



Universiteit
Leiden
The Netherlands

Cannabis use, cognitive functioning and behaviour problems

Lendering, M.F.H.

Citation

Lendering, M. F. H. (2013, March 28). *Cannabis use, cognitive functioning and behaviour problems*. Retrieved from <https://hdl.handle.net/1887/20683>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/20683>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/20683> holds various files of this Leiden University dissertation.

Author: Griffith-Lendering, Merel Frederique Heleen

Title: Cannabis use, cognitive functioning and behaviour problems

Issue Date: 2013-03-28

References

- Achenbach, T.M., 1991. *Manual for the Youth Self-Report and 1991 Profile*. University of Vermont, Burlington.
- Arrindell, W.A., & Van der Ende, J. (1985). Cross-sample invariance of the structure of self-reported distress and difficulty in assertiveness: Experience with the scale for interpersonal behaviour. *Advances in Behavior Research and Therapy*, 7, 205-243.
- Arseneault, L., Cannon, M., Poulton, R., Murray, R., Caspi, A., & Moffitt, T.E. (2002). Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study. *British Medical Journal*, 325, 1212–1213.
- Brook, J.S., Cohen, P., & Brook, D.W. (1998). Longitudinal study of co-occurring psychiatric disorders and substance use. *Journal of the American Academy of Child and Adolescent Psychiatry*, 37, 322–330.
- Buchan, B.J., Dennis, M.L., Tims, F.M., Diamond, G.S., (2002). Cannabis use: consistency and validity of self-report, on-site urine testing and laboratory testing. *Addiction*, 97, 98–108.
- Caspi, A., Moffit, T.E., Cannon, M., McClay, J., Murray, R., Harrington, H., Taylor, A., Arseneault, L., Williams, B., Braithwaite, A., Poulton, R., & Craig, I.W. (2005). Moderation of the Effect of Adolescent-Onset Cannabis Use on Adult Psychosis by a Functional Polymorphism in the Catechol-O-Methyltransferase Gene: Longitudinal Evidence of a Gene X Environment Interaction. *Biological Psychiatry*, 57, 1117 – 1127.
- Court, J.M. et al. (1998). Cannabis and brain function. *Journal of Paediatric Child Health*, 34, 1-5.
- Cuijpers, P. (2002). Effective ingredients of school-based drug prevention programs; A systematic review. *Addictive Behaviors*, 27, 1009-1023. ,

Donaldson, S. I., Sussman, S., MacKinnon, D. P., Severson, H. H., Glynn, T., Murray, D. M., & Stone, E. J. (1996). Drug abuse prevention programming; do we know what works? *American Behavioral Scientist*, 39, 868–883.

Ehrenreich, H., Rinn, T., Kunert, H. J., Moeller, M.R., Poser, W., Schilling, L., Gigerenzer, G., & Hoehe, M.R. (1999) Specific attentional dysfunction in adults following early start of cannabis use. *Psychopharmacology*, 142, 295 -301.

Ferdinand, R.F., Sondeijker, F., van der Ende, j., Selten, J., Huizink, A., & Verhulst, F.C. (2005). Cannabis use predicts future psychotic symptoms, and vice versa. *Addiction*, 100, 612– 8.

Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2006). Cannabis use and other drug use: testing the cannabis gateway hypothesis. *Addiction*, 101, 556-569.

Fergusson, D.M., & Horwood, L.J. (1997). Early onset cannabis use and psychosocial adjustment in young adults. *Addiction*, (92), 279–296.

Fergusson, D.M., Horwood, L.J., & Swain-Campbell, N. (2002a). Cannabis use and psychosocial adjustment in adolescence and young adulthood. *Addiction*, 97, 1123–1135.

Fergusson, D. M., Swain-Campbell, N. R., & Horwood, L. J. (2002b). Deviant peer affiliations, crime and substance use: a fixed effects regression analysis. *Journal of Abnormal Child Psychology*, 30, 419-430.

Fergusson, D.M., Horwood, L.J., & Swain-Campbell, N.R. (2003). Cannabis dependence and psychotic symptoms in young people. *Psychological Medicine*,, 33, 15-21.

Fergusson, D.M., Horwood, L.J., & Ridder, E.M. (2007). Conduct and attentional problems in childhood and adolescence and later substance use, abuse and dependence: results of a 25-year longitudinal study. *Drug and Alcohol Dependence*, 88, 14–26.

Gill, M., Donohoe, G., Corvin A. (2010) What have genomics ever done for the psychoses? *Psychological Medicine*, 40, 529-520.

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A Research Note. *Journal of Child Psychology and Psychiatry*, 38, 581-586.

Gresham, F. M., & Elliott, S. N. (1990). *Social Skills Rating System*. Circle Pines, MN: American Guidance Service.

Hawkins, J.D., Catalano, R.F. & Miller, J.Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance abuse prevention. *Psychological Bulletin*, 112, 64 – 105.

Hicks, B.M., Schalet, B.D., Malone, S.M., Iacono, W.G., & McGue, M. (2011). Psychometric and Genetic Architecture of Substance Use Disorder. and Behavioral Disinhibition Measures for Gene Association Studies. *Behavior Genetics*, 41, 459-475.

Henquet, C., Di Forti, M., Morrison, P., Kuepper, R., Murray, R.M. (2008). Gene-Environment interplay between cannabis and psychosis. *Schizophrenia Bulletin*, 34, 1111-21.

Henquet, C., Krabbendam, L., Spauwen, J., Kaplan, C., Lieb, R., Lieb, H.U., & van Os., J. (2005). Prospective cohort study of cannabis use, predisposition for psychosis, and psychotic symptoms in young people. *British Medical Journal*, 330, 11 -14.

Huisman, M., Oldehinkel, A.J., de Winter, A., Minderaa, R.B., de Bildt, A., Huizink, A.C., Verhulst, F.C., Ormel, J., 2008. Cohort profile: the Dutch ‘tracking adolescents’ individual lives survey; trails. *Int. J. Epidemiol.* 37, 1227–1235.

Huizink, A.C., Ferdinand, R.F., Ormel, J., & Verhulst, F.C. (2006). Hypothalamicpituitaryadrenal axis activity and early onset of cannabis use. *Addiction*, 101, 1581–1588.

Kandel, D.B., Yamaguchi, K., & Chen, K. (1992). Stages of progression in drug involvement from adolescence to adulthood: further evidence for the gateway theory. *Journal of Studies on Alcohol*, 53, 447–457.

Kendler, K.S., Prescott, C.A., Myers, J. & Neale, M.C. (2003). The structure of genetic and environmental risk factors for common psychiatric and substance use disorders in men and women. *Archives of General Psychiatry*, 60, 929–937.

Khantzian, E.J., 1985. The self-medication hypothesis of addictive disorders – focus on heroin and cocaine dependence. *American Journal of Psychiatry*, 142, 1259–1264.

King, S.M., Iacono, W.G., & McGue, M. (2004). Childhood externalizing and internalizing psychopathology in the prediction of early substance use. *Addiction*, 99, 1548–1559.

Klein, D. & Riso, L. (1994). *Psychiatric disorders: problems of boundaries and comorbidity*. In: Costello, G., (Ed.). Basic Issues in Psychopathology, New York: Guilford Press, pp. 19–66.

Kolliakou, A., Joseph, C., Ismail, K., Atakan, Z., & Murray, R.M. (2011). Why do patients with psychosis use cannabis and are they ready to change their use? *International Journal of Developmental Neuroscience*, 29, 335-346.

Kuepper, R., van Os, J., Lieb, R., Wittchen, H., & Höfler, M., (2011). Continued cannabis use and risk of incidence and persistence of psychotic symptoms: 10 year follow-up cohort study. *British Medical Journal*, 342, d738.

Lee, C.M., Neighbors, C., & Woods, B.A. (2007). Marijuana motives: Young adults' reasons for using marijuana. *Addictive behaviors*, 32, 1384-1394.

Loehlin J.C. (1992). *Genes and Environment in Personality Development*. Newbury Park, CA: Sage.

Lynskey, M.T., Heath, A.C., Nelson, E.C., Bucholz, K.K., Madden, P.A.F., Slustke, W.S., Statham, D.J., & Martin, N.G. (2002). Genetic and environmental contributions to cannabis dependence in a national young adult twin sample. *Psychological Medicine*, 32, 195–207.

Marsman, R., Swinkels, S.H.N., Rosmalen, J.G.M., Oldehinkel, A.J., Ormel, J., & Buitelaar, J.K. (2008). HPA-axis activity and externalizing behaviour problems in early adolescents from the general population: the role of comorbidity and gender – the TRAILS study. *Psychoneuroendocrinology*, 33, 789–798.

Miller, P., Lawrie, S. M., Hodges, A., Clafferty, R., Cosway, R., & Johnstone, E.C. (2001) Genetic liability, illicit drug use, life stress and psychotic symptoms: preliminary findings from the Edinburgh study of people at high risk for schizophrenia. *Social Psychiatry and Psychiatric Epidemiology*, 36, 338 -342.

Monshouwer, K., Smit, F., Graaf, R., Van Os, J., Volleberg, W. (2005). First cannabis use: does onset shift to younger ages? Findings from 1988 to 2003 from the Dutch National School Survey on Substance Use. *Addiction*, 100, 963-970.

Moore, T.H.M., Zammit, S., Lingford-Hughes, A., Barnes, T.R.E., Jones, P.B., Burke, M., & Lewis, G. (2007). Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review. *Lancet*, 370, 319–328.

Offord, D.R., Boyle, M.H., Racine, Y., Szatmari, P., Fleming, J.E., Sanford, M., Lipman, E.L., 1996. Integrating assessment data from multiple informants. *J. Am. Acad. Child Adolesc. Psychiatry* 35, 1078–1085.

Pedersen, W., Mastekaasa, A., & Wichstrom, L. (2001). Conduct problems and early cannabis initiation: a longitudinal study of gender differences. *Addiction*, 96, 415–431.

Petraitis, J., Flay, B.R., & Miller, T.Q. (1995). Reviewing theories of adolescent substance use: organizing pieces in the puzzle. *Psychological Bulletin*, 117, 67 – 86.

Pokhrel, P., Sussman, S., Rohrbach, L. A., & Sun, P. (2007). Prospective associations of social self-control with drug use among youth from regular and alternative high schools. *Substance Abuse and Treatment Prevention Policy*, 2, 22.

Raine, A., (1996). Autonomic nervous system factors underlying disinhibited, antisocial, and violent behaviour. Biosocial perspectives and treatment implications. *Annals of the New York Academic Sciences*, 794, 46–59.

Rijdsdijk F.V., Gottesman I.I., McGuffin, P., Cardno, A.G. (2011). Heritability estimates for psychotic symptom dimensions in twins with psychotic disorders. *American Journal of Medical Genetics part B: Neuropsychiatric Genetics*, 156B, 89-98.

Rutter, M., Silberg, J., O'Conner, T., & Simonoff, E. (1999). Genetics and child psychiatry: II empirical research findings. *Journal of Child Psychology and Psychiatry*, 40, 19–55.

Schneider, M. (2008). Puberty as a highly vulnerable developmental period for the consequences of cannabis exposure. *Addiction Biology*, 13, 253-263.

Solowij, N., & Battisti, R. (2008). The chronic effects of cannabis on memory in humans: a review. *Current drug abuse reviews*, 1, 81-98.

Sussman, S., McCuller, W. J., & Dent, C. W. (2003). The associations of social self-control, personality disorders, and demographics with drug use among high-risk youth. *Addictive Behaviors*, 28, 1159–1166.

Tarbox, S.I., & Pogue- Geile, M.F. (2008). Development of social functioning in preschizophrenia children and adolescents: A systematic review. *Psychological Bulletin*, 134, 561 – 583.

Tarter, R. E. (1988). Are there inherited behavioral traits that predispose to substance abuse? *Journal of Consulting and Clinical Psychology*, 56, 189–196.

Tobler, N. S., Roona, M. R., Ochshorn, P., Marshall, D. G., Streke, A. V., & Stackpole, K. M. (2000). Schoolbased adolescent drug prevention programs: 1998 meta-analysis. *Journal of Primary Prevention*, 20, 275–336.

Verdoux, H., Gindre, C., Sorbara, F., Tournier, M., & Swendsen, J.D. (2003). *Psychological Medicine*, 33, 23-32.

Verhulst, F.C., & Achenbach, T.M. (1995). Empirically based assessment and taxonomy of psychopathology – cross-cultural applications – a review. *European Child and Adolescent Psychiatry*, 4, 61–76.

Von Sydow, K, Lieb, R., Pfister, H., Höfler, M., Wittchen, H. (2002). What predicts insicent use of cannabis and progression to abuse and dependence? A 4-year prospective examination of risk factors in a community sample of adolescents and young adults. *Drug and Alcohol Dependence*, 68, 49 – 64.

Warner, R., Taylor, D. & Wright, J. (1994) Substance use among the mentally ill: prevalence, reasons for use and effects on illness. *American Journal of Orthopsychiatry*, 74, 30–39.

White, H.R., Loeber, R., Stouthamer-Loeber, M., & Farrington, D.P. (1999). Developmental associations between substance use and violence. *Developmental Psychopathology*, 11, 785–803.

de Winter, A., Oldehinkel, A.J., Veenstra, R., Brunnekreef, J.A., Verhulst, F.C., Ormel, J., 2005. Evaluation of non-response bias in mental health determinants and outcomes in a large sample of pre-adolescents. *Eur. J. Epidemiol.* 20, 173–181.

Acknowledgements

Studies described in chapter 2, 3 and 4 are part of the TRacking Adolescents' Individual Lives Survey (TRAILS). Participating centers of TRAILS include various departments of the University Medical Center and University of Groningen; the Erasmus University Medical Center, Rotterdam; the University of Utrecht; the Radboud Medical Center, Nijmegen; and the Parnassia Bavo group, all in the Netherlands. TRAILS has been financially supported by various grants from the Dutch Organization for Scientific Research NWO (Medical Research Council program grant GB-MW 940-38-011; ZonMW Brainpower grant 100-001-004; ZonMW Risk Behaviour and Dependence grants 60-60600-98-018 and 60-60600-97-118; ZonMW Culture and Health grant 261-98-710; Social Sciences Council medium-sized investment grants GB-MaGW 480-01-006 and GB-MaGW 480-07-001; Social Sciences Council project grants GB-MaGW 457-03-018, GB-MaGW 452-04-314, and GB-MaGW 452-06-004; NWO large-sized investment grant 175.010.2003.005; NWO Longitudinal Survey and Panel Funding 481-08-013); the Sophia Foundation for Medical Research (projects 301 and 393), the Dutch Ministry of Justice (WODC), the European Science Foundation (EuroSTRESS project FP-006), and the participating universities. We are grateful to all adolescents, their parents and teachers who participated in this research and to everyone who worked on this project and made it possible.

We would like to thank Prof. Dr. Pieter Kroonenberg for his valuable advice concerning statistical analyses in Chapter 3.

