Studying ADHD from childhood into adulthood and older age

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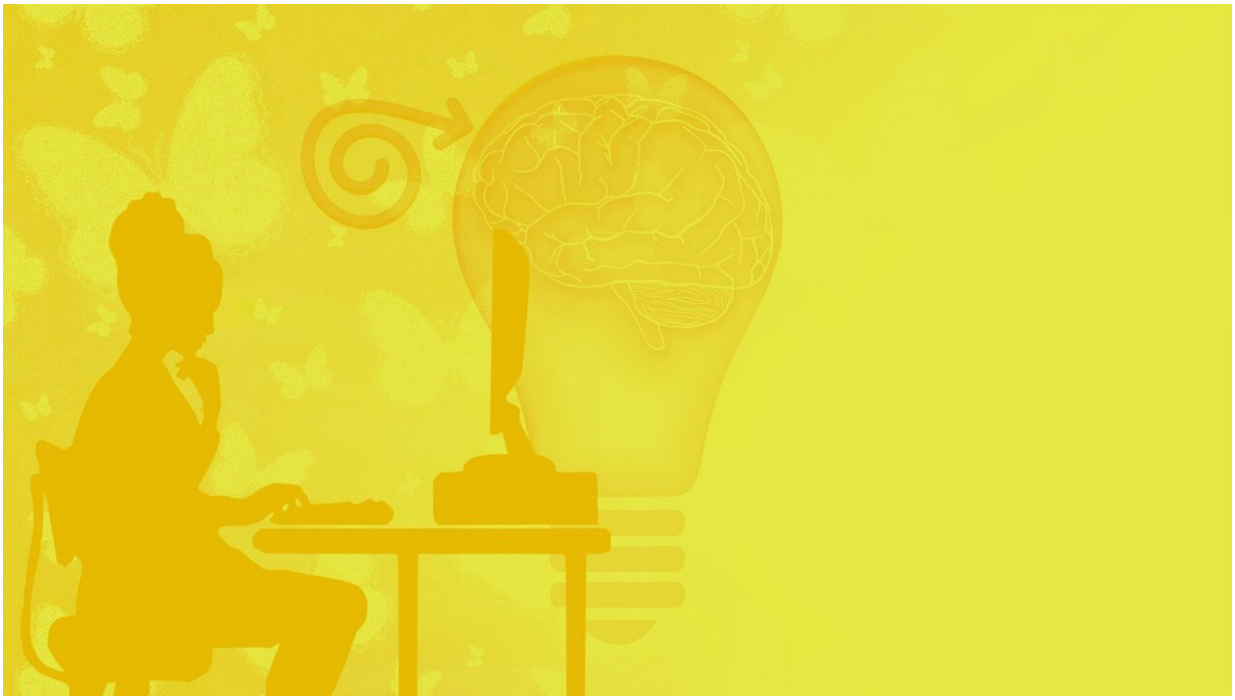

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Attention-deficit/hyperactivity disorder (ADHD) is a common neurodevelopmental disorder characterized by developmentally inappropriate levels of inattentiveness, hyperactivity, and impulsivity. Symptoms of ADHD often persist into adulthood and psychiatric comorbidities as well as adverse somatic outcomes can emerge across the lifespan.

Health outcomes of ADHD in adulthood and old age and the long-term consequences of ADHD medications remain understudied and are now in focus in Le Zhang's thesis. As a Ph.D. student at the Department of Medical Epidemiology and Biostatistics, she included four studies;

1. What are the patterns of co-medication and polypharmacy with ADHD medications among adults?
2. Is ADHD linked with Alzheimer's disease and other dementias within families?
3. Is ADHD medications associated with the risk of cardiovascular diseases according to all existing evidence?
4. Does long-term use of ADHD medication and increase the risk of cardiovascular diseases?

What are the most important results in your thesis?

ADHD is a common neurodevelopmental disorder that persists into adulthood and even old age. Substantial psychiatric comorbidities and somatic outcomes can emerge across the lifespan. The findings from my thesis suggest that co-medication with somatic medications was common among adults receiving ADHD medications. In addition, ADHD was associated with Alzheimer's disease and any dementia within families. Furthermore, long-term use of ADHD medications was associated with a modest increased risk of cardiovascular diseases in both children and adults.

Why did you choose to study ADHD?

For a long time, the perception was that the problems with ADHD would disappear when the child got older. Today we know that this is rarely the case—the core symptoms persist to a greater or lesser extent in most people. We also know that the majority of adults with ADHD have at

least one psychiatric comorbidity. However, evidence on neurological and somatic comorbidity among people with ADHD, such as for Alzheimer's disease and other dementia and cardiovascular disease, which are the leading disease burden in Sweden, remains lacking, especially among adults and the elderly.

Thus, my thesis examined comorbid conditions among adults with ADHD. In addition, with the increasing use of ADHD medications for treating the disorder, safety concerns have been raised as ADHD medications are known to increase heart rate and blood pressure. For this purpose, we examined whether ADHD medications lead to clinically relevant serious cardiovascular diseases.

What do you think should be done moving forward in this research area?

We found elevated rates of co-medication and polypharmacy with somatic and psychotropic medications in adults receiving ADHD medications. Whether one needs to pay attention to the safety concerns of using multiple medications together with ADHD medications should be investigated. In addition, the underlying mechanisms for the association between ADHD and Alzheimer's disease within families should be explored in further research.

Revealing the mechanisms underlying the co-aggregation between ADHD and Alzheimer's disease could answer if early-life psychiatric prevention can help to prevent later development of neurodegenerative diseases. Last but not least, although we found that long-term exposure to ADHD medications was associated with a modestly increased risk of cardiovascular disease and suggest that clinicians should be vigilant for signs and symptoms of cardiovascular in patients treated with ADHD medications, alternative observational research designs are important for

triangulating our findings.

More information: Developmental trajectories of attention-deficit/hyperactivity disorder into adulthood and aging: multimorbidity and polypharmacy. openarchive.ki.se/xmlui/handle/10616/48437

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