# Executive Summary

**Title:** Does Nighttime Gaming Really Affect Sleep?
**Team:** G12 – *The Digital Nightlife Project*

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**Hypothesis:**

- **$H_1$:** Nighttime gaming negatively affects sleep duration and quality
- **$H_0$:** Nighttime gaming does not significantly affect sleep.

**Data Source:** Siebers et al. (2024) study on teenagers' phone use and sleep

**Analysis Methods:**

- Simple & Polynomial Regression
- Multiple Regression by App Type
- Mediation Analysis (Gaming → Bedtime → Sleep Duration)
- Time-of-day Comparison (daytime / pre-bed / post-bed)

**Main Findings**

| Analysis Focus | Main Result | Interpretation |
|---|---|---|
| Pre-bed Gaming → Sleep Time | β = -0.032, p = 0.529 | No significant effect |
| Pre-bed Gaming → Bedtime → Sleep | Indirect β = -0.044, p = 0.53 | No mediation effect |
| App Type Comparison | Social (p = 0.022), Video (p = 0.031) | SNS and video show weak negative effects |
| Time of Day Effect | Daytime β = -0.112, p = 0.001 | Daytime overuse reduces sleep time |
| Sleep Time ↔ Sleep Quality | r = +0.68, p < 0.001 | More sleep = better quality |

**Interpretation**

Contrary to popular belief, gaming before bed does not significantly shorten or worsen sleep. Across all regression models, the effect of gaming was statistically non-significant ($p > 0.5$). However, daytime smartphone overuse showed the strongest negative impact on total sleep time and social media and video apps had mild negative effects, possibly due to emotional or visual stimulation.

## Reference

Siebers, T., Beyens, I., Baumgartner, S. E., & Valkenburg, P. M. (2024). *Adolescents' Digital Nightlife: The comparative effects of day- and nighttime smartphone use on sleep quality.* University of Amsterdam. https://doi.org/10.21942/uva.26395903.v2