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The Impact of Dr. Barry Sears's Diet on Employee Physical Manifestations: A Preliminary Study

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Abstract

Nowadays, working conditions have a negative impact on employees' eating habits, as well as on their health status and ability. The main objective of this study was to investigate whether Dr. Sears's diet affects employees' physical manifestations. Data were collected from a sample of 100 employees who were employed by different companies in the broader area of Attica, once a week, for a period of three weeks. Of those who participated in the study 44% were female. The results showed that Dr. Sears's diet had a beneficial effect on the participants' physical symptoms. This diet normalized the physical symptoms from the stomach and musculoskeletal system, the fainting tendencies, shortness of breath, low energy levels and difficulties in sleep. Future research should include personal (e.g. Big 5 Personality Traits) and environmental (e.g. working conditions) factors for the best possible improvement in occupational health.

Keywords

Dr. Sears's Diet, Nutrition, Somatic Complaints, Occupational Health, Stress

1. Introduction

The modern biopsychosocial model helps us to understand better the role of various factors responsible for the development of many modern disease (Syed,

Syed, & Bhardwaj, 2020), recognizes that stress is an important mediating factor between the wider social environment and its mental and physical effects on health (McEwen & Gianaros, 2010). Thus, employees with stress-related physical problems contribute less than employees with low stress levels and fewer physical problems (George & Zakkariya, 2015).

This fact, has been confirmed by EU-OSHA estimates, which reported that occupational stress is the second most frequent work-related health problem after back pain, affecting 28% of employees in the European Union, while more than four in ten employees (44%) report that their work stress has increased as a result of the pandemic (EU-OSHA, 2022).

Chronic work stress is a health risk factor for employees (Maslach, Schaufeli, & Leiter, 2001), especially when they adopt unhealthy habits (De Vries & Wilkerson, 2003) to cope with it (Dyrbye et al., 2019). Employees who are unable to cope successfully with work stressors usually exhibit negative physical, mental and behavioral health problems (Hespanhol, 2005; Rožman, Grinkevich, & Tominc, 2019).

Specifically, the physical symptoms of burnout include certain types of pain, such as headaches, neck and shoulder pain (Hespanhol, 2005; Rožman, Grinkevich, & Tominc, 2019) chest pain, back pain (Jaarsveld, 2008) and non-specific pains, as well as symptoms of physical exhaustion, fatigue (Mosadeghrad, 2014; Rožman, Grinkevich & Tominc, 2019), sleep disturbances (Nixon, Mazzola, Bauer, & Spector, 2011), energy loss, reduced attention span, lack of meaning in life, apathy, elevated blood pressure (Mosadeghrad, 2014; Rožman, Grinkevich, & Tominc, 2019), gastrointestinal disorders (Nixon, Mazzola, Bauer, & Spector, 2011), eating and sexual disorders, as well as possible substance abuse (Jaarsveld, 2008).

Therefore, it is important to consider various chronic stressors, which may create a wide range of physical problems in employees working in different environments (Nixon, Mazzola, Bauer, & Spector, 2011). Of note, employees belonging to different age groups may perceive and react differently to their work environment (Rožman, Grinkevich, & Tominc, 2019; Ilmarinen, 2006; Jolynn et al., 2011).

The role of nutrition in coping with stress and decreasing or eliminating physical problems can be catalytic (Estruch et al., 2018). Indeed, a nutritious and healthy diet can play a key role in the prevention of various diseases (Ferraro, 2016) and can create more favorable conditions for dealing with a disease state, while, on the other hand, poor nutrition may burden a patient's health condition (Kandel, 2019).

One such healthy diet is the Zone Diet, which was developed by Sears (Sears & Bell, 2004) to reduce potential inflammation caused by specific nutrients and to improve people's mental and physical well-being. It is a calorie-restricted diet, adequate in protein, moderate in carbohydrates (Hamdy et al., 2017; Sears, Perry, & Saha, 2021) and high in fermentable fiber (Sears, 1995; Sears, Perry & Saha, 2021). This diet can be used indefinitely and without time limitations (Hamdy et al., 2017; Sears, Perry, & Saha, 2021), with the aim of reaching and maintaining a

stable hormonal balance, a state necessary for individual worker well-being, and the proper functioning of the organization (Sears, 1995).

This diet creates a specific nutritional zone ("Zone Diet") (Cheuvront, 2003), which is based on the consumption of carbohydrates, fats and proteins in a ratio of 40% - 30% - 30% (i.e. a dietary protocol prescribing 40% carbohydrates, 30% fat and 30% protein) (Sears, 2000; Cheuvront, 2003) and follows the American Heart Association guidelines for nutritional intervention in the workplace by taking well-balanced meals, low intake of saturated fat, sugar and salt and high intake of fruit, vegetables (Fitzgerald et al., 2017), whole grains, seafood, lean meat and poultry, as well as alternative salt options (Rachmah et al., 2021).

The purpose of this research is to expand on the already existing studies and to investigate how The Zone Diet (Sears) affects the health of employees in Greece. Of note, few comparisons have been made between The Zone Diet and other diets (Gardner et al., 2007), while there are few studies on the effects of the Zone Diet on the health and work of different types of employees (Nevanperä et al., 2012).

2. Methodology

2.1. Research Strategy

The study is considered quasi-experimental because the control and intervention groups were not matched for demographic/anthropometric characteristics and dietary habits. The key dependent variable was the presence of physical symptoms (i.e. stomach pain, headaches or migraines, muscle aches, back pain, chest pain, nausea, indigestion or bloating, diarrhea or constipation, heart disease, fainting tendencies, difficulty breathing, low energy and difficulty sleeping), which were monitored for three weeks (week 1, week 2 and week 3), the period in which participants followed Dr. Sears's diet. The group that applied this diet was considered the intervention group, which included participants with poor eating habits. The control group consisted of participants with regular eating habits. Demographic/anthropometric characteristics and physical activity were used as control variables in the analyses.

2.2. Data Collection Tool

The participants were thoroughly informed about the purpose of the research and volunteered to complete the questionnaires. Data collection was done anonymously and confidentially.

The questionnaire included the following scales/questions:

Physical Symptoms: The main data collection tool on physical symptoms implemented is the Patience Health Questionnaire (PHQ-15), which includes 15 questions (Kroenke, Spitzer, & Williams, 2002). From the final questionnaire distributed to the participants, two questions were deleted, because they were referred exclusively to women. In the questionnaire, physical symptoms are defined as stomach pain, headaches or migraines, muscle aches, back pain, chest

pain, nausea, indigestion or bloating, diarrhea or constipation, heart disease, fainting tendencies, difficulty breathing, low energy and difficulty sleeping. The answers to each question were entered on a 5-point Likert scale (1 = Never, 2 = Almost Never, 3 = Sometimes, 4 = Quite often, 5 = Very often). The reliability index of the scale was .XX.

Zone Diet: The intervention group followed a specific Zone Diet program for 3 weeks with weekly monitoring of participants' progress. Of the intervention group, 100% participated in the program for all the entire three weeks.

Demographic Characteristics: Demographic characteristics, such as gender, age, education level, work experience, working hours per week, height, body weight and resting heart rate were also included in the final questionnaire.

2.3. Sample

The sample consisted of 100 employees (intervention group) who followed Dr. Sears's diet for three weeks and a control group of 175 people who did not follow any specific diet. Both groups responded to questionnaire once per week. In general, the two samples (intervention and control) had no significant differences in height, age, years of work experience and resting heart rate. Differences were observed for gender, BMI, and work hours.

Table 1 presents the demographic characteristics for the control and intervention groups. The groups were similar in terms of height (mean without SEARS = 1.72, mean with SEARS = 1.73), age (mean without SEARS = 45.32, mean with SEARS = 44.67) and years of work experience (mean without SEARS = 21.02, mean with SEARS = 20.11).

3. Results

Our results mainly focused on normality checks, as well as the performance of specific Student t-tests, which aimed to clarify or determine whether following the Zone Diet yields positive results in existing physical symptoms/problems.

The results of the normality tests, using the Kolmogorov-Smirnov test, for the factors of our physical symptoms showed that all factors, except for the pre-intervention physical symptoms, followed a normal distribution.

Table 1. Demographic data of control and intervention groups.

Demographic	Control (N = 175)	Sears (N = 100) ARS (N = 100)	s Statistic AicS	*p*-value
Gender	Male: 69 (39.7%) Female: 105 (60.3%)	Male: 56 (56%) Female: 44 (44%)	X2 (1) = 6.834	0.009
Weight	74.02 (16.66)	85.11 (21.75)	t (273) = −4.741	<0.001
Height	1.72 (0.10)	1.73 (0.10)	t (272) = −1.271	0.205
BMI	24.93 (4.23)	28.29 (7.20)	t (272) = −4.856	<0.001
Age	45.32 (11.05)	44.67 (9.26)	t (271) = 0.491	0.624
Work experience	21.02 (10.36)	20.11 (8.83)	t (233.845) = 0.772	0.441
Hours of work per week	21.02 (10.36)	39.74 (6.47)	t (270.067) = −18.392	<0.001

Demographic Control (N = 175) SEARS (N = 100) Statistic *p*-value.

The results in Figure 1, for the variable "physical symptoms", demonstrate a declining trend over the course of the 3 weeks, with statistically significant reductions in each time transition.

Furthermore, the results of the comparisons for physical symptoms between the control and intervention group in the first week are presented, where statistically significant differences were found in 2 factors and in the factor "physical symptoms", the mean of the control group was statistically lower than that of the intervention group (See Figure 2).

In the second week, the factor of "physical symptoms" of the control group was statistically higher than that of the intervention group (See Figure 3).

Finally, in the third week, the factor "physical symptoms" of the control group was statistically higher than that of the intervention group (See Figure 4).

To summarize, we analyzed the results that emerged from the combination of physical activity and the Zone Diet, and conducted Spearman correlations between physical symptoms and independent variables for the intervention group. In addition, multiple linear regressions were performed to examine the relations between physical symptoms and associated factors in the intervention group. The conclusions of the above analyses indicate that the Zone Diet has beneficial effects by decreasing stomach and musculoskeletal problems to normal levels in the first week, and by improving physical manifestations, such as fatigue, nervousness, and sleep duration, in the second week. Overweight individuals showed less improvement in the elimination of physical symptoms and musculoskeletal problems, but also produced less improvement in arterial blood pressure. Older participants continued to experience increased physical symptoms, even after implementing the Zone Diet, highlighting the significance of age as an inhibitory factor in the alleviation of these symptoms. Lastly, participants who worked long hours per week exhibited greater delays in the regulation of their blood pressure.

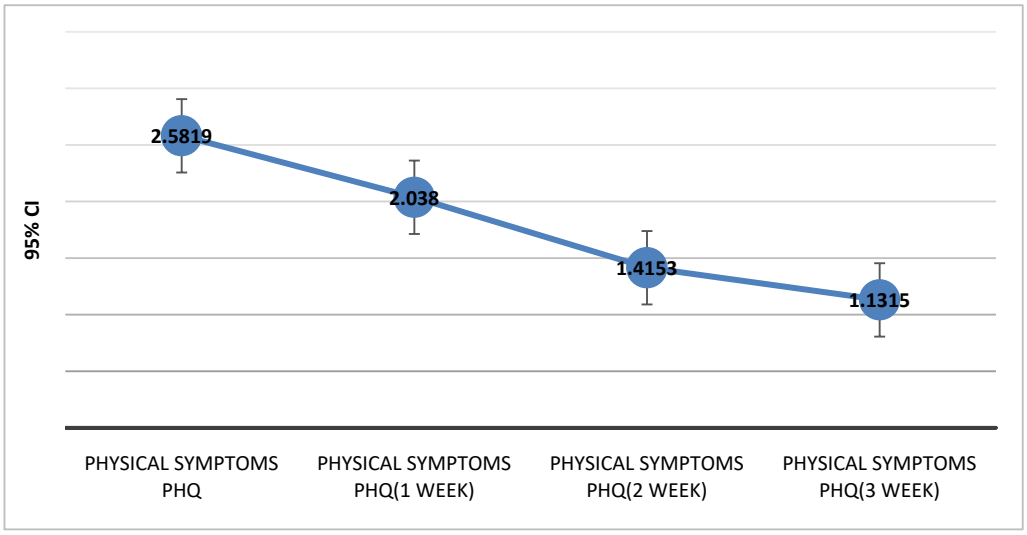

Figure 1. Error bars for the physical symptoms in the intervention group, over time.

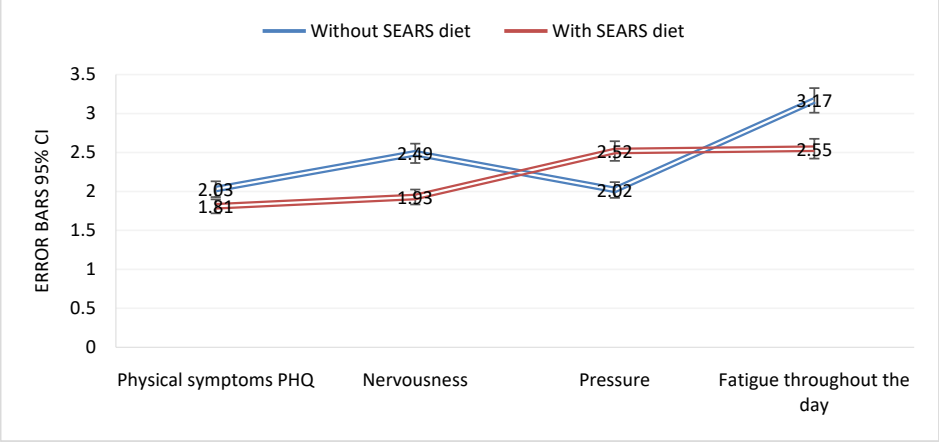

Figure 2. Error bars for the significant differences of physical symptoms between the control and intervention group in the 1st week.

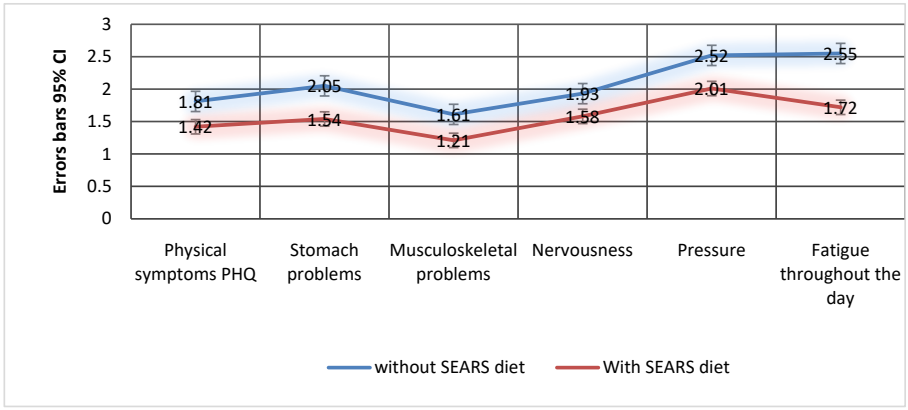

Figure 3. Error bars for the significant differences of physical symptoms between the control and intervention group in the 2nd week.

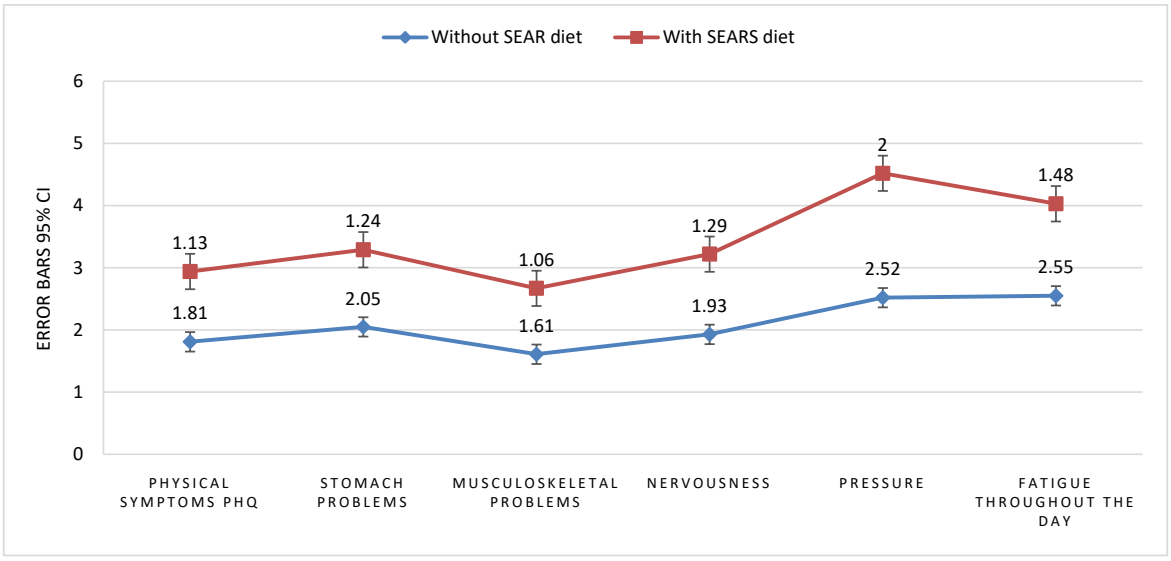

Figure 4. Error bars for the significant differences of physical symptoms between the control and intervention group in the 3rd week.

4. Discussion

The purpose of this study was to investigate the effect of the Zone Diet (The Zone Diet/Sears) on the physical health status of Greek employees. Data were collected from a sample of 100 employees who were employed by different companies in the broader area of Attica, once a week, for a period of three weeks. Of those who participated in the study 44% were female.

The results of this research showed that the Zone Diet worked beneficially by decreasing physical manifestations related to the gastrointestinal and musculoskeletal systems, arterial blood pressure, fainting tendencies, difficulty breathing, low energy levels and sleep difficulties.

The results of several studies support the notion that diet-related chronic diseases continue to threaten health worldwide (Beaglehole et al., 2011; WHO, 2013-2020; Fitzgerald et al., 2017). The impact of these illnesses represents a major economic burden, not only on the employees but also on the employers and the society at large. Of note, diet-related illnesses have been linked to absenteeism and loss of productivity in the workplace (Fitzgerald et al., 2017; Trogdon et al., 2008). In this environment of rising health care costs and continuing financial constraints, there is an increasing emphasis on prevention and on the treatment of diseases that are related primarily to poor diet (Fitzgerald et al., 2017; WHO, 2013-2020).

The results of this research are not generalizable and must be interpreted within the context of several limitations. In particular, the modest sample size reduces statistical power.

Also, the study participants were a heterogeneous sample. The different levels of autonomy, control and responsibility that participants had may have influenced their experiencing of stress, job satisfaction and other survey outcome measures. A selection of a more homogeneous sample would lend additional confidence to the reported results. A final limitation is that all data were collected from the same source, and this may raise some concerns.

Despite these limitations, however, this research offers useful conclusions, which can be applied in our country in the future, through other related research and can help improve the eating habits of employees and, consequently, of their health at a national level.

At a national and international level, our study has some elements of originality. It is worth emphasizing that the literature usually refers to generalized interventional nutritional programs for employees and not to specialized nutritional programs as our study did (Fitzgerald et al., 2017). Having statistically significant findings at a relatively small sample size suggests that our intervention had a strong effect on the participants. Therefore, the continuation of our research in a larger sample to obtain long-term data at various time periods is warranted.

Earlier, we applied the zone diet to employees with the main purpose of investigating its effect on their stress levels; the results were complementary to those of this study, with distress and bad nutrition being key factors associated with bad health (Gkiolia et al., 2023).

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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