentage	$\chi^2$ value at 95%CI $p \leq 0.05$
<b>Age (years);</b>			
• Less than 18	6	4.7	
• 19 – 25	16	12.6	
• 26-32	12	9.5	
• 33-39	16	12.6	
• 40-46	26	20.6	
• 47-53	22	17.4	
• 54-60	12	9.5	0.000**
• 61 and above	16	12.6	
<b>Mean Age 41.9</b>			
<b>Marital status:</b>			
• Married	60	47.6	
• Never married	30	23.8	
• Widowed	24	19.0	0.000**
• Divorced	12	9.5	
<b>Gender:</b>			
• Male	30	23.8	0.000**
• Female	96	76.1	
<b>Level of education</b>			
• Primary	26	20.6	
• Secondary	40	31.7	
• Tertiary	60	47.6	0.000**
<b>Occupation:</b>			
• Civil servant	57	45.2	
• Business person	61	48.4	
• Artisan	8	6.3	
<b>Income</b>			
• Low earners	83	65.8%	
• High income earners	43	34.2%	0.000**

\*\*indicates significance level

Regarding the relationship between self-reported effects of self-care challenges it was observed that 20.6% of people of age 40-46 was the group who relationship between Self-reported effects of self-care challenges and the lower was at the age less

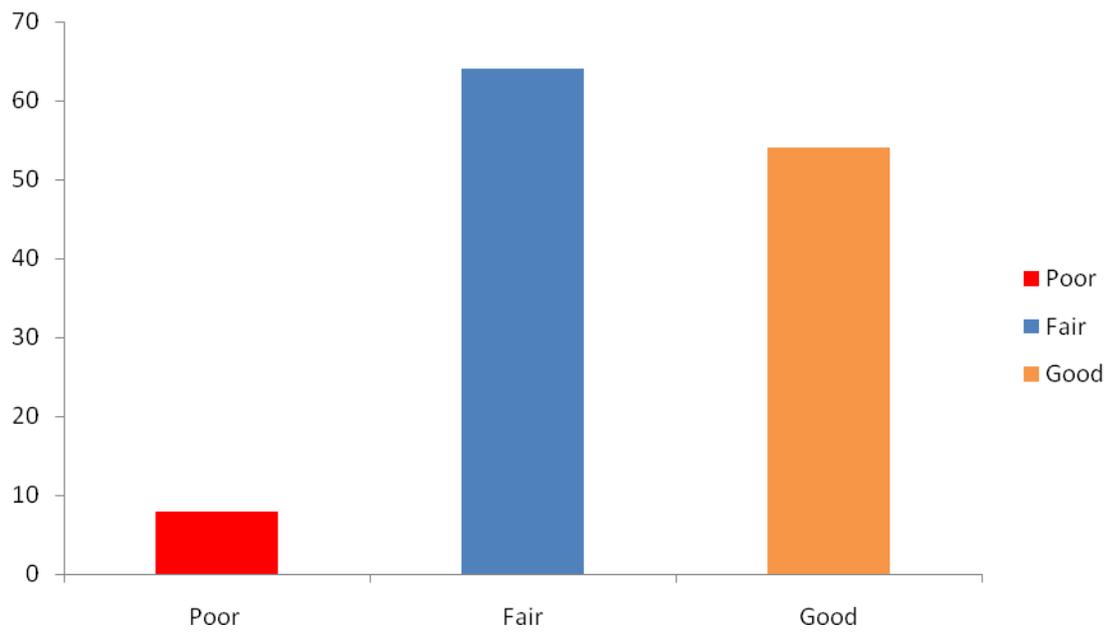
than 18. Married people, women, graduates of Tertiary education, Business persons, and low earners indicated more significance levels regarding the relationship between self-reported effects of self-care challenges

**Table II: Relationship between Self-reported effects of self-care challenges and socio-demographic data of patients**

	Frequency	Percentage	$\chi^2$ value at 95% CI $p \leq 0.05$
<b>Age (years);</b>			
• Less than 18	6	4.7	
• 19 – 25	16	12.6	
• 26-32	12	9.5	
• 33-39	16	12.6	
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• 47-53	22	17.4	0.000**
• 54-60	12	9.5	
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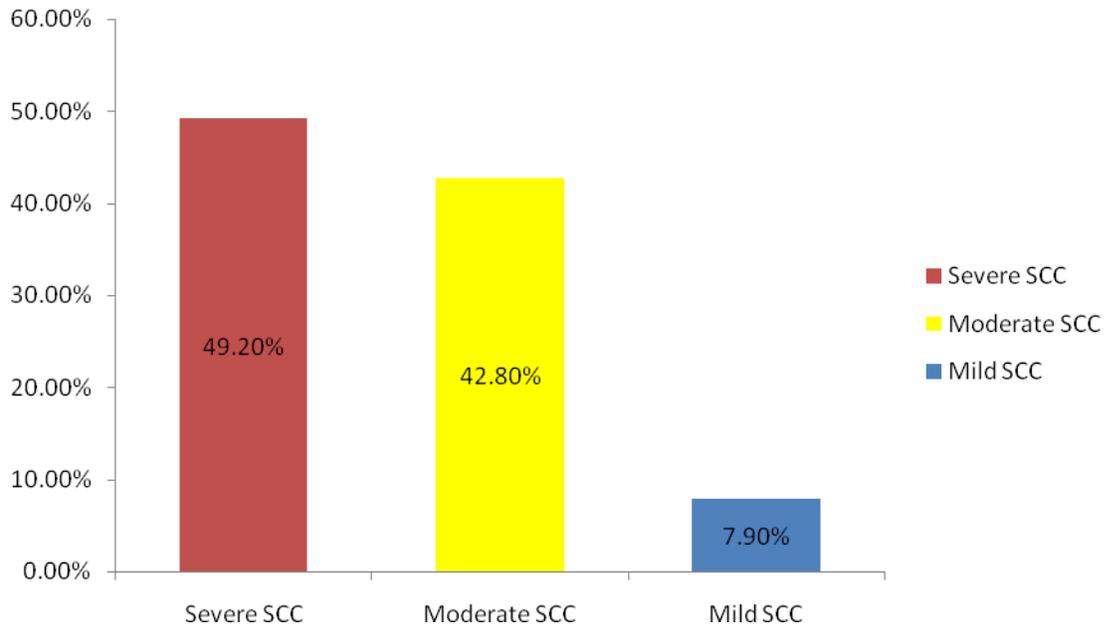
### Patient's Diabetic Knowledge



**Figure 1:** Bar graph of knowledge level to frequency

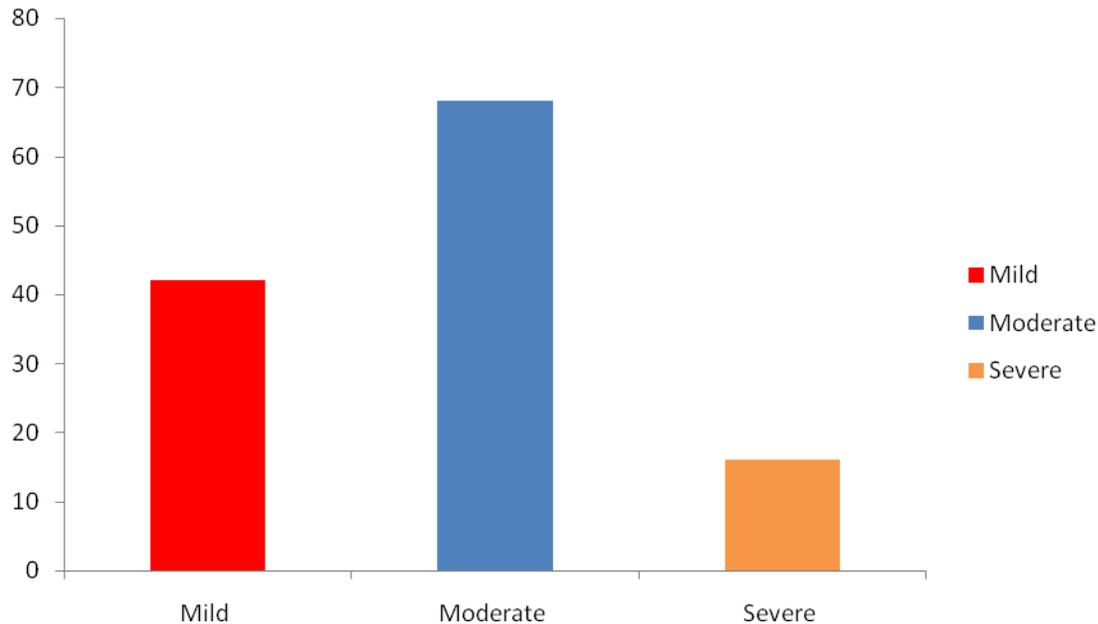
The Bar graph above shows that more of the respondents have fair knowledge of diabetes (50.7%) while 42.8% have good knowledge and 6.3% with poor knowledge.

**Table 3: Severity of Self-care challenges experienced by patients with diabetes mellitus.**



**Figure 2:** bar graph of percentage and self care challenges.

The graph and table above indicates that most of the respondents (49.20%) experience severe challenges in their self-care activities. 42.80% moderate challenges and 7.90% had mild self-care challenges.

**Table 4: Self-reported effects of self-care challenges on the patients****Figure 3:** Bar graph of effects of challenges to frequency

The graph above shows that most of the respondents experienced moderate effects of the challenges of self-care while more than 40.0% reported mild effect and below 20.0% of the patients experienced severe effect of the self-care challenges.

### Discussion

Cherny (2014) concluded that type II diabetes was more prevalent in older adults, middle aged and older adults are still at the highest risk for developing type II diabetes. This finding is in accordance with age distribution of respondents which showed mean age of 41.9 years similar to what Cherny (2014) revealed in the study of type II diabetes mellitus about prevalence.

Other socio demographic results indicate that most of the respondents were married females which support the position of the ADA (2016) that women with diabetes have worse symptoms on average than men with diabetes, and diabetes mellitus was 76.1% prevalent among women than

men recruited in the study. Women have also been reported by ADA to present faster and have more severe with the symptoms.

### Knowledge of respondents about diabetes mellitus:

Empirical findings from this study show 50.7% of the study population had fair knowledge of diabetes mellitus on a rating of good, fair and poor. However when compared to results from a research on awareness of diabetics mellitus among diabetic patients in the Gambia by Mafomekong et al (2013), of the patients studied (n=199), only 47% said they knew what diabetes mellitus is, similarly 53% of the study participants had no knowledge of the causes of diabetes mellitus and

about 50% were not aware of the methods of prevention.

The findings of the study may have also contradicted reports from a study by Ulvi et al (2009) which showed a significant number of people in rural Islamabad had little or no overall knowledge of diabetes mellitus furthermore, while Mamnarayana et al (2010) have shown that many people are still ignorant about several aspects of the diabetes mellitus including approaches necessary for the prevention and control, findings from this study indicates that more of the Nigerian respondents have fair and good knowledge of the disease condition. The aspects of knowledge include knowledge of the cause, Prognosis, diagnostic evaluation, types of diabetes mellitus, management and lifestyle modifications. This may be partly due to urbanization and efforts of various agencies, proximity to the hospital and closeness of health care workers. The respondents also have reported their sources of information about the disease to be mass media, including prints.

#### **Self care challenges experienced by patients with diabetes mellitus:**

The research findings indicate that majority of the respondents i.e. 49.2% were having severe self-care challenges. The facts recovered from the research entwines with Sternhof and Gupta's (2014) reports that for people with diabetes, managing their emotional health can be as important as keeping their blood sugar under control. The condition requires constant attention, and that can trigger feelings of stress and anxiety. The stress and anxiety surmounts to the self-care challenges these patients experience and on a long run of determined their response to their treatment and general health status.

Ward (2015) have also affirmed that when a family member is diagnosed with diabetes emotional stress impacts the whole family spouse may feel stressed as they assist with new heal planning and medication management children might feel anxious about changes in family routines include additional doctor visits, daily blood glucose monitoring and expanded exercise routines. The finding above agrees with the fact deduced from this research that most of these patients are severely challenged the burden of daily

glucose check, regular doctor visits diet up keep and external influence which often than never not available.

Findings by Ward (2015) concurred to the challenges of these patients as deduced from this study that families dealing with diabetes can also suffer from communication challenged, parents whose adult children have diabetes may feel compelled to provide regular reminders about eating, exercise and medications causing the diabetic sufferer to feel scolded or nagged. Communication sometimes disintegrates as family members struggle to find new ways to communicate about the ongoing issue of living with diabetes statistical figures from this study is similar to facts as stated above as majority of the respondents suffer moderate and severe self care challenges due majorly to the socio economic status and assistance from family members the self care challenges include psychological imbalance stress of glycemic control activities, diet modification, financial difficulty, being left along to hear the bender effects on social, financial, family and socialization. .

#### **Effects of self care challenges on the patient**

The study revealed that 53.9% of the respondents was moderate effects on them exerted as a result their disease condition few of the respondents had severe effects. The effects of self care challenges on these patients impacts negatively on their finance, figures from table I shows majority of respondents to low income earners. American diabetes association (2015) stated in agreement with findings above that diabetes often adds a financial strain to families with or without insurance, the extra lost of medication and doctor visits may be overwhelming, individuals with diabetes spend \$4,100 more on annual medical costs than individuals without diabetes. The costs associated with the disease condition have negative impress on the finances of these respondents and this is majorly due to the general economic structure where the cost of healthcare is lightly subsidized and degrading economic status is plaguing the income of the respondents. The cost of medical services is as well too high for the respondent's limited income.

Global health information (2007) affirmed that when poorly managed or undiagnosed, diabetes mellitus presents with severe complications like stroke, Blindness, heart attack, kidney failure, hypertension and amputation medical management might alleviate the effects of these complications but they still manage to deface the positive health status the patient desires.

The respondents' socialization and work does not acclimatize easily with their disease condition which ends up giving them a negative a depressed self-concept. Domains of self-reported effects include effects on; health, finance, self-concept and state of complications. The effects were as well felt in the respondent's relationship with family, co-workers, work and the society. The disease has detrimental and of health, negative or defective relationship with 10 workers, work, socialization and it impacts negatively on the respondents finance.

### Implications for nursing

Nursing care is dynamic and is apt to change with patient' needs and steer of manifestations of symptoms by the client, a nurse knowing the various burdens borne by these diabetics' client will devise interventions to help alleviate these burdens. The nurse educates every client he/she encounters in order to increase their level of knowledge. Majority of these patients suffer a negative self concept thus leading to depression, and emotional imbalances at worst feelings of aggression. The nurse cares for this patient putting this fact into consideration as well as examining other listed factors.

The finance of the patient when examined and the extent of effect realized the nurse devises methods and avenues to provide these patients with value and affordable care. The nurses in practice assist these patients with various self care activities in order to reduce the effects of these self care challenges on the patient.

Nursing in her contribution to healthcare and welfare of these clients alleviates these burdens and reduces the effect on these patients.

### Conclusion

The study concludes that there is relationship between the age, gender, level of education,

marital status and income of the patients and challenges experienced about self-care management of the condition. And also women suffer more severe challenges and more women suffer effects of the disease.

### Recommendations

Governments and NGOs would achieve reducing burden of diabetes by

- Providing fund and allocations to the health sector in order to aid and fund this process
- Implement policies that will make assess to treatment easy for these patients.
- Pass bill into law that will favor those decapitated/rendered handicap by diabetic complications providing them equal rights and opportunity in their work places and society at large.
- Women empowerment and equity bill as more woman are affected by this disease and its complication

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