Associations Between Sleep Health, Performance Anxiety, and Mental Burnout in Adolescent Athletes: A Cross-Sectional Study

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INTRODUCTION

- Participation in sports during adolescence supports physical health, social development, and psychological growth (1).
- Adolescents face increased academic pressure and social challenges while navigating developmental factors, which can lead to high stress levels when combined with the demands of competitive sports (2,3,4).
- A buildup of psychological stress can lead to poor mental health, which can cause symptoms of performance anxiety and mental burnout (4,5).
- Sleep is critical for physical recovery and mental function and supports emotional regulation and cognitive performance, all of which are essential for adolescent athlete well-being (6,7,8,9).
- When sleep health is poor, adolescent athletes may experience more stress, poor athletic performance, and increased vulnerability to anxiety and burnout (6,7,8,9,10).
- Sleep health is an important factor to study in adolescent populations (11, 12,13)

PURPOSE: To explore the relationship between sleep health, performance anxiety, and mental burnout in adolescent athletes.

METHODS

APPROACH

- Participants = Middle and high school student-athletes ages 11 to 18 years in the Belchertown Public School District participating in at least one organized sport

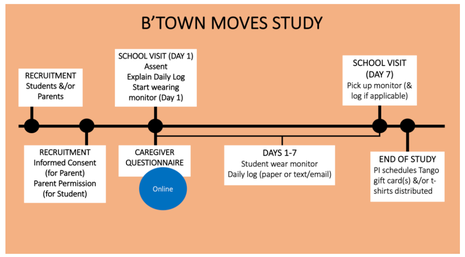
MEASURES

Surveys and Daily Logs

- Revised Competitive State Anxiety-2 (CSAI-2R) Survey: 17 questions, 3 categories, 4-point scale
- Athlete Burnout Questionnaire: 15 items representing three dimensions of burnout, 5-point scale
- Activity Monitor Log
  - Online or paper
  - Introductory survey on day 1 → Daily questions days 1 to 7
  - Report sleep & wake times, sport program information, sleepiness, mood, & performance

Activity Monitoring

- Fitbit Charge 5 on non-dominant wrist for 24-hour over 7 days
- Sleep metrics & movement behaviors estimated with Fitabase program

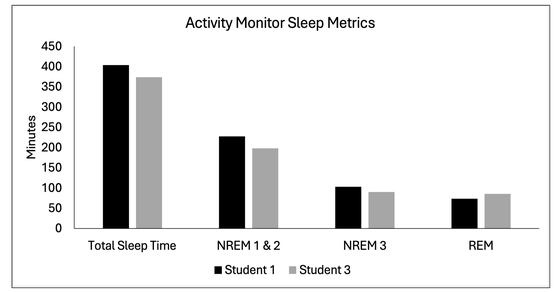


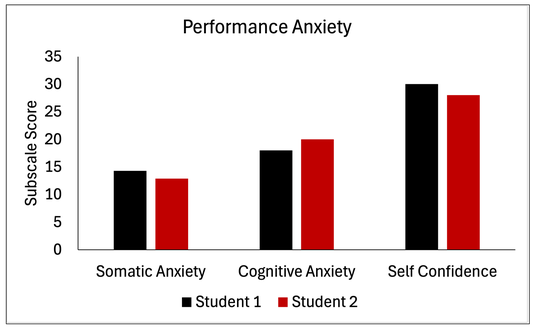
B 'town Moves Study

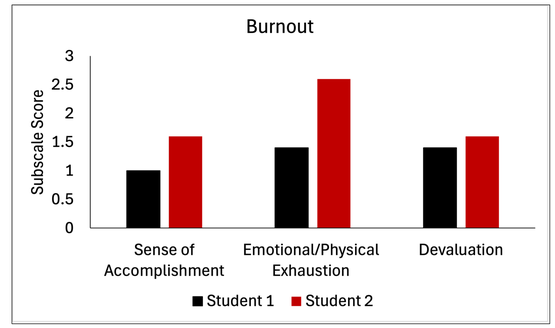
Assessing Physical Activity in Students and Schools

PRELIMINARY RESULTS

- Current sample size = 4 students
- Age = 13.3 (0.6) years; Grades 7 to 9
- 50% participated in school sport programs
- 50% participated in outside sport programs
- Self-reported gender = Male/boy (50%), she/her (25%), & not-reported (25%)
- Self-reported race = Bi/multiracial (50%), White (25%), & not-reported (25%)







CONCLUSIONS

- Data collection is currently on-going, so only descriptive statistics are presented.
- We hypothesize that more sleep time and NREM stage 3 sleep will be inversely associated with performance anxiety and negative burnout scores, supporting that that poor sleep is linked to poorer mental health outcomes in youth athletes.
- Poor sleep may contribute to the development of symptoms associated with these outcomes, and future studies should explore strategies to improve athletic mental health through sleep health education and promotion.

REFERENCES

1. Weinberg, R.S. & Gould, D. Foundations of Sport and Exercise Psychology. (2023). Human Kinetics.
2. Cotterill, S., Weston, N., & Breslin, G. (2016). Sport and Exercise Psychology: Practitioner Case Studies. John Wiley & Sons, Incorporated.
3. Hagger, M., & Chatzisarantis, N. (2005). The Social Psychology of Exercise and Sport. McGraw-Hill Education.
4. Reardon, C. L., Gorczynski, P., Hainline, B., Hitchcock, M., & Rice, S. (2024). Anxiety Disorders in Athletes. Clinics in Sports Medicine, 43(1), 33–52.
5. Sawczuk, T., et al. (2018). Relationships between training load, sleep duration, and daily well-being and recovery measures in youth athletes.
6. Charest, J., & Grandner, M. A. (2020). Sleep and Athletic Performance: Impacts on Physical Performance, Mental Performance, Injury Risk and Recovery, and Mental Health. Sleep medicine clinics, 15(1), 41–57.
7. Copenhaver, E. A., & Diamond, A. B. (2017). The Value of Sleep on Athletic Performance, Injury, and Recovery in the Young Athlete. Pediatric annals, 46(3), e106.
8. Paruthi, S., Brooks, L. J., D'Ambrosio, C., Hall, W. A., Kotagal, S., Lloyd, R. M., Malow, B. A., Maski, K., Nichols, C., Quan, S. F., Rosen, C. L., Troester, M. M., & Wise, M. S. (2016). Consensus Statement of the American Academy of Sleep Medicine on the Recommended Amount of Sleep for Healthy Children: Methodology and Discussion. Journal of clinical sleep medicine: JCSM: official publication of the American Academy of Sleep Medicine, 12(11), 1549–1561.
9. Stubbs, B., Vancampfort, D., Rosenbaum, S., Firth, J., Cosco, T., Veronese, N., Salum, G. A., & Schuch, F. B. (2017). An examination of the anxiolytic effects of exercise for people with anxiety and stress-related disorders: A meta-analysis. Psychiatry Research, 249, 102–108.
10. Coel, R. A., Pujalte, G. G. A., Applewhite, A. I., Zaslow, T., Cooper, G., Ton, A. N., & Benjamin, H. J. (2023). Sleep and the Young Athlete. Sports Health, 15(4), 537–546.
11. Fox, J. L., Scanlan, A. T., Stanton, R., & Sargent, C. (2020). Insufficient Sleep in Young Athletes? Causes, Consequences, and Potential Treatments. Sports Medicine, 50(3), 461–470.
12. Buysse, D. J. (2014). Sleep Health: Can We Define It? Does It Matter? Sleep, Volume 37, Issue 1, January 2014, Pages 9–17.

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