Original Research Article

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Knowledge about risk factors of diabetes mellitus type 2 among government school teachers in rural area of Haryana

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ABSTRACT

Background: Teachers are persons responsible for children in school, so they should have adequate information and good level of awareness about diabetes as they can play an important role in decreasing the risk of type 2 diabetes in children. The objective of the study was to assess the knowledge about risk factors of diabetes mellitus type 2 among government school teachers.

Methods: It was a cross-sectional study. 115 school teachers from five Government schools of district Hisar, Haryana were selected for the study. Data was collected using a predesigned and pretested structured questionnaire. The knowledge scale required the respondents to rate each item as either "yes", "no", or "don't know". Statistical analysis was done using percentages.

Results: A substantial number of the respondents were aware of the common risk factors of diabetes like lack of regular exercise (90.4%), sedentary lifestyle (88.7%), family history of diabetes (79.1%), fast food/soft drinks (78.3%), increasing age (75.7%) and overweight (70.4%). Besides, there was a lack of awareness of low birth weight (33.9%), hypertension (22.6%), oily food (20.9%) high cholesterol level (18.2%), smoking (17.3%) and gestational diabetes (14.8%) as risk factors contributing to the development of diabetes.

Conclusions: Lack of awareness was found regarding certain risk factors among the teachers. There is a need for establishing teaching programs to educate teachers and update their knowledge about diabetes and its risk factors.

Keywords: Diabetes Mellitus, Knowledge, Risk factor, School teacher

INTRODUCTION

Diabetes mellitus (DM) is one of the most common non-communicable illnesses worldwide. Diabetes is a global epidemic of the 21st century and it is increasing rapidly. India has 69.2 million people with diabetes positioned second among the top 10 countries in the world with huge numbers of people with diabetes. The number is expected to increase to 123.5 million by 2040. Type 2 diabetes (sometimes called non-insulin-dependent or adult-onset diabetes) happens when the body cannot effectively use the insulin it produces. Often preventable, it can result from excess body weight and physical inactivity, and

sometimes, a genetic predisposition. Recently, type 2 diabetes has increasingly been reported in children and adolescents, so much so that in some parts of the world type 2 diabetes has become the main type of diabetes in children. The global rise of childhood obesity and physical inactivity is widely believed to play a crucial role.³

Unfavourable modification of lifestyle and dietary habits that are associated with urbanization are believed to be the most important factors for the development of diabetes.⁴ Unhealthy lifestyle like physical inactivity with spending more time on computers, mobile phones and

televisions and poor dietary pattern i.e. intake of more junk food like pizza, burgers, ice-creams, soft drinks etc. has significantly increased the prevalence of childhood overweight and obesity. To overcome the adverse effects of unhealthy lifestyle there is an urgent need to increase awareness of diabetes and other lifestyle diseases.

Teachers should have adequate information and a good level of awareness about diabetes because they are the persons responsible for children in schools. Teachers can play a major role in decreasing the risk of type 2 diabetes in children by making them aware about the ill effects of poor dietary pattern and physical inactivity. They can inculcate healthy lifestyle habits in children by encouraging them to eat well and get regular physical activity. Therefore, the present study was undertaken with the objective to assess the knowledge about risk factors of diabetes mellitus type 2 among school teachers in government schools of rural area of Hisar, Haryana.

METHODS

The present cross-sectional study was conducted on school teachers working in government schools in a rural area of Hisar, Haryana. From a list of schools in the study area, five schools were randomly selected and all the teachers who agreed to participate in the study were administered a pre-designed and pre-tested structured questionnaire which was used to collect the information. Approval for the study was sought by contacting the headmasters and headmistresses of the various schools through personal meeting to orient them about the purpose of the study and get their permission to conduct the study. The inclusion criteria were teachers affiliated to the chosen schools who agree to participate in the study. The exclusion criteria were teachers who declined to participate, incompletely filled questionnaires and nonteaching staff. The questionnaire was divided into two parts. The first part contained socio-demographic and personal information like level of education, level of school and years of work. The second part included 12 questions to assess knowledge regarding the risk factors of diabetes. The knowledge scale required the respondents to rate each item as either "yes", "no", or "don't know".

The data thus collected was entered into a master chart in Microsoft Excel. The socio-demographic characteristics and knowledge about risk factors of diabetes mellitus type 2 were tabulated using percentages.

RESULTS

The present study included 115 teachers. There were 56 (48.7%) males and 59 (51.3%) females. Most of participants 51 (44.4%) were in the age range 40-50 years, 39 (33.9%) were between 30-40 years old, 17 (14.8%) were in the age of \geq 50 and 8 (6.9%) were less than 30 years old. The large majority were married 108 (93.9%), whereas 6 (5.2%) and 1 (0.9%) were unmarried

and widow respectively. Majority of the teachers belonged to general category (62.6%). Fifty five (47.8%) teachers were graduate/postgraduate with additional diploma bachelor of education/master of education (B.Ed./M.Ed.), 34 (29.6%) had only postgraduate qualification and 13 (11.3%) had masters of philosophy/doctorate of philosophy (MPhil/PhD) degree. The large majority were secondary school teachers 43 (37.4%), followed by teachers from intermediate school 42 (36.5%) and primary school 30 (26.1%). Majority of the teachers had 5-10 years of work experience. There were 27 (23.5%) teachers who had 20 years and more of teaching experience, 19 (16.5%) had 15-20 years, 23 (20.0%) had 10-15 years while 14 (12.2%) had less than 5 years of work experience as shown in Table 1.

Table 1: Socio-demographic characteristics of participants.

Namban	Danagata as (0/)
Number	Percentage (%)
	40.7
	48.7
59	51.3
-	-
	6.9
	33.9
51	44.4
17	14.8
108	93.9
06	5.2
01	0.9
72	62.6
29	25.2
14	12.2
13	11.3
34	29.6
55	47.8
13	11.3
30	26.1
43	37.4
42	36.5
14	12.2
32	27.8
23	20.0
19	16.5
27	23.5
	108 06 01 72 29 14 13 34 55 13 30 43 42 14 32 23 19

Table 2 illustrates the responses of the participants to each item in the knowledge question. A substantial number of the respondents were aware of the common risk factors of diabetes like lack of regular exercise

(90.4%), sedentary lifestyle (88.7%), family history of diabetes (79.1%), fast food/soft drinks (78.3%), increasing age (75.7%) and overweight (70.4%). Besides, there was a lack of awareness of low birth weight (33.9%), hypertension (22.6%), oily food (20.9%) high cholesterol level (18.2%), smoking (17.3%) and gestational diabetes (14.8%) as risk factors contributing to the development of diabetes.

Table 2: Knowledge regarding risk factors of diabetes among the participants.

Risk factors	Yes N (%)	No N (%)	Don't know N (%)
Family history	91 (79.1)	23 (20.0)	01 (0.9)
Overweight	81 (70.4)	24 (20.1)	10 (8.7)
Gestational diabetes	75 (65.2)	23 (20.0)	17 (14.8)
Lack of regular exercise	104 (90.4)	09 (7.8)	02 (1.7)
Smoking	54 (46.9)	41 (35.6)	20 (17.3)
Increasing age	87 (75.7)	15 (13.0)	13 (11.3)
High cholesterol level	61 (53.0)	33 (28.7)	21 (18.2)
Hypertension	57 (49.6)	32 (27.8)	26 (22.6)
Low birth weight	25 (21.7)	51 (44.3)	39 (33.9)
Oily food	52 (45.2)	39 (33.9)	24 (20.9)
Fast food/soft drink	90 (78.3)	21 (18.3)	04 (3.5)
Sedentary lifestyle	102 (88.7)	09 (7.8)	04 (3.5)

DISCUSSION

The increasing prevalence of diabetes and its complications in India would pose a real threat to existing health services. Awareness of the risk factors of diabetes can assist in its early prevention and reduce its incidence. This is the first study to assess the knowledge of school teachers about diabetes in Haryana. In the present study, the female teachers were more dominant (51.3%) than male teachers (48.7%) and the large majority of participants were in the age range of 40-50 years old representing 44.4% of all participants. Fifty five (47.8%) of teachers were graduate/postgraduate with additional diploma (B.Ed./M.Ed.), 34 (29.6%) had postgraduate qualification and 13 (11.3%) had MPhil/PhD degree. Only 23.5% of the teachers had experience of ≥20 years and 12.2% had teaching experience of less than 5 years. In contrast to present study, a study from Jordan showed dominancy of male and young age participants.⁵ A study from Turkey showed that 50% of participant teachers were males and most of them were married and had bachelor degree.⁶ Another study from Saudi Arabia also showed dominancy of male teachers (58.4%) as compared to females (41.6%) but in this study majority of participants (44.2%) were in the age range of 40-50 years which is similar to present study.7 In a study from Ghana, majority of teachers were males (82.6%), within the 30-39 age group range (50.5%) and married (66.8%). Majority (31.8%) of teachers had 1-5 years teaching experience while in our study majority of teachers had 5-10 years teaching experience.⁸

In present study, a substantial number of the respondents were aware of the common risk factors of diabetes like lack of regular exercise (90.4%), sedentary lifestyle (88.7%), family history of diabetes (79.1%), fast food/soft drinks (78.3%), increasing age (75.7%) and overweight (70.4%). Knowledge about risk factors of diabetes was found to be very low in a study from Ghana where only 35.3% of teachers perceived family history as an important risk factor for developing diabetes and only 20.0%, 15.8%, 7.5% and 21.3% perceived obesity, decreased physical activity, stress and consuming too much sugars and sweets respectively as risk factors for diabetes.⁸

There were few studies conducted on the present subject and they were of different design, so we couldn't compare more findings of our study as there were no similar studies. This subject should get more attention to prevent diabetes in children as they spend more of their time in the school.

CONCLUSION

Though a good number of the respondents had knowledge of the common risk factors of diabetes, lack of awareness was found regarding certain risk factors. There is a need for establishing teaching programs to educate teachers and update their knowledge about diabetes and its risk factors so that they can educate children and prevent diabetes in them.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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