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Do Collegiate Athletes' Sleep Habits Correspond to Injury Rate?

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Objective: The purpose of this study was to investigate collegiate athletes' consistency and quality of sleep habits and the correlation to injury rate.

Design and Setting: The study used survey research with a convenience sample of N=283 from a Division-III Ohio college. The independent variables were gender of the athletes, school year, and sport. The dependent variables were consistency and quality of sleep habits and how many injuries each athlete received.

Participants: The overall return rate was 63% (n=177). Year in school composed the following: freshman 46% (n=83), sophomores 18% (n=31), juniors 17% (n=30), seniors 17% (n=30), and unreported 1% (n=3). Gender composed the following: males 68% (n=121), females 30% (n=53), and unreported 1% (n=3).

Intervention: The survey had 31 questions, 26 quantitative, 2 qualitative, and 3 demographic. A panel of experts determined face validity. Content validity was determined through the table of specifications. The IRB approved the research through exempted review. SPSS 21.0 analyzed data. Kruskal-Wallis, with grouping variables including year in school, number of injuries received, number of days of practice missed, and sport, and Chi-Square tests, with grouping variable of gender of athletes, were used to analyze data. The alpha level was set at .05 *a priori.* Descriptive statistics (percentages and frequency counts) were also used on all applicable items.

Main Outcome Measurement: A four point Likert scale was used (always[4], often[3], rarely[2], never[1]) and (strongly agree[4], agree[3], disagree[2], strongly disagree[1]) for 22 questions. A seven point Likert scale was used (Less than 2 hrs[1], 2-3.9 hrs[2], 4-5.9 hrs[3], 6-7.9 hrs[4], 8-9.9 hrs[5], 10-11.9 hrs[6], and More than 12 hrs[7]) and (0 min[1], 1-30 min[2], 31-60 min[3], 61-90 min[4], 91-120 min[5], 121-150 min[6], and More than 150 min[7]) for two questions. An eight point Likert scale was used (0-5 min[1], 5-15 min[2], 15-25 min[3], 25-35 min[4], 35-45 min[5], 45-55 min[6], 55-65 min[7], and More than 65 min[8]) for one question. A Likert scale was used (yes[1], no[2]) for one question. Two fill in the blank questions were asked with instructions stating, "write in number."

Results: Upon survey 54% (n=95) of athletes "strongly agree" or "agree" that there is a relationship between sleep habits and injury rate. Additionally 62% (n=108) of athletes "agree", and 30% (n=52) "strongly agree" that they believe they perform better when practicing good sleep habits. Correlation of sleep to injury rate was addressed with the following response. Athletes reported "often" feeling sleep deprived prior to injury 15% (n=26) of the time. Of athletes with four injuries 100% (n=1) "often" felt sleep deprived. Those with five injuries reported 100% (n= 2), and two injuries reported 55% (n=11). There was no direct correlation to sleep habits on injury rates however. Consistency and quality of sleep were addressed by the following responses. Athletes reported "always" catching up on sleep 34% (N=60) of the time. Freshman and sophomores "always" catch up on sleep during the weekends 42% (n=35) and 48% (n=15) respectively. Electronic devices were "rarely" used by 5% (n=9) of athletes. Seniors reported at 20% (n=6) and juniors at 13% (n=4). Electronic devices were "rarely" used by 17% (n=5) of juniors, 4% (n=3) of freshman, and 3% (n=1) of sophomores. Quiet sleep environments were "rarely" or "never" reported by 31% (n=55) of athletes. Freshman responded with 43% (n=36) "never" or "rarely" having a quiet sleep environment. Sophomores, juniors and seniors reported 16% (n=5), 13% (n=4), and 30% (n=9), respectively "never" or "rarely" have a quiet environment.

Conclusions: This study found no direct correlation between sleep and injury rate, however the collegiate athletes surveyed are not practicing healthy sleep habits. The consistency and quality of sleep reported is moderate to low. ATs should make an effort to educate athletes about good sleep hygiene. ATs that promote healthy sleep hygiene are helping their athletes perform at their best ability. By providing sleep education information sessions

during preseason ATs will be giving athletes the tools necessary to improve the consistency and quality of their sleep habits. More extensive research is needed in this area to determine the direct correlation between sleep and injury rate.

Key Words: *Sleep hygiene, college, athlete, injury*