



Studying the Optimal Time for Meals to Circadian Rhythms and Body Health (Application to Hospitality Establishments)

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Abstract

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BACKGROUND: Circadian rhythms, metabolism, and nutrition are closely linked, although the effects of meal timing on the human circadian system are poorly understood. The time factor biological of nature is an essential element for the functioning of cosmic systems. In the event of any defect, many problems come out as a result of this imbalance and here came whether to change the timing of eating diets have to do with the occurrence of illness in the body and the emergence of diseases of this age such as obesity and diseases of the gastrointestinal tract (gallbladder – diseases of the colon, liver, and others).

AIM: Hence the need to research the effect of timing, eating the three meals, and the body's system to resist disease.

METHODS: The study sample was withdrawn from Egyptian and foreign guests in hospitality establishments in Hurghada, Egypt, with 300 forms. SPSS statistical program was used, and the research was focused on the body's sympathetic nervous system and its role in regulating the body processes related to metabolism.

RESULTS: The timing of waking up and eating meals reached a set of findings and recommendations. The most important ones are the need to amend the healthy track of food and to increase the awareness of educational health, followed by hotels and resorts' restaurants and room services offering those meals according to the client's demand and the time they want to eat the meal.

CONCLUSION: Therefore, it is necessary to direct the food operators in the hospitality establishments to prepare the food at the optimum time and to search for the modification of new food trends in line with the nature and the regularity of the diet to prevent diseases.

Introduction

The sympathetic nervous system is considered primarily responsible for the activity of the digestive system, as the sympathetic nervous system receives signals of the brightness of the light and translates those signals through the spinal cord to start the process of secretion of digestive enzymes and the process of food metabolism. On the other side, the individuals having their meals (breakfast-lunch-dinner) in non-ideal times due to changes observed in the lifestyle and dietary habits over the past three decades, the last result of technological progress and means of media and the reverse of the times of day and the change in sleeping hours which resulted in nighttime activity inconsistent with biological nature and thus represent the metabolic variable occurs in non-natural appointments that are compatible with the internal environment of the human being and the external environment of nature (human nature of creation), causing the emergence of many diseases of the gastrointestinal tract of sugar, liver,

pancreas, irregular heartbeat and obesity which are stated to be caused by the quality of the food only, without relating to the meal timing [1].

The alternating of day and night of the earth's cycle is so reliable that it is not surprising that animals, plants, and bacteria adjust their behavior and physiology (Figures 1 and 2). Circadian rhythms are a ubiquitous adaptation of all organisms to the most predictable of environmental challenges. A biological rhythm that persists under constant conditions and has a period of 1 day is called "circadian" (circa, "around," dian, "day"). Until very recently, the molecules underlying the oscillation have remained unknown. Perturbations of such oscillations by inhibitors of RNA or protein synthesis suggest that such molecules are involved [2].

The importance of the study is the need for organs of the body compatibility (internal) parasympathetic system, which must be in harmony with the external environment Biological Clock (CIRCADIAN RHYTHM) at the right time to eat three meals as well as the importance of educating and modifying style

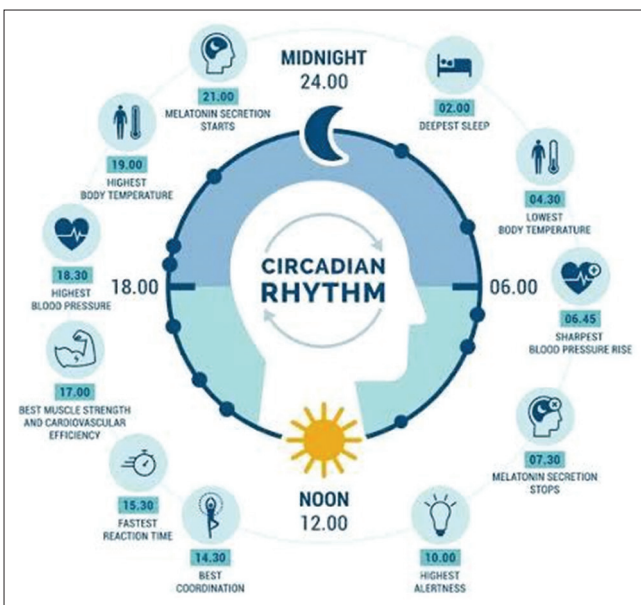


Figure 1: Infographic of a conventional circadian rhythm

behaviors and methodology of individuals at the time of food to reach eating to good health. In addition to modifying the course of hospitality institutions in the necessity of providing healthy food at the appropriate time for the hotel guests in a simultaneous healthy and biological way. Sleeping is a significant component of human health needs and supports hotel guests recover physically and psychologically from their trip [3].

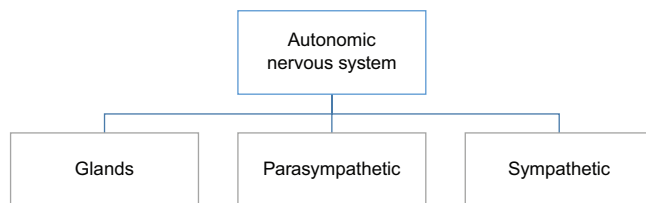


Figure 2: Control of smooth muscles, cardiac muscles, and glands

Mao *et al.* introduced that some research has examined the connection between sleep and hotel. In addition, they confirmed that there is a positive relationship between the traits of hotels and the quality of hotel guests' sleep. However, they did not gain greater vision into individual physical characteristics [4].

The study seeks to achieve a set of aims, the most important of which is to confirm the relationship between the activity of the parasympathetic system **Biological Clock** (CIRCADIAN RHYTHM) and healthy food metabolism. Second, to illustrate the diseases of the digestive system and their relationship to food metabolism and nutrition. And third, to highlight the changes that have occurred in the way of life and nutrition in society because of development, which led to the emergence of diseases. And finally, determine the appropriate time to eat breakfast, lunch, and dinner in line with the internal environment of the body and the external environment Biological Clock (CIRCADIAN RHYTHM) [5].

Plato linked satiety, lethargy, slackness, moderation in eating, and serenity of mind through a

philosophical and spiritual view and emphasized that the treatment of disease should address the body as a whole and not the sick organ only. Aristotle said that the inhalation of air is not from the mouth and nose only but also the cells and the pores of the body breathe as well and that plants and production of oxygen in the early morning hours and the absorption of carbon dioxide and vice versa of the need for human oxygen and output of carbon dioxide in exhaled these operations whenever there is harmony between them led to the prevention [6].

Over the past centuries, diseases did not appear among humans in this widespread due to change many of the behaviors that people are accustomed to especially Egyptian old farmer which are in line with nature, including waking up early with the onset of light and eating breakfast foods that are produced from the environment, which may be characterized by a decline in the economic well value [7].

And then go out to work and when you return home at the end of the day at sunset time, one should have dinner between the time of Maghrib and Isha then go to bed early as a result of an early wake-up. Consequently, family members stop eating healthy food. The technological advances and modern developments behavior of individuals have changed and increased their aspiration for each new thing without paying attention to the form, composition, and timing of food in addition to changing the sleep timing for most individuals resulting in eating meals at different times. As a result, every member of the family eats at a different time that killed the minutes in which everyone meets on meals time and its positive impact on public health [8].

Wisdom manifested in his nature, which created people there are certain timings where the body is at full activity, vitality and can do all the natural processes that it needs to carry out all the functions of the representation of diet properly reaches healthy body that is free of disease and able to do the muscular and mental effort. The universe is based on that harmony, consistency, and coherence between the human (internally) and nature (external) which is considered the biological human time. When a change happens to these cosmic systems, the human's body begins to face stress, fatigue, and functional deficiencies of the body, and thus the emergence of diseases and illness in the body, and we start to search for the causes without referring to the nature creation. Therefore, the importance of the current study is in identifying the relationship between the Biological Clock (CIRCADIAN RHYTHM), the individual's food metabolism, the timing of eating meals, and the extent of its relationship to the body's illness [9].

Parasympathetic system

The parasympathetic system intervenes to regulate the body's function during rest, such as sleep and digestion – reduces the heart rate, increases

Table 1: The study sample of Egyptians and foreigners according to the incidence of diseases

Parameter	Diseases							Total
	Sugar	Obesity	Liver	Diseases of the colon	Gallbladder disease	Other diseases	No diseases	
Foreigners								
Number	1	8	0	0	0	6	125	140
Percentages	1	6	0	0	0	4	89	100
Egyptians								
Number	10	13	3	8	4	8	114	160
Percentages	6	8	2	5	3	5	71	100
Mean								
Foreigners	3							
Egyptians	8							
SD								
Foreigners	4							
Egyptians	2							

stomach motility, increases secretions, and attacks. This system is also known as the basis for what is known as the phenomenon of dawn by converting the thyroid hormone into what is known as rest and digestion, and it is one of the three parts of the autonomic nervous system, as shown in Figure 2. The structured parasympathetic device work by issuing signals across light (with the beginning of the Biological Clock) through the eye when you realize the light of the morning, starting from 6 o'clock until seven in the morning and from 6 o'clock until seven in the evening to move through the spinal cord signals to issue the necessary hormones to stimulate the secretion of digestive enzymes during the enzymes salivary necessary metabolism in the digestive system glands in the abdominal area and then the parasympathetic system sends signals that stimulate the activity of the stomach and intestines (internally) and activates both the liver and pancreas and stimulates the gallbladder in addition to stimulating the genitals and becomes the digestive system fully prepared and completed activity (peak) by connecting internal elements by the external environment. Tracking phase of the summit excretion stage basal (basal status) less than the system activity and carrying the enzymes and the activity of glands turn the intestine to inactivity and less secretion of the pancreas and works sympathetic to increase breathing and pumping blood glucose, rapid heart rate [2].

Olshansky *et al.* 2008 and Omar *et al.* emphasized that at certain times, the sympathetic system begins to function at the need for speed (fight or flight), and the activity moves to the heart and increases in intensity with fever and digestion to the activity of other parts of the body. The brain begins to set a specific fixed program with the time, which signals the beginning of the activity time of the body and the digestive system [5], [10], [11].

The role of the parasympathetic nervous system in metabolic syndrome

The previous image refers to the incision Parasympathetic nervous system and its impact on the different organs of the human body which activate secretions of digestive enzymes and intestinal dramatically during periods of the day affected by the parasympathetic nervous system, which leads to

the lack of any problems in digestion if linked to food systems [12].

Many researchers have shown that there is a change in the body mass of children in the last decades, and they attributed this to the interference of brain signals resulting from the disruption of those times to the occurrence of accidents. The secretion of insulin is linked to biological hourly closely and when a malfunction in the metabolism resulting in an imbalance in the secretion of insulin, which human affects diabetic and eating nightscape leads to a response to endocrine glands abnormally and increase the desire to eat food energy in the evening periods, giving thus vague references to the brain and the different rhythm of body temperature, sleep, and excessive insulin secretion and the accumulation of fat in the abdomen, heart disease, and blood vessels and irregular process of metabolism in line with the regularity of natural physiological (metabolic disorders') and thus obesity, were confirmed by Shakoor [13] and Schiller [14] that the value of the individual's basal metabolism during sleep (nighttime periods) decreases by 10% of the normal.

The fact that we all know that late night eating syndrome leads to that an individual does not have breakfast and even giving up on it at all (morning anorexia) [15], [16].

The main defect that causes the disease in the digestive system is due to the occurrence of a defect in the parasympathetic nervous system and its incompatibility with the external environment and the metabolism process [17].

Most of the articles focused on research dealing with food and nutrition value and the amount of the meal and focus on activities without paying attention to the importance of optimal timing for meals and even determine the times of food systems are incompatible with the autonomic nervous system and the external environment and the limited view of the environment and the surrounding medium of forbidding eating in front of the television, the internet, and other [6].

Some people believe that eating one meal a day like breakfast with fat content may be ideal for the application of diet systems and weight loss and that on the contrary, completely handled meals such as breakfast and dinner and content of the diet moderately better as proven by experience that the metabolism is

in the one his meal a negative effect on the liver, insulin secretions, and glucose levels, which leads to obesity, as well as the energy to work is negatively affected [18].

Moreover, some studies have shown that children who sit the most in front of the TV are exposed to an increase in the rate of food consumption by 105% of the others who watch less [15], [19].

In addition, the participation of the family at least 3 times in the family meals per week leads to a healthy diet, and adherence to the set appointments leads to an appetite [20].

Despite the availability of diabetes medications, changes in lifestyle, behavioral, and cognitive patterns have an impact on the ineffectiveness of health outcomes [21].

Many have tried to strive by establishing regulated diets for obese patients through dieting regimens, including what is transmitted from the west and making a list of prohibited foods and foods. Similarly for diabetics – people with liver and gallbladder diseases – measuring secretions of the endocrine – measuring the metabolism grassroots and others. Most researchers start to search about the quality of food, medicines, disincentives, and others trying to focus on the quality of inputs without standing even for a period to discover the fact that the body system is fixed and we must find out what has been disturbing the performance of that system and respect it [22].

Study hypothesis

There is a statistically significant relationship between eating the three meals at a specific time and hour (according to the Biological Clock) (CIRCADIAN RHYTHM) and between food metabolism and the prevention of disease and outbreaks.

Research Methodology

Questionnaire forms were distributed to a random sample of Egyptian and foreign guests at resorts and tourist hotels in Hurghada between March and September of the year 2021. The survey included a range of inquiries about nationality, age, weight, and height. And whether the individual suffers from obesity, in addition to recognizing the type of effort expended, the number of hours of sleep, the number and quality of meals eaten per day. Furthermore, whether there are hereditary diseases and the type of diseases in case of infection. The study needed to know the time of sleep and the time of awakening to determine whether there is a relationship between them and the three meals and their dates and the consumption of healthy food. It was important to make sure how keen individuals to eat

meals on time or not, and the extent of their commitment to it. The main reason refers to finding communication points between what the hotels services offer and progress of clients including no desire contrary to the health and verification of the interest of individuals, level of awareness, and level of education aware educational and health they have.

The study sample

The study sample was 304 questionnaires (Table 1). Of which, 300 are valid and four are invalid. One hundred and forty of them are for foreigners and 160 are for Egyptians. After that, comparing the sample and extracting percentages and frequencies to discover the different relationships, which contributed to the development of the recommendations, concluded by the study.

Statistical analysis

In this study, descriptive analysis of the collected data – percentages-frequencies-Arithmetic mean 2 was used to determine the relationship between a set of variables and to clarify and clarify the explanation.

Results and Discussion

Through the theoretical and field study, several results were reached to study the relationship between the time of awakening and the time of eating meals and between the sympathetic system (the human's Biological Clock) (CIRCADIAN RHYTHM) and its role in harmonizing external influences and food metabolism.

It is clear from Figure 3 that the sample of foreigners is in the age group of 26–41 years, with a percentage of 37%, and in the second rank, it was from 18 to 25 years, where the total percentage of foreigners is 31%, then 42–60 with a percentage of 15%. While the Egyptians, the age group of 26–40 years was the largest of the samples with a percentage of 26.25% followed by the age group of 42–60 years at a percentage of 22%.

The results show more dominant in females by 62.2% for foreign guests and the mean is 1.62 and a standard deviation 0.487 and in case of Egyptians the men is more dominant with 52.6% and females 47.4% with a mean ratio of 1.4 and a standard deviation 0.50.

The results showed that the vast majority of the foreigner's sample had an ideal weight at a rate of 67%, then those who were underweight 10%, and 12% of those who suffered from overweight, and their weight did not exceed an extreme. As for the Egyptians, the highest percentage of those suffering from excess

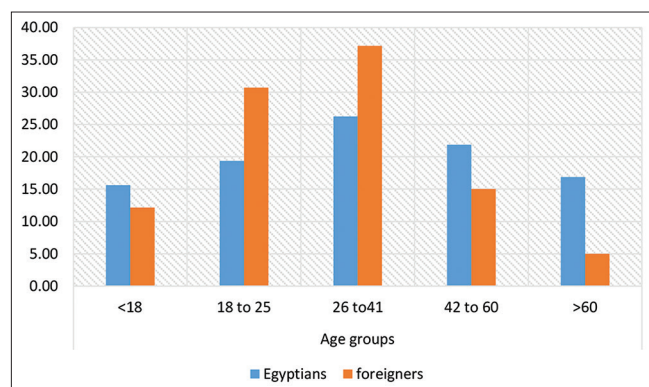


Figure 3: Age groups in the study sample

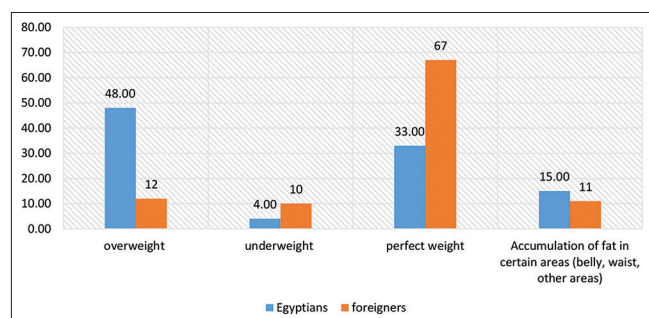


Figure 4: The study sample of Egyptians and foreigners, according to weight

weight and fat accumulation was in certain areas (abdomen-waist-other areas) at a rate of more than 48%, or more than 15%, as shown in Figure 4.

As for the nature of daily work between the Egyptians and foreigners, it became clear from the results that the very light work (read-watch TV-sitting) was accounted for 41% while light work (housework-walking slowly-shopping) was accounted for 33% and 15% work heavy (work in the fieldwork that requires movement with mental effort-power games), and finally, an average work of 14% for foreigners. On the contrary, for the Egyptians, it is clear from the results of the study that 28.5% of the samples do light work (housework-walking slowly-shopping) and 24.1% of laborers work in the field strong), 19% medium work (deep cleaning-fast walking and playing tennis), and 17.5% work very heavy (lifting heavy materials-swimming-running-cycling).

Although the Egyptians are the top in hard work percentage, it was noted that they score the most diseases prevalent obesity which is due to the irregular dates of eating meals and stop having breakfast, as it turned out in Table 2, and late time sleep. This was confirmed by Zygmunt and Stanczyk [17] that the parasympathetic system has certain periods that are higher in the enzyme secretions and lower at the time of basal metabolism.

It is clear from the results of the study that the disease is not attributable to the genetic factor, as the results showed that 89% of the foreign samples

do not suffer from any hereditary diseases, while 11% suffer from hereditary diseases. It was also clear from the results that 71% of the Egyptian samples do not suffer from any hereditary diseases, and 29% suffer from some hereditary diseases, which confirms that the hereditary factor is not hereditary.

The results showed that 82% of foreigners get enough sleep, which is 7–8 h of sleep per day. The results showed that 39.4% of Egyptians slept from 8 to 7 h a day, while 37.2% slept from 6 to 5 h a day.

The study showed that 57% of foreign guests get up early from 6 to 8 in the morning, while 34% get up very early before 6 in the morning. As for the time of awakening for the Egyptian sample, the study showed that 30.7% of the samples wake up from 6 to 8 in the morning, 26.3% wake up early before 6, and 61% wake up at 8-10 in the morning and 11.7% and get up late afternoon.

It was also clear from the results that 53% do not practice any physical activity after waking up, and 69.3% of Egyptians do not practice any physical activity after waking up. As for the time of sleep, 38% of the Egyptian samples sleep at 2 am, and the same percentage (38%) sleep from 1 to 11 am, and this result is clear. As for bedtime, the results showed that 50.5% of the foreigners slept starting at 1–11 in the morning, while 31.5 fell asleep very late starting at 2 in the morning. While 18% sleep early, starting from 8–10 in the evening.

Figure 5 shows the great interest of foreigners who eat three meals a day, with a rate of 73% of the sample, while 13% eat breakfast and dinner, and 9% do not have breakfast. The results also showed that 65% of the Egyptian sample eat three meals a day, 12% eat only two meals (lunch and dinner), leaving breakfast, and 12% are having lunch and breakfast while leaving the dinner. Where there is a statistically significant close relationship between the percentage of late dinner starting from midnight to late hours and the reluctance to eat breakfast in the early hours of the day from loss of appetite in the morning, even if I wake up early and this was confirmed by both [23].

The study showed, as shown in Table 3, that the breakfast time for foreign guests starts at 8–10 am at a rate of 29%, while 43% of foreign guests eat it at 10–12 a.m. The study also showed that the time for Egyptian guests to eat breakfast starts at 8 a.m. before 10 a.m., at a rate of 19%, while 28% ate it from 10 a.m., while 19% eat breakfast from 6 to 8 in the morning.

Foreigners eat lunch from 2 to 4 in the evening, with a percentage of 40%, and 24% of them eat lunch from 12 to 2 in the evening, and 31% of them eat it from 4 in the evening. As for the time of eating lunch for Egyptians, the results showed that 34% take it from

Table 2: Breakfast, lunch, and dinner times for Egyptians and foreigners

Parameter	Breakfast time					Lunch time					Dinner time					
	Before 6-8	From 8 to 10	From 10 to 12	Not eat breakfast	Total	From 12 to 2	From 2 to 4	From 4 to 6	Not eat lunch	Total	From 6 to 8	From 8 to 10	From 10 to 12	>12	Not eat dinner	Total
Foreigners																
Number	20	40	60	20	140	33	56	43	8	140	7	35	42	38	18	140
Percentages	14	29	43	14	100	24	40	31	6	100	5	25	30	27	13	100
Egyptians																
Number	30	62	44	24	160	33	51	55	1	140	25	22	56	31	26	160
Percentages	19	39	28	15	100	21	32	34	1	88	16	14	35	19	16	100
Mean																
Foreigners						35					31					
Egyptians						40					34					
SD																
Foreigners						19					15					
Egyptians						17					14					

Table 3: Chi-square value for relation in the study sample

Parameter	p-value		Chi-square value		DF	
	Foreigners	Egyptians	Foreigners	Egyptians	Foreigners	Egyptians
The relationship between bedtime and waking time	0.032	0.041	0.000	0.000	1	1
The relationship between the time of breakfast and the time of bed	0.011	0.215	0.000	0.001	1	1
The relationship between when you eat breakfast and when you eat dinner	0.023	0.003	0.000	0.002	1	1
The relationship between the time of eating dinner and the incidence of diseases	0.012	0.001	0.000	0.003	1	1
The relationship between the time you eat breakfast and the time you wake up from sleep	0.011	0.031	0.003	0.0074	1	1
The relationship between weight and meals is eaten throughout the day	0.0332	0.038	0.008	0.0025	1	1
The relationship between weight and the time of awakening from sleep	0.0422	0.0411	0.0011	0.0034	1	1
The relationship between the time of eating a meal and the incidence of disease	0.039	0.035	0.003	0.0041	1	1

4 to 6 pm, while 32% eat lunch from 2 to 4 during the evening, 21% after 12–2 pm.

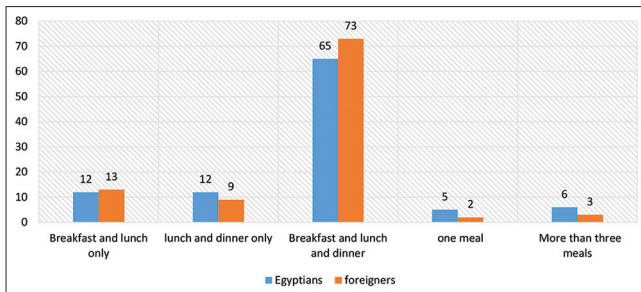


Figure 5: Meals are eaten throughout the day by Egyptians and foreigners

As for the timing of dinner for foreigners, it showed that 30% of the total sample ate dinner late from 10-noon, while 27% had an afternoon, 25% in 8–10, and 16% they do not eat dinner. As for the timing of Egyptians eating dinner, it was found that 35% of the total samples eat dinner late from 10 to noon, 19% of the Egyptian samples eat dinner >12, and 16% of the Egyptian samples eat dinner, while 16% do not eat dinner.

The results of the questionnaire showed that 52% of the foreigners' samples do not adhere to the fixed time for eating when eating outside the home, while 35% of the foreigners do not adhere to the fixed time for eating at home, and 13% of the time when they are at home. The results of the study also revealed that 51% of the Egyptian samples do not adhere to the fixed time for eating when eating outside the house. While 25% adhere to the appointment as much as possible, 24% adhere to the fixed time for eating outside the house.

The results of the research for foreigners showed that 73% do not follow a certain diet and 86.1% of Egyptians do not follow a specific diet.

It is clear from Figure 6 that a sample of foreigners is estimated at 45% who are interested in searching for information on food and nutrition regularly, while 22% are interested in searching for information about the disease. About 33% of foreigners are not interested in searching for information on food and nutrition, whether with health or disease. The results also showed that 33% of the Egyptian samples are not interested in looking for information on food and nutrition except in the event of an illness, while 33% are not interested in looking for nutrition information, and 35% are searching for information on food and nutrition regularly.

Chi-square test

The Chi-square distribution is one of the commonly used probability distributions, as it has many applications to the degree that it can be said that it ranks second in the normal distribution. The Chi-square distribution, like the t distribution, depends entirely on the degrees of freedom. Confidence was <0.05.

From the table above, there is a statistically significant relationship between sleep and wake-up time for confidence degree <0.05, whether for Egyptians or foreigners, and freedom 1, which is not high. It means that the fewer degrees of freedom, the greater the distortion of distribution and getting away from symmetry. The results also show that there is a statistically significant relationship between the time of breakfast and the time of bed for Egyptian and foreign guests, with a confidence degree of <0.05 with 1 freedom. As seen from the above data, there is a statistically significant relationship between breakfast

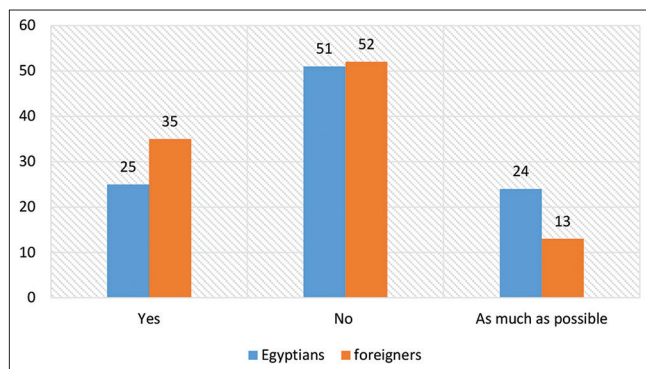


Figure 6: Adhering to the timings of eating outside the home

and the date of dinner with a confidence degree <0.05 , whether for Egyptians or foreigners, and freedom is 1, which is not high, and it means that the fewer degrees of freedom, the greater the distortion of distribution and getting away from similarity.

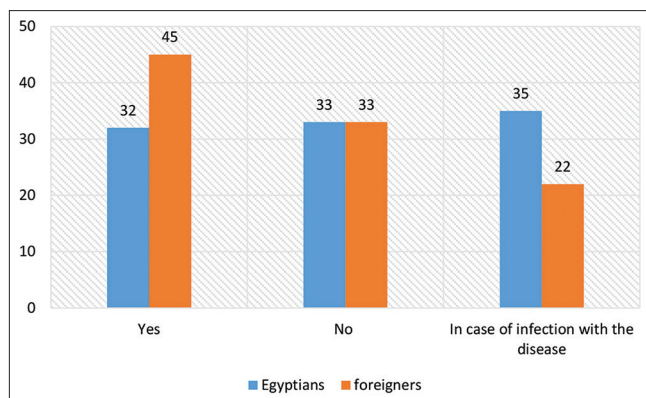


Figure 7: Finding information about the food, nutrition, and digestive system of foreigners and Egyptians

As it is shown in Table 3, there is a statistically significant relationship between dinner and the infection with diseases for confidence degree <0.05 for the Egyptians guests and freedom of 1 which is not high. It means that the fewer degrees of freedom, the greater the distribution of distortion and getting away from symmetry.

It is clear from the previous table that there is a statistically significant relationship between the time of having breakfast and the time of awakening for the Egyptian guests, with confidence <0.05 .

From the previous data, there is a statistically significant relationship between the body weight and the meals eaten throughout the day, with a confidence degree of <0.05 for foreign guests.

It is clear from Table 3 that there is a statistically significant relationship between the body weight and the time of awakening from sleep, with a confidence degree <0.05 for foreign guests.

The previous table shows that there is a statistically significant relationship between the time of a meal and the infection with diseases for confidence degree <0.05 for foreigners and freedom of 1, which is not high. It means that the fewer degrees of freedom, the greater the distortion of distribution getting away

from symmetry as shown in Figure 7.

From the foregoing results, we realize the expansion of interest in nutrition in all countries of the world and the interest of specialists in what people have of information about food and nutrition and its role in treating or avoiding some diseases. Therefore, we must correct the concepts, identify the needs, and increase nutritional education, with attention to behavioral changes among people that result in an improvement in their health, nutrition, and nutritional status.

The timing of meals eaten outside the home contrasts with the nature of some individuals in the Egyptian sample. About 25% of them try to comply as much as possible and the majority cannot by 55%. As for foreigners, the largest percentage was 37% who could not eat the meal on time and between 25% and 33% are eating and trying to comply which requires modifying the timing of serving food by the hotels depending on the nature of the body and the biological system of nature. This is in addition to the irregular sleeping hours among the Egyptians and the delay in bedtime. Consequently, the late eating of dinner and as a result the failure to have breakfast even in the case of waking up early. Ends up simply by having only two meals lunch and dinner. Or by the lack of regularity in the times of eating meals where there is a statistically significant close relationship between having dinner late and the reluctance to eat breakfast in the early hours of the day even in the case of waking up early. This loss of appetite is called morning anorexia, and this was confirmed by Wilson (2011) [24].

Obesity and susceptibility to diseases are on the rise among Egyptians, even though the research sample is from young people up to the age of 40, and therefore, it is expected that these rates will rise with age. On the contrary, we find that foreigners are committed to eating the three meals on time as much as possible and adhere to sleep early and wake up early. As a result, they enjoy the ideal weight and does not subject to digestive system diseases due to the high rate of food culture they have [25].

Recommendations

1. Linking the close relationship of the parasympathetic system Biological Clock (CIRCADIAN RHYTHM) to a healthy metabolism of the body through the parasympathetic nervous system, the external times of sleep, and wakeup, and having meals at the correct time
2. Getting up early, eating breakfast, and then applying early exercise play a major role in extending human life and living as long as

- possible in good health, and enjoying an ideal body
3. Paying attention to having the three meals on time, as indicated by the study, without canceling any of them
4. Changing the recently acquired habits of sleeping and having meals at late times so as not to affect the physical health, performance, and mood of individuals
5. Adjusting the timing of serving meals in hospitality establishments to match the body's systems, starting from breakfast at six in the morning and up to a maximum of nine. Lunch is served from 12 noon until 3 o'clock, and dinner is from 5 until 8 at the most
6. Hospitality establishments should link between the guests' loyalty and the improving guests' experience and satisfaction of adjusting meals timing that respects the body's systems
7. Raising the food culture among the Egyptians.

Conclusion

The brain needs constant signs (morning and evening) from the inside and the outside for constant food metabolism to maintain the rhythm of the physiological self in harmony with the production and function of the parasympathetic system, which emphasizes the importance of controlling the timing of having breakfast, lunch, and dinner to accommodate internally with the activity of the body and to working internally and externally in harmony to maintain a healthy body without any diseases and to enjoy the ideal body weight.

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