

Section IV: Discussion

The primary objective of this study was to examine the impact of different nap conditions on table tennis performance, particularly serve accuracy. Our hypothesis stated that optimal nap conditions, such as those without phone usage, would improve performance compared to a baseline condition without napping. The results provide partial support for this hypothesis.

We saw a clear improvement in serve accuracy when comparing the net serve accuracy from the bar chart in Figure 1. The baseline serve accuracy, out of 120, was 93; the optimal nap serve accuracy was 113 out of 120; and the napping serve accuracy was 101 out of 120. The pattern shows that the optimal nap condition resulted in the highest serve accuracy, followed by the napping condition, with the baseline condition showing the lowest accuracy. Additionally, the improvement in performance after nap conditions, especially with phone usage before naps, was likely due to rest. More rest seems to provide more energy, contributing to better performance.

A Friedman test comparing baseline, optimal napping, and phone usage napping conditions yielded a statistically significant result ($p = 0.03719$). Further analysis using a one-tailed Wilcoxon Signed-Rank Test for paired samples demonstrated that the No Phone group exhibited significantly better performance than the Baseline group ($W = 0$, $p = 0.034$). Given that the p-value is below the standard significance threshold of 0.05, we reject the null hypothesis and conclude that nap conditions without phone usage led to significantly higher serve accuracy.

Future Research

Future research should increase the sample size for better accuracy and include more performance metrics like reaction time and rally performance. Controlling for sleep quality and prior rest would help reduce errors, while a long-term study could show lasting effects. Testing different nap lengths and the impact of phone use before sleep could refine recommendations. Comparing different skill levels and using a crossover design would improve reliability. Finally, applying these findings to other sports could determine if the benefits of napping without phone use extend beyond table tennis.

Section V: Conclusion

This study aimed to explore the impact of nap conditions and pre-nap phone usage on table tennis serve accuracy. We compared three conditions: baseline (no nap), optimal nap (ideal nap duration), and phone usage nap (phone usage before nap). Serve accuracy was measured, with results showing that the optimal nap condition led to the highest serve accuracy (113/120), followed by the napping condition without phone usage (101/120), and the baseline (93/120). Statistical tests revealed a significant improvement in performance when naps were taken without phone usage, with a p-value of 0.034. These findings suggest that proper rest, especially without distractions, enhances athletic performance. In conclusion, sleep is not only crucial for recovery but also a key factor in maximizing performance, offering valuable insights for those aiming to optimize their capabilities in competitive settings.