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**Obesity prevalence in night shift workers compared to day workers across Europe – a preliminary analysis of the SHIFT2HEALTH online survey**

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**Introduction:** Previous research has shown that working night shifts is associated with an increased body mass index (BMI) and a higher risk of developing overweight and obesity, but comparative data across EU countries are missing. Therefore, the aim of this study was to compare the prevalence of overweight and obesity between night shift workers and day workers and to analyse differences in dietary and physical activity behaviour among night shift workers with overweight/obesity and those with normal weight in Europe.

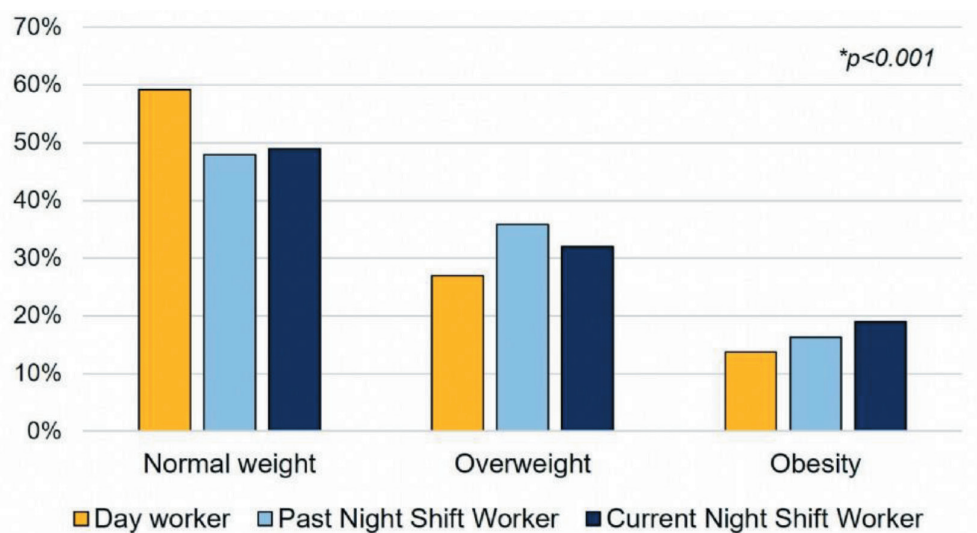
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**Methods:** This analysis presents preliminary data from an online survey conducted in eight European countries (AT, DE, DK, ES, GR, IT, NL, PL) within the framework of the EU-funded SHIFT2HEALTH project (<https://shift2health.eu/>). The survey collected self-reported data on BMI, occupation, work hours, shift work history, dietary behaviour (shortened Food Frequency Questionnaire), and physical activity (Godin Weekly Leisure Activity Score), among other factors. The prevalence of overweight and obesity is presented as percentages, and comparisons between BMI groups were made using the Chi-square test.

**Results:** A total of 3,936 individuals were included (mean age: 40 [SD: 10.6] years; 49.3% female). Of the participants, 38.6% worked in the health or social care sector, and 45.8% had a university degree or higher. Greece had the highest prevalence of overweight and obesity (59.2%), while the lowest prevalence was observed in Italy (40.5%;  $p < 0.001$ ). Regarding shift work, 52.3% currently worked night shifts, 24.7% had night shifts in the past, and 23.0% worked day shifts. Current night shift workers had a significantly higher prevalence of overweight and obesity (27.0% and 19.0%), followed by former night shift workers (35.8% and 16.3%) and day workers (32.0% and 13.8%;  $p < 0.001$ ). Night shift workers with overweight/obesity reported faster self-rated eating speeds ( $p < 0.001$ ) compared to night shift workers with normal weight. Significantly more night shift workers with overweight/obesity reported daily consumption of soft drinks (20.5% vs. 14.4%;  $p = 0.005$ ) and less daily intake of legumes (11.4% vs. 15.5%;  $p < 0.001$ ), vegetables (41.0% vs. 48.0%;  $p = 0.016$ ), and fruit (43.7% vs. 53.0%;  $p < 0.001$ ) compared to night shift workers with normal weight. In addition, night shift workers with overweight/obesity reported less leisure-time physical activity on a weekly basis (55.2% vs. 67.6%;  $p < 0.001$ ).

**Conclusion:** Night shift workers had a higher prevalence of overweight and obesity than day workers. Furthermore, night shift workers with a higher BMI tended to have less favourable dietary and physical activity behaviour. These results suggest the need for tailored interventions that focus on practical approaches to directly engage individuals, which is one of the aims of the SHIFT2HEALTH project. European companies and the health care sector should consider providing adaptable tools and services specifically for night shift workers to help prevent and reverse obesity within this group.



**Fig. 1.** Overweight and Obesity Prevalence.