报告

轮班作业、昼夜节律紊乱和健康效应以及潜在的城市光污染和气候变化

Shiftwork, Circadian Rhythm Disruption and Health Impact with Implications of Light Pollution of Cities and Climate Change

谢立亚教授 | 香港中文大学医学院公共卫生及基层医疗学院总监，职业及环境健康教研中心总监，香港中文大学公共卫生及基层医疗中心（深圳）

讲者介绍 Biography

谢教授于复旦大学 (上海医科大学) 取得医学学士学位，并获香港中文大学颁授博士学位，及后于美国国立卫生研究院国家癌症研究所作医学深造。谢教授兼任香港职业及环境卫生学会主席(2019-2021)、职业安全健康局质素保证小组委员会主席、香港中文大学安全咨询委员会 (环境卫生) 主席，以及南京医科大学客席教授。同时，谢教授亦是香港医院管理局荣誉研究顾问。谢立亚教授的主要研究兴趣包括昼夜节律与健康、职业及环境癌症流行病学，以及粉尘暴露及健康的研究。近 10 来谢教授持续与美国 NCI/NIH 持续合作乳腺癌项目。同时，谢教授亦曾主持 2 项国家自然科学基金委员会的项目(NSFC)、2 项香港政府研究资助局(GRF/RGC)、4 项医疗卫生研究基金(HMRF)，以及香港卫生署和医管局的拨款项目，亦是 WHO/IARC 肺癌 SYNERGY 项目的重要国际合作者。谢教授曾于 2014/15 年度荣获国家科技进步奖二等奖(硅肺机制及防治,第四位)，主持的科研经费资助超过 4000 万港币,已发表英文学术论文近 200 篇，其中约 10 篇学术论文影响因子 10 分以上。

Shelly Tse obtained her Bachelor of Medicine from Fudan University (formerly, Shanghai Medical University), and then obtained her PhD degree at CUHK and received further training in the National Cancer Institute, National Institutes of Health of USA. Shelly is the president of Hong Kong Institute of Occupational and Environmental Hygiene (2019-2021), Chairman of the Quality Assurance Sub-committee (2020-2022), Chairman of the CUHK Advisory Committee of Environmental Hygiene (2015-2022), and Visiting Professor of Nanjing Medical University. In addition, She is also the Honorary Advisor (FM/GOPC KCC) of Hospital Authority of Hong Kong. Shelly's research interest includes circadian rhythm and health impact, occupational and environmental exposures and cancer epidemiology, and dust exposure and adverse health effects. In the past 10 years, Shelly has continuously awarded research grant from NCI/NIH of USA to support the breast cancer molecular epidemiolgy study. Meanwhile, Shelly is the PI of two NSFC projects, two GRF/RGC projects, four HMRF projects, etc. Shelly is the key international collaborator of WHO/IARC on lung cancer SYNERGY project. In addtion, Shelly received the Second Class Award of State Scientific and Technological Progress Award (SSTPA) in 2014/2015 on silicosis,

mechanisms and prevention with China partners. Until now, she has about 200 research publications and 10 papers have impact factors above 10.

报告摘要 Abstract

现代社会持续的夜间光暴露可能延迟睡眠导致睡眠障碍和生物节律的紊乱。夜间活动增加对服务业的需求（如，饮食，交通）促使工人投身到夜班轮班工作的行列，而增加的夜间照明可导致潜在的城市光污染。研究提示光污染与空气污染和气候变暖有一定的关联。由于现代城市劳动力对灵活性和生产力的需求增加，轮班工作变得越来越受欢迎。全球数据显示约有20%的劳动力从事轮班工作模式，相当于近 7 亿名员工属于轮班工作。涉及夜间光暴露导致的昼夜节律紊乱的轮班工作最近被确定为一种重要的职业危害，目前许多研究已经提供证据显示其对工人产生的不良健康影响，如乳腺癌、前列腺癌、肥胖、代谢异常和肝损伤。本次演讲将重点关注由 NSFC 和 RGC 资助的项目资助的中国男女性轮班工人的健康效应，并讨论轮班工作、光暴露污染、空气污染与气候变化之间的关系。

Prolonged light at night exposure in modern society may postpone the bedtime and thus may lead to sleep disturbance and circadian rhythm disruption. Night activities increase demands on services such as catering and transportation which request workers providing shift work over night and thus increase their exposure to light at night, potentially causing light pollution. Light pollution is association with air pollution, climate change and global warming. Shift work schedules are becoming popular among employees because of the high demand for flexibility and productivity in workforces in modern city. Globally, approximately 20% of the overall workforce is engaged in a shift work pattern, equivalent to nearly 0.7 billion workers. Shift work involving circadian rhythm disruption has recently been identified as an important occupational hazard, showing harmful health effects on workers, such as breast cancer, prostate cancer, obesity, metabolism abnormalities and liver injury. This talk will be focusing on our recent findings on shift work derived from projects funded by NSFC and RGC among Chinese male and female population. Meanwhile, correlation between shift work, light at night pollution, air pollution and climate change will be discussed.

有兴趣合作之项目 Interested topics for future collaboration

- Shift work, circadian rhythm and health impact: cohort studies
- Industrial dust and health events: a cohort study
- Workplace safety toward COVID-19: a cohort study