Dietary Pattern and Psychological Status of It Professionals During the Covid 19 Pandemic

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Abstract - **Background The COVID - 19 lockdown has had a significant impact on the population's food habits and psychological well-being. Work from home became the "New Normal," resulting in poor eating habits and physical inactivity, all of which contribute to the occurrence of non-communicable diseases.**

Objectives To determine the eating habits of Information Technology (IT) professionals in Tamil Nadu during the pandemic, as well as the impact on their mental health.

Methods An online survey was conducted using a structured questionnaire to collect information about their dietary pattern, physical activity patterns, demographic details, mental health status, personal habits, stress levels, medical history and sleep pattern.

Results The participants (n = 80) were mostly females (55%) between the ages of 21 to 38. The lockdown resulted in longer working hours, and 64% of participants said they did not engage in any physical activity. Diabetes and cardiovascular diseases are the most common diseases, with 23% of the participants reporting a family history of disease. The majority of the participants eat non-vegetarian foods and eat three meals per day. 39 percent of the respondents admitted to skipping meals. The majority of individuals claim to take snacks in the evening. The majority of the participants only drink one to two litres of water every day. Fifty percent of the individuals reported eating junk food..When they are stressed or depressed, 44% of the participants said they eat unhealthy foods. The individuals' psychological states were largely angry, with only 3% of them feeling optimistic about their lives.

Conclusions

The COVID - 19 pandemic lockdown has definitely brought out a difference in dietary habits and psychological wellbeing. The risk of developing non - communicable diseases were higher since there were no physical activities, poor eating habits and increased consumption of junk/fast foods. There is a noticeable deterioration of psychological wellbeing since the working hours were higher, hearing the increase of covid cases in the city, death of family members or close relatives due to covid has made the people feel low or less positive about their life. As a result, the COVID - 19 lockdown has had a significant impact on IT personnel' nutritional and psychological well-being.

1.INTRODUCTION

The first case of COVID – 19 infections in India was reported on January 27, 2020. This is shaping up to be the perfect storm for global malnutrition. Everyone's lifestyle has changed considerably as a result of the COVID-19 outbreak. Restricted mobility, insufficient access to health services, food suppliers, and exercise resources, changes in social dynamics as a result of isolation, and psychological adaptations to isolation have all influenced what we eat, think, and do with our time. The crisis has had a significant impact on the nutritional status of low- and middle-income people. Though there is a lot of focus on the health and nutritional status of the lower socioeconomic group, information technology (IT) professionals receive less attention. The rapid movement of all IT personnel from traditional offices to Work from Home (WFH) has resulted in bad eating habits. Because the IT business employs 4.5 million people in India as of Financial Year (FY)21, this is a serious issue that must be addressed. To address this problem, people must be educated about the importance of eating a well-balanced and diverse diet in order to acquire enough of all nutrients, particularly those that assist the immune system fight infections. COVID-19 has had a substantial impact on the mental health of IT workers and the general population, in addition to its health repercussions. Deadlines, work pressure, fear of a pandemic, workplace transition, fear of losing jobs, dread of interacting with COVID – 19, poor eating habits, and other variables have all had an impact on the psychological status of IT personnel. It's unclear how this crisis will affect people's mental health in the

short and long term. This research also looked at professionals in the IT field who might be stressed out.

Objectives

1. To conduct a survey of 80 IT professionals to find out their dietary patterns and dietary changes during the COVID 19 pandemic.
2. To elicit information on the demographic profile, pattern of work, health status, mental health status and personal habits of the subjects.
3. To assess the dietary pattern of the subjects through nutrient intake and selected anthropometric measurements.
4. To determine the correlation between eating habits and mental health of the subjects during the pandemic.
5. To assess the impact of mental health of the subjects during the pandemic through a questionnaire.

2. METHODOLOGY

The purpose of this study was to determine the correlation between eating habits and the mental health of the subjects during the pandemic.

2.1 Design of the Study

A survey design was employed to elicit information about the eating habits and mental health of the subjects during the Covid 19 pandemic. A self-designed, structured questionnaire was created using google forms.

2.2 Sampling technique

Convenience sampling was employed for collecting the study data. The area chosen was Chennai due to familiarity and easy accessibility. The questionnaire was shared with the subjects through Google forms. Instructions on how to fill out the questionnaire were given.

2.3 Pilot Study

A pilot study among 10% of the study population was carried out to determine the feasibility and validity of the questionnaire. Based on the feedback obtained, suitable modifications were carried out in the questionnaire.

2.4 Sample size: In all, 80 IT company employees completed the questionnaire. The study was carried out over a period of one month to ensure that enough time was given to respondents to fill out the questionnaire and reduce sampling error.

3. RESULTS AND DISCUSSION

3.1. WORK PATTERN OF IT PROFESSIONALS

The survey was conducted in order to determine the nature of work done by IT professionals. 74 percent of the 80 participants worked the day shift, while 24 percent worked the night shift. The constant change of day and evening; or day, evening, and night shifts, severely limits or completely eliminates the ability to regulate body rhythms. Many evening and night workers are dissatisfied with shift work because it puts them "out of rhythm" with their thoughts and bodies, their families and social life, and the rest of the community's routines, especially during the pandemic. (Finn.P, 1981)

The majority of the participants (73%) reported that their work timings had increased during the COVID-19 lockdown while (45%) stated that they work for more than 10 hours. Long working hours are a common occurrence in many organisations and businesses have been linked to an increased risk of cardiovascular disease, chronic fatigue, stress, depression, anxiety, sleep quality, all-cause mortality, alcohol use, and smoking, as well as self-perceived health, mental health status, hypertension, and health behaviours, according to epidemiological studies. Long work hours have been linked to psychological and occupational stress in certain research. Working 10 hours or more per day, or more overtime hours per month, and 60 hours or more per week, is likely to cause stress. (Wong.K.et al, 2019)

3.2. PHYSICAL ACTIVITIES

64 percent of the IT professionals stated that they did not exercise during the COVID - 19 lockdown and only 36 percent of the employees mentioned that they do exercise on a regular basis. Out of 36 percent of subjects, 26 percent said that they will work out for less than an hour, nine percent of the subjects workout between one hour to two hours, and only one person says that they workout more than two hours. Physical activity is linked to a higher level of psychological well-being (e.g., through reduced stress, anxiety and depression) and physical fitness. Psychological well-being is especially crucial for the prevention and management of cardiovascular disease, but it also has implications for the prevention and management of diabetes, osteoporosis, hypertension, obesity, cancer, and depression. Physical inactivity is a modifiable risk

factor for heart disease, diabetes, cancer, obesity, hypertension, bone and joint illnesses and depression. Though one must consider doing physical activity regularly in order to reduce the risk of chronic diseases and early death. (Warburton.D.E.R, et al, 2006)

3.3. MEDICAL HISTORY

23% of the respondents expressed they have a family history of diseases, while the remaining 78% said they do not. A family history of diabetes was reported by 17% of the participants. The remaining participants said that their family had a history of diseases including cardiovascular disease and hypertension, and just a few of them mentioned obesity, cancer, thyroid, or kidney stones. Family history has been employed as a genetic risk predictor as well as a form of social assessment. Only a few of them stated that they have genetic diseases but it is a very important factor to be considered since it leads to prevalent chronic diseases such as cardiovascular disease, diabetes, and cancer. Family history is one of the methods for early detection. A family history of diabetes and cardiovascular disease appears to be an independent risk factor. (Klemenc-Ketis.Z and Peterlin.B, 2013)

3.4. EATING HABITS DURING PANDEMIC

63 percent of participants said they eat non-vegetarian, 14 percent said they consume vegetarian, and three percent said they only eat eggs. When specific questions on the vegan diet were asked, none of them stated that they follow a vegan diet.

66 percent of the participants said they eat three meals per day, whereas 29 percent said they eat two meals each day. Four percent of employees say they eat four to five meals per day, while only one percent said they eat more than five meals per day. The physiological benefits of regular meal pattern which includes breakfast consumption, consuming a higher proportion of energy early in the day, reduced meal frequency (i.e., 2–3 meals/day), and regular fasting periods will lead to reduced inflammation, improved circadian rhythmicity, increased autophagy and stress resistance, and modulation of the gut microbiota. Reduced meal frequency is linked to an irregular eating pattern, which can lead to weight gain, an increase in hunger-related hormones, and a metabolic disturbance that can raise cardiovascular risk. On the other hand, a reduced frequency but consistent time may reduce the danger of weight gain. (Paoli.A., et al, 2019)

Food Consumption Timings

Breakfast: When we look at the general picture of breakfast consumption among IT professionals, we can observe that the majority of the subjects (39%) have breakfast between 10 and 11 a.m., and 29% eat breakfast between 8 and 9 A.M.13 percent of those responded that they skip breakfast.

Lunch: The majority of the subjects (36 percent) have lunch between 2 PM to 3 PM whereas 28 percent have lunch between 1 PM to 2 PM.

Snacks: The majority of the subjects (56 percent) eat snacks in the evening, while 36 percent eat snacks at any time during the day.

Dinner: 41% of respondents said they would eat dinner between 9 and 10 p.m., while 16% said they would eat dinner between 8 and 9 p.m.

Eating time contemporizes organs like the stomach, gut, liver, pancreas, or adipose tissue involved in food digestion, absorption, or metabolism and plays an important role in obesity and weight reduction treatment. Melatonin is a hormone that serves as a biological night signal in the circadian rhythm, and it may be involved in the negative effects of late meals on glucose metabolism. When compared to early meals, late dining reduces glucose tolerance, resting energy expenditure, and carbohydrate oxidation. Breakfast deprivation is connected to obesity while eating late lunch (after 3 p.m.) stymies weight loss and negatively impacts microbiota diversity and composition. Having a late meal (within two hours of going to bed) lowers glucose tolerance. (Minguez. J.L., et al, 2019)

Skipping meals: 61.3 percent of the subjects claimed they don't miss meals, while 38.8 percent said they will skip meals. Skipping meals was linked to a poor diet, a lack of fruits and vegetables, and high salt and calorie intake from solid fats and added sugars.It is also linked to lower energy intake, increased calories per eating occasion, and higher triglycerides and visceral adipose tissue, all of which are strong indicators of detrimental metabolic profiles and may be linked to increased visceral adipose tissue and related metabolic diseases in high-risk individuals. Breakfast eaters had a lower BMI than those who skip breakfast. Breakfast skipping is connected with an increased risk of type 2 diabetes, and the association is

mediated by BMI, according to the influence of the body mass index (BMI) on the risk of type 2 diabetes. (Aishwarya.M and Anuradha.S., 2020)
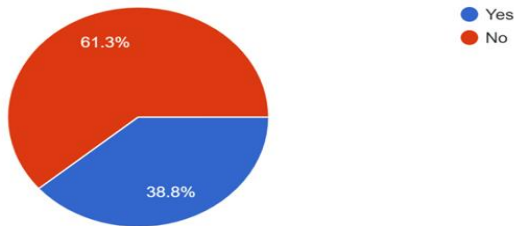

Responsibility for Planning and Preparing Meals: 49 percent of participants indicated they had some responsibility for meal planning and preparation, while 36% said they have no responsibility at all, meaning that they are not involved in any meal planning and will consume whatever is provided by a family member. People who want to eat a healthy diet may be more likely to organize their meals.It is linked to improved adherence to dietary requirements and a greater range of foods. Furthermore, meal planning is linked to a lower risk of being overweight or obese in women and obese in males. Finally, deciding what foods will be eaten in the coming days may help people to prepare more varied meals and plan ahead for grocery shopping for specific items, which could explain the greater food variety shown in meal planners. (Ducrot.P., et al, 2017)

Eating habits during the Pandemic: The subjects were asked to rate their eating habits on a scale of one to five, with one representing poor eating habits and five representing excellent eating habits. Because of the impact caused by COVID - 19, the majority of the participants (45%) said that their eating habits are good, implying that they would have avoided some junk items from their diet or begun or consider consuming healthy foods (such as immune boosters, the inclusion of fruits and vegetables). Because of the aforementioned reasons, 24% of them felt their eating habits have improved significantly. Only 11% of them said their eating habits had deteriorated during the COVID-19 lockdown. The COVID-19 quarantine has had a positive and negative impact on the eating habits and nutritional patterns of IT professionals. Staying at home, indoors, and working remotely had a direct impact on daily food habits, resulting in an increase in energy ingestion and a desire for comfort food owing to boredom and stress. Increased consumption of high-calorie foods and decreased consumption of healthful

foods such as vegetables and fruits may raise the chance of developing chronic diseases. (Clemente-Suarez.V.J.,et al, 2021). While in the case of the IT professionals, some of them have actually chosen to eat healthy.

Beverage consumption during a pandemic: 36 percent of the subjects stated that their beverage intake has increased, while 64 percent stated that their beverage consumption has remained unchanged. The majority of people stated they drink coffee and tea, while the rest said they drink bournvita, boost, Horlicks, lemon tea, coriander tea, milk, juice, and so on. Hot beverage consumption can cause thermal injury to the oesophageal mucosa and there are various molecular processes by which thermal injury, in general, can raise the risk of esophageal cancer. People who drink and eat beverages and food that are served very hot or hot frequently are nearly twice as likely to get esophageal cancer. . (Chen.Y., et al, 2015)

Immune Boosting Foods: 41.3% of the subjects said they focused and ate immune-boosting foods, whereas the rest said they didn't focus or eat immune-boosting foods. Immune-boosting foods were widely advertised and promoted during the COVID-19 pandemic. Many of them focus on and eat such foods. Anti-inflammatory, free radical scavenging, and virucidal functions of nutritional supplements derived from various spices, herbs, fruits, roots, and vegetables can reduce the risk or severity of a wide range of viral infections such as coronavirus by boosting the immune response, especially in people with insufficient dietary sources, and by their anti-inflammatory, free radical scavenging, and virucidal functions. These nutrients could be used to counteract the degenerative effects of the SARS-CoV-2 infection. As a result, natural substances may be used in addition to COVID-19 therapy to provide alternate prophylactic and therapeutic assistance. (Immunity boosting foods) (Mrityunjaya.M., et al,2020)
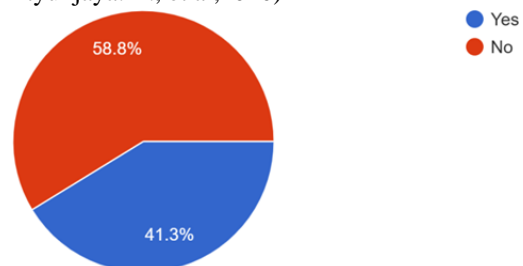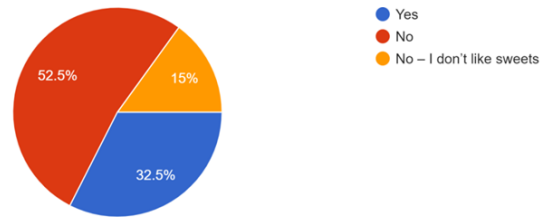
Water Consumption:

The majority of the respondents (48%) indicated they drink one to two liters of water per day, while 36% said they drink two to three liters of water per day. Only 10% of the subjects drink less than one liter of water, while the rest drank more than three liters.Water, which is found in every cell of our body as well as in many tissues and compartments, serves first and foremost as a construction material. Human water requirements are not based on a minimum intake because this could lead to a water shortage (metabolism, climate, physical activity, diet and so on). Rather, water requirements are determined by empirically determined intake amounts that are believed to provide adequate nourishment for a healthy population. (Jequier.E and Constant.F., 2010)

Consumption of Junk Food, Fast Food, Fried Foods during the Pandemic: Almost half of the participants agreed that their consumption of fast foods, fried foods, and junk foods had increased as a result of the COVID - 19 outbreak, whereas the remaining participants said that their junk food consumption has not increased. Overeating is linked to an increased risk of obesity and, as a result, an increased risk of cardiovascular disease and Type II diabetes. During the lockdown, overeating (especially snacking) and weight gain may lead to Coviobesity. A tendency toward increased snacking should not be overlooked because it may lead to long-term issues, particularly if further lockdowns are repeated. (Bakaloudi.D.R.,et al, 2021).
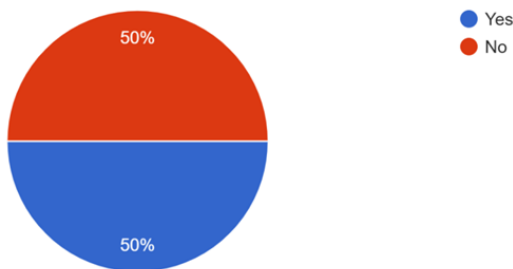

Consumption of Sweets: Sweets, candies, chocolates, and other sugary foods were consumed more frequently by 32.5% of the participants. 52.5 percent of the participants stated that their sweet consumption has been constant, while 15% stated that they dislike sweets. In terms of weight management and better dietary health, evidence suggests that portion control is more successful than eliminating or restricting a

highly delicious meal. When nutrient-dense foods are chosen initially, a proposed definition of moderation for sweets intake is an amount equivalent to up to an average of 50–100 kcal/d for adults, to fit within a range of energy needs. This amount of sweets corresponds to 20–30% of the daily maximum allowed for solid fats and added sugars in diets ranging from 1800 to 3000 calories per day. (Duyff. R.L., et al, 2015)

Consumption of unhealthy food when frustrated or stressed: When stressed, 43.8% of the population admit to eating unhealthy foods. Many people are aware that junk food, fast food, processed food, white flour, sugar, maple syrup, honey, agave nectar, and all other junk foods contribute to obesity, diabetes, heart attacks, strokes, dementia, and cancer, but few are aware of the strong causative role that an unhealthy diet may play in mental illness. Candy and sweetened baked products may activate the brain in an addictive manner, resulting in more serious disorders. (Fuhrman.J, 2018)
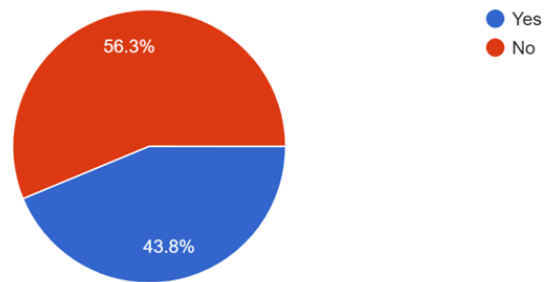
3.5. PERSONAL HABITS OF THE SUBJECTS

Only 4% of the subjects agreed that they smoke cigarettes, while 84 percent said they used to smoke cigarettes. In developed countries, cigarette smoking (often known as "smoking") is the leading cause of early death. Oral, pharyngeal, and esophageal cancers all have a significant attributable risk from smoking. (Bergen.A.W and Caporaso.N., 1999).

Sleep Pattern

55 percent of the participants reported they sleep more than eight hours per day, while 35 percent reported they sleep five to seven hours each day. Only ten percent of the respondents stated they get less than five hours of sleep every day. Sleep is necessary for the production of growth hormone, which is required for appropriate physical development. With the growing popularity of smartphones and all of their advanced technologies, using a smartphone before going to bed has become a habit that might cause sleep latency and shorten sleep length. (Lin. P.H., et al, 2019) Sleep deprivation has been linked to negative health and performance outcomes. (Czeisler.C.A, 2015) Sleep is becoming more widely acknowledged as an important aspect of good development and general health. Proper duration, high quality, appropriate scheduling, and the absence of sleep problems are all aspects of healthy sleep. Daily sleepiness, weariness, depression, poor daytime functioning, and other health and safety issues are all linked to not getting enough sleep at night. In terms of the ideal quantity of sleep you get each night, there is no magic number for everyone. Sleep length recommendations are intended for public health purposes, but they must be tailored to the individual. A complex collection of elements, including our genetic makeup, environmental, and behavioral factors, influence our sleep needs. Our present evidence of sleep need is objectively based on circadian, homeostatic, and ultradian sleep regulation and sleep requirement mechanisms. (Chaput. J.P., et al, 2018)

3.6. MENTAL HEALTH STATUS

The study revealed that 3% and 50% of the subjects were always angry and angry once in a while respectively during the covid pandemic. Nearly 31% of the subjects were gloomy about half of the time. Several studies have linked frequent exposure to COVID-19-related social media/news to anxiety and stress symptoms. (Gao et al., 2020; Moghanibashi-Mansourieh, 2020) Also it is observed that 3% of the subjects never felt positive in their lives and a majority 35% of the subjects mentioned that they were positive most of the time.

- Never
- Once in a while
- About half the time
- Most of the time
- Always
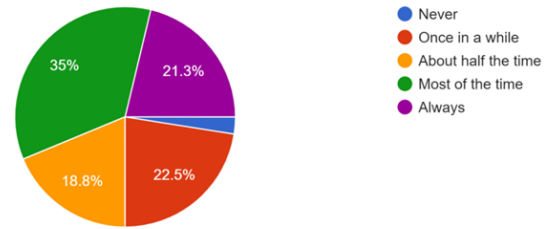
4.DISCUSSION

This population-based study provides a snapshot of the dietary habits and psychological status of IT Professionals during the Covid 19 pandemic. During the COVID-19 lockdown, the sense of hunger and satiety changed for a majority of the population: 36 percent of the subjects stated that their beverage intake has increased and 38.8 percent of the population skip meals. Sweets, candies, chocolates, and other sugary foods were consumed more frequently by 32.5% of the participants. It was expected that during the quarantine there would have been a reduction of the consumption of fresh food, accompanied by vitamins and minerals deficiency, including vitamin C and vitamin E and beta-carotene with antioxidants and anti-inflammatory properties (Renzo.L.D et al, 2020) but the 41.3% of the subjects said they focused and ate immune-boosting foods. With regards to psychological status it is evident that 3% of the subjects never felt positive in their lives and 3% of the subjects were always angry during the Covid pandemic. However, as the COVID-19 pandemic is ongoing, our data need to be confirmed and investigated in future more extensive population studies.

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