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Mediterranean diet pattern behaviors and related socio-demographic factors in a sample of nurses: results of an observational study in Italy

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Keywords: Nurses; mediterranean diet; dietary behaviors; nutritional education
Parole chiave: Infermieri; dieta mediterranea; comportamenti alimentari; educazione alimentare

Abstract

Backgound. *Interest in the dietary habits of healthcare professionals, particularly nurses, has increased in recent years. Nurses play a key role in promoting healthy habits among patients, yet often struggle to maintain a balanced diet due to the demanding nature of their profession.*
Study Design. *Cross-sectional.*
Methods. *The sample identified consisted of working students who attend the master's degree course in "Nursing and Midwifery Sciences" at the University of Rome "La Sapienza" and nurses inscribed in several Italian nurses' groups on Facebook, like "Infermiere professionista della salute", "Infermieri attivi", "Infermieri di Roma e Provincia" and "Infermieri Roma". A snowball sampling was used. This observational study was carried out from May to September 2020 through an online platform, and explores the dietary habits of 549 nurses, examining correlations between eating behaviors (Mediterranean Diet Score) and work conditions, such as shift patterns, work hours, and contract types.*
Results. *The Mediterranean Diet Score had a mean value of 7.50 (SD = 1.69). Results show that 90.2% of participants can take short breaks (5-10 minutes) for meals, although stress often affects the quality of these breaks. Nurses with permanent contract ($\beta = 0.098$; $p = 0.021$) and part-time schedules ($\beta = 0.106$; $p = 0.012$) reported healthier eating habits and greater adherence to the Mediterranean diet.*
Conclusions. *The findings highlight the need for improved access to healthy food during long shifts and the implementation of nutritional education programs to support healthier eating habits among nurses.*

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Introduction

Nurses represent the largest group of health professionals. Several studies have shown that this group of workers is often not inclined to follow a healthy diet (1,2). Not following a healthy diet can lead to overweight and obesity and, as a result, to an increase of the risk of disease and a reduction of productivity (2,3). In the last few years, some articles have focused on health professionals working conditions and their health state, especially concerning their eating habits at work. Particularly, these studies analyzed and investigated the cause-effect relationships between these two aspects (4). In addition, there's evidence of several causes of a high stress level linked to poor meal organization (5).

Due to the nature of their profession, nurses should be considered, by the public, as healthy role models (6,7). For this to happen, they must be the first to have satisfactory health conditions (2). On the contrary, it appears that nurses seldom follow a proper diet at work. In fact, during work shifts, their priority is to assist patients' requests in ways and times required by the situation. Shift work is usually associated with irregular meal consumption: lower intake of full meals, lower appetite, lower satisfaction in eating and consumption of high-calorie meals, with a high content of simple carbohydrates (1,8,9). The score of the Mediterranean diet may represent a relevant factor in influencing the quality of employees' diet: it refers to a dietary profile commonly available in the Mediterranean regions (10), in association with adequate and regular physical activity (11). The Mediterranean diet may reduce the physiological effects of stress and promote healthy aging (12). It has also been demonstrated to have significant effects on cardiovascular diseases (13). Problems such as a high risk of overweight and diabetes, which often relates to lower work efficiency, due to continuous absences or leave or even abandonment of premature work, are closely linked to a poor-quality diet (2).

Obesity is widespread among nurses who work for more than 40 hours a week. As a result, nurses' weight gain leads to several issues, such as fatigue and slowdown in the workplace. Among other negative effects, work shifts also negatively affect melatonin production, which influences metabolism and digestion processes (14). Furthermore, there is also a close correlation between their poor health, their bad eating habits and their efficiency in the workplace. In this way, their intrinsic role of assistance and health promoters could be lost and all these aspects could have a negative impact on nurses' lifestyle habits (15).

However, until now, surprisingly, no study has been carried out in Italy on the Mediterranean diet pattern behaviors among nurses, that can be considered the home of the Mediterranean diet. So, our aim was to evaluate what are the dietary behavior (adeherence to Mediterranean Diet) of a sample of nurses and to find socio-demographic factors that have an influence on this behavior.

Methods

The sample identified consisted of working students who attend the master's degree course in "Nursing and Midwifery Sciences" at the University of Rome "La Sapienza" (120 students) and nurses inscribed in several Italian nurses' groups on Facebook, like "Infermiere professionista della salute", "Infermieri attivi", "Infermieri di Roma e Provincia", "Infermieri Roma" (22,440 health professionals). In the first case, all the students answered, while in the second case a snowball sampling was used. We stopped sampling after three waves of remind.

Inclusion conditions were: being a nurse or midwifery; working for a public or private healthcare facility. On the other hand, exclusion criteria were: being retired, working as a freelancer.

They filled in a questionnaire of 50 items to investigate their eating behavior and possible correlations with workflow and shifts (see appendix). This questionnaire was available using a Google form, and its web address was sent to all the master students and posted on the Facebook groups. For all questions mandatory answers were required.

The questionnaire was specifically designed for nurses and it consists of four parts:

- the first part concerns personal data (gender, age, marital status, number of children, level of training, type of contract, area of work and working hours);
- the second part concerns eating habits in the workplace (hunger during the shift, the possibility of taking breaks, free supply of food and water from the company, what food the nurses eat and how many times a week, how much working time affects eating habits) and weekly consumption of the 12 elements that constitutes the Mediterranean diet, using an already validated questionnaire (16);
- the third part concerns safety and characteristics of work (weight loss or gain, episodes of energy loss, eating properly);

- the fourth part concerns the suggestions: in this part, the workers are asked to do the most urgent things to improve working conditions.

The whole process od devopment of the questionnaire was carried out involving two professional dietitians.

The questionnaire was administered from May to September 2020 through an online platform. The participation was anonymous and voluntary. Concerning Ethical considerations, data privacy and confidentiality were assured since no personal data was collected. Moreover, for answering no email address was required. **Informed consent was collected e**nsuring participants know the survey's purpose at the beginning of the Google form.

Statistical Analysis

All analyses were performed using IBM SPSS software for Windows (Statistical Package for the Social Sciences, Version 27). The following steps describe in detail the procedures used to analyse the data:

For quantitative variables, median, minimum and maximum values were calculated to provide an overview of the distribution of the data. For categorical variables, absolute frequencies and percentages were calculated to understand the distribution of sociodemographic and occupational characteristics in the sample.

We calculated the Mediterranean diet (MD) adherence score as follows: for each of the 11 items we applied 1 point for the adherence to MD, and 0 point for non adherence to the MD. Finally we added up the items, with a minimum score of 0 and a maximum of 12, according to the method developed by Mead et al in 2006 (16).

Non-parametric tests were used to examine changes in key variables (such as the Mediterranean diet adherence score). In particular, the Wilcoxon signed ranks test was used to compare any differences in the variables pre- and post-period. The difference between the variables measured before and after (e.g. changes in the Mediterranean diet score) was calculated to obtain the delta variable (Δ), denoted as ΔDiet Score.

For comparisons between two groups, the Mann-Whitney U-test was applied, while for comparisons between more than two groups, the Kruskal-Wallis test was used. These non-parametric tests were chosen to handle possible non-normal distributions of the variables in the sample.

Spearman's rank correlation coefficient was calculated to estimate the direct or indirect relationship between variables such as age, number of children, perceived impact of working hours on eating habits and Mediterranean diet score.

Multivariate linear regression models were developed using the stepwise method with backward elimination of non-significant variables ($p < 0.05$). The dependent variables included the Mediterranean diet score (ΔDiet Score), while the independent variables were demographic and job characteristics such as gender, age, job role, contract type and perceived job stress.

The results of the models were presented using standardised beta coefficients (β) and p-values to indicate the strength and significance of the relationships between variables. Additional regression models were created by stratifying the analysis by gender and age (groups < 52 years and ≥ 52 years) to assess possible modifying effects. The goodness of fit of the different linear regression models was assessed using the coefficient of determination (R^2). A higher R^2 value indicates a better ability of the model to explain the variability in the dependent variable. The significance threshold was set at $p < 0.05$ for all analyses.

Results

This study involved a sample of 549 nurses, of whom 85.8% were women and 14.2% were men. The participants' ages ranged from 22 to 65 years, with a mean age of 38.22 years and a median age of 35 years. In terms of marital status, 56.5% were married or cohabiting, whereas 43.5% were single, separated, divorced, or widowed. Employment data indicated that 17.5% had a self-employed status, VAT registration, or a fixed-term contract, while 82.5% held permanent contracts. Of these, 94.5% worked full-time, whereas 5.5% were part-time employees.

The nurses were classified based on their work area, with 38.2% assigned to medical units, 25.6% to surgical units, 22.4% to emergency/intensive care, and 13.8% to service departments. Regarding shift patterns, 68.7% of participants worked rotating shifts, including night shifts, whereas 31.3% followed a fixed schedule or were on-call.

A significant proportion of participants (29.5%) reported experiencing hunger during their shifts, while 66.1% occasionally felt hungry, and 4.4% did

not experience hunger at work. Meal breaks were reportedly available to 90.2% of the nurses, typically lasting between 5 and 10 minutes. However, 40.1% indicated that their ability to take a break depended on workload and stress levels. In terms of meal choices, 53.4% consumed home-prepared food, while 14.4% relied on ready-made meals. Only 14.2% adhered to specific dietary regimens, including vegetarian, vegan, pescatarian, Mediterranean, lactose-free, gluten-free, ketogenic, low-calorie, and protein-based diets.

Nearly half of the participants (46.6%) reported consuming snacks compulsively in response to stress. Furthermore, 40.1% indicated that their eating habits were significantly influenced by their work schedules, while 33% perceived a high level of influence, 19.3% reported a moderate impact, and only 7.7% considered their dietary choices to be largely unaffected by their work conditions. In addition, 27.5% stated that food offered by patient families influenced their diet, whereas 39.6% reported no impact. Since starting their careers, 41% of nurses experienced weight gain, while 18.9% reported weight loss.

78% can drink at work in any place and 23.3% claim to drink enough. More specifically 70.1% are supplied with bottled drinking water. During the night shift and shifts over 6 hours only 6% of respondents are supplied with food by the company in which they work. 56.1% of the sample has breakfast after the night shift and 15.8% assume more calories before starting the shift. 40.1% of the sample state that eating habits are fully influenced by work shifts, 33% say that it is very influenced, 19.3% think that work affects enough and only 7.7% think that work affects little or no eating habits.

27.5% of nurses state that food brought by parents of patients can affect their eating habits, while 39.6% say that they do not. 41% of the sample say they have had weight gain since working, while 18.9% say they have lost weight since working.

Each participant was asked if and how many times a week he consumed certain foods to investigate adherence to the Mediterranean diet: bread, pasta,

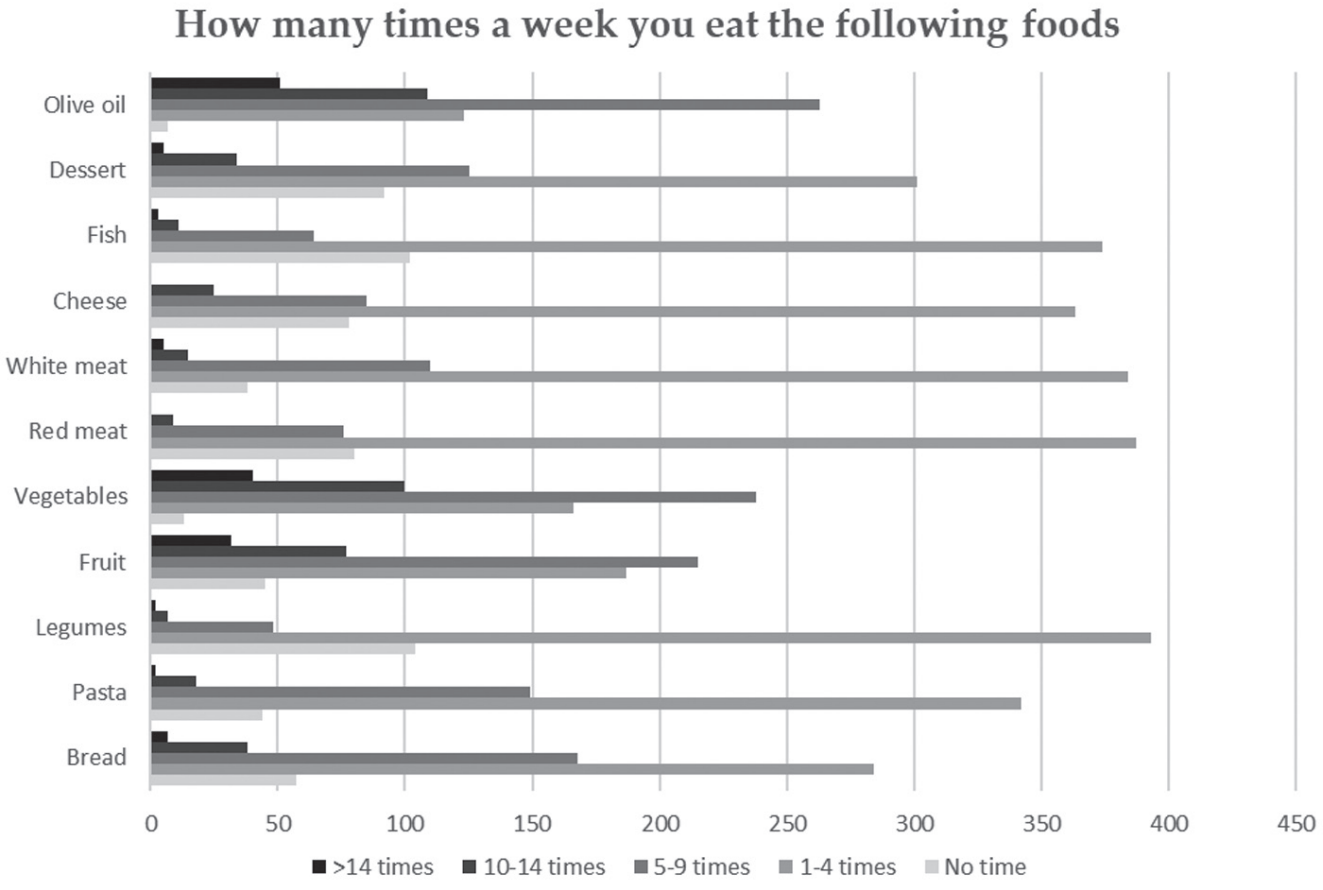

Figure 1 - Number of times the sample usually eats main foods in a week

legumes, fruits, vegetables, red meats, white meats, cheeses, fish, sweets and extra virgin olive oil (Figure 1). The Mediterranean Diet Score had a mean value of 7.50 (SD = 1.69), with a normal distribution observed among the participants.

The study also assessed the willingness of nurses to participate in employer-provided educational programs on stress-related eating disorders. The findings indicated that 15% would attend weekly, 13% would attend twice per month, 30% would attend monthly, 27% would participate up to five times annually, and 14.8% expressed no interest in attending such programs. When asked about their perception of dietary adequacy given their work conditions, responses varied: 5.3% believed they ate appropriately, 17.9% reported eating well, 41% considered their diet moderately adequate, 22% perceived their diet as insufficient, and 13.8% felt they did not eat correctly at all.

Univariate analysis

The Mediterranean diet score data are normally distributed, with a mean of 7.50 (standard deviation = 1.692).

Table 1 shows the means, standard deviations and significance of the variables gender, working environment, educational qualification, time schedule and type of contract.

Bivariate analysis

The correlation contains information about the force and direction of a linear relationship between two variables. The correlation coefficient r may assume values between -1 and 1. Positive values indicate the existence of a positive linear correlation; negative values indicate a negative correlation; 0 indicates no correlation.

The correlations between the variables "age", "number of children", "how much do you think your habits are affected by working hours?" and "in your opinion, given how difficult your work is, do you feed properly?" are shown in Table 2.

There is a statistically significant correlation between the score of the Mediterranean diet and the influence that working hours have on the eating habits of nurses.

Moreover, there is a significant correlation between the Mediterranean diet score and "In your opinion, given how hard your job is, do you feed yourself properly?" Those who think they're eating properly actually do.

Multivariate analysis

The variables included in the Regression Model are gender, age in years, the medical area, Emergency and Services, the type of Contract (determined or indeterminate), the Hours regime (part-time/full-time), "How much do you think your habits are influenced by working hours?".

In the full model, which is the first step, all these variables are included. We observe in Table 3 the beta standard with relative significance P for each variable considered.

In the following steps, non-significant variables are removed from the model. In the last step, the stepwise model, only the statistically significant variables remain.

Table 1 - Results of the univariate analysis

Variable		Mean (SD)	p
Gender	Male	7.5949 (1.53)	0.580
	Female	7.4809 (1.71)	
Workplace	Internal Medicine wards	7.4673 (1.56)	0.139
	Emergency department	7.6794 (1.82)	
	Surgery wards	7.2143 (1.71)	
	Services	7.6522 (1.73)	
Qualification	Diploma of professional nurse	7.6324 (1.67)	0.477
	University diploma	7.5952 (1.78)	
	Bachelor's degree	7.4367 (1.68)	
Time schedule	Full time	7.4528 (1.69)	0.010
	Part-time	8.2667 (1.38)	
Contract type	Determined	7.1563 (1.73)	0.030
	Indeterminate	7.5695 (1.67)	

Table 2 - Analysis of the correlation coefficients of the quantitative variables

		Score_ Mediterranean_ Diet	Age in years	Number of children	How much do you think your habits are affected by working hours?	In your opinion, given how hard your job is, do you feed yourself properly?
Score_ Mediterranean_ Diet	Pearson's correlation	1	0.036	0.009	-0.116**	0.200**
	P		*0.406*	*0.841*	*0.007*	*0.001*
Age in years	Pearson's correlation	0.036	1	0.562**	-0.137**	0.091*
	P	*0.406*		*0.001*	*0.001*	*0.032*
Number of children	Pearson's correlation	0009	0.562**	1	-0.004	-0.016
	P	*0.841*	*0.001*		*0.927*	*0.711*
How much do you think your habits are affected by working hours?	Pearson's correlation	-0.116**	-0.137**	-0.004	1	-0.260**
	P	*0.007*	*0.001*	*0.927*		*0.001*
In your opinion, given how hard your job is, do you feed yourself properly?	Pearson's correlation	0.200**	0.091*	-0.016	-0.260**	1
	p	*0.001*	*0.032*	*0.711*	*0.001*	

**. The correlation is significant at level 0.01 (two queues).

*. The correlation is significant at level 0.05 (two queues).

Table 3 - Results of the multivariate analysis

A) Gender: M – W	Full Model	Stepwise Model
	β – standard (p)	β – standard (p)
Female	-0.033 (0.446)	
Age in years	-0.026 (0.596)	
How much do you think your habits are affected by working hours?	-0.115 (0.009)	-0.110 (0.009)
Medical area	0.082 (0.153)	
Emergency	0.115 (0.36)	
Services	0.085 (0.121)	
Time schedule: part_time	0.105 (0.015)	0.106 (0.012)
Contract type: Indeterminate	0.083 (0.073)	0.098 (0.021)

Table 3 shows that the statistically significant variables are:

"How much do you think your habits are affected by working hours?", with a standard beta value of -0.110 and a significance p = 0.009.

Time schedule (part-time), with a standard beta of 0.106 and p = 0.012 and finally the type of contract with a beta standard of 0.083 and p = 0.021.

Following the analysis, it appears that the statistically significant variables are:

- "Considering how tiring your job is, do you feed yourself properly?", awareness of eating properly is associated with the Mediterranean diet score;
- Part-time schedule, if the worker is part-time, he has more time to prepare healthy foods;
- The type of contract: a worker with an open-ended contract has a more correct behavior than someone with other types of contract.

Discussion

The purpose of this paper is to evaluate the relationships between nurses' eating habits, particularly their adherence to the Mediterranean diet, and their role within hospitals, through a 50-item questionnaire structured specifically for nurses.

In our sytudy, the Mediterranean diet score was higher than that found in nurses in Spain (17,18) or Greece (19), Israel (20) and USA (21).

Nurses have been considerd, among the health professionals, those who have the most stressful healthcare activity. However, regular lifestyle, i.e., eating and physical activity, can be helpful to live better (22).

Gender, type of studies and education do not significantly impact nurses' eating habits. In terms of workplace, there are also no major differences between the areas identified except for the emergency area where the situation is slightly better, and this is in line with research carried out in different countries (23).

Significant, however, are the variables related to contract type: workers with permanent contracts eat more correctly than others, as do part-time workers who have more time to prepare healthy foods for themselves.

The greatest difficulties in eating well, as perceived by our sample, relate to the organizational aspects of work. To the question "How much do you think your habits are affected by working hours?" only 7.7% of respondents think that working hours affect their eating habits little or not at all, for all others it affects them to varying degrees and as the perception of the weight of working hours on eating habits increases (40% absolutely yes, 33% very much, 19.3 quite a bit) the Mediterranean Diet score decreases.

In addition, during night shifts and day shifts longer than 6 hours, only 6% of respondents report receiving food from the company and 90.2% report having a break to eat generally of 5-10 minutes, between care needs.

To improve nurses' eating habits, contract stabilization (nurses on permanent contracts eat better) and new recruitment to increase staff strength and decrease workload would be desirable. Companies should also provide full, healthy meals to workers who work shifts longer than 6 hours and ensure adequate breaks for their consumption. The inclusion of healthy snacks in vending machines would also help.

To improve nurses' adherence to the Mediterranean diet, it might also prove useful to organize nutrition education courses in which most respondents were willing to participate (only 14.8% would prefer to engage in other activities).

Our study enrolled a total of 549 participants in the period from May to September 2020, during the Sars-Cov2 pandemic, elements that represent limitations to our study. To confirm and validate our results, future similar studies with a larger sample size, a longer follow-up period, and outside the pandemic emergency context would be desirable.

The administration of the questionnaire studied how a sample of nurses feeds, taking information on personal data (age, title, type of contract and schedule), dietary habits during work and the characteristics and safety of work.

No significant differences were found between males and females, type of studies and post-basic training. As for the field of work, there are no big differences between the four identified areas (medical area, emergency surgical area and services), we see a slightly better situation in the area of emergencies and services. There is a correlation between the type of contract or the part-time or full-time schedule and the Mediterranean diet: it was found that nurses who have a permanent employment contract feed more adequately as well as those working part-time. From these results we can see that all variables that have a significant correlation with the Mediterranean diet are related to work nurses say they have no time.

Taking into consideration the variable "How much do you think your habits are influenced by working hours?" it is seen that this belief decreases the score of the Mediterranean diet.

Also, when asked "How much do you think your habits are affected by working hours?", most workers respond that working hours and shifts affect how they eat. It would be useful to hold or in any case to increase courses in food education for nurses, to provide healthy food on the farm for long shifts, to allow adequate breaks for snacks, try to organize work to reduce stressful interruptions during breaks.

These findings align with previous research indicating that shift work and irregular schedules negatively impact dietary habits among healthcare professionals. Studies suggest that rotating shifts and long working hours lead to poor adherence to healthy diets, including the Mediterranean diet, as they contribute to irregular meal times, increased consumption of processed foods, and decreased intake of fresh produce (24,25). Moreover, stress and workload in hospital settings have been associated with unhealthy eating behaviors, which can ultimately affect the overall well-being and performance of healthcare workers (26). Therefore, interventions such as structured meal breaks and improved availability of nutritious food options at the workplace have been proposed as potential strategies to mitigate these effects (27).

The results of this study are positive. We observe that the nurses of the sample in question feed correctly on average. The eating habits of Italian nurses can be assimilated into the Mediterranean diet, even if they are not explicitly classified as such. However, it is important to acknowledge the strengths and practical implications of these findings. The study highlights the importance of employment stability in promoting healthier eating habits among nurses, suggesting that policies aimed at increasing permanent employment opportunities and reducing excessive workloads could have a positive impact on dietary choices. Additionally, the willingness of most respondents to participate in nutrition education programs indicates a feasible strategy for improving dietary adherence among healthcare professionals.

This paper, though, is not exempt from research limitations, such as the low sample size or potential under-reporting due to possible omissions by nurses. Since the questionnaire was administered online, the researcher could not ensure the accuracy of self-reported data. Additionally, the study was conducted during the peak of the COVID-19 pandemic, a period characterized by extreme workload and psychological stress among healthcare workers, which may have influenced responses and dietary behaviors. These factors introduce potential biases related to self-reporting and external stressors that may not be present in normal working conditions. It would also be interesting to assess how shift work and contract type affect the eating habits of other healthcare professionals. Future research should focus on expanding the sample size and including healthcare workers from different settings and professional categories to obtain a more comprehensive understanding of the relationship between work conditions and dietary habits. Furthermore, longitudinal studies with follow-up assessments could provide more robust evidence on the long-term effects of work schedules on dietary adherence.

Another limitation is that the research was conducted over a short time and during the most acute phase of the coronavirus emergency. Evaluating the long-term effects of these findings through follow-up studies would be valuable. Further research and experimental studies are necessary to validate these results and ensure that healthcare professionals have greater protection in terms of working shifts and contract stability, ultimately improving their dietary habits, well-being, and productivity.

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Supporting information: Additional supporting information may be found in the online version of the article at the publisher's website.

Riassunto

Aderenza alla dieta mediterranea e relativi fattori socio-demografici in un campione di infermieri: risultati di uno studio osservazionale in Italia

Introduzione. Negli ultimi anni è aumentato l'interesse per le abitudini alimentari degli operatori sanitari, in particolare degli infermieri. Gli infermieri svolgono un ruolo fondamentale nella promozione di abitudini sane tra i pazienti, ma spesso faticano a mantenere una dieta equilibrata a causa della natura impegnativa della loro professione.

Disegno dello studio. Trasversale.

Metodi. Il campione individuato era composto da studenti attivi

che frequentano il corso di laurea magistrale in "Scienze infermieristiche e ostetriche" presso l'Università di Roma "La Sapienza" e infermieri iscritti a diversi gruppi infermieristici italiani su Facebook, come "Infermiere professionista della salute", "Infermieri attivi", "Infermieri di Roma e Provincia" e "Infermieri Roma". È stato utilizzato un campionamento a palla di neve. Questo studio osservazionale è stato condotto da maggio a settembre 2020 attraverso una piattaforma online ed esplora le abitudini alimentari di 549 infermieri, esaminando correlazioni tra comportamenti alimentari e condizioni di lavoro, ed ha esaminato le abitudini alimentari (Punteggio della Dieta Mediterranea) di 549 infermieri, prendendo in considerazione le correlazioni tra i comportamenti alimentari e le condizioni di lavoro, come i turni, le ore di lavoro e i tipi di contratto.

Risultati. Il punteggio della Dieta Mediterranea ha avuto un valore medio di 7,50 (SD = 1,69). I risultati mostrano che il 90,2% dei partecipanti è in grado di fare brevi pause (5-10 minuti) per i pasti, anche se lo stress spesso influisce sulla qualità di queste pause. Gli infermieri con contratti a tempo indeterminato ($\beta = 0{,}098$; $p = 0{,}021$) e orari part-time ($\beta = 0{,}106$; $p = 0{,}012$) hanno riportato abitudini alimentari più sane e una maggiore aderenza alla dieta mediterranea.

Conclusioni. I risultati evidenziano la necessità di migliorare l'accesso a cibi sani durante i turni di lavoro lunghi e di implementare programmi di educazione nutrizionale per sostenere abitudini alimentari più sane tra gli infermieri.

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APPENDIX

Self-report questionnaire specifically designed for nurses.

Part one: personal data

A) Gender: M – W

B) Age: ___

C) State
1. single/unmarried
2. separate/div.
3. Married/cohabiting
4. Widower

D) Number of children
1. 0
2. 1-2
3. >23.

E) Vocational qualifications
1. diploma of professional nurse
2. Diploma
3. Bachelor's degree

F) Post-basic training
1. specialization
2. Admission to managerial functions
3. Master degree
4. D.A.I, ID, D.D.S.I
5. Master in nursing and midwifery
6. Other degree ----------

G) Employment contract
1. Indefinitely
2. Temporary
3. Co.co.Co
4. Other

H) Working time
1. full-time
2. part-time

I) Clinical working environment
1. medical area
2. surgical area
3. emergency room
4. operating room
5. cancer area
6. outpatient area
7. critical area
8. paediatric area
9. administration

L) How long have you worked for the current company?
1. less than 6 months
2. 6-12 months
3. More than a year

M) Average weekly working hours:
1. <20 hours
2. 20-40 hours
3. >20 hours

N) Typical working hours are:
1. Day shift
2. Afternoon shift
3. Night shift
4. Irregular shift per call
5. Shift rotation

Part two: eating habits at work

A) Are you hungry during working hours?
1. Yes, always
2. Sometimes
3. No

B) Is it possible to take a break to eat or drink during working hours?
1. Yes
2. No

C) If you answered "yes" to the previous answer, how long does it last?
1. -10 minutes
2. 10 minutes
3. Half an hour
4. An hour or more

D) If I could answer the previous question: during the break, where are you allowed to eat?
1. In a fixed place, such as the kitchen or a room for the break
2. Where I want, just don't get dirty
3. Outside the department where you work
4. Outside the facility where you work
5. Other_____

E) Is it possible to drink in the workplace?
1. Yes
2. Only in the break room or kitchen
3. vDepends
4. No

F) If he answered the previous question in the affirmative, do you think you will hydrate enough at work?
1. Yes
2. Sometimes
3. No
4. I can't answer

G) Does the company provide free drinking water in the workplace?
1. Yes
2. No

H) Does the company provide free food and drinks for the night shift or long shift (> 6 hours)?
1. Yes, for both
2. Yes, but only for the night shift
3. Yeah, but only for the long shift
4. No
5. I can't answer

I) On the farm where you work, is there a kitchenette where you can cook or heat food?
1. Yes
2. No

J) Is the room or kitchen where you take a break far from where you work?
1. Yes
2. No

K) If you answered the previous question "yes", how much does it affect the possibility of taking a break?
1. Much
2. Little
3. By no means

L) Do you feel stressed and/or eat fast during your break?
1. Absolutely yes
2. Depends on the workload
3. Sometimes
4. No, I have time to eat stress-free
5. I can't answer

M) How much time do you need to train colleagues in your work, to cover for yourself during the break?
1. A lot, even more reason why it's hard to go on break
2. Depends on the workload
3. Takes little time
4. No, you don't have to
5. I can't answer

N) Is there a food and snack vending machine in your company that is open 24 hours a day?
1. Yes
2. No

O) Does the bar or machines provide healthy food in your company?
1. Yes
2. No
3. I can't answer

P) In your company the bar or machines provide food for vegetarians, vegans, celiacs, diabetics, lactose intolerant?
1. Yes
2. No
3. I can't answer

Q) How many times do you take snacks or high calorie drinks (chocolate bars, sugary drinks, sweets)?
1. once or more a day
2. 2-3 times a week
3. Once a week
4. 1-2 times a month
5. Never

A) Do you consider your work stressful?
1. By no means
2. Somewhat
3. Quite
4. Much
5. Absolutely

S) When you are stressed, is it easier for you to eat a snack?
1. Yes
2. No
3. I can't answer

T) Can you bring food from home to your company?
1. Yes
2. No
3. I can't answer

U) Do you have breakfast immediately when you get home after the night shift?
1. Yes
2. Sometimes
3. No

V) Before starting the shift, do you take more calories, necessary to have enough energy at work, than when you don't have to work?
1. Yes
2. Sometimes
3. No, never

W) If you answered "yes" to the previous question, how many hours before?
1. >2 hours before
2. 2 hours before
3. 1 hour before

X) After eating, before going to work, do you suffer from digestive disorders?
1. Never
2. Few times
3. Sometimes
4. ftentimes
5. Always

Y) Do you follow a particular diet?
1. Yes
2. No

Z) If the answer to the previous question is yes, please indicate:

_____

AA) Indicate how many times a week the following foods are eaten (never, 1-4 times, 5-9 times, 10-14 times, >14 times):
Bread
Pasta
Legumes
Interest bearing
Vegetables
Red meat
White meat
Cheese
Fish
Dessert
Olive oil

AB) How much do you think your habits are affected by working hours?
1. By no means
2. Little
3. Quite
4. Much
5. Absolutely

AC) Do you eat ready-made or home-cooked food more often?
1. Both in the same amount
2. Ready meals
3. Food prepared at home
4. I can't answer

AD) How many times do you eat food offered by relatives of patients at work?
1. Never
2. Sometimes
3. Oftentimes
4. I can't answer

AE) If you answered the previous question in the affirmative: Do you think that having foods offered by relatives often in the workplace can help alter your diet and health?
1. Yes
2. Little
3. No
4. I can't answer

AF) Can colleagues or family members influence your eating habits?
1. Yes
2. Yes, only the colleagues
3. Yes, only family members
4. Sometimes
5. No
6. I can't answer

AG) Does the company where you work organise meetings or consultations on food education?
1. Yes
2. No
3. I can't answer

Part three: safety and characteristics of your work

A) If the company in which the work is carried out were to offer courses in food education or stress-related eating disorders, would it attend them?
1. Yes, once a week
2. Yes, twice a month
3. Yes, once a month
4. Yes, but no more than five times a year
5. No, I prefer other activities

B) Have you taken or lost weight since working?
1. Fattened
2. Lost weight
3. No
4. I can't answer

C) At work, have you ever had episodes of decreased energy, decreased pressure, palpitations or fainting?
1. Yes
2. No

D) If you answered "yes", do you think that with the possibility of taking a break and eating could have been avoided?
1. Yes
2. No
3. I can't answer

E) Considering how hard your work is, do you feed properly?
1. By no means
2. Little
3. Quite
4. Much
5. Absolutely

Part four: suggestions

What do you think are the most urgent things to improve in the company in which you work? (maximum five answers)
1. the comfort of the working environment
2. safety of the working environment
3. professional relationships between colleagues
4. the possibility of eating at work
5. the room for the break or the kitchen closest to where you work
6. free water at work
7. a kitchen where you can heat the food
8. increased attention by food suppliers in the company to the different dietary habits of staff
9. Nutrition and stress management education programs
10. more staff at work
11. less long shifts or less working hours per month (less extra hours)
12. Improving relations with management
13. Improve relationships with nursing management
14. Improve relations with medical staff