

Clinical perspectives on Attention-Deficit Hyperactivity/ Disorder (ADHD): Long-term, Naturalistic Follow-ups in Childhood and in Adulthood

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Avhandlingen för avläggande av filosofie doktorsexamen i psykologi, som med vederbörligt tillstånd av samhällsvetenskapliga fakultetsstyrelsen vid Göteborgs universitet kommer att offentligen försvaras fredagen den 20:e maj 2022, klockan 14:00 i sal F1, Psykologiska institutionen, Haraldsgatan 1, Göteborg.

Fakultetsopponent: Professor Maj-Britt Rocio Posserud, Klinisk institutt 1, Universitetet i Bergen, Bergen, Norge.

Föreliggande uppsats grundar sig på följande artiklar:

- I. Nylander, E., Andersson, B., Tjus, T., & Hansen, S. Treatment outcome in child ADHD at a Swedish outpatient clinic: The first year. Manuscript.
- II. Nylander, E., Andersson, B., Hansen, S., & Tjus, T. Treatment outcome in child ADHD at a Swedish outpatient clinic: Five years later. Manuscript.
- III. Nylander, E., Floros, O., Sparding, T., Rydén, E., Hansen, S., & Landén, M. (2021). Five-year outcomes of ADHD diagnosed in adulthood. *Scandinavian Journal of Psychology*, 62, 13-24. 10.1111/sjop.12692
- IV. Nylander, E., Sparding, T., Floros, O., Rydén, E., Landén, M., & Hansen, S. (2022). The Quantified behavioural Test plus (QbTest+) in adult ADHD. *Nordic Psychology*, Advance online publication. 10.1080/19012276.2022.2036628



Abstract

Nylander, E. (2022). *Clinical Perspectives on Attention-Deficit/Hyperactivity Disorder (ADHD): Long-term, Naturalistic Follow-ups in Childhood and in Adulthood*. Department of Psychology, University of Gothenburg, PO Box 500, SE-405 30, Gothenburg, Sweden.

The overall aim of this thesis was to evaluate the long-term outcome of Attention-Deficit/Hyperactivity Disorder (ADHD) in childhood and in adulthood, as it is presented in typical patients in real-world settings. **Study I** assessed treatment outcome and predictive factors after 1 year in 253 children with ADHD. We compared drug treatment with regular counselling with regard to their effectiveness in reducing core ADHD symptoms and improving real-life functioning. The evaluations were made through telephone interviews (Brief Child and Family Phone Interview; BCFPI) with a parent. BCFPI contains a number of subscales, we used: ADHD, Oppositional Defiant Disorder (ODD), Separation Anxiety, General Anxiety Disorder (GAD), Depression, Overall functioning, Family situation, and Parental depression. Regardless of treatment mode, our results clearly indicated reduced symptom severity on most relevant subscales. According to the effect sizes, the treatment effects were largest with regard to ADHD-, ODD-, and Child functioning subscales. When analysing the two treatment modes separately, the medicated patients improved between referral and 1-year follow-up on subscales ADHD, ODD, GAD, Depression, Child functioning, and Family situation; the counselled patients improved over time on subscales of ODD and Depression only. Comparing the two treatment groups directly revealed differences only with regard to subscales ADHD (large effect size) and Child functioning (medium effect size). Potential confounders obscured unanimous interpretation: firstly, the medicated group was on average diagnosed more rapidly and hence received treatment for a longer period of time. Secondly, medicated children had more appointments and their parents attended the proffered ADHD-programs to a greater extent. This means that one cannot safely attribute the improvement to the medication alone. Important predictors for improvement of parent-rated ADHD-symptoms and overall functioning level included male sex, on-going medication, previous symptom severity, and overall functioning level. Exploratory analyses revealed that successful treatment of ADHD, regardless of treatment mode, also significantly ameliorated comorbid symptoms. The aim of **Study II** was to evaluate treatment outcome and predictive factors after 5 years in 137 of the children from Study I. They were still younger than 18 at the time of follow-up. As in Study I, we wished to compare drug treatment to regular counselling with regard to their effectiveness in reducing core ADHD symptoms and improving real-life functioning. We also wished to map temporal patterns and compare the three measurement points (referral, 1-year outcome, and 5-year outcome). The evaluations were made through BCFPI telephone interviews with a parent. Overall, children with ADHD improved after 5 years, both according to symptom severity and improved real-life functioning. No differences between treatment groups were found on any BCFPI subscale, including the ADHD- and the Child functioning subscales. Thus, the superiority of medication, apparent at the 1-year follow-up, had dissipated at the 5-year follow-up. Important predictors for the treatment outcome of parent-rated ADHD symptoms and functioning level after 5 years included baseline ADHD- and ODD-symptom severity as well as baseline functioning level and how the child's symptoms affected family life. **Study III** monitored 52 persons diagnosed with ADHD in adulthood over 5 years. We recorded self-report symptom ratings (Brown ADD scale [BADDS]; Adult Self-Report Scale [ASRS]) and clinicians' ratings (Global Assessment of functioning [GAF]; Clinical Global Impressions -Severity [CGI-S]) of symptom severity at baseline and again at the 5-year follow-up. We attempted to identify outcome (core ADHD symptom severity and real-life functioning) predictors using rating scores at baseline, along with measures of medication intensity, psychiatric comorbidity, cognitive ability, age, and sex. After 5 years, patients were improved with fewer and/or less severe ADHD symptoms compared with baseline. Note, however, that the average patient still had clinically significant levels of symptoms with functional deficits. Baseline self-reports of ADHD symptoms predicted their own 5-year outcome and low baseline functioning level predicted improved global functioning at follow-up. Factors that typically predicted treatment outcome in ADHD in many previous studies, such as medication, comorbidity, IQ, age, or sex did not anticipate long-term outcomes according to this study. The aim of **Study IV** was to investigate Quantified behavioural Test (QbTest+) performance in a group of 67 adult patients diagnosed with ADHD. Forty-one of them completed a second QbTest+ 4 years later. This computer-based attentional test is often employed in the assessment of ADHD. Overall, there was large individual variability in QbTest+ scores at baseline, but the majority (65%) scored in the clinical range despite being on stimulant treatment during the test. Out of the 13 patients who suspended medication prior to the test, 11 (85%) scored above the clinical cut-off. There were modest concurrent associations between QbTest+ cardinals and symptom self-ratings. Performance on the QbTest+ was improved at the follow-up test and fewer patients scored in the clinical range (34%). The scores on the QbInattention cardinal at baseline correlated positively with BADDS and ASRS self-ratings at the 4-year follow-up.

Keywords: Attention-deficit Hyperactivity disorder, ADHD, adult ADHD, childhood ADHD, lifespan ADHD, naturalistic studies, long-term outcome, clinical evaluation, QbTest, ADHD medication, stimulants

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