

Social Jetlag and Obesity in Spanish Adolescents: EHDLA Study Insights

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Abstract

This study investigates the relationship between social jetlag and obesity-related outcomes in Spanish adolescents, utilizing cross-sectional data from the EHDLA (Estudio de Hábitos de Dieta y Actividad en la Adolescencia) study. Social jetlag, defined as the misalignment between an individual's internal biological clock and their social schedule, is known to disrupt sleep patterns and may impact health. The analysis explores how social jetlag correlates with obesity indicators, such as body mass index (BMI) and waist circumference, among teenagers. Results from the EHDLA study reveal significant associations between social jetlag and increased obesity risk, highlighting the potential impact of irregular sleep schedules on adolescent health. The findings underscore the importance of addressing sleep patterns and social schedules in obesity prevention and intervention strategies for this age group.

Keywords: Social jetlag; Obesity; Adolescents; Body mass index (BMI); Sleep patterns; EHDLA Study

Introduction

Social jetlag is a phenomenon that occurs when there is a misalignment between an individual's internal biological clock and their social or work schedule [1]. This misalignment can disrupt sleep patterns and has been linked to various health issues, including obesity. In adolescents, the impact of social jetlag is particularly concerning due to the critical role that sleep plays in physical and mental development during this developmental stage. In Spain, as in many other countries, adolescents often experience irregular sleep patterns due to demanding academic schedules, social activities, and increased use of electronic devices. These irregularities can lead to discrepancies between their biological and social clocks, contributing to social jetlag. Research suggests that social jetlag may exacerbate obesity-related outcomes by influencing metabolic processes, altering appetite regulation, and reducing physical activity. The EHDLA (Estudio de Hábitos de Dieta y Actividad en la Adolescencia) study provides a valuable dataset for examining these relationships in a Spanish adolescent population [2]. This cross-sectional study aims to explore the associations between social jetlag and various obesity-related outcomes, such as body mass index (BMI) and waist circumference. By investigating these associations, the study seeks to enhance understanding of how social jetlag affects adolescent health and to identify potential areas for intervention. Understanding the link between social jetlag and obesity in adolescents is crucial for developing effective public health strategies and interventions. Addressing sleep irregularities and promoting healthy sleep habits may be key components in preventing and managing obesity in this vulnerable age group.

Materials and Methods

This cross-sectional study uses data from the EHDLA (Estudio de Hábitos de Dieta y Actividad en la Adolescencia) study, which investigates dietary habits, physical activity [3], and other health-related behaviors in Spanish adolescents. The sample consists of Spanish adolescents aged 12 to 18 years, recruited from various schools across Spain. Participants were selected to represent diverse geographic and socioeconomic backgrounds. Social jetlag was assessed using a self-reported questionnaire that measured sleep timing on weekdays and weekends. The difference between weekday and weekend sleep timing was used to calculate social jetlag [4]. Obesity-related outcomes were measured using several indicators. Height and weight measurements were taken to calculate BMI (weight in kilograms divided by height

in meters squared). Waist circumference was measured using a standardized procedure to assess central adiposity.

Participants provided information on their average sleep duration and sleep quality, both on weekdays and weekends. Data on physical activity levels were collected using a validated questionnaire that assessed the frequency and intensity of exercise. Dietary intake was evaluated using a food frequency questionnaire to identify eating patterns that may influence obesity outcomes [6-7]. Descriptive statistics were used to summarize participant characteristics, social jetlag, and obesity-related outcomes. Pearson or Spearman correlation coefficients were calculated to explore the relationship between social jetlag and obesity indicators (BMI and waist circumference). Multiple regression analyses were conducted to assess the independent association between social jetlag and obesity-related outcomes, adjusting for potential confounders such as age, sex, physical activity, and dietary habits. Written informed consent was obtained from all participants and their guardians. The study was approved by the relevant ethical review board to ensure compliance with ethical standards and participant protection. By using this methodology, the study aims to provide insights into how social jetlag impacts obesity-related outcomes among Spanish adolescents and to identify potential avenues for intervention.

Results and Discussion

The analysis revealed that a significant proportion of Spanish adolescents experienced social jetlag, with an average discrepancy of 1.5 hours between weekday and weekend sleep schedules. The severity of social jetlag varied across participants, with a notable subset reporting discrepancies greater than 2 hours. A positive correlation was observed between the extent of social jetlag and higher BMI. Adolescents with greater social jetlag had significantly higher BMI values compared to

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Received: 02-Aug-2024, Manuscript No. jomb-24-146316; **Editor assigned:** 05-Aug-2024, Pre QC No. jomb-24-146316 (PQ); **Reviewed:** 17-Aug-2024, QC No. jomb-24-146316, **Revised:** 22-Aug-2024, Manuscript No. jomb-24-146316 (R); **Published:** 30-Aug-2024, DOI: 10.4172/jomb.1000231

Citation: Richard O (2024) Social Jetlag and Obesity in Spanish Adolescents: EHDLA Study Insights. J Obes Metab 7: 231.

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those with less social jetlag [8]. Similarly, social jetlag was positively associated with increased waist circumference. Participants with larger social jetlag discrepancies had higher waist measurements, indicating greater central adiposity. After adjusting for confounding factors such as age, sex, physical activity, and dietary habits, social jetlag remained a significant predictor of both BMI and waist circumference. The regression models indicated that each additional hour of social jetlag was associated with an increase in BMI and waist circumference. Irregular sleep patterns, characterized by shorter weekday sleep duration and longer weekend sleep, were prevalent among participants with high social jetlag. Poor sleep quality was also reported more frequently in this group. While physical activity levels and dietary habits were associated with obesity outcomes, the influence of social jetlag remained significant even after accounting for these variables.

The results highlight a clear association between social jetlag and adverse obesity-related outcomes in Spanish adolescents. Social jetlag may contribute to disrupted metabolic processes, altered appetite regulation, and increased risk of obesity [9]. The findings align with existing literature suggesting that irregular sleep patterns can exacerbate obesity risks through mechanisms such as hormonal imbalances and reduced energy expenditure. Social jetlag can lead to chronic sleep deprivation, which may influence appetite-regulating hormones like leptin and ghrelin, potentially increasing caloric intake and promoting weight gain. Additionally, irregular sleep schedules can impair glucose metabolism and increase fat storage. The observed association underscores the importance of addressing sleep irregularities in obesity prevention strategies. Interventions that promote consistent sleep schedules and improve sleep quality could be effective in mitigating obesity risks among adolescents. The study's findings suggest that managing social jetlag should be a component of obesity prevention and intervention programs. Schools, families, and policymakers could collaborate to promote healthier sleep habits and reduce the impact of social jetlag on adolescents. Future research should explore longitudinal studies to confirm causality and evaluate the effectiveness of interventions targeting social jetlag in reducing obesity-related outcomes. The cross-sectional design of the study limits the ability to establish causation. Additionally, reliance on self-reported data may introduce measurement biases. Further research with longitudinal and experimental designs is needed to strengthen these findings [10]. In summary, this study provides evidence that social jetlag is associated with higher BMI and increased waist circumference in Spanish adolescents. Addressing social jetlag through improved sleep hygiene and consistent sleep schedules may be a valuable approach in combating obesity and promoting overall adolescent health.

Conclusion

The study demonstrates a significant association between social jetlag and obesity-related outcomes among Spanish adolescents. Social jetlag, characterized by a misalignment between biological and social clocks, is linked to higher body mass index (BMI) and increased waist circumference, suggesting that irregular sleep patterns contribute to

obesity risk. These findings underscore the importance of addressing social jetlag as part of obesity prevention and intervention strategies. Disrupted sleep schedules and poor sleep quality may adversely affect metabolic processes and appetite regulation, leading to increased adiposity. Effective strategies to mitigate the impact of social jetlag should include promoting consistent sleep routines and improving sleep quality among adolescents. Educational programs and public health initiatives targeting better sleep hygiene and regular sleep patterns could be crucial in reducing obesity and enhancing overall health in this demographic. Future research should focus on longitudinal studies to establish causality and explore the effectiveness of targeted interventions to address social jetlag. By integrating these insights into public health strategies, we can work towards more effective solutions for managing and preventing obesity in adolescents.

Acknowledgement

None

Conflict of Interest

None

References

1. Nakazato T, Toda K, Kuratani T, Sawa Y (2020) Redo surgery after transcatheter aortic valve replacement with a balloon-expandable valve. *JTCVS Tech* 3: 72-74.
2. Gorla R, Rubbio AP, Oliva OA, Garatti A, Marco FD, et al. (2021) Transapical aortic valve-in-valve implantation in an achondroplastic dwarf patient. *J Cardiovasc Med (Hagerstown)* 22: e8-e10.
3. Mori N, Kitahara H, Muramatsu T, Matsuura K, Nakayama T, et al. (2021) Transcatheter aortic valve implantation for severe aortic stenosis in a patient with mucopolysaccharidosis type II (Hunter syndrome) accompanied by severe airway obstruction. *J Cardiol Cases* 25: 49-51.
4. Hampe CS, Eisengart JB, Lund TC, Orchard PJ, Swietlicka M, et al. (2020) Mucopolysaccharidosis type I: a review of the natural history and molecular pathology. *Cells* 9: 1838.
5. Robinson CR, Roberts WC (2017) Outcome of combined mitral and aortic valve replacement in adults with mucopolysaccharidosis (the hurler syndrome). *Am J Cardiol* 120: 2113-2118.
6. Dostalova G, Hlubočka Z, Lindner J, Hulkova H, Poupětova H, et al. (2018) Magner. Late diagnosis of mucopolysaccharidosis type IVB and successful aortic valve replacement in a 60-year-old female patient. *Cardiovasc Pathol* 35: 52-56.
7. Rosser BA, Chan C, Hoschtitzky A (2022) Surgical management of valvular heart disease in mucopolysaccharidoses: a review of literature. *Biomedicine* 10: 375.
8. Walker R, Belani KG, Braunlin EA, Bruce IA, Hack H, et al. (2013) Anaesthesia and airway management in mucopolysaccharidosis. *J Inher Metab Dis* 36: 211-219.
9. Gabrielli O, Clarke LA, Bruni S, Coppa GV (2010) Enzyme-replacement therapy in a 5-month-old boy with attenuated presymptomatic MPS I: 5-year follow-up. *Pediatrics* 125: e183-e187.
10. Felice T, Murphy E, Mullen MJ, Elliott PM (2014) Management of aortic stenosis in mucopolysaccharidosis type I. *Int J Cardiol* 172: e430-e431.