

Original Research Article

Prevalence of obesity and diabetes among health care physicians in Pondicherry, India

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ABSTRACT

Background: Non communicable diseases like obesity and diabetes are increasing worldwide, healthcare physicians are also not immune to this morbidity. The objective of this study is to find the prevalence of obesity and diabetes among healthcare physicians.

Methods: The study was done at a tertiary care hospital in Pondicherry. All adult health care physicians of both sexes working in the hospital and giving informed consent to participate in the study were included. Pregnant physicians and those who are not willing to give written consent for participation in the study were excluded from the study. The study was done as a cross sectional study using a pretested standardized questionnaire. Age, sex, demographic data, height, weight, diet habits, family history of diabetes, exercise, medication in all the health care physicians were recorded and studied.

Results: Of the total one hundred health care physicians, there were 50 male and 50 female physicians. Among the female physicians, there were 17 of age 41 to 50 years. There were 27 male and 34 female physicians with body mass index of 25 to 29.9. Six males and four females had diabetes mellitus. Six physicians were doing regular exercise. Four physicians were taking both oral anti hyperglycemic drugs and insulin.

Conclusions: Doctors are aware and educated part of the society but there is high prevalence of obesity and diabetes mellitus among healthcare physicians. Doctor have to be motivated to take care of their health and to prevent lifestyle disease complication. Further regular screening for diabetes and obesity has to be done for doctors.

Keywords: Exercise, Healthcare physicians, Obesity and diabetes mellitus

INTRODUCTION

Non communicable disease (NCD) as such is rising and it has become a problem for all professions.¹ Hospital expenditure is also more for NCD when compared with communicable because of the chronicity of the condition and non-communicable disease causing end organ damage and morbidity.¹ Since non-communicable disease effects the working hours and efficiency of professionally

qualified persons they constitute a significant economic burden to health care system and India.¹

There is a projected USD 237 million loss of national income for India due to non-communicable disease mortality for the year 2006-2015. This productivity loss will be doubled to 17.9 billion by 2030.² WHO chronic disease report says non-communicable diseases cause premature death, effects the quality of life of the

individual and creates large adverse effects of families, communities and societies in general.²

Health care physicians are more prone to sedentary life style, obesity and diabetes.³ Even though doctors deal with NCDs and are educated and aware they are in high risk for non-communicable disease like obesity and diabetes.³ Doctors are at the pinnacle of the health care system of every society therefore their health status is very important. Occupational stress, erratic eating timings, long working hours, less or no physical activity and unhealthy dietary habits put them in a position of developing NCDs.⁴

In particular unhealthy lifestyle has a negative impact on the cardiovascular health of the individual.⁴ Physicians food due to irregular eating habits contains more of stored and processed food that has less of fresh fruits and vegetables and more of fat and cholesterol which causes obesity and insulin resistance.⁴ Consumption of sugar sweetened and stored beverages because of timings which has high glycemic load further causes insulin rise and demand which leads to beta cell exhaustion in long run which is the primary cause of diabetes and cardiovascular disease.⁴ Physicians due to irregular work timings are prone to less physical activity which increase obesity and cardiovascular risk. Sleep restriction, night duties and extended wakefulness effects the energy requirements of the body, increase hunger due to hormonal imbalance, insulin resistance and obesity.⁵ Obesity and increased body mass index is also linked with adverse cardiovascular health and abnormal glycemic status.^{4,5} So, in our study we decided to analyse the prevalence obesity and diabetes in health care physicians in Pondicherry.^{2,3}

METHODS

The study was done as a cross sectional study using a standardized questionnaire method during the period of April 2018 to November 2018 in Aarupadai Veedu Medical College and Hospital, Pondicherry. The study was conducted after obtaining a proper Institutional ethics committee approval. Health care physicians working in different departments of all ages and both genders were included for the study after obtaining an informed written consent. All those who were not willing to give an informed consent, physicians who were pregnant and those with chronic diseases were excluded from the study. All the participants were asked to fill in a pretested questionnaire, which had questions regarding presence of diabetes, duration of diabetes, details of diabetic diet, oral antidiabetic drugs or insulin or both, presence of retinopathy, nephropathy, neuropathy. Anthropometric measurements with regards to height and weight, Body mass index (BMI) was recorded. The height was measured using a standardized wall mounted scale making the participant stand erect in a flat surface after removing the foot wear and the weight was recorded using a standardized weight scale after removing the foot

wear and heavy clothing's if any. Age, sex, height, weight, BMI, diabetic duration, diet pattern, treatment for diabetes, presence of neuropathy, nephropathy, retinopathy in all the participants were studied and were analyzed using SPSS 22 software.

RESULTS

In the present study 100 physicians were enrolled, their mean age was 43.4 ± 7.4 . Of the total one hundred health care physicians, there was 50 male physicians and 50 female physicians in the study (Table 1). The maximum number of physicians was from the age group 41-50 (Table 2) which had 37 participants. Thirty five participants was from the age group 31-40. Age group 51-60 had 23 participants. 5 are from less than 30 age group (Table 2). In male physicians 20 participants were from both each of 31-40 and 41-50 age group. Female physicians had 15, 17 participants in age group 31-40 and 41-50 respectively. 21-30 age group had 3 from male and 2 from female respectively. Hence the highest number of participants were from 41-50 age group (37%).

Table 1: Sex distribution.

| Sex physicians |
|----------------|
| Male 50 |
| Female 50 |

Table 2: Age distribution.

| Age | Male physician, N=50 | Female physician, N=50 | Total N=100 |
|-------|----------------------|------------------------|-------------|
| 21-30 | 3 | 2 | 5 |
| 31-40 | 20 | 15 | 35 |
| 41-50 | 20 | 17 | 37 |
| 51-60 | 7 | 16 | 23 |

Table 3: Body mass distribution.

| BMI | Male physician, N=50 | Female physician, N=50 | Total N=100 |
|---------|----------------------|------------------------|-------------|
| <25 | 16 | 7 | 23 |
| 25-29.9 | 27 | 34 | 61 |
| 30-34.9 | 7 | 8 | 15 |
| 35-39.9 | 0 | 1 | 1 |
| >40 | 0 | 0 | 0 |

The body mass index was evaluated. Out of total of 100 physicians 23% had BMI less than 25 (Table 3). 61% of physicians had BMI 25-29.9 which comes under over weight. Obese BMI range of 30-34.9 was found in 15%. One female participant had BMI in severely obese range of 35-39.9 (Table 3). No physicians were found in morbidly obese category. Of all the participants, majority are from overweight and obese BMI with female physicians more than male in overweight and obese category.

Six male physicians had diabetes mellitus and four female physicians had diabetes mellitus (Table 4). A total of ten health care physicians had diabetes mellitus in 100 participants (Table 4).

Table 4: Prevalence of diabetes mellitus.

| | Male physician | Female physician | Total |
|-------------------|----------------|------------------|-------|
| Diabetes mellitus | 6 | 4 | 10 |

In our study 3 male and 4 female health care physicians were following diabetic diet. Six male and 4 female health care physicians were adherent to the treatment (Figure 1). Four male and 4 female health care physicians had diabetes mellitus under control. Four male physicians had positive family history and 3 female physicians had positive family history (Figure 1). Three male and 3 female health care physicians were doing regular exercise (Figure 1).

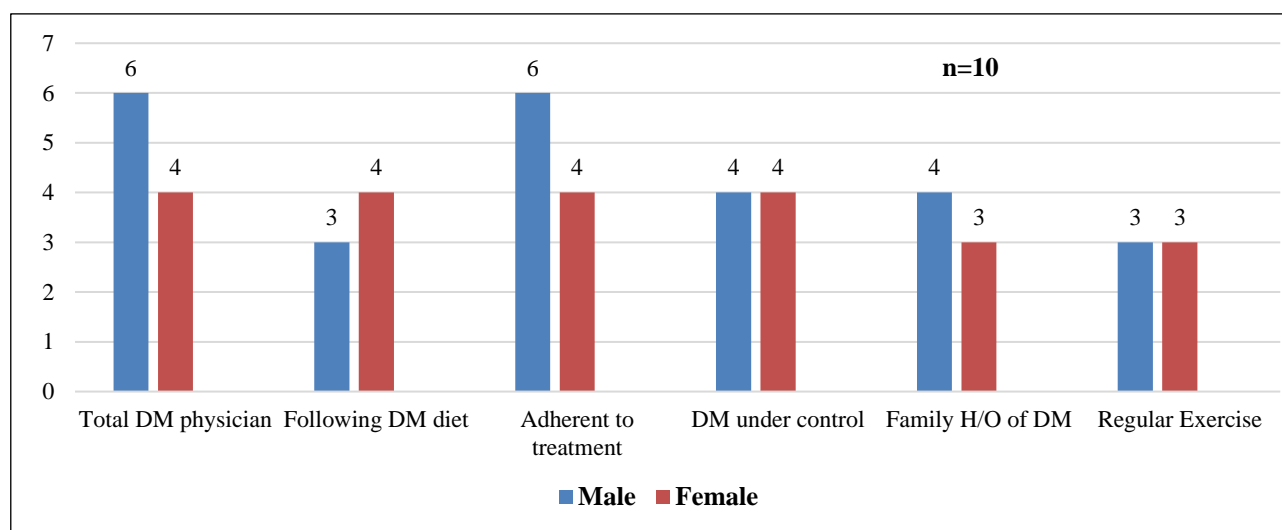


Figure 1: Total DM physicians following DM diet, adherent to treatment, DM under control, family H/O of DM, regular exercise.

Of 10 diabetes participants 8 had diabetes under control. Seven had family history of diabetes. Seven were following diabetic diet. Six were doing regular exercise. All were adherent to treatment.

Table 5: Taking oral anti hyperglycemic drugs, insulin and both.

| Physicians having dm (n=10) | Oral antihyperglycemic drugs | Insulin only | Both |
|-----------------------------|------------------------------|--------------|------|
| Male | 4 | 0 | 2 |
| Female | 2 | 0 | 2 |
| Total | 6 | 0 | 4 |

In all physicians who were following the treatment 4 male health care physicians and 2 female health care physicians were taking oral antihyperglycemic drugs (Table 5). Two male, 2 female health care physicians were taking both and none of the health care physicians took insulin alone (Table 5). Totally 6 out of 10 diabetic participants were taking oral antihyperglycemic drugs (OAH) rest were taking both insulin and OAHs.

DISCUSSION

Doctors due to excessive number of work hours (more than 65 hours per week) are faced with challenges like stress, lack of sleep, long working hours, over-exhaustion plus lack of physical activity, skipping breakfast and less sleep have put them under high risk of obesity and insulin resistance and diabetes mellitus.^{4,5} Physicians should also have healthy life style and prevent obesity which is risk factor for diabetes mellitus and cardiovascular disease.^{5,6}

In our study male physicians (50%) and female physicians (50%) were equal. Among the physician's 35% were of age between 31 to 40 years and 37% were of age between 41 to 50 years 23% were of age between 51 to 60 years. Body mass index which is used to measure generalized obesity can predict future risk factor for insulin resistance and cardiovascular disease.⁶⁻⁸ In our study, 27 male physicians and 34 female physicians were having body mass index in the range of 25 to 29.9 and were diagnosed to be overweight. Overall overweight was present in 61 (61%) of the physicians, which was more than that of the general population.⁹ A total of 15

physicians had mild obesity with a body mass index of 30 to 34.9, almost similar to general population.⁹ But in our study one of the participant had moderate obesity none of the physicians had severe obesity, possibly due to a smaller study size.⁹ From the study it is inferred that more number of physicians come under overweight 61%. Obesity was found in 16% physicians. Diabetes has a high risk for cardiovascular disease, retinopathy, nephropathy and neuropathy.¹⁰

In our study total of 10 (10%) physicians had diabetes. 6 male and 4 female physicians had diabetes. 4 male and 3 female physicians, totally 7 physicians had positive family history of diabetes. 3 male and 4 female physicians were following the diabetic diet. 6 physicians were doing regular exercise. All 10 physicians were adherent to the treatment and take diabetes medicine regularly. 8 physicians had their diabetic status under control and 6 physicians takes oral antihyperglycemic drugs, 4 physicians were taking both insulin and oral antihyperglycemic drugs. A study in northern India has shown high prevalence of diabetes 9.4% in male and 12.9% in female physicians.¹¹ A study done in south India showed metabolic syndrome was 29.0% among doctors.¹² In a another study done in 2015 in south India showed prevalence of diabetes to be 24.5% and obesity to be 36.5%.¹³ Regular screening of these risk factors in all health care physicians should be done to prevent future cardiovascular diseases.¹⁴

CONCLUSION

Healthcare physicians have high prevalence of obesity and diabetes. Awareness have to be created among the healthcare physicians regarding the importance of non-communicable disease and risk of cardiovascular disease and diabetes complication that they can advocate to their patients.

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