Sleep problems among Dutch higher educational students, working towards solutions.

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BACKGROUND
Lately, attention for the role of sleep in health and wellbeing has increased. Short sleep duration and poor quality of sleep are associated with a higher chance at several (mental) health issues, including a higher mortality risk. Furthermore it is associated with attention problems and lower academic achievement. Poor sleep has a high prevalence, especially among students. We aim to provide (policy) recommendations from studying the associated factors on an individual and social level with poor sleep and its consequences.

METHOD
In a cross-sectional survey design (N=493), the extent of sleep problems and its associated factors was studied amongst a group of Dutch students. The Pittsburg Sleep Quality Index (PSQI) was used. PSQI consists of 7 components, namely subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, use of sleep medication, daytime dysfunction and sleep disturbances. Linear regression analyses were performed at the different levels while controlling for physical and mental health and academic performance. Participants were recruited through social media and e-mail (Male 43%; Female 57%; mean age, 22 years). None of the background variables (gender; age; type of housing; type of university applied yes/no; study phase) were significantly associated with the global PSQI score. Additionally, experts were questioned in a small qualitative survey to come up with solutions (N=24).

RESULTS
• 59% of higher educational students suffer from poor sleep quality.
• Factors that were significantly associated with worse sleep quality at the individual level were: sleep need (β=-10; p<.05), behavior (β=-20; p<.01), and psychology (β=14; p=0.05) (effects stress overload) [F(7, 317) = 33.75; p = .000].
• Factors that were significantly associated with worse sleep quality at the social level were: having a paid job in the evening/night (β=13; p<.05) [F(4, 211) = 38.45; p = .000], loneliness (β=16; p<.01) [F(4, 320) = 49.82; p = .000], having the Chinese (β=12; p<.05) and other ethnicity (β=19; p<.05) [F(11, 313) = 18.15; p = .000].
• Sleep was significantly associated with worse mental health (β=26; p<.01) [F(5, 263) = 74.40; p = .000], vitality (β=25; p<.01) [F(4, 264) = 42.58; p = .000], and drug use (β=11; p<.05) [F(4, 320) = 48.35; p = .000]. Additionally, sleep was a significant predictor for attention problems (β=28; p<.01) [F(2, 295) = 30.25; p = .000], and worse academic performance (β=18; p<.01) [F(5, 263) = 7.29; p = .000], in the current academic year.

DISCUSSION/ CONCLUSION
1. Students in higher education are a population at high risk for poor sleep quality
2. More attention for the importance of sleep for health, wellbeing and academic achievements should be implemented in the university institutional context
3. Nearly 2 out of 3 students suffered from poor sleep quality, reconfirming the high prevalence amongst higher educational students in other studies. Recommendations regarding future study improvements are, longitudinal study designs, using more objective measures and study aspects of sleep quality separately. On a more practical level, Universities can contribute to better sleep quality of their students by educating their students more about sleep hygiene (including effects of drugs and how to deal with high work pressures), and make them more aware of the availability of student psychologists, student general practitioners and other student health services.

REFERENCE