

The University of Hong Kong
Department of Psychology

Departmental Seminar

The Role of Psychological Resilience in the Adolescent Brain

Date: August 27, 2014 (Wednesday)

Time: 3:30 p.m. – 4:30 p.m.

Venue: Room 813, 8/F, The Jockey Club Tower, Centennial Campus, HKU

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Previous literature has revealed continuing developmental trajectories in the adolescent brain through to early adulthood. Some of the regions have already matured to near-adult level; whereas others are still undergoing rapid development. Crucially, the diverse regional developmental trajectories and the developing network have contributed to an array of typical teenage-characteristics and a range of adolescents' cognitive functions and socio-emotional behavioral changes.

Adolescents typically experience more stress and higher stress reactivity relative to other developmental periods. From the literature, we understand that stress could but not necessary impair cognitive function if it is dealt in a positive way. At the same time, the hypothalamic-pituitary-adrenal axis responsive to perceived stress by regulating the amount of cortisol released into the system is still undergoing maturation. The unique biopsychosocial environment to which each adolescent exposed contributes to a range of individual attributes, such as positive affects and empathy, are associated to resilience to stress.

Up to date, there are scant studies on resiliency in adolescent brain. In what way the developing brain coupled with behavioral changes under daily stress is poorly understood. Therefore, the proposed studies seek to adopt a multi-modal neuroimaging

approach to gain better understanding of the developing brain by looking at both the anatomical and the functional aspect of the developing brain. Moreover, it would also be useful if the variances of brain resilience in adolescents explained by genetics and environmental factors could be estimated.

Three studies are proposed. The first study is proposed to investigate how daily stress is related to the adolescent's social and cognitive functions through the brain networks. The second study will be a follow-up study investigating how daily stress is related to adolescents' brain and behavioral development, and whether some of the resilience factors could be protective. The third study will be a twin study design comparing monozygotic and dizygotic adolescent twins. Together, the three studies will be informative and will provide a good foundation for future education curriculum and therapies.

