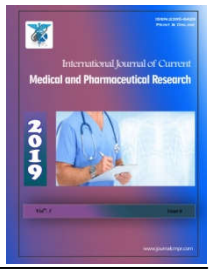
INTERNATIONAL JOURNAL OF CURRENT MEDICAL AND PHARMACEUTICAL RESEARCH
ISSN: 2395-6429, Impact Factor: 4.656
Available Online at www.journalcmpr.com
Volume 5; Issue 06(A); June 2019; Page No. 4273-4276
DOI: http://dx.doi.org/10.24327/23956429.ijcmpr201906673



Research Article

OVERWEIGHT AWARENESS AND PREVALENCE OF BLOOD PRESSURE, BMI IN DENTAL STUDENTS

Dr jyoti Kiran kohli

Dept of Anatomy World College of Medical Sciences and Research Gurawar jhajjar Haryana

ARTICLE INFO

Article History:
Received 6th March, 2019
Received in revised form 15th April, 2019
Accepted 12th May, 2019
Published online 28th June, 2019

Key words:
overweight, awareness, BMI,dental students, prevalence.

ABSTRACT

BMI: is defined as body mass index which is value calculated using height and weight of the person . Obesity and overweight in age around adolescence are the global problems on the rise especially very common in India. Prevention of obesity and hypertension in young age is very important to prevent major problems like cardiovascular diseases later.

Aim : Prevention of obesity is always better than its treatment and carries a lot of importance about this in health workers(including dental students).Awareness of high risk factors like fast food , increased carbonated drink consumption ,watching television ,internet surfing and lack of outdoor activities is essential to prevent overweight /obesity.

This study is done to know awareness among these health groups (1st year dental students)so that they can know about this growing problem and take steps to prevent this and its sequalae This study was also done to measure blood pressure and BMI in dental students to find out if there is any correlation between blood pressure and BMI in subjects and create awareness in others also.

Material and Methods: This was a cross-sectional study and ethical clearance was obtained from ethical committee. The subjects for the study were all students of 1st year BDS (Bachelor of dental sciences) course in a dental college. All students(101 out of 110) who gave informed consent , validated predesigned questionnaire were used to interview these students .Height , weight and blood pressure was taken for these students and then data was analysed for BMI calculation and results.

Results and Observations: Out of 101 students , 72 were females (71.2%) and 29 were males (28.7%).

In present study ,total overweight students were 25.7% and 17.82% were obese with BMI >30 and grade 1 obesity while 1.9% were of grade 2 obesity.

Out of 101 only 40 students i.e 39.6% only are aware of their Body mass index (BMI) while 61 were not conscious /aware of their BMI(60.4%).80% females (32/40) are found to be more aware while males were only 20% aware (i.e. 8/40).

Blood pressure was taken in all students and 13 students were found to be hypertensive ,out of which 5 were males and 8 were females.

Data comparison showed that BP indices found significantly high in overweight groups.

We found a highly significant association of BMI with blood pressure in our study. Also in our study only 35% students were found aware of obesity and its complications, females more aware than males.

Conclusion: This study also showed dental students being overweight and had suffered with one of its sequelae like hypertension too. This is attributed to their lack of awareness of overweight ,obesity and its sequelae . This is also found to be correlated with lack of physical activity ,consumption of junk food , habbit of not consuming breakfast ,consuming food in canteen and mess in dental students and related to obesity and overweight.

The problem of obesity is on rise and there is a definite need to make dental students aware of good eating habbits. Healthy eating ,regular physical exercise and awareness of consequences of obesity helps them for their own better physical and mental health .Their this knowledge also helps in guiding their patients for controlling their obesity and thus contributing to prevent growing pandemic of this disease in the society.

INTRODUCTION

BMI is defined as body mass index which is value calculated using height and weight of the person.BMI is ranging from 18-25 is considered as normal. Obesity and overweight in age around adolescence are the global problems on the rise especially very common in developing countries like India .Obesity is evolving as one of major burden of india as it results in many chronic diseases (1,2).According to stastics ,7% people of the current population are obese (3).also globally 13% of population due to elevated blood pressure levels and 21% of heart diseases is said to be caused due to increased BMI (4).

Overweight and obesity is abnormal accumulation of fat in body impairing health. Prevention of obesity and hypertension in young age is very important to prevent major problems like cardiovascular diseases later. There is an increasing trend in both blood pressure and body mass index in the recent years .Studies on general population have demonstrated that

Corresponding author:* **Dr jyoti Kiran kohli
Dept of Anatomy World College of Medical Sciences and Research Gurawar jhajjar Haryana

the prevalence of hypertension in overweight subjects are more when compared to the normal subjects (2,3,4,5,6,7,8). The increase of BP and BMI in recent years may be due to changes in the food habits ,consumption of more from fast food outlets instead of nutritious and healthy food ,stress ,playing video games in leisure time ,increased usage of laptops and computers in leisure time ,television and lack of physical exercise(2,9).prevalence of obesity is more among urban population when compared to rural population (10).population based preventive approaches should be done to manage elevated BP levels in developing countries like India. Clinic based care for blood pressure management is not a feasible option(11).the normal blood pressure varies from each individual depending on their ,weight and body size.

Obesity is associated with many systemic diseases like diabetes, hypertension ,cardiovascular diseases, osteoarthritis etc. Obesity is considered as fifth leading risk factor for global death. Obesity has come up as a serious problem throughout world among all age groups ,affecting both developed and developing countries like India.(12,13)

- ✓ The irregularity in diet ,
- ✓ Lack if exercise, addiction
- ✓ Lack of physical exercise

Junk food and sitting for long durations on computer are being important factors leading to obesity (12)

Studies on medical students and health personnel in many countries suggested that obesity is a problem among these population groups, who are exposed to many factors affecting their BMI .(present study)

Aim and objectives

Prevention of obesity is always better than its treatment and carries a lot of importance about this in health workers(including dental students).Awareness of high risk factors like fast food , increased carbonated drink consumption ,watching television ,internet surfing and lack of outdoor activities is essential to prevent overweight /obesity.

This study is done to know awareness among these health groups (1st year dental students)so that they can know about this growing problem and take steps to prevent this ,its sequelae and create awareness in others also.

This study was also done to measure blood pressure and BMI in dental students to find out if there is any correlation between blood pressure and BMI in subjects.

MATERIAL AND METHODS

This was a cross-sectional study and ethical clearance was obtained from ethical committee. The subjects for the study were all students of 1st year BDS (Bachelor of dental sciences) course in a dental college.

Inclusion Criteria

All students who gave informed consent, validated predesigned questionnaire were used to interview the students .study was done on type of diet students consuming i.e pure vegetarian diet or taking mixed diet at times. Diet was also collected as students breakfast regularly or occassionaly at home ,canteen or mess. Students were asked about daily consumption of junk food in their routine activity (>3 times a day). Physical activity was based on the hours spent on the playground for outdoor games ,membership of any gymnasium, hours spent per week for brisk walking /jogging . This study comprises of --- females and ---males ---in total with ranging from 17—20yrs. The BMI and blood pressure was measured in the BDS students studying in a dental college, Haryana, India. The systolic and diastolic blood pressure of all the subjects was measured using OMRON HEM 71133 automated blood pressure monitor. The blood pressure was measured in the right arm of the students after a resting period of at least 10 minutes. The blood pressure was measured in sitting posture with the right arm placed on a table .the two readings of systolic and diastolic blood pressure was taken and the mean value was used for the study. The height of the subject was measured in centimeter without shoes. While measuring the height, the subjects were made to stand facing away from the wall and heel of the foot, buttocks, shoulder and the head touching the wall. The weight was measured using a spring balance weight machine. Weight was measured in kilograms (kg).BMI was calculated by dividing weight in kilogram by square of height in meter (kg/m2)differences between variables were evaluated and analysed.

RESULTS AND OBSERVATIONS

Out of 110 students available at the time of study,101 consented for their participation in the study. No sampling (purposive sampling) was carried out and all 101 students, who consented, were included in the study. Out of 101 students, 72 were females (71.2%) and 29 were males (28.7%).

In present study, total overweight students were 25.7% and 17.82% were obese with BMI >30 and grade 1 obesity while 1.9% were of grade 2 obesity.:
Grade 1 (BMI 30-34.99)---17.82% .
Grade 2 (BMI 35-39.9)---1.9%
Grade 3 (BMI >40)---none

Out of 101 students only 40 students i.e 39.6% only are aware of their Body mass index (BMI) while 61 were not conscious /aware of their BMI(60.4%).80% females (32/40) are found to be more aware while males were only 20% aware (i.e. 8/40).

Out of 35 students (34.6%) were aware of obesity and related complications of which females were more aware than males i.e 77.14 % of females as compare to 22.8% of males.66 students were not aware of obesity and overweight and its complication i.e 65.34% ,out of which males were 21/66=31.88% ,while females were 45/66=68.1% only.

Blood pressure was taken in all students and 13 students were found to be hypertensive ,out of which 5 were males and 8 were females.

Table 5: shows distribution of study subjects according to blood pressure based on JNC vii classification and break up of hypertensive study subjects.it was observed that majority of the study subjects 88(87.12 %) were falling in the normal range of blood pressure I.e <120/80 mm of hg, while 13 students (12.87%)were hypertensives .

On observing the breakup of it was observed that 1 student was In the category of pre HT, where as out of (13)08 were in stage 1 HT and only 2 in stage 2 HT. It was observed that one male student and 2 females were affected in category of preHT where as 4 males and 4 females were in stage 1 HT.

None of male students were found in stage 2 HT while only 2 female students were affected and found in stage 2 HT.

Data comparison showed that BP indices found significantly high in overweight groups.

Table 1 Body Mass Index Vs Sex Ratio

BMI	MALE (N-29)	FEMALE (N-72)	TOTAL (101)	%
NORMAL (18.5-24.99)	12	45	57	56.43%
PREOBESE (25-29.9)	09	17	26	25.74%
OBESE GR I (30-34.9)	6	10	16	15.84%
OBESE GR II (35-39.9)	2	0	2	1.98%
O9BESE GR III (> 40)	0	0	0	0%

Table 2 Awareness Ratio in Males and Females

OBESITY	TOTAL 101	% FEMALES	% MALES
AWARE	35(34.6%)	27(77.14%)	8(22.8%)
UNAWARE	66(65.34%)	45(68.1%)	21(31.88%)

Table 3 value of blood pressure acc. To jncvii classification

	Systolic value	Diastolic value
NORMAL	120	80
PRE HT	<130	<85
STAGE I	130-139	85-89
STAGE II	140-149	90-99

Table 4 Distribution of hypertensives in study

	Male no.	% males	Female no.	% females	Total no.	%
number	24	82.75%	64	88.88%	88	87.12%
Hypertensives (B.P>120/80)	5	17.24%	8	11.11%	13	12.87%

Table 5 Criteria of Hypertensives In Study

Catageory of hypertension	Males No.	% males	Females no.	% females	Total no.	% of total
Pre HT	1	20%	2	25%	3	23.07%
Stage I HT	4	80%	4	50%	8	61.53%
Stage II HT	0	---	2	25%	2	23.07%

DISCUSSION

India is currently in transitional phase between developing countries and developed countries. Overweight /obesity among college students is an important issue as height by this age is stablised. It is very important in this age group to inculcate the importance of physical exercise and healthy eating and for this awareness among them is very important. In present study 72 females and 29 males were included, 25.7 % were found to be overweight while 17.82 % were obese (grade 1) and 1.9 % were obese (grade 2).But out of 101 only 35 % students were aware of obesity and related complications of which females were more aware then males. One of the limitations of our study was a small sample size. Similar study was conducted by gupta *et al* (13) among medical students studying in midpore medical college ,india ,overall prevelance of 17.5 % and 3.4% for overweight and obesity respectively was found.

Another study by chabra *et al* (14) reported prevalence of 11.7% and 2% obesity in medical students .This was conducted clearly indicates prevalence of overweight and obesity is on rise.

Another Study was done by Ranjana tiwari *et al* .(15) to assess prevalence of obesity among 2nd semester medical students of G.R.medical college, which showed a high prevalence of overweight and obesity among medical students.

Another study done in 2017 by MARTINS.C AND NORSETT-CARR(16) among final year medical students in Norway, which showed an inadequate knowledge level within obesity field .This showed a high perceived proficiency in dealing with obesity ,despite several constraints /barriers.
Study done in 2013 also showed similar results (17)which showed high prevalence of obesity and overweight among medical students. Sedentry lifestyle and frequency of eating fatty food was high among medical students(17,18,19,20,21,22)

In comparision to students with normal BMI ,25.7% were overweight and 17.87% students were obese with BMI >25 kg/m2(23) showed significantly high blood pressure indices.Higher BMI was also one of contributory factors for high blood pressure 12.87% of hypertensives had BMI of > 25 kg/m2 and similar observation was observed which was found to be stastically significant as by Sharma *et al*. and Reddy *et.al* (10,27).Their study showed prevalence of obesity is more among urban than rural population.(10,24,25,26,27,).

Medical field is a challenging and stressful profession and of the factors contributing to obesity, stress seems to be particularly important as stressful condition leads to irregularity in diet, lack of exercise and addiction, each being considered independent factors leading to obesity.(28) .Population based preventive approach should be done to manage elevated BP levels in developing countries like india as clinic based care for blood pressure management is not a feasible option.

We found a highly significant association of BMI with blood pressure in our study. Also in our study only 35% students were found aware of obesity and its complications, females more than males.

CONCLUSION

This study also showed dental students being overweight and had suffered with one of its sequel like hypertension too. This is attributed to lack of awareness of overweight ,obesity and its sequel in dental students. This is found to be correlated with lack of physical activity ,consumption of junk food , habit of not consuming breakfast ,consuming food in canteen and mess in dental students is also related to obesity and overweight.

The problem of obesity is on rise and there is a definite need to make dental students aware of good eating habits. Healthy eating, regular physical exercise and awareness of consequences of obesity helps them for their own better physical and mental health .Their this knowledge also helps in guiding their patients for controlling their obesity and thus contributing to prevent growing pandemic of this disease in the society.

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How to cite this article:

Dr jyoti Kiran kohli (2019) ' Overweight Awareness and Prevalence of Blood Pressure, Bmi in Dental Students', *International Journal of Current Medical And Pharmaceutical Research,* 06(06), pp 4273-4276.

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