Neighbourhood environment and mental health in later life

**Speaker:** Dr. Shiyu Tracy LU & Dr Yingqi GUO

**Date:** 12 April 2022 (Tuesday)

**Time:** 2:30 pm – 4:00 pm

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Moderator: Dr. Shiyu Tracy LU (Assistant Professor)

**Language:** English

**Biography of Dr Shiyu Tracy LU:**
Dr Shiyu Tracy LU is an Assistant Professor in the Department of Social and Behavioural Sciences at the City University of Hong Kong. Her principal areas of research interest include healthy ageing, mental health and volunteering among older adults. Dr Lu has investigated social determinants of healthy ageing, emphasising how neighbourhood and social-behavioural factors (e.g., civic participation and volunteering) shape well-being and physical and mental health in later life. Dr Lu is currently working on a project to understand the effects of timebank on promoting volunteering among older adults (funded by the General Research Fund). She obtained her PhD in Social Welfare from The Chinese University of Hong Kong in 2017.

**Research Interests:** Environmental gerontology, Healthy Ageing, Social Capital, Mental Health.

**Abstract**

**Objective:** Neighborhood environments are increasingly recognized as being associated with mental well-being among older adults, and however, their underlying mechanisms remain unclear. This study investigated the mediating effects of cognitive and structural social capital in relationships between neighbourhood environments and mental well-being among older adults.

**Method:** We conducted a cross-sectional analysis with data from 1,277 community-dwellers aged 60 years and above in Hong Kong in 2021. Mental well-being was assessed by Warwick-Edinburgh Mental Well-being Scale, with two latent constructs including affective-emotional/psychological-functioning well-being. Perceived age-friendliness of physical and social neighbourhood environment was assessed, such as outdoor space, transportation, community & health service. The objective neighbourhood environment was measured by the numbers of common neighbourhood facilities (e.g., transportation, community centres, leisure facilities) within 200- and 500-meter buffer areas from respondents' residences, respectively. Structural equational modelling was used.

**Results:** The numbers of community centres and passive leisure facilities had direct effects on affective-emotional well-being within a 500-meter buffer area. Cognitive social capital played a mediating role in relationships between perceived age-friendly neighbourhood environment and affective-emotional/psychological-functioning well-being. However, no significant mediating effect of structural social capital was found.

**Conclusion:** The findings highlight the role of the age-friendly neighbourhood environment in fostering community-based social capital and promoting mental well-being among older adults in high-density cities. Policy implication on enhancing social capital among older adults for better mental well-being will be discussed.

**Biography of Dr Yingqi GUO**
Dr. Yingqi Guo currently works as Research Assistant Professor in the Department of Rehabilitation Science in The Hong Kong Polytechnic University. Dr Guo received her Bachelor of Engineering from the China University of Geosciences and her Master of Science from the University of Chinese Academy of Sciences. She accomplished her PhD at the Department of Social Work and Social Administration, The University of Hong Kong. She is interested in the research on the application of 3S technologies (geographical information system (GIS)/remote sensing (RS)/global positioning system (GPS)), wearable technologies, artificial intelligence, things of internet (ToI), street imagery, brain imagery, geographical ecological momentary assessment (GEMA) in social and behavior sciences.

**Research Interests:** Environment and mental health; Wearable technologies/GEMA/AI/neural engineering in mental health; GIS/GPS/RS/spatial analysis in mental health; Mix-method approach: quantitative and qualitative GIS in mental health.

**Abstract**

**Objective:** A better-designed environment could promote mental health and prevent mental disorders. However, empirical findings were mainly from a cross-sectional design based on a self-reported survey source. This presentation will introduce the intensive longitudinal design, i.e., geographic ecological momentary assessment (GEMA), based on geo-technologies, i.e., geographic information system (GIS), global positioning system (GPS), and street view imagery to create objective metrics on environmental attributes and mental health status, and to reveal dynamic interaction between environment and mental health.

**Method:** We conducted a pilot study among 168 older adults to test the feasibility of GEMA. In the first stage, we conducted baseline question and physical test. In the second stage, we required participants to wear a device (i.e., with GPS and accelerometer sensors) and complete the real-time questionnaire 7 time per day for 15 days.

**Results:** The results showed that it is feasible to apply GMEA approach among older adults. The mobility indicators can be feasibly extracted based on sensor information, i.e., real-time location, physical activities status and mobility pattern (i.e., extent, intensity, and diversity). The real-time information can be feasibly linked to geo-big data to extract environment indicators on GPS and street view imagery to reveal “environment-mental health” relationship. The preliminary results showed that recreational services are related to better real-time emotion.

**Conclusion:** Compared to the traditional between-person approach, the within-person approach (i.e., GEMA) helps identify for each person in which specific conditions, when, and where the mental health problem happens. Practical implications on intervention design will be discussed.