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(日本の大学院生における睡眠習慣および睡眠障害の有病率と睡眠障害による負荷)

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論文内容要旨

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学位論文題目	“Sleep habits, prevalence and burden of sleep disturbances among Japanese graduate students” 日本の大学院生における睡眠習慣および睡眠障害の有病率と睡眠障害による負荷		
<p>Abstract - While completing their degree courses graduate students often complain about poor sleep and mental health mainly due to the academic environment and the uncertainty of their success in obtaining their degree. To estimate the prevalence of sleep disturbances among them and the related adverse consequences, we conducted a cross sectional epidemiological survey at 15 universities' graduate schools in Kyoto, Japan. A total of 241 responses were returned (44%) and we analyzed the data of 219 graduate students (158 males and 61 females, aged 22-39 years). Participants completed the self-reported Pittsburgh Sleep Quality Index questionnaire, together with specific questions designed for the purpose of the study. We found a lower prevalence rate of excessive daytime sleepiness and a higher percentage of longer sleep hours among graduate students compared to the general young adult population. Among graduate students, 29.8% also reported fatigue, 9.6% health problems, 5% university absenteeism, and 3.2% accidents at their university as adverse consequences of their sleep problems. The prevalence rates of other sleep disturbances were similar to the reported rates for the general young adult population, consequently we suggest that the prevalence rates of the adverse consequences of sleep problems are higher for the general young adult population than for the less sleep deprived graduate students. Graduate students also reported a low consultation rate for sleep problems despite the high prevalence rates of adverse consequences, indicating the need to increase awareness of sleep problems and their prevention among them.</p> <p>Methods - <u>Subjects:</u> The study was part of a large survey of mental health, sleep, and seasonal related problems of foreign and Japanese graduate students, administered from the end of October through to the beginning of November 2001 at 15 different universities in Kyoto, Japan. We informed graduate schools' student officers in detail about the purpose of the survey and asked for their consent to conduct the study at their graduate schools. The officers randomly distributed the questionnaires in sealed envelopes to Japanese graduate students. The universities' privacy policies prevented us from obtaining their students' mailing addresses, therefore we had to distribute the questionnaires through the officers to ensure the complete anonymity of the respondents, and to reach graduate students at their universities.</p> <p><u>Questionnaires:</u> The self-administered questionnaires used in this study included the Japanese version of the PSQI that has been developed and validated in accordance with the original version, together with questions regarding sociodemographic variables, how graduate students cope with their sleep problems regarding professional help and what the adverse consequences of sleep problems are for them. To understand graduate students' attitude towards sleep difficulties and professional help we asked whether they considered they had sleep difficulties and if they had sought help for their problem, to whom and how often they asked for help, and whether they had experienced improvement after having asked for help. In addition, they were asked to indicate the most frequent adverse consequences of their sleep problems.</p> <p><u>Statistical analysis:</u> We used StatView for Windows (Version 5.0.1, SAS Institute Inc.) software for statistical analysis. The Chi-square test was used to test for differences between proportions and the Student-t test to compare PSQI item scores. Reported differences were significant at 0.05 or less.</p>			

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Results- Sample characteristics: We received 241 (44%) answers from graduate students, and excluded from the analysis responses with missing data on gender and/or age, and subjects older than 39 years. The data of 219 (37%) graduate students (158 males, 72% and 61 females, 28%) were included in the final analysis. Although more males than females responded to our survey, the Japanese graduate students' gender ratio in our sample did not differ from the general Japanese graduate students' population gender ratio ($\chi^2=0.236$, $DF=1$, $p=0.627$).

Prevalence rates of sleep disturbances and hypnotic medication use: The overall rate of insomnia (INS) was 14.6% among graduate students, while 10.5% had difficulty initiating sleep (DIS) and 6.9% had difficulty maintaining their sleep (DMS). Excessive daytime sleepiness (EDS) was present in 4.1% of the students, while hypnotic medication use (HMU) was less than 1%. There were no significant differences between the genders in any of these prevalence rates among the graduate students.

Sleeping characteristics of graduate students and the adverse consequences of their sleep problems: Overall, they went to bed at 01:31 am (± 100 minutes) and got up at 08:45 am (± 115 minutes). It took 20 minutes (± 20 minutes) for them to fall asleep and their total sleep time (TST) was 6 hours 57 minutes (± 59 minutes). There were no significant differences between the genders' sleeping habits, except male graduate students went to bed significantly later than their female counterparts. The overall adverse consequences of the graduate students' sleep problems were 29.8% fatigue, 9.6% health problems, 5% university absenteeism, and 3.2% accidents at their university. There were no significant differences in the reported prevalence rates of adverse consequences between those graduate students who slept less and those who slept more than 8 hours; 8 hours was selected based on the sleep need suggested in laboratory studies of healthy young adults.

Consultation rate for sleep problems: Among the 219 subjects, 41 (19%) indicated sleep difficulties. The majority of them (88%) had not sought help for their problem, while only five of them (12%) did. All five subjects contacted a physician (including psychiatrist) once or twice per month, and three had their problems improved after seeking help.

Discussion- Sleep disturbances of the general Japanese population are well described. In our study we aimed to describe the sleep disturbances and habits of the Japanese graduate students, as they are known to often complain about poor sleep and mental health mainly due to the difficulties they face in their academic environment. Using a cross-sectional design did not allow us to differentiate between acute and chronic sleep disturbances as we only assessed the previous month. Secondly, we relied on self-reported symptoms of sleep disturbances and self-reported adverse consequences of sleep problems. Finally, the distribution of questionnaires through graduate officers proved to be a restricting factor as our sample size is a potential source of bias, and we could not describe the nonresponding graduate student proportion, hence limiting generalization. However, the most outstanding differences we found in the prevalence rates of sleep disturbances and sleep characteristics between Japanese graduate students and the general young adult population were the lower EDS rate and the higher proportion of longer TST, suggesting a less sleep deprived target group than their young adult counterparts. As a result, we would argue that the prevalence rates of the possible adverse consequences and the burden of sleep disturbances are higher among the general young adult population. Importantly, the present study also found a low consultation rate for sleep problems in spite of the high prevalence rates of sleep disturbances and adverse consequences. Since our subjects are among the highest educated, hence likely to be most proactive for their mental health and sleep problem needs, it is even more indicative of the need to raise awareness of sleep problems and their prevention among them and the general population.

学位論文審査の結果の要旨

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(学位論文審査の結果の要旨)			
<p>本論文では大学院学生の睡眠障害とそれに関連する副作用の頻度が検討された。対象は京都地区の 15 大学の大学院学生 241 名のうち解析ができた 219 名（男性 158 名、女性 61 名、年齢 22～39 才）で、日本の大学院学生の男女比に相当する比率であった。睡眠障害の調査には、Pittsburg Sleep Quality Index(PSQI)が用いられた。その結果、不眠症の頻度は 14.6%で、睡眠薬の使用は 1%以下であった。しかし、同様な方法で検討された若年一般成人に比べて、不眠症や睡眠導入障害の頻度は同程度で、昼間の眠気が少なく、女性の大学院生の場合睡眠維持障害の頻度も低値であった。睡眠障害の副作用としては易疲労感、健康問題、欠勤、大学での事故があったが、睡眠時間 8 時間未満とそれ以上で有意差は認められなかった。以上、大学院学生の睡眠障害は若年一般成人の成績に比べ予想に反し、より軽度であることが明らかとなった。</p> <p>本研究は、日本の大学院学生における睡眠習慣および睡眠障害の有病率とその副作用の問題を疫学調査することにより若年特殊集団の睡眠障害の特性を解析した研究で、博士（医学）の学位論文として価値あるものと認める。</p>			
(平成 15 年 9 月 5 日)			