Introduction

Diabetes is a serious chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Diabetes is one of the largest global health emergencies of the 21st century and is associated with changes in lifestyle resulting in less physical activity and increased obesity. The age-adjusted death rate of diabetes mellitus (DM) is 22.62 per 100,000 of the population and it ranks 98th in the world. It can gradually develop complications and is...
known to be associated with an increased cardiovascular risk. It can reduce quality of life and life expectancy (Gebremedhin et al., 2019).

**Materials and Methods**

Purposive sampling technique was used to select type 2 diabetic patients (based on inclusion and exclusion criteria confirmed by WHO) from hospitals/clinics or work places. In the present study 300 (150 male and 150 female) with type 2 diabetic subjects were selected from Jhansi and Lalitpur districts of Uttar Pradesh.

A standard questionnaire on QoL instrument for Indian diabetes patients and factors affecting it are social life and work (Nagpal et al., 2010) was used for the data collection.

**Results and Discussion**

**Demographic profile of respondents (N=300)**

The results on demographic profile of the selected subjects with type 2 diabetes mellitus depicted in Table 1.

**Age**

The results showed that majority of the males and females from both districts were under the age group of 45-55 years, in Jhansi [males 54.7% (n= 42) and Female n=54 (74.0%)] and in Lalitpur [male n=53(70.7%) Female n=27 (36.0%)]. In Jhansi 33.3% males (n= 25) and 21.92% females (n= 16) were in the age group of 55-65 years. Where as in Lalitpur 27.3% males (n= 28) and 25.3% females (n=19); in Jhansi 2.7% males (n= 2), 2.7% females (n= 2) and none of the male subjects and 5.3% females (n=4) were under age group of 65-75 years. Whereas under age >75 years 9.3% males (n= 7), 4.1% females (n= 3) in Jhansi; (21.3%) males (n= 16) and 4.1% females (n=3) were in Lalitpur.

Singh et al., (2017) conducted a study in Uttar Pradesh to determine the prevalence of diabetes mellitus in rural community by health camp and door to door approach and reported that prevalence of type 2 diabetes in the rural population was found to be 8.03%. Prevalence was higher in female population (9.91%) as compared to males (6.79%). 19.74 % of participants over 70 yrs of age were diabetics while diabetes was present only in 2.95% of participants in the age group of 25-39 year. The maximum number of diabetes was in the age group of 50-59 years.

Anjana et al., (2011) revealed that age, sex, obesity, hypertension, and family history of diabetes were independent risk factors for diabetes in both urban and rural areas.

**Religion**

In Jhansi 93.3% males (n= 70) and 87.7% females (n = 64) were Hindus, 4% males (n = 3) and 12.2% females (n = 9) were Muslims. Among the selected subjects in Jahnsi no one belonged to Christian community, whereas, 2.7% of both males (n = 2) and females (n = 2) belonged to other categories. Whereas, results on the religion of the respondents from Lalitpur 98.7% males (n= 74) and 86.7% females (n = 65) were Hindu; 1.3% males (n = 1) and 13.3% females (n = 10) were Muslim. None from Christian community.

**Education**

Results with regard to educational qualification among the respondents from Jhansi district showed that 26.7% males (n = 20) and 4.1% females (n = 3) were post graduates; 10.7% males (n = 8) and 9.6% females (n = 7) were under graduates, followed by high school 25.3% males (n = 19) and 17.8% females (n = 13). At upper primary level both males and females were 8.0% (n=6) and 13.3% males (n = 10) and 17.8% females
(n = 13) were at primary level, while 16.0% males (n = 12) and 45.2% females (n = 33) were illiterates.

Where as in Lalitpur district 33.3% males (n = 25) and 6.7% females (n = 6) were post graduates; 2.7% males (n = 2) and 13.3% females (n = 10) were under graduates. Followed by high school 29.3% males (n = 22) and 18.7% females (n = 14). Educational qualification at upper primary level 30.7% males (n = 23) and 2.7% females (n = 2); 4.0% males (n = 3) and 12.0% females (n = 12) were had primary level education, while 16.0% males (n = 12) and 45.2% females (n = 33) were uneducated (Fig. 1).

Kapur (2001) detailed that education appeared to affect prognosis in diabetes, by improved understanding and preventive measures, or as a reflection of better economic status.

It also indicates that diagnosis can be delayed by 3-7 years in the less and uneducated sections of the population. Patients with a higher educational status were diagnosed at a younger age, 43.6 ± 10.7 years in college-educated patients compared with 45.4 ± 13.1 years in patients with school education and 50.4 ± 13.2 years in illiterate patients.

Mode of diagnosis

The results on mode of diagnosis indicated that among males 58.7 % from Lalitpur which was slightly higher than Jhansi 44% were diagnosed with diabetes through incidental mode whereas among females from Lalitpur had higher percentage (40%) of subjects were diagnosed by incidental mode when compared to Jhansi 35.6%. Diagnosis from symptomatic mode among males was higher among subjects from Lalitpur 40% than Jhansi 38.7% in Jhansi. Among females 52.1% from Jhansi and 44% from Lalitpur were diagnosed through symptomatic mode. Diagnosis at screening mode was lowest when compare to other two modes i.e. incidental and symptomatic. Diagnosis at screening mode among the subjects was 17.3% males, 12.3% females from Jhansi and 1.3% male and 16%female from Lalitpur.

Monthly income

Result on monthly income status of the subjects showed that in Jhansi 42.7 % males (n= 32) and 37% females (n= 27)family earning was below 10,000 per month; 18.7% males (n= 14) and 12.3% females (n=9) family earning was between 11,000 to 19,000 per month; 13.3% males (n = 10) and 16.4% females (n= 12)family earning was between 20,000 to 29000 per month and 25.2% males (n=19) and 34.2% females (n= 25) belongs family earning was above 30,000 per month.

Whereas, from Lalitpur 17.3 % males (n= 13) and 44% females (n= 33)family earning was below 10,000 per month; 12 % males (n= 9) and 10.7% females (n=8)family earning was between 11,000 to 19,000 per month; 14.7 % males (n= 11) and 8% females (n= 6)family earning was between 20,000 to 29000 per month and 54.7% males (n=41) and 36 % females (n= 27) family earning was group above 30,000 per month.
| Parameters considered       | Jhansi  |            | Lalitpur  |            |
|-----------------------------|---------|------------|-----------|------------|
|                             | Districts | Number (%) | Districts | Number (%) |
| Age                         |          |            |           |            |
| 45-55                       | Male     | 41(54.7)   | Male      | 27(36.0)   |
|                             | Female   | 54(74.0)   | Female    | 53(70.7)   |
| 55-65                       | Male     | 25(33.3)   | Male      | 28(37.3)   |
|                             | Female   | 16(21.96)  | Female    | 19(25.3)   |
| >75                         | Male     | 2(2.7)     | Male      | 4(5.3)     |
|                             | Female   | 2(2.7)     | Female    | -          |
| Gender                      | Male     | 75(50)     | Male      | 75(50)     |
|                             | Female   | 75(50)     | Female    | 75(50)     |
| Religion                    | Hindu    | 72(96.3)   | Hindu     | 74(98.7)   |
|                             | Muslim   | 3(4.0)     | Muslim    | 1(1.3)     |
|                             | Christian| -          | Christian | -          |
|                             | Others   | -          | Others    | -          |
| Education                   | PG Education | 20(26.7) | PG Education | 25(33.3) |
|                             | UG Education | 8(10.7)  | UG Education | 7(9.6)   |
|                             | High School | 19(25.3) | High School | 22(29.3) |
|                             | Upper Primary Education | 6(8.06) | Upper Primary Education | 23(30.7) |
|                             | Primary Education | 10(13.3) | Primary Education | 3(4) |
|                             | No Education | 12(16.0) | No Education | 0.0 |
| Occupation                  | Sedentary          | 40(53.3) | Sedentary         | 62(82.7) |
|                             | Moderate          | 12(16.0) | Moderate          | 10(13.3) |
|                             | Heavy            | 23(30.7) | Heavy            | 3(4) |
| Marital status              | Married          | 71(94.7) | Married          | 70(93.3) |
|                             | Unmarried        | 3(4.0)   | Unmarried        | 4(5.3)   |
|                             | Widowed          | 1(1.3)   | Widowed          | 1(1.3)   |
|                             | Divorced         | -        | Divorced         | -        |
|                             | Alone            | -        | Alone            | -        |
| Mode of diagnosis           | Incidental      | 33(44.0) | Incidental      | 44(58.7) |
|                             | Symptomatic     | 29(38.7) | Symptomatic     | 30(40)   |
|                             | At Screening    | 13(17.3) | At Screening    | 1(1.3)   |
| Monthly income              | <10,000         | 32(42.7) | <10,000         | 13(17.3) |
|                             | 11,000-19,000   | 14(18.7) | 11,000-19,000   | 9(12)    |
|                             | 20,000-29,000   | 10(13.3) | 20,000-29,000   | 11(14.7) |
|                             | >30,000         | 19(25.3) | >30,000         | 41(54.7) |
| Occupation                  | Government service | 07(9.3) | Government service | 27(36) |
|                             | Professional    | 05(6.7)  | Professional    | 2(2.7)   |
|                             | Private Service | 35(46.7) | Private Service | 8(10.7)  |
|                             | Business        | 08(10.7) | Business        | 17(22.7) |
Sample size = 300, J = 150 (M = 75 and F = 75) and L = 150 (M = 75 and F=75)
Values in parenthesis are expressed as percentage

**Fig.1 Educational qualification of selected subjects for study from both districts**
Occupation

Results on occupation showed that, 9.3% males (n=7) and 17.8% females n= 13 were in government services; 6.7% males (n=5) and 2.7% females (n= 2) were in professional work; 46.7% males (n=35) and 11% females (n= 8) were in private service10.7% males (n= 8) and 5.5% females n= 4 were in business and 26.7% males (n= 20) and 63% females (n= 63) were in Household work/ Retired, among the respondents from Jhansi district.

Whereas from Lalitpur 36 % males (n=27) and 9.3% females (n= 7) were in government services; 2.7% males (n=2) and 6.7% females (n= 5) were in professional work; 10.7% males (n=8) and 6.7% females n= 5 were in private service; 22.7% males (n= 17) and 6% females (n= 8) were in business and 28 % males (n= 28) and 69.3% females (n= 52) were in Household work/ retired.

Hours of work

Results on hours of work depicted that majority of subjects selected for study were working for 6-7 hours per day (57% males, 75.3% females from Jhansi and 49% males, 68% females from Lalitpur); 12% males, 16.4% females from Jhansi and 14.7% males and 14.7% from Lalitpur were working for 7-8 hours per day; 13.3% males, 4.1 % females from Jhansi and 14.7% males, 2.7% females form Lalitpur were working for 8to 9 hours per day where as 17.3% males, 4.1% females from Jhansi and 18.7% males, 9.3% females from Lalitpur were working for 9 to 10 hours per day.

Hours of exercise per day

Among males 16% from Jhansi, 20% from Lalitpur were doing regular exercise for ½ hours per day; 17.3% from Jhansi, 21% from Lalitpur males were doing regular exercise for 1 hours; 2.7% form Jhansi, 4% from Lalitpur were doing regular exercise for 1 ½ hours and 6.7% from Jhansi and 14% from Lalitpur males were doing exercise 2 hours per day.

Among females 34.2% from Jhansi, 36% from Lalitpur were doing regular exercise for 1/2 hours; 20.5% from Jhansi, 20% from Lalitpur were doing exercise for 1 hours; none from Jhansi, 4% from Lalitpur were dong regular exercise for 1 ½ hours where as 2.7% form Jhansi and 4% from Lalitpur females were doing regular exercise per for 2 hours.

Smoking and alcohol consumption

Results showed that smoking 20% males and 2.7% females from Jhansi were smokers whereas, 80% males and 97.3% females were non-smokers.

In Lalitpur 5.3 % females and 16% males were smokers while 84% males and 94.7% females were nonsmokers.

It was reported that in Jhansi 14.7% males and 1.4 % females were consuming alcohol whereas; in Lalitpur 9.3% males and 2.7% had habit alcohol consumption.

The present study will be helpful to access how age, gender, educational status, monthly income, occupation, hours of work, hours of exercise etc. affecting the health-related quality of life (HRQOL) also to identify important predictors for type 2 Diabetes mellitus.

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