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ADHD & Addiction

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CHAPTER 1
GENERAL INTRODUCTION TO THIS THESIS

Substance use disorders (SUD) are a major public health problem worldwide. In Europe alone already 15 million people (3.4%) suffer from alcohol dependence, and more than one million people are affected by drug dependence.¹ The impact of SUD on the lives of patients who suffer from it is huge, with often dramatic consequences for physical health, psychological wellbeing, interpersonal relationships, and employment.²

Over the last decades, research has contributed to a better insight in the etiology and pathophysiology of SUD and revealed potential targets for treatment with for example cognitive behavioral therapy (CBT), medication, and neuromodulation. Protocolized treatment programs are available in many countries. Still, recovery from addiction is difficult and relapse is the rule rather than the exception. One of the complicating factors in SUD patients is the presence of comorbid psychiatric disorders. Attention Deficit Hyperactivity Disorder (ADHD), a neurodevelopmental disorder associated with severe problems in several areas of functioning,³ is one of them.

During the period of my PhD research, I evaluated many adult SUD patients with ADHD symptoms at the Jellinek Addiction Treatment Centre. They told me in detail how their lives were often seriously affected by ADHD symptoms; many of them typically ended up without any diplomas in spite of sufficient intellectual capacities, had only short and under-level jobs, struggled with difficulties in relationships, had a history of failure and negative comments from others since childhood, and often had very low self-esteem. Importantly, alcohol and drugs such as cannabis were used to calm down, but escalation of drug use often led to its own problems.⁴

This thesis aims to make a contribution to the epidemiology, recognition and treatment of ADHD in patients with a comorbid substance use disorder, and focuses on the following research questions:

1. What is the prevalence of ADHD in SUD patients and what are the factors that have an impact on the prevalence?
2. Does the comorbidity profile of SUD patients with ADHD differ from SUD patients without ADHD?
3. Can ADHD be diagnosed during active substance use?
4. What is the efficacy of adding a shortened CBT specifically focusing on ADHD symptoms to regular therapy for SUD in patients with both conditions?
5. Which patient factors influence drop-out and efficacy of an integrated cognitive behavioral therapy for SUD and ADHD? Which patient factors are suitable for patient-treatment matching?

OUTLINE OF THIS THESIS

In **Chapter 2** of this thesis, an overview is presented with information on the epidemiology of ADHD in SUD patients, neurobiological aspects, the clinical presentation, the diagnostic evaluation, treatment options and prognosis. In **chapter 3**, we start with a meta-regression-analysis to establish the prevalence of ADHD in treatment-seeking SUD patients with special attention for predictors of the ADHD prevalence in treatment-seeking SUD patients. In **chapter 4**, we describe the protocol of an international multi-center study, the International ADHD in Substance use disorder Prevalence (IASP) study with the same objective: establishing a prevalence of ADHD in treatment-seeking SUD patients, and examining the factors that influence this prevalence. The

results of this study are presented in **chapter 5**. Data from this study are also used for **chapter 6**, where we take a closer look at SUD patients with ADHD and examine if they are different from non-ADHD SUD patients with respect to other comorbid conditions. Since we conclude that ADHD is a highly prevalent condition in SUD patients, that these double diagnosis patients are more complex with respect to additional comorbidities and that standard pharmacological interventions are not very effective in the treatment of either ADHD or SUD symptoms, we hypothesize that standard psychological SUD treatments might also not suffice to treat this group of patients. Subsequently, we develop an integrated treatment with cognitive behavioral therapy (CBT) aimed at reducing both SUD and ADHD symptoms. In **chapter 7**, the outlines of this therapy are presented, and the protocol of a randomized controlled trial (RCT) to test the efficacy of this new treatment is described. Within the context of the RCT, in **chapter 8**, we examine whether diagnostic assessment of ADHD in SUD patients can reliably be performed early after presentation at an addiction service, even in a period of continued substance use. In **chapter 9**, the results of the RCT are presented. In **chapter 10**, we take a closer look at two patients who participated in this study, by describing the course of treatment of a patient who completed the therapy successfully and a patient who dropped out in an early phase. In **chapter 11**, we try to identify factors that predict which patients will benefit from the integrated therapy for SUD and ADHD, and which patients will drop out. Finally, in **chapter 12**, the main findings of this thesis and their clinical relevance are discussed and viewed in the context of the literature on this subject. We conclude this chapter with limitations and recommendations for future research.

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