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Impact of nutritional factors and lifestyle in the etiology of micronutrients deficiency causing new world syndrome

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Abstract
The present study was to assess the prevalence of New World Syndrome in office going person and their dietary habits. New World Syndrome is a set of non-communicable diseases brought on by consumption of junk food and a sedentary lifestyle, especially common to office going person. It is characterized by obesity, heart disease, diabetes, hypertension, and shortened life span. The data concerning dietary intake of the respondents were collected using 24 hour recall method, Data concerning lifestyle and Dietary habit was obtained from the respondents by 'questionnaire-cum interview' and purposive random sampling method. 2.11 mg of thiamine, 1.76 mg of riboflavin and 15.39 mg of niacin, were consumed by male respondents followed by 2.31 mg thiamine, 1.64 mg riboflavin and 15.81 mg niacin were consumed by female respondents. Sedentary lifestyle consists of excessive periods of sitting or lying down while engaging in activities such as reading, watching television or using a mobile phone or computer. Sitting at a desk for long periods of time, combined with environmental factor such as artificial light, and workplace stressors such as meeting deadlines can have a series of negative effects on employee physical and mental wellbeing.

Keywords: Nutrient intake, lifestyle, office going person, iron, vitamin a, folic acid, riboflavin, thiamine, niacin, vitamin c

Introduction
A sedentary lifestyle plays a significant role in obesity. Worldwide there has been a large shift towards less physically demanding work, and currently at least 30% of the world's population gets insufficient exercise. This is primarily due to increasing use of mechanized transportation and a greater prevalence of labor-saving technology in the home. In children, there appear to be declines in levels of physical activity due to less walking and physical education. World trends in active leisure time physical activity are less clear.

Cardiovascular disease (CVD) is a class of diseases that involve the heart or blood vessels. CVD includes coronary artery diseases (CAD) such as angina and myocardial infarction (commonly known as a heart attack).

Lifestyle

People with diabetes can benefit from education about the disease and treatment, dietary changes, and exercise, with the goal of keeping both short-term and long-term blood glucose levels within acceptable bounds. In addition, given the associated higher risks of cardiovascular disease, lifestyle modifications are recommended to control blood pressure.

Hypertension
Hypertension (HTN or HT), also known as high blood pressure (HBP), is a long-term medical condition in which the blood pressure in the arteries is persistently elevated. High blood pressure typically does not cause symptoms.

Nutritional assessment is the interpretation of anthropometric, biochemical (laboratory), clinical and dietary data to determine whether a person or groups of people are well nourished or malnourished (over-nourished or under-nourished).

Diabetes mellitus (DM), commonly known as diabetes, is a group of metabolic disorders characterized by a high blood sugar level over a prolonged period of time. Symptoms often include frequent urination, increased thirst and increased appetite.

Micronutrients are vitamins and minerals needed by the body in very small amounts. However, their impact on a body's health are critical, and deficiency in any of them can cause

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severe and even life-threatening conditions. They perform a range of functions, including enabling the body to produce enzymes, hormones and other substances needed for normal growth and development. Micronutrient deficiencies can cause visible and dangerous health conditions, but they can also lead to less clinically notable reductions in energy level, mental clarity and overall capacity. This can lead to reduced educational outcomes, reduced work productivity and increased risk from other diseases and health conditions.

Methodology
A community based survey was carried out among employees of district Kanpur to assess their micronutrient status, Life style and Dietary habits. The data concerning dietary intake of

the respondents were collected using 24 hour recall method, Data concerning lifestyle and Dietary habit was obtained from the respondents by 'questionnaire-cum interview' and purposive random sampling method. The Nutrient intake was compared with the suggested intake was compared with Recommended Dietary Allowances (RDA) of ICMR (2020).
The study was conducted during the study period of 2020 to 2021 with the sample size of 100 respondents. Data was analyzed statistically using the MS Excel 2010. Frequency, standard deviation, z test, mean and percentage. The level of significant was taken at $p < 0.05$ for the study.

Observation and Assessment
Nutrient intake

Table 1: Iron and Vitamin - A consumption of Respondents according to gender.

S. No.	Nutrient	Gender		Z test	Significant level
		Male	Female		
1.	Iron (mg/day)	17.98±2.61	15.8 ±3.61	5.237*	P< O.O5
2.	Vitamin-A (µg/day)	925.66±32.38	750.78±51.82	3.668	P>O.O5

Table 1: Reveals the Iron, Calcium and Vit A consumption of respondents according to gender, 18.98 mg of Iron, 933.4 mg of calcium and 925.66 µg of Vitamin A with SD 3.61, 58.19 and 32.38 were consumed by Male respondents followed by average 22.8 mg iron with SD 3.61 and 750.78 µg vitamin A with SD 51.820 were consumed by female respondents. Iron consumption with value z test is 5.237* and Vit A consumption with value z test is 3.668. Respondents in the study area and means significant difference (according to age group) were found of vitamin A consumption with value Z at 5% level of significant. This study showed that there was significant difference in consumption of Iron and Vitamin A

between males and females. Females were taking less iron than males because females were found to be picky eaters and not much interested in taking green leafy vegetables, also they loss their blood every month during menstruation that is the main cause of anemia. vitamin A intake were found to be more in males during survey. It was found that some females had lunch in canteens which were found to be unhealthy and some females were taking lunchbox in their office which was deficient in nutrients. Sometimes they reach their home late at night so mostly they avoid cooking and they prefer ready to eat food because of fatigue.

Table 2: Thiamine, Riboflavin, Niacin consumption of Respondents as compared to R.D.A.

S. No.	Nutrient	Gender		Z test	Significant level
		Male	Female		
1.	Thiamine (mg/day)	2.11±0.46	2.11±0.42	1.487*	P< 0.05
2.	Riboflavin (mg/day)	1.76 ±0.34	1.64±0.30	4.873*	P< 0.05
3.	Niacin (mg/day)	15.39±1.88	15.81±1.90	8.317*	P< 0.05

Table 2: Reveals the Thiamine Riboflavin and niacin consumption of respondents according to gender, 2.11 mg of thiamine, 1.76 mg of riboflavin and 15.39 mg of niacin with SD 0.46, 0.34 and 15.39 were consumed by Male respondents followed by mg of average 2.31 thiamine with SD 0.42, 1.64 mg riboflavin with SD 3.30 and 15.81 mg niacin with SD 1.90 were consumed by female respondents. Thiamine consumption with value z test is 1.487*, Riboflavin consumed

with value Z test is 4.873*, and Niacin consumption with value z test is 8.317*, Respondents in the study area and means significant difference (according to gender) were found, at 5% level of significant with value Z. This study showed that there was not much difference in consuming thiamine, Riboflavin and Niacin between males and females, because respondents were taking cereals and pulses at least once or more in a day.

Table 3: Vitamin C, Folic Acid consumption of Respondents as compared to R.D.A.

S. No.	Nutrient	Gender		Z test	Significant level
		Male	Female		
1.	Folic Acid (µg/day)	278.72±20.54	197.96±13.14	8.406*	P< 0.05
2.	Vitamin c (mg/day)	65.12±9.36	58.12±8.64	0.237	P>0.05

Table 3: Reveals the Vit C and Folic acid consumption of respondents according to gender, 65.12 mg of Vit C and 278.72 mg of Folic acid with SD 9.36 and 20.54 were consumed by Male respondents followed by 65.12mg of average Vit C with SD 8.64 and 197.96 mg of Folic acid with SD 13.14 were consumed by Female respondent and mean significant difference were found to be Folic acid consumption with value z test is 8.406* and Vitamin C

consumption with value z test is 0.237. Respondents in the study area and means significant difference (according to age group) were found at 5% level of significant with value Z. This study showed that there was significant difference in consuming Folic acid and Vitamin C between males and females, because females were not taking fresh fruits, vegetables and fortified cereals and dependent on ready to cook and processed foods which was found to be the main

cause of folic acid and vitamin C deficiency. Working females had lack of time and more responsibility than males in their home that is why they prefer ready to eat food like packed foods, canned juices, vegetables, that is the main

reason for folic and vitamin C deficiency in females.

Life style of the population

Table 4: Distribution of respondents according to Life Style of the population.

S. No.	Activity	Frequency	Percentage
1.	Play indoor game	48	48.0
2	Play outdoor game	1	1.0
3.	Chatting to friend on phone or computer	72	72.0
4.	Use internet for fun	83	83.0
5.	Use internet for office project	98	98.0
6.	Read for fun	17	17.0
7.	Use computer	100	100.0

Table 4 Shows the distribution of respondents according to Life Style of the population. Maximum 100% respondents were using computer, 48% were Playing indoor game, 1% were Playing outdoor game, 72% were Chatting to friends on phone or computer, 83% were Using internet for fun, 98% were Using internet for office project and 17% respondents were read for fun.

"Inactive lifestyle, lack of exercise and poor eating habits are

making millions of urban Indians face a high risk of heart disease," said D S Rawat, secretary general of ASSOCHAM. Majority of them are overweight and prone to heart attacks and other cardiovascular problems due to unhealthy blood pressure, cholesterol or blood sugar levels. ASSOCHAM Health committee chairman Dr. B K Rao said, "shift work has long been known to disrupt the body clock and be linked to high blood pressure, high cholesterol and diabetes".
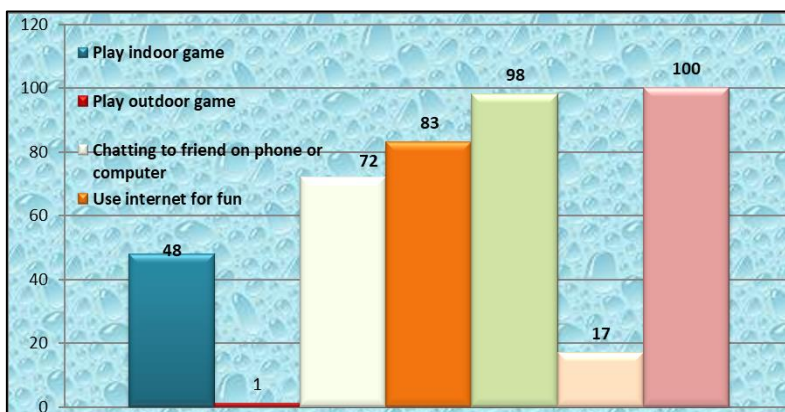

Fig 1: Distribution of respondents according to Life Style of the population

Table 5: Distribution of respondents according to Number of meals consumed in a day.

S. No.	Number of meals consumed in a day	Frequency	Percentage
1.	One time	14	14.0
2.	Two time	49	49.0
3.	Three time	37	37.0
	Total	100	100.0

Table 5 Indicates the Distribution of respondents on the basis of number of meals consumed in a day. Maximum 14% respondents were consuming once, 49% respondents were

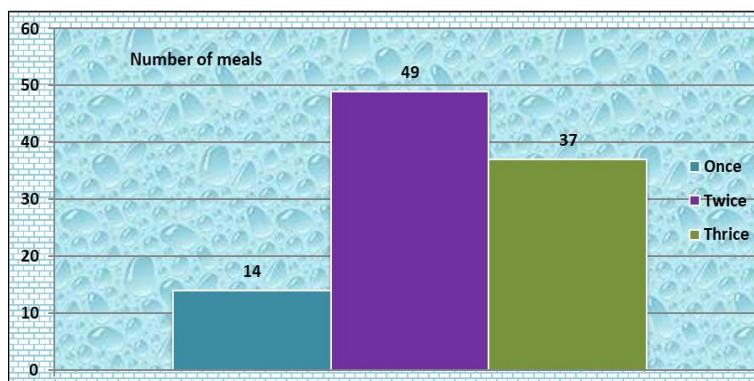consuming twice and 37% respondents were Consuming thrice a day.

Fig 2: Distribution of respondents according to Number of meals consumed in a day

Table 6: Distribution of respondents on the basis of Snacks consumed in a day.

S. No.	Snacks consumed in a day	Frequency	Percentage
1.	Once	63	63.0
2.	Twice	24	24.0
3.	Thrice or more than thrice	13	13.0
	Total	100	100.0

Table 6 Indicates the Distribution of respondents on the basis of Snacks consuming in a day. Maximum 63% respondents were consuming once in a day, 24% respondents were consuming twice and 13% respondents were consuming Snacks thrice in a day. Samosas, bread pakoras, patties, burgers, chowmein and other oil-laden artery clogging food in cafeterias and vending machines stocked with calories dense beverages such as colas or the surgary tea and coffee.
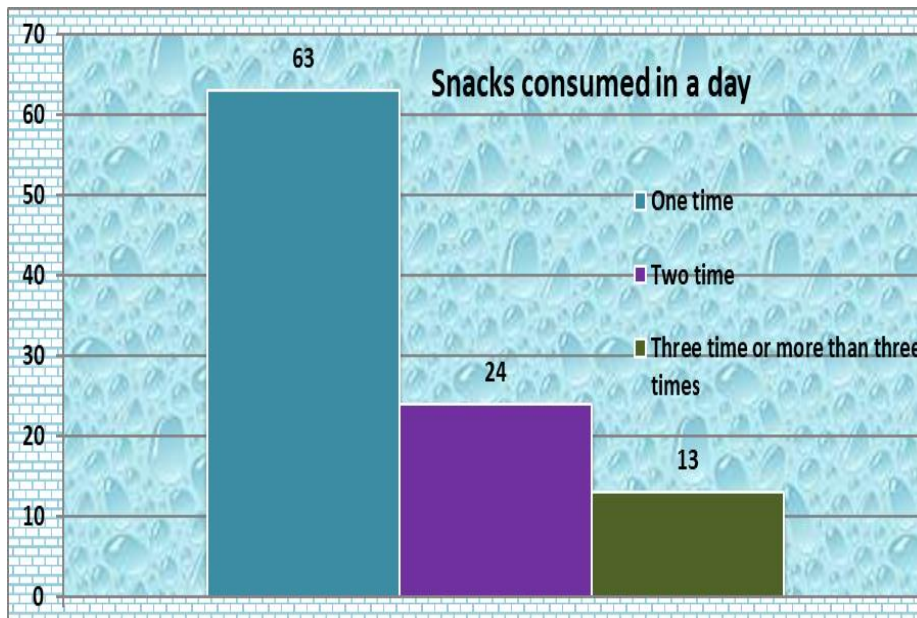

Fig 3: Distribution of respondents on the basis of Snacks consumed in a day

Table 7: Distribution of respondents on the basis of Eating outside.

S. No.	Eating outside	Frequency	Percentage
1.	Daily	23	23.0
2.	Most often	29	29.0
3.	Once a week	16	16.0
4.	Once a month	19	19.0
5.	Occasionally	13	13.0
	Total	100	100.0

Table 7 Indicates the Distribution of respondents on the basis of Eat outside. Maximum 23% respondents were daily eating outside, 29% respondents most often eating outside, 16% respondents were eating outside once a week, 19% respondents were eating once a month and 13% respondents were eating occasionally outside. Restaurant foods are rich in Trans fat that contain Low-density lipoprotein. LDL, or "bad," cholesterol can build up in the walls of the arteries, making them hard and narrow. Eating too much samosa, burger, noodles, Pakora and pastries that contains saturated fat can increase blood cholesterol.
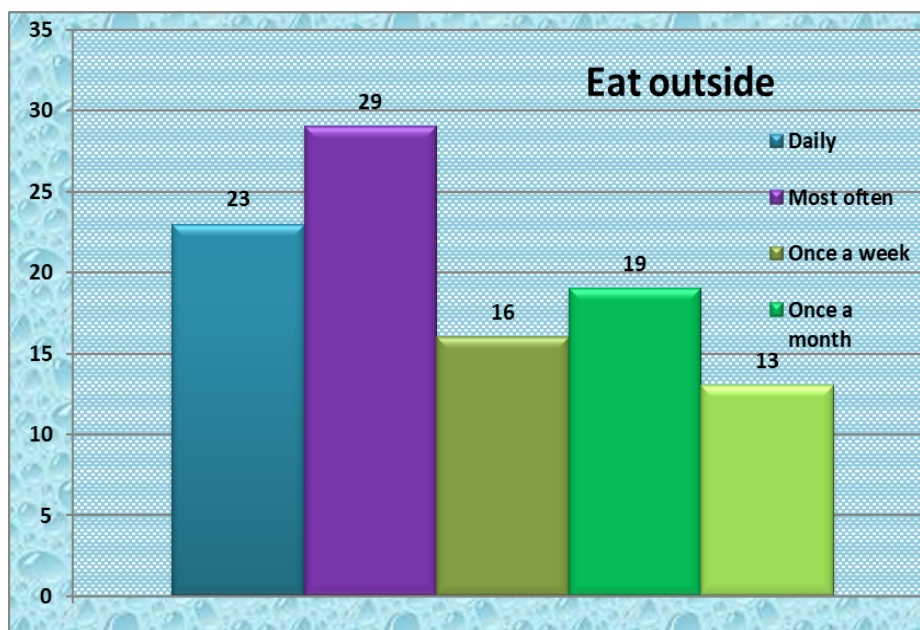

Fig 4: Distribution of respondents on the basis of Eating outside

Table 8: Distribution of respondents according to Intake of Beverage.

S. No.	Type of Beverage	Frequency	Percentage
1.	Tea	93	93.0
2.	Energy Drink	28	28.0
3.	Juice	41	41.0
4.	Alcohol	23	23.0
5.	Carbonated Drink	82	82.0

Table 8 Indicates the distribution of respondents according to

Intake of Beverage. Maximum 93% respondents were preferring tea on daily basis, 28% respondents were preferring energy drink, 41% respondents were preferring juice, 23% respondents were preferring alcohol and 82% respondents were preferring Carbonated Drink. Excess of tea is harmful for health. At the workplaces maximum respondents were intake Carbonated Drink which are full of carbonated gases and calories. Some respondents were consumed alcohol to reduce the stress. Consumption of excess amount of alcohol affects the lungs and liver.
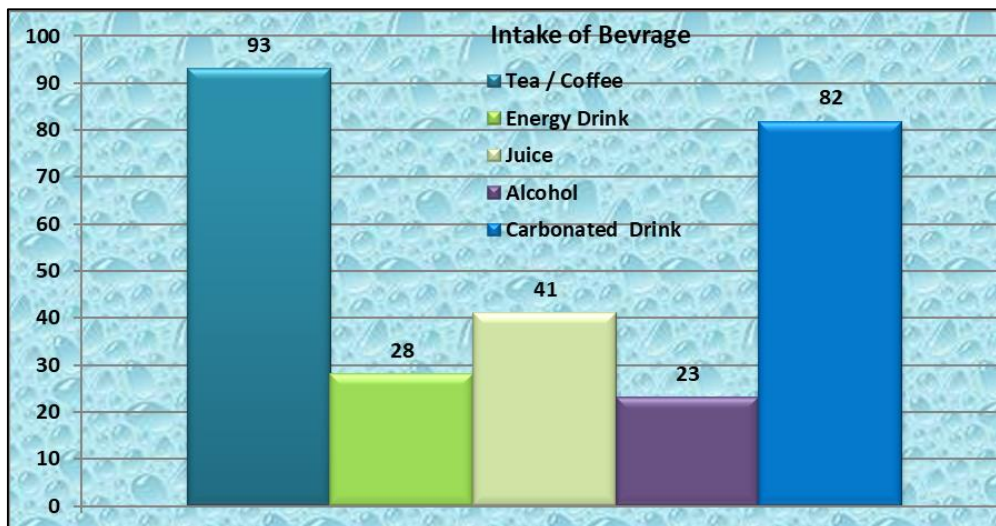

Fig 5: Distribution of respondents according to Intake of Beverage

Conclusion
The systematic planning in micro and macro level can be established. It can provide a social and individual healthy lifestyle. For normal health to be maintained, a wide range of vitamins, minerals and trace elements must be present in adequate amounts in the body tissues, and the dietary intake must be sufficient to meet the requirement. A sedentary lifestyle also appears to have a negative impact on mental wellbeing. The combination of the physical and mental impact to health makes a sedentary lifestyle particularly problematic.

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