

Prevalence of Diabetes Mellitus in Rural Population of Jammu

Kulbir Singh, Sanjeev Kumar

Abstract

Diabetes Mellitus (DM) is increasing in epidemic proportion globally. This current observational hospital record based study was planned to estimate the prevalence of DM in various age groups in rural population of Jammu. Out of 4000 patients screened 194 were found to be having DM i.e. prevalence of DM was found to be 4.85%. Out of 2083 males screened 99 were suffering from DM i.e. prevalence of 4.6%. Whereas out of 1917 females screened 95 were suffering from DM i.e. prevalence of 4.9%. Prevalence of DM was maximum in age groups of 41 to 50 years i.e. 5.89%. Prevalence of DM in males was found to be maximum in age group of 41-50 years i.e. 5.4%. Prevalence of DM in females was found to be maximum in age group 41-50 years i.e. 6.6%. Thus the current study recorded alarmingly high prevalence of DM among rural population which should be a cause of concern for health care providers.

Key Words

Diabetes Mellitus, Prevalance, Rural Population

Introduction

Diabetes Mellitus (DM) is increasing in epidemic proportion globally. According to W.H.O., the prevalence of DM in adults worldwide was estimated to be 4% in 1995 and predicted to rise to 5.4% by the year 2025, such that the no. of adults with DM in the world would rise from 135 million in 1995 to 300 million in the year 2025. The major part of this numerical increase will occur in the developing countries. There will be 42 % increase from 51 to 72 million in the developed countries and 170 % increase from 84 to 228 million in the developing countries. Thus, by the year 2025 more than 75 % of the people with diabetes will reside in developing countries as compared to 62% in 1995. The countries with the largest no. of people with diabetes are and will be in the year 2025, India, China and the United States. (1) The International Diabetes Federation has come up with much

higher figures in a recent report estimated that in 2011, 366 million people worldwide had DM and if this trend continues, by 2030, 552 million people i.e. one in ten adults will have DM.(2) Epidemiological studies have shown that the DM is increasing rapidly in people of south Asia, Africa and Caribbean Origin. (3) In 2000, According to WHO, the prevalence of DM among the 11 countries of South-East Asian region was 4.69 million (4) In India the recent data with ICMR-INDia DIABetes (ICMR-INDIAB) study in 2011 reported the prevalence of DM in 4 regions of country as 10.4% in Tamil Nadu, 8.4 % in Maharashtra, 5.3 % in Jharkhand and 13.6 % in Chandigarh. The overall no. of people with DM in India in 2011 based on this study was estimated to be 62.4 million. (5) The recent NFHS3 Data which studied urban and rural residents in 29 States of India during the period

From the Deptt of G Medicine Govt. Medical College and J&K Health services* , Jammu J&K India

Correspondence to : Dr.

2005-2006, the no. of women who had DM range from 282 per one lac women in Rajasthan to 2549 per one lac women in Kerala. In five other states (Tamil Nadu, Goa, Tripura, West Bengal & Delhi), the no. of women with DM were relatively high (above 1500 per one lac women). Only five states had DM prevalence levels below 500 per one lac men (Jammu & Kashmir, Mizoram, Himachal Pradesh, Rajasthan & U.P.) (6)

The rate of undiagnosed DM is high in both S.E. Asian and African region. In the ICMR-INDIAB Study, the prevalence of undiagnosed DM among residents of Tamil Nadu, Maharashtra, Jharkhand & Chandigarh were 44%, 70%, 51% & 50% respectively. (5) Numerous studies have been conducted to estimate the prevalence of DM in urban population but data available on the prevalence of DM in the rural population of India is very scarce. (7) Anjana *et al.* also have expressed their concern on inadequate coverage of Indian rural population in various national studies. (8) Major population of India resides in rural area. Data suggest that approximately 742 million people in India (70 % of Indian population) lives in rural area. (9,10)

It certainly becomes very important to estimate the prevalence of DM in rural Indian population to design various strategies to tackle the battle against DM. The main objective of the present study was to estimate the prevalence of DM in rural population of Akhnoor Tehsil, Distt. Jammu (J&K).

Material and Methods

This study was planned to estimate the prevalence of DM in various age groups by analyzing the hospital record based data.

Out of all the patients attending the medicine OPD (Sub-Distt. Hospital, Akhnoor) for any illness, those showing even slightest evidence towards the presence of DM, either because of their presenting signs & symptoms or because of positive family history were screened for DM. Fasting plasma glucose > 126 mg% and random plasma glucose > 200 mg% were taken as the diagnostic criteria for diagnosis of DM.

Table-1. Age-Wise and Gender-wise no. of Patients Screened for DM

Age (yrs)	With DM		Without DM		Total no. of Patients Screened with DM	
	M	F	M	F	M	F
21-30	4	5	149	191	153	196
31-40	8	17	243	506	251	523
41-50	38	31	663	439	701	470
51-60	22	16	401	237	423	253
>60	27	26	528	449	555	475
Total	99	95	1984	1822	2083	1917

Table-2. Percentage of Patients Screened for DM Based on Age distribution

Age Group	With DM	Without DM
21-30	9 (4.6%)	340 (8.9%)
31-40	25 (12.9%)	749 (19.7%)
41-50	69 (35.6%)	1102 (28.9%)
51-60	38 (19.6%)	638 (16.8%)
>60	53 (27.3%)	977 (25.7%)
Total	194	3806

Table-3. Percentage of Patients Screened for DM Based on Gender distribution

Gender	With DM	Without DM
Males	99 (51%)	1984 (52.1%)
Females	95 (49%)	1822 (47.9%)
Total	194	3806

Results

The present study was conducted from January, 2013 to April, 2013 in SDH, Akhnoor. Data concerning total no. of patients screened for DM in terms of their age and gender status is presented in *Table-1*. Total 4000 patients were screened for DM out of which 2083 were males and 1917 were females. Majority of the patients were in age group 41-50 years i.e. 1172 patients. The percentage of patients screened for DM based on age, gender distribution is presented in the *Table 2, 3* respectively. Out of 4000 patients screened 194 were found to be having DM i.e. prevalence of DM was found to be 4.85%. Out of 2083 males screened 99 were suffering from DM i.e. prevalence of 4.6%. Whereas out of 1917 females screened 95 were suffering from DM i.e. prevalence of 4.9%. Prevalence of DM was

Table-4. Prevalence of DM in Different Age-Groups in Studied Population

Age-group (in years)	No. of people with DM	No. of people without DM	Total no. of Patients screened	Prevalence of DM
21-30	9	340	349	2.57%
31-40	25	749	774	3.34%
41-50	69	1102	1171	5.89%
51-60	38	638	676	5.62%
>60	53	977	1030	5.14%
Total	194	3806	4000	4.85%

Table-5. Prevalence of DM in Different Age-Groups in Studied Male Population

Age-group (in years)	No. of males with DM	No. of males without DM	Total no. of male screened	Prevalence of DM in males
21-30	4	149	153	2.6%
31-40	8	243	251	3.2%
41-50	38	663	701	5.4%
51-60	22	401	423	5.2%
>60	27	528	555	4.9%
Total	99	1984	2083	4.6%

Table-6. Prevalence of DM in Different Age-Groups in Studied Female Population

Age-group (in years)	No. of females with DM	No. of females without DM	Total no. of female screened	Prevalence of DM in females
21-30	5	191	196	2.6%
31-40	17	506	523	3.2%
41-50	31	439	470	6.6%
51-60	16	237	253	6.3%
>60	26	449	475	5.5%
Total	95	1822	1917	4.9%

maximum in age groups of 41 to 50 years i.e. 5.89%. Table-4 shows the prevalence of DM in different age groups. Prevalence of DM in males was found to be maximum in age group of 41-50 years i.e. 5.4%. Prevalence of DM in females was found to be maximum in age group 41-50 years i.e. 6.6%. Table 5,6 shows the gender-wise prevalence of DM in different age groups.

Discussion

In our study, the prevalence of DM was found to be 4.85%. In study conducted by Himanshu Madaan et al. in 2013 on prevalence of DM in rural population of Distt, Sonapat, the prevalence of DM was found to be 18.43% (7) Almost two decades earlier Wander et al. in their DM prevalence study in rural Punjab (Pohir), the prevalence of DM was found to be 4.6%. (11) In another study by Chow *et al.* in 2006, high prevalence of DM from Godawari rural area was detected. Overall prevalence of known and undiagnosed DM in this rural

population was found to be 13.2%. (12) In recent NFHS3 Data, which studied urban and rural residents (all women aged 15-49 years and all men 15-54 years) in 29 states of India during the year 2005-2006 states that the prevalence level below 500 per one lac men in J&K. (6)

In comparison with NFHS3 Data which is showing prevalence of DM < 0.5%, prevalence in our studied group is quite high. One possible reason is that the present study population was taken from hospital OPD. Our study shows the prevalence of DM was maximum in the age group of 41-50 years i.e. 5.89%. In study conducted by Himanshu Madaan *et al.* (7) in 2013 on prevalence of DM in rural population of Distt, Sonapat, the highest prevalence was seen in 46-60 years which is in accordance with our study. In another study conducted by Ahmad, J. *et al.* (13) in 2011 in Kashmir, there is almost three times increase in prevalence of DM after the age of 60 years (5.8% Vs. 16.6% for 40-60 years

Vs. > 60 years). Our study shows that prevalence of DM in females is slightly higher than males i.e. 4.9% in females and 4.6% in males. In study conducted by Himanshu Madaan et al in 2013 on prevalence of DM in rural population of Distt, Sonapat, gender specific prevalence for DM was 19.36% for males and 16.98% for females. (7)

Nayakk *et al.* (14) in their study Prevalence of Type-II DM in urban population of Ahmedabad in Gujarat have shown the prevalence of DM as 16.9% in males and 11.1% in females.

Shah *et al.* (15) in their study High prevalence of Type-II DM in urban population in North-eastern India have shown the gender distribution of DM as 8.7% and 7.8% in males and females respectively.

Conclusion

Thus the current study recorded alarmingly high prevalence of DM among rural population which should be a cause of concern for health care providers. In India, there is very less data on DM in rural population. Moreover, facilities for health check-up are also very less in rural areas. So rural population remains exposed to higher blood-glucose levels for longer time, so there are increased chances of developing complications in them. Modernization of life styles in rural areas are also contributing to rise in prevalence of DM in rural areas. More and more studies are required to find out the prevalence of DM in rural population and also early diagnosis and management of DM is required at primary health center levels.

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