

8th International Conference on

Epidemiology & Public Health

September 17-19, 2018 | Rome, Italy

Exposure to outdoor artificial night time light and use of hypnotic medications

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Outdoor artificial nighttime light is increasingly recognized as a form of environmental pollution. Excessive nighttime light exposure, whether from indoor or outdoor sources, has a number of deleterious effects on human health. We performed a population-based cohort study in South Korea to assess a possible association between outdoor nocturnal lighting and insomnia in older adults, as measured by prescriptions for hypnotic drugs. This study used data from the 2002-2013 National Health Insurance Service-National Sample Cohort (NHIS-NSC), and a total of 52,027 adults who met aged ≥ 60 years were included as study subjects. Light data was based on satellite mapping of artificial light. The use of hypnotics was extracted from the NHIS-NSC records, and two drugs, zolpidem (N05CF02) and triazolam (N05CD05), were analysed for this study. Among the study cohort, 11,738 had prescriptions for hypnotic drugs. Increasing outdoor artificial nighttime light exposure (stratified by quartile) was associated with increased prevalence of hypnotic prescriptions and daily dose intake. Compared with subjects living in the lowest Quartile 1, the regression coefficients for prescription days and daily defined doses of all hypnotics and certain hypotonic drugs were significantly higher among those living in area with higher outdoor artificial nighttime light (Quartile 2 - 4). We found that outdoor artificial nighttime light exposure was significantly associated with prescription of hypnotic drugs in older adults. Our findings are consistent with the hypothesis that even outdoor artificial nighttime light may cause sleep disturbances.