

Introduction

1. Do chronotype differences exist between musicians and nonmusicians?
 2. Is daily timing of music playing related to chronotype?
 3. How did COVID-19 restrictions influence musicians' daily performance and social activities?
- Chronotype differences previously noted between nonmusicians, active musicians, and composers¹
 - Time of day and chronotype contribute to individual differences in music performance^{2,3}
 - Social schedules and chronotype can influence daily timing of behaviour^{4,5,6}
- Music performances tend to occur in the evening
Some evidence of changes in musical activities during COVID-19 period^{7,8}

Method

- 28 Nonmusicians (NM): no training / music activities
- 27 Inactive Musicians (IM): training; no activities
- 16 Active musicians (AM) active (not performing)
- 26 Performing musicians (PM): performing

- Online survey conducted June to September 2020
- Participants from comparable latitudes in Canada (control for daylight exposure)

Design and Procedure:

Participants completed:

- **7-day Sleep Diary:** Measured sleep patterns and timing and amount of daily music playing, physical exercise, and social behaviour.
- **Munich Chronotype Questionnaire (MCTQ):** Assess Chronotype via Midsleep point (MSF_{sc})
- **Musical Background Questionnaire (MBQ):** Assess musical training and activities pre- and during COVID period

Data Analysis:

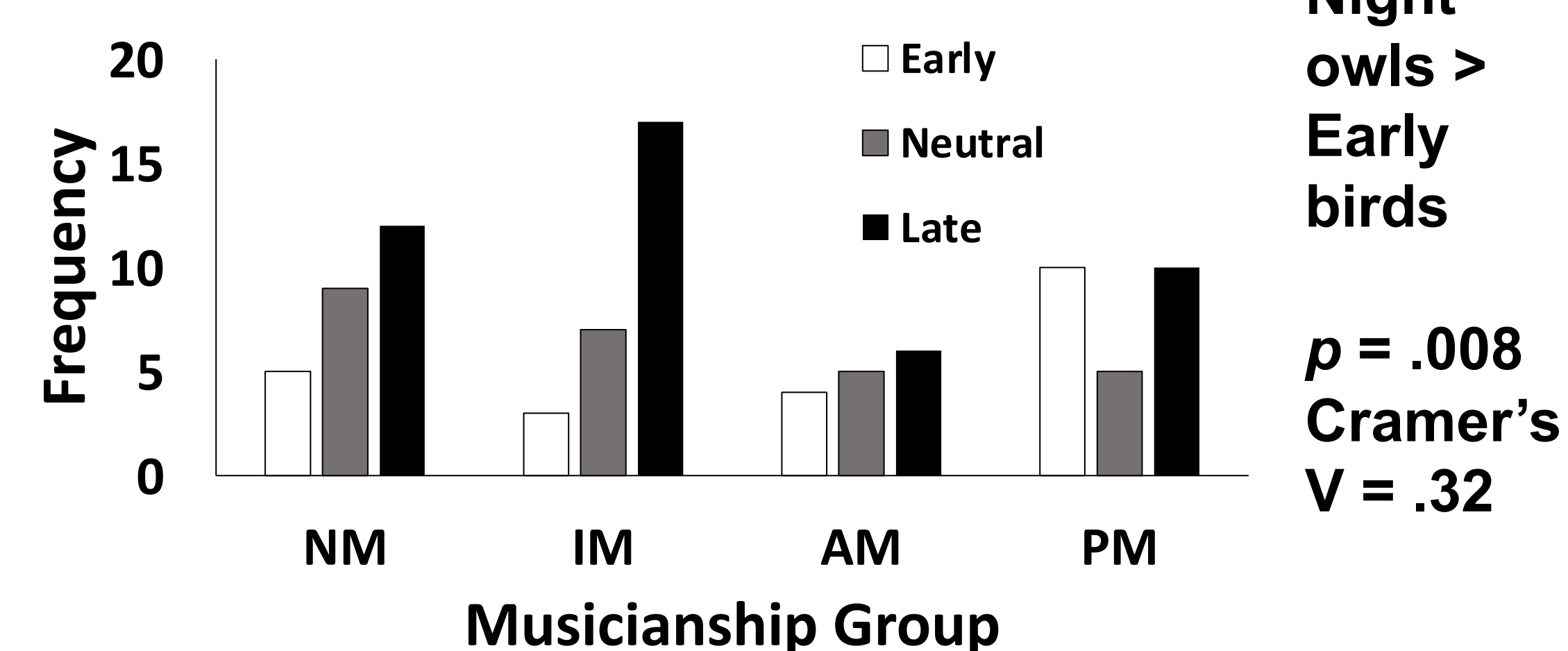
Chronotype Calculation (Corrected Midsleep, MSF_{sc}):
 $MSF_{sc} = MSF - 0.5*(SD_F - (5*SD_W + 2*SD_F)/7)$

3 chronotype groups¹⁰:

- Early** (early birds) $\leq 04:00$ midsleep point
- Neutral** $04:01 < \text{midsleep point} \leq 05:00$
- Late** (night owls) $> 05:00$ midsleep point

Results

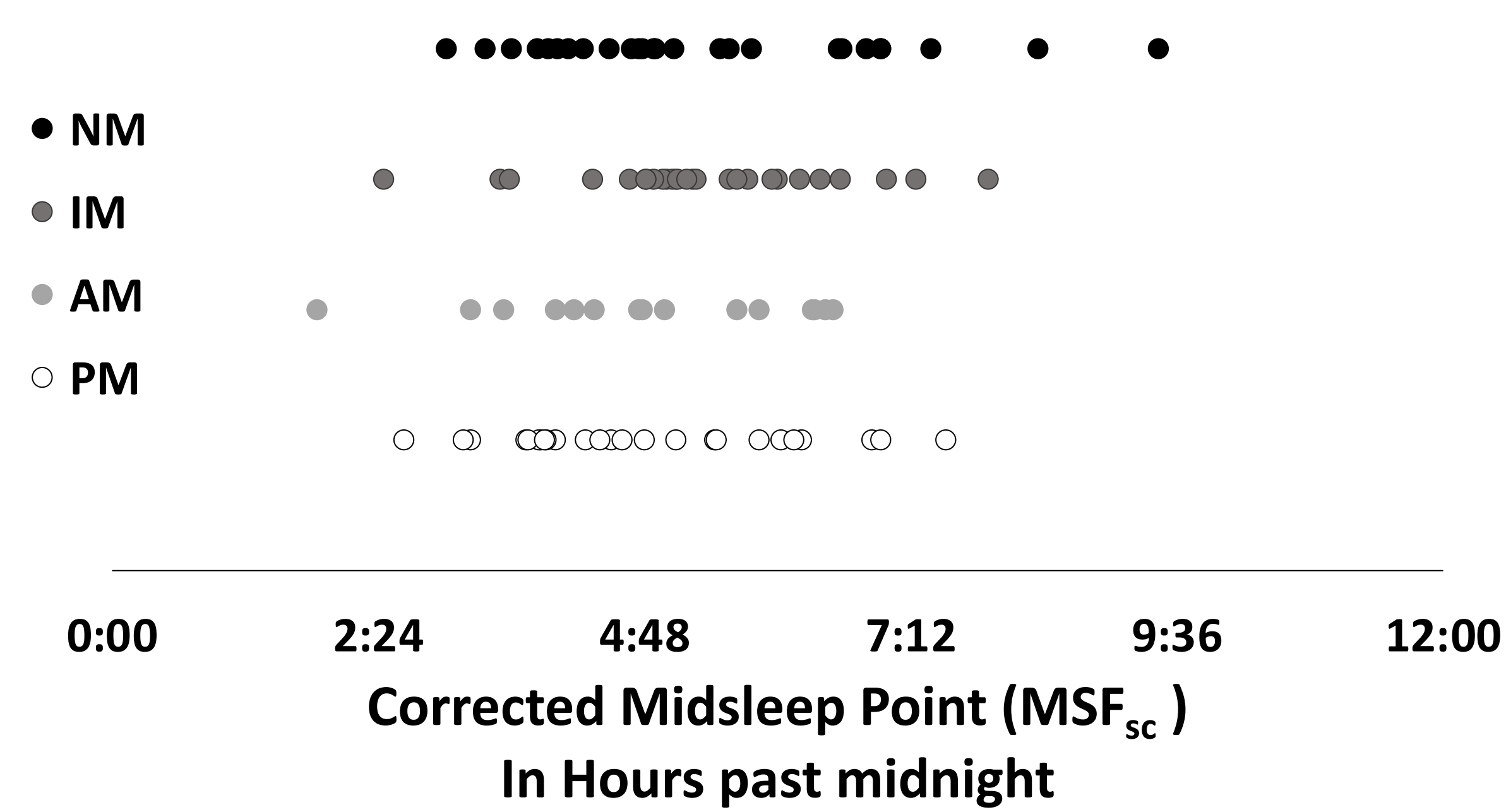
1. More night owls than early birds



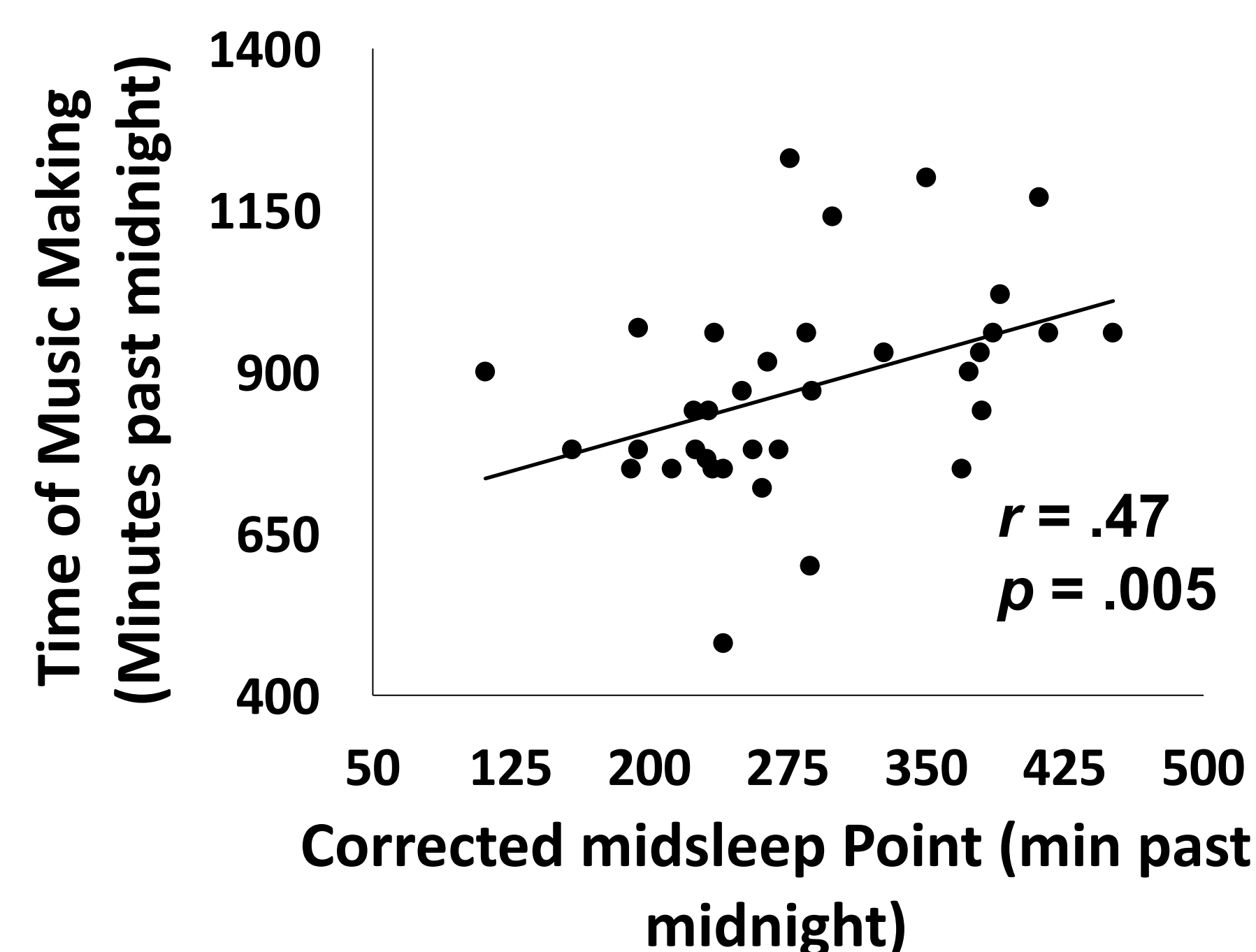
Performing Musicians not more likely to be night-owls

Results

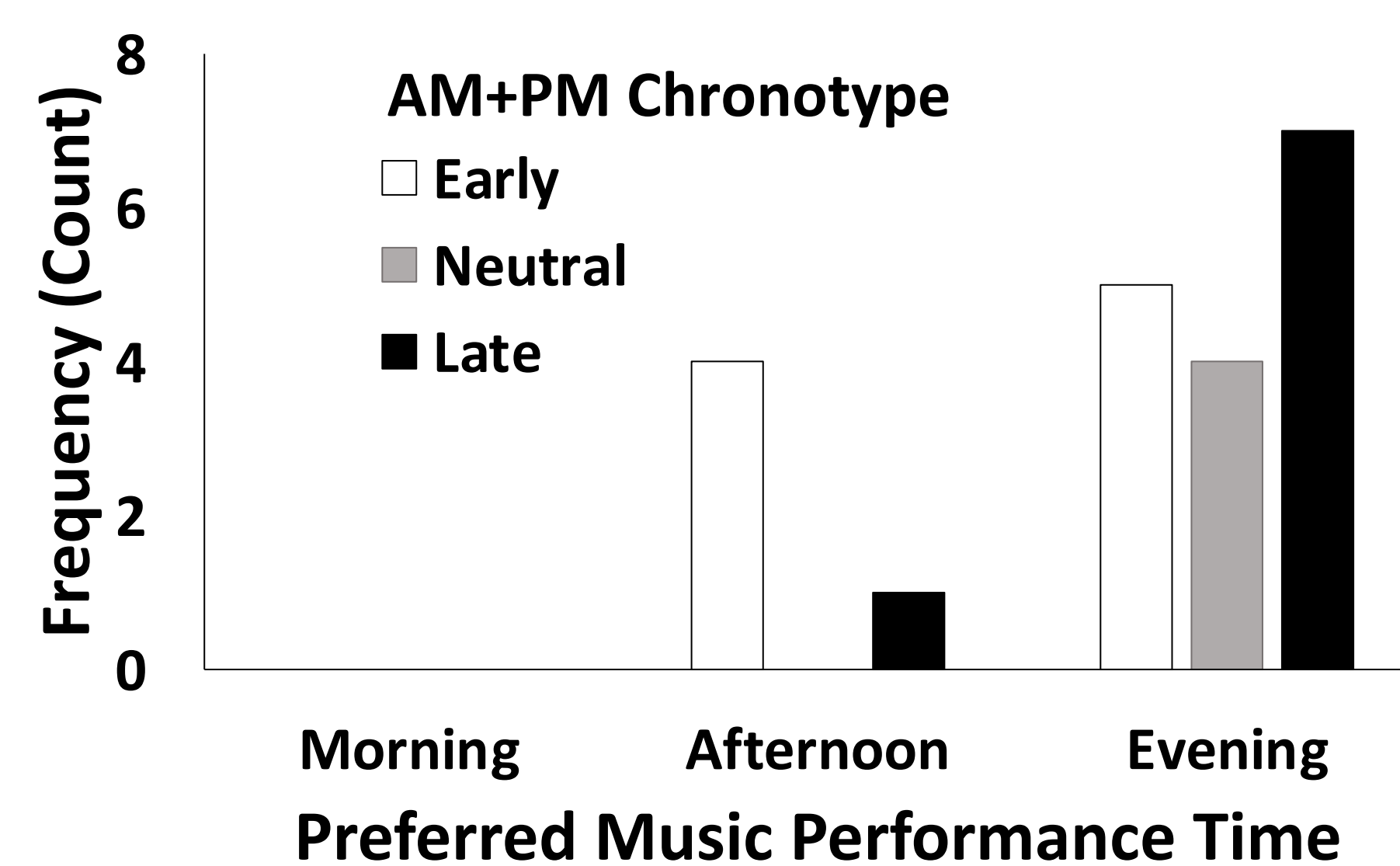
2. Musicians (AM, PM) have slightly earlier midsleep point No chronotype differences between groups



3. Musicians' Midsleep point predicts time of music-making



Musicians (AM, PM) with later midsleep point make music later in the day



Preference to perform music in the evening, regardless of chronotype ($p=.03$)

Similar for preferred music practice time (n.s.)

3. COVID-19 Changes: Later sleep onset, less music performance, less social interaction

Timing	Early	Later	No change
Sleep Onset*	22 (24%)	44 (49%)	24 (27%)
Quantity change	Less	More	Same Amount
Performing music* (AP)	19 (79%)	1 (4%)	4 (17%)
Exercise*	44 (45%)	35 (36%)	18 (19%)
Social Interaction*	73 (75%)	9 (9%)	15 (15%)

* chi-squared, $p < .01$

No changes in **timing** of music performance/practice or other daily activities

Discussion

1. Do chronotype differences exist between musicians and nonmusicians?

- No clear evidence of group differences;
 - More early birds in AM, PM musician groups
 - Gjermunds et al. (2019) differences for composers – less reliance on fine motor control
- Greater number of late chronotypes may be related to sample age⁸ (18-34) or to COVID-19 changes

2. Is daily timing of music-making related to chronotype?

- Midsleep point predicts daily timing of music-making
Consistent with athletes' preferences to train at times of day that correspond to their chronotype⁴

3. Have COVID-19 restrictions influenced musicians' activities?

- Later sleep onset, less music performance, and less socialising during COVID-19 period
 - May reflect changes in social schedule constraints¹¹
- Timing of daily activities did not change
 - Chronotype may influence daily timing more than COVID-related changes

Limitations and Future Directions:

- Limited sample of currently performing musicians
- Explore the relationship between chronotype and music performance in professional musicians

References

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Acknowledgments