Medical Xpress

NBA playoff format is optimizing competitive balance by eliminating travel

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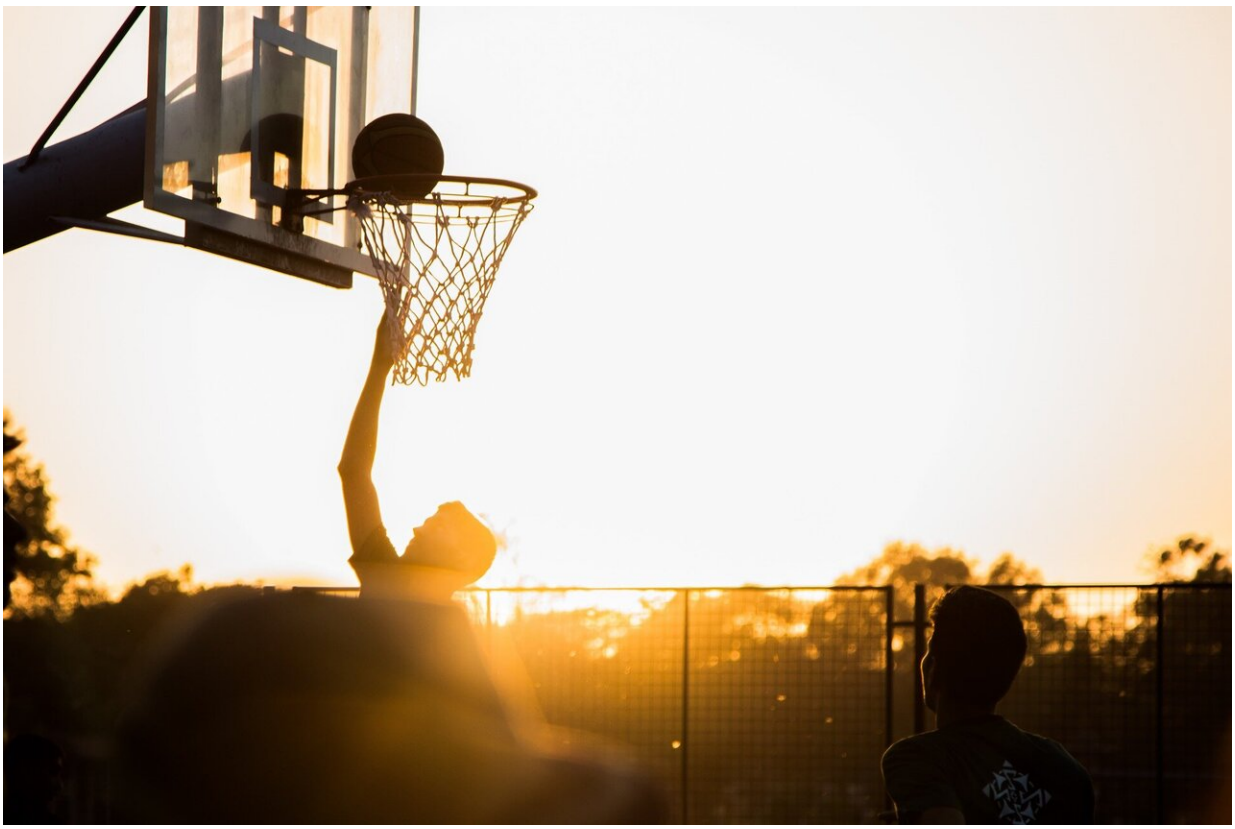

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In addition to helping protect players from COVID-19, the NBA 'bubble' in Orlando may be a competitive equalizer by eliminating team travel. Researchers analyzing the results of nearly 500 NBA playoff games over

six seasons found that a team's direction of travel and the number of time zones crossed were associated with its predicted win probability and actual game performance.

Preliminary results of the study suggest that the 2020 NBA playoffs, which begin Aug. 17, will eliminate any advantages or disadvantages related to long-distance travel. In this year's unique playoff format, implemented due to the COVID-19 pandemic, all 16 teams will stay in Orlando, Florida, and compete at the ESPN Wide World of Sports Complex in Walt Disney World.

The study found that scoring was significantly higher following eastward travel. Although there were no differences in actual game outcomes based on overall direction of travel, there were differences when considering both the direction and magnitude of travel. Teams that traveled east with three-hour time zone changes had higher predicted probabilities of winning than teams that traveled west or played in the same time zone. In contrast, teams that traveled west across three time zones had lower predicted win probabilities than teams that traveled east or played in the same time zone.

"During this initial study, it was interesting to find that team scoring improved during general eastward travel compared to westward travel and travel in the same zone, but game outcomes were unaffected by direction of travel during the playoffs," said lead author Sean Pradhan, assistant professor of sports management and business analytics in the School of Business Administration at Menlo College in Atherton, California. "However, when considering the magnitude of travel across different time zones, we found that teams had predicted probabilities of winning that were lower after traveling three time zones westward, and tended to actually lose more games when traveling two time zones westward compared to most other types of travel."

Circadian rhythms are endogenous, near-24-hour biological rhythms that exist in all living organisms, and these daily rhythms have peaks and troughs in both alertness and sleepiness that can impact individuals in high-performance professions. Therefore, an athlete has a greater opportunity for optimal performance when the timing of an activity is synchronized with the body's circadian clock.

Researchers from Menlo College and other collaborators reviewed data from 499 NBA playoff games from the 2013-2014 through 2018-2019 seasons. They looked at the impact of direction of travel and time zones traveled on actual game outcomes, team quality, predicted win probability, and team scoring for visiting teams.

"A great deal of prior work has examined the effects of travel and circadian advantages on team performance during the regular season of various professional sports leagues," said Pradhan. "The current study extends such findings of previous research by examining team performance in the NBA playoffs, which is obviously an extremely crucial time for teams competing."

More information: S Pradhan et al, 0174 Examining Circadian Disadvantages in the National Basketball Association's Playoffs, *Sleep* (2020). DOI: 10.1093/sleep/zsaa056.172

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