

Early Birds or Night Owls: Who is Getting the Best Sleep?

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Literature Review

- Chronotyping (Montaruli et al., 2021):
 - Morning/M-types- rise earlier in the morning and fall asleep earlier in the evening
 - Evening/E-types- rise later in the morning and fall asleep later in the night.
- These two types differ on melatonin production by the pineal gland. Henrich et al. (2021) found that M-types experience better quality sleep than E-types.
- The circadian rhythm has the crucial function of regulating not only sleep and wakefulness, but also functions such as blood pressure, body temperature, mood, and hormone levels. These are each essential to an athlete's performance (Lim et al., 2021).
- Athletic performance is optimized when matched with an individual's chronotype (Lim et al., 2021). While studied in athletes, this has been under researched in non-athletes.

Hypotheses

- M-types will report better sleep quality than E-types.
- Individuals who exercise based on their chronotype will report better sleep quality. M-types will report better sleep quality when they exercise in the morning hours and E-types will report better sleep when they exercise in the afternoon/evening.

Materials & Procedure

- Will recruit online through social media.
- Via a Qualtrics link, participants will sign an informed consent form, complete demographic questions, & surveys.
- Self-report Surveys:
 - Category of Chronotype- Morningness- Eveningness Questionnaire (MEQ; Horne & Östberg, 1976)
 - Sleep Quality & Quantity- Pittsburgh Sleep Quality Index (PSQI; Buysse et al., 1989)
 - Grouping or Continuous Rating of Exercise- International Physical Activity Questionnaire (IPAQ; Booth, 2000) & asked their preferred time of day for exercise
- Categorize participants based on chronotype and preferred exercise, and label them as either matching or non-matching.

Participants

- N = Approximately 200 Adults
- Any Gender & Aged 20+
- Working full-time, not retired, and not full-time students
- Chronotypes: ~100 M-type and ~100 E-type
- Exercise times:
 - Early morning- before 7/8am
 - Morning- before noon/1pm
 - Afternoon- before 5/6pm
 - Evening- after 6pm

Analyses and Anticipated Results

- Use an Independent samples t -test to assess sleep quality based on chronotype.
 - Expect to find that that M-type individuals will report better sleep quality than E-type individuals.
- Categorize participants on matching chronotype/exercise timing or non-matching type and then conduct an Independent samples t -test.
 - Expect to find that that matching chronotype/exercise timing will report better sleep quality than non-matching type.



Expected Findings & Implications

- We hope to replicate Henrich et al. in that Morning people will report better sleep quality than Evening people.
- If we find that Morning people and Evening people report better sleep quality with a matching exercise time, this could be used in enhancement of scheduling or productivity in:
 - Athletics
 - Educational settings
 - Job performance
- This research can be important for anyone trying to optimize recovery from exercise, especially if there are significant differences in matching/non-matching of exercise timing and chronotype on sleep quality.
- A goal of this study is to broaden previous research on athletes to a general population.
- Possible benefits include justification for establishing routines, prioritizing exercise, and improving general well-being.

References

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