

Home > Journal > Medicine & Healthcare > IJCM

[Indexing](#) [View Papers](#) [Aims & Scope](#) [Editorial Board](#) [Guideline](#) [Article Processing Charges](#)

IJCM > Vol.4 No.1, January 2013

OPEN ACCESS

Sleep Duration and Its Links to Psychological Distress, Health Status, Physical Activity and Body Mass Index among a Large Representative General Population Sample

PDF (Size: 382KB) PP. 45-51 DOI: 10.4236/ijcm.2013.41010

Author(s)

Wenbin Liang, Tanya Chikritzhs

ABSTRACT

This study aimed to investigate associations between: (a) psychological distress, self-perceived health status and sleep duration among a large representative general population sample; and (b) patterns of sleep duration, physical activity and Body Mass Index among a subgroup of participants who self-reported as being in good health with low psychological distress. Data collected from six waves of the Nation Health Interview Surveys (NHISs) was employed. The results indicated that both psychological distress and self-perceived health status were strong predictors of sleep duration. Participants with high serious psychological distress scores reported sleeping 7 - 8 hours less often than those in low or moderate psychological distress and were also most likely to sleep for less than 6 hours or 9 or more hours. Similar patterns were observed for sleep duration by self-reported health status. Subgroup analysis including only participants in self-reported excellent or very good physical health with low mental distress scores showed that participants who engaged in higher frequencies of vigorous and strengthening exercises were more likely to sleep less than six hours, and participants with a BMI of 25 or higher were also more likely to sleep less than six hours.

KEYWORDS

Psychological Distress; General Health; Sleep

Cite this paper

W. Liang and T. Chikritzhs, "Sleep Duration and Its Links to Psychological Distress, Health Status, Physical Activity and Body Mass Index among a Large Representative General Population Sample," *International Journal of Clinical Medicine*, Vol. 4 No. 1, 2013, pp. 45-51. doi: 10.4236/ijcm.2013.41010.

References

- [1] M. P. Walker, "The Role of Sleep in Cognition and Emotion," *Annals of the New York Academy of Sciences*, Vol. 1156, No. 1, 2009, pp. 168-197. doi:10.1111/j.1749-6632.2009.04416.x
- [2] M. S. Buchsbaum, J. C. Gillin, J. Wu, E. Hazlett, N. Sicotte, R. M. Dupont, et al., "Regional Cerebral Glucose Metabolic Rate in Human Sleep Assessed by Positron Emission Tomography," *Life Sciences*, Vol. 45, No. 15, 1989, pp. 1349-1356. doi:10.1016/0024-3205(89)90021-0
- [3] P. Maquet, "Functional Neuroimaging of Normal Human Sleep by Positron Emission Tomography," *Journal of Sleep Research*, Vol. 9, No. 3, 2000, pp. 207-231.
- [4] E. Bixler, "Sleep and Society: An Epidemiological Perspective," *Sleep Medicine*, Vol. 10, No. Supplement 1, 2009, pp. S3-S6. doi:10.1016/j.sleep.2009.07.005
- [5] Y. Takahashi, D. M. Kipnis and W. H. Daughaday, "Growth Hormone Secretion during Sleep," *The Journal of Clinical Investigation*, Vol. 47, No. 9, 1968, pp. 2079-2090. doi:10.1172/JCI105893
- [6] P. A. Bryant, J. Trinder and N. Curtis, "Sick and Tired: Does Sleep Have a Vital Role in the Immune System?" *Nature Reviews Immunology*, Vol. 4, No. 6, 2004, pp. 457-467. doi:10.1038/nri1369
- [7] K. Spiegel R. Leproult and E. Van Cauter, "Impact of Sleep Debt on Metabolic and Endocrine

- [Open Special Issues](#)
- [Published Special Issues](#)
- [Special Issues Guideline](#)

[IJCM Subscription](#)

[Most popular papers in IJCM](#)

[About IJCM News](#)

[Frequently Asked Questions](#)

[Recommend to Peers](#)

[Recommend to Library](#)

[Contact Us](#)

Downloads: 143,585

Visits: 279,655

[Sponsors >>](#)

- [8] M. Ferrara and L. De Gennaro, "How Much Sleep Do We Need?" *Sleep Medicine Reviews*, Vol. 5, No. 2, 2001, pp. 155-179. doi: 10.1053/smr.v.2000.0138
- [9] H. P. A. Van Dongen, N. L. Rogers and D. F. Dinges, "Sleep Debt: Theoretical and Empirical Issues," *Sleep and Biological Rhythms*, Vol. 1, No. 1, 2003, pp. 5-13. doi: 10.1046/j.1446-9235.2003.00006.x
- [10] J. Fernan-dez-Mendoza, S. Calhoun, E. O. Bixler, S. Pejovic, M. Karataraki, D. Liao, et al., "Insomnia with Objective Short Sleep Duration Is Associated with Deficits in Neuropsychological Performance: A General Population Study," *Sleep*, Vol. 33, No. 4, 2010, pp. 459-465.
- [11] J. E. Gangwisch, S. B. Heymsfield, B. Boden-Albala, R. M. Buijs, F. Kreier, T. G. Pickering, et al., "Short Sleep Duration as a Risk Factor for Hypertension: Analyses of the First National Health and Nutrition Examination Survey," *Hypertension*, Vol. 47, No. 5, 2006, pp. 833-839. doi: 10.1161/01.HYP.0000217362.34748.e0
- [12] C. Hublin, M. Partinen, M. Koskenvuo and J. Kaprio, "Sleep and Mortality: A Population-Based 22-Year Follow-Up Study," *Sleep*, Vol. 30, No. 10, 2007, pp. 1245-53.
- [13] J. R. Jennings, M. F. Mul-doan, M. Hall, D. J. Buysse and S. B. Manuck, "Self-Reported Sleep Quality Is Associated with the Metabolic Syndrome," *Sleep*, Vol. 30, No. 2, 2007, pp. 219-223.
- [14] D. F. Kripke, L. Garfinkel, D. L. Wingard, M. R. Klauber and M. R. Marler, "Mortality Associated with Sleep Duration and Insomnia," *Archives of General Psychiatry*, Vol. 59, No. 2, 2002, pp. 131-136. doi: 10.1001/archpsyc.59.2.131
- [15] S. R. Patel, "Social and Demographic Factors Related to Sleep Duration," *Sleep*, Vol. 30, No. 9, 2007, pp. 1077-1078.
- [16] S. R. Patel, A. Malhotra, D. J. Gottlieb, D. P. White and F. B. Hu, "Correlates of Long Sleep Duration," *Sleep*, Vol. 29, No. 7, 2006, pp. 881-889.
- [17] C. Sabanayagam and A. Shankar, "Sleep Duration and Hyper-cholesterolaemia: Results from the National Health Interview Survey 2008," *Sleep Medicine*, Vol. 13, No. 2, 2012, pp. 145-150. doi: 10.1016/j.sleep.2011.07.017
- [18] C. M. Morin, S. Rodrigue and H. Ivers, "Role of Stress, Arousal, and Coping Skills in Primary Insomnia," *Psychosomatic Medicine*, Vol. 65, No. 2, 2003, pp. 259-267. doi: 10.1097/01.PSY.0000030391.09558.A3
- [19] S. J. Linton, "Does Work Stress Predict Insomnia? A Prospective Study," *British Journal of Health Psychology*, Vol. 9, No. 2, 2004, pp. 127-136. doi: 10.1348/135910704773891005
- [20] E. S. Healey, A. Kales, L. J. Monroe, E. O. Bixler, K. Chamberlin and C. R. Soldatos, "Onset of Insomnia: Role of Life-Stress Events," *Psychosomatic Medicine*, Vol. 43, No. 5, 1981, pp. 439-451.
- [21] D. Foley, S. Ancoli-Israel, P. Britz and J. Walsh, "Sleep Disturbances and Chronic Disease in Older Adults: Results of the 2003 National Sleep Foundation Sleep in America Survey," *Journal of Psychosomatic Research*, Vol. 56, No. 5, 2004, pp. 497-502. doi: 10.1016/j.jpsychores.2004.02.010
- [22] M. Manocchia, S. Keller and J. Ware, "Sleep Problems, Health-Related Quality of Life, Work Functioning and Health Care Utilization among the Chronically ILL," *Quality of Life Research*, Vol. 10, No. 4, 2001, pp. 331-345. doi: 10.1023/A:1012299519637
- [23] P. D. Penev, "Update on Energy Homeostasis and Insufficient Sleep," *Journal of Clinical Endocrinology & Metabolism*, Vol. 97, No. 6, 2012, pp. 1792-1801. doi: 10.1210/jc.2012-1067
- [24] CDC, "2008 NHIS Survey Description," Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Hyattsville, 2009.
- [25] CDC, "2009 NHIS Survey Description," Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Hyattsville, 2010.
- [26] CDC, "2010 NHIS Survey Description," Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Hyattsville, 2011.
- [27] CDC, "1997 NHIS Survey Description," Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Hyattsville, 2000.
- [28] CDC, "1998 NHIS Survey Description," Centers for Disease Control and Prevention, U.S.

- [29] R. C. Kessler, G. Andrews, L. J. Colpe, E. Hiripi, D. K. Mroczek, S. L. Normand, et al., " Short Screening Scales to Monitor Population Prevalences and Trends in Non-Pecific Psychological Distress," *Psychological Medicine*, Vol. 32, No. 6, 2002, pp. 959-976. doi:10.1017/S0033291702006074
- [30] T. A. Furukawa, R. C. Kessler, T. Slade and G. Andrews, " The Performance of the K6 and K10 Screening Scales for Psychological Distress in the Australian National Survey of Mental Health and Well-Being," *Psychological Medicine*, Vol. 33, No. 2, 2003, pp. 357-362. doi:10.1017/S0033291702006700
- [31] R. C. Kessler P. R. Barker L. J. Colpe J. F. Epstein, J. C. Gfroerer, E. Hiripi, et al., " Screening for Serious Mental Illness in the General Popula-tion," *Archives of General Psychiatry*, Vol. 60, No. 2, 2003, pp. 184-189. doi:10.1001/archpsyc.60.2.184
- [32] L. D. Wilkin, A. Cheryl and B. L. Haddock, " Energy Expenditure Comparison between Walking and Running in Average Fitness Individuals," *The Journal of Strength & Conditioning Research*, Vol. 26, No. 4, 2012, pp. 1039-1044. doi:10.1519/JSC.0b013e31822e592c
- [33] D. E. R. Warburton, C. W. Nicol and S. S. D. Bredin, " Health Benefits of Physical Activity: The Evidence," *Canadian Medical Association Journal*, Vol. 174, No. 6, 2006, pp. 801-809. doi:10.1503/cmaj.051351
- [34] L. Klingenberg, A. Sj?din, U. Holmb?ck, A. Astrup and J. P. Chaput, " Short Sleep Duration and Its Association with Energy Metabolism," *Obesity Reviews*, Vol. 13, No. 7, 2012, pp. 565-577.
- [35] C. M. Jung, E. L. Melanson, E. J. Frydendall, L. Perreault, R. H. Eckel and K. P. Wright, " Energy Expenditure during Sleep, Sleep Deprivation and Sleep Following Sleep Deprivation in Adult Humans," *The Journal of Physiology*, Vol. 589, No. 1, 2011, pp. 235-244.