

Nutritional quality and adherence to Mediterranean diet in industrial shift workers. An interventional project

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Background

- WHO data:
 - 86% of death
 - 77% of lost years in good health status
 - 75% of income in health sector

By illness caused by modifiable risk factors as:

smoke, obesity, overweight, alcohol abuse, low consume of fruits and raw vegetables, sedentary life style, high level of lipid in blood and hypertension.



Background

Eating behavior might be altered by working shifts, especially when night work is involved for biological, social, and cultural factors



Studies underline the connection between absenteeism and injury and night shift. Obesity also is associated with an increase in injury and working days lost by illness.

Background

Mediterranean diet was defined during sixties by Ancel Keys demonstrating that people living on country posed around Mediterranean sea (in particularly South Italy and Greece) had a lower incidence of cardiovascular diseases and cancers.



Background

- Alimentary pyramid



Objectives

Considering the numerous demonstrations of the good effects of Mediterranean diet of people healthy status, the goal of this study was to examine the possible relationship between nutritional quality, adherence to Mediterranean diet and shift work.



Methods:



Five step intervention:

- 1) evaluation of anthropometric parameters (height, weight, abdominal circumference) for each worker;
- 2) administration of two proper questionnaires about diet, sleep, shift schedules and health;
- 3) collective meetings focused on nutrition, lifestyle and sleep hygiene;
- 4) individual dietitian consultations for obese workers;
- 5) reevaluation of the first step at 12 and 24 months after the interventions.



Questionnaire

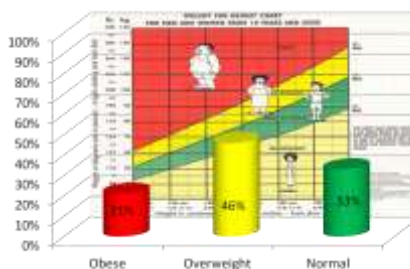
- One about diet adherence to Mediterranean diet from Panagiotakos et al.
- One about sleep habits and shift schedule



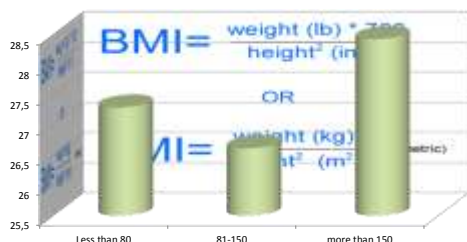
Population studied

- We interview 100 industrial workers of a glass factory
 - 79 were shift workers
 - 99 were male
- Average age was 46±6.3 years
- Average BMI was 27.4±4.04 Kg/m²

Population studied

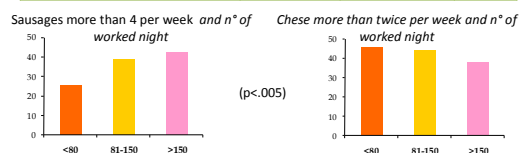


BMI and n° of night worked



Results

	Shift workers	Non shift workers	p
Fruits twice almost per day	28,1%	47,6%	p<0,005
Raw vegetables almost twice per day	18,8%	38,1%	p<0,005
Fish almost twice per week	9,5%	28,1%	p<0,005
Red meat more than twice per week	72,2%	67,2%	p>0,005
Sausages more than 4 per week	43,2%	39,1%	p>0,005





Changes

- BMI reduction of 0,03 Kg/m²
 - Abdominal circumference reduction of 1,25 cm
 - 36,4% of workers increase fruit intake, 50% increase raw vegetables intake, 20,5% increase legumen intake, 18,2% increase fish intake.
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Conclusion

Nutritional quality is worst among shift workers and during night shifts with respect to day workers. This profile can contribute to a worst risk profile in terms of cardiovascular and metabolic diseases



Conclusion

Our intervention seem to represent a simple but valid way to improve quality of food intake and health parameters.

