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FINNISH RESEARCH ON PSYCHOTIC DISORDERS IN THE 2020s

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Finland has had a strong position in psychosis research. Finnish cohort, general population, family, adoption and twin studies have been famous, as has been, for example, Finnish genetic and brain imaging research. This editorial discusses the present state of Finnish psychosis research and its main areas in the 2020s.

One PubMed search revealed that I do indeed have something to write home about. It would be impossible to provide a comprehensive description or list of publications. In the following, I aim to give a couple of good examples of different types of Finnish psychosis research.

Register-based research utilizing nationwide healthcare and other registers has been highly successful in all Nordic countries (Laugesen et al. 2021). In Finland, the most successful register-based research line in psychotic disorders has been pharmacoepidemiological research. Jari Tiihonen, Heidi Taipale and Antti Tanskanen have led this work and advanced the methodology of pharmacoepidemiological research. They have numerous publications from Finland in the 2020s related to antipsychotic medication treatment strategies (Taipale et al. 2025) and side effects (Luykx et al. 2024). In collaboration with Solja Niemelä and Swedish researchers, they have also investigated the treatment and longitudinal course of substance-induced psychotic disorders (Jeyapalan et al. 2026).

Data from several nationwide registers were combined to establish the Finnish Quality of Psychosis Care register, which publishes a variety of indicators on the treatment and outcomes of non-affective psychotic disorders. The main purpose of the quality register is to inform the wellbeing services counties of their performance in the treatment of psychotic disorders, and research is being done to deepen the understanding regarding results – for example, factors that have predicted rehospitalizations (Suokas et al. 2024).

Nationwide registers have also been used to form birth cohorts, which are then used to investigate risk factors or psychotic disorders. For example, adolescent mental health conditions and their treatment and subsequent risk of psychotic disorders have been studied by constructing a birth cohort from those born in Finland between 1987 and 1997, showing, for example, that SSRI medication did not protect adolescents with depression from subsequent psychotic disorder (Healy et al. 2025). Register-based birth cohort approach was also used to study whether and which school grades predicted later development of non-affective psychotic disorders (Gyllenberg et al. 2022). Adding register information on family members has allowed investigation of familial risk of psychotic disorders (Healy et al. 2024).

Register-based studies have investigated important outcomes, like employment (Ringbom et al. 2023) and mortality risk (Lieslehto et al. 2024). On the other hand, they have also been used to study specific risk factors like paediatric traumatic brain injury (Laaksonen et al. 2025), and specific outcomes like fatal motor vehicle accidents involving drivers with psychotic disorders (Koskinen et al. 2026).

Having biobank samples available adds precision to the investigation of risk factors. Andre Sourander, with Finnish and American researchers, has utilized the Finnish Maternity Cohort with serum samples available from the first and early second trimester of pregnancies. As an example, they studied maternal vitamin D levels, finding no association between maternal vitamin D levels in early pregnancy and offspring schizophrenia (Sourander et al. 2024).

Prospective Finnish cohort studies with repeated health examination or questionnaire-based assessments and linkage to register data produce important results on the risk factors of psychotic disorders. The Young Finns Study is one of them, finding, for example, that frequent stress-prone life events and disadvantageous emotional family atmosphere predicted higher likelihood of non-affective psychotic disorders (Saarinen et al. 2023). Investigation of psychotic disorders continues in the Northern Finland 1986 and 1966 birth cohorts, reporting, for

example, productivity costs of psychotic disorders (Majuri et al. 2024) and factors predicting progressive brain structural changes (Konttajärvi et al. 2024).

Finland continues to be at the forefront of genetic studies of psychotic disorders. A remarkable joint effort of all Finnish psychiatric university clinics is the SUPER study, a cohort of 10,403 individuals with psychotic disorders (Lähteenvuo et al. 2023). Both genetic (Kämpe et al. 2024) and numerous clinical (e.g. Mäkipelto et al. 2024) articles, as well as a combination of both (e.g. Cederlöf et al. 2025), have been published from this ongoing study. Pharmacogenetic research is also active in Finland (e.g. Rask et al. 2025).

A traditional, important research line in psychosis research is clinical cohort studies. One such cohort consists of a longitudinal follow-up of all adolescents treated at a psychiatric inpatient ward at Oulu University Hospital between April 2001 and March 2006. While 23% of these adolescents developed a schizophrenia spectrum disorder (SSD) during the 17 to 22-year follow-up, having subthreshold psychotic symptoms during the inpatient stay did not predict future SSD (Kieseppä et al. 2025). Longitudinal cohort studies on first-episode psychosis have been done at the Finnish Institute for Health and Welfare (e.g. Leijala et al. 2025) and at the University of Turku (e.g. Armio et al. 2024), in close collaboration in recent years with a focus on immunological mechanisms in psychotic disorders (Laurikainen et al. 2020, Rankka et al. 2025). In the longitudinal studies on psychosis risk and first-episode psychosis, University of Turku has also long-standing international collaboration (e.g. Plavén-Sigray et al. 2021, Neuner et al. 2025).

One famous line of psychosis research in Finland relates to brain imaging. Jarmo Hietala has led this line of research at the University of Turku, using both MRI (e.g. Tuominen et al. 2025) and PET methodologies (e.g. Borgan et al. 2021). MRI- and fMRI-based research has also been done at the University of Oulu (e.g. Lieslehto et al. 2021) and at the Aalto University (e.g. Hayward et al. 2023).

Forensic psychiatric psychosis research is active in Finland. Themes include for example the association of psychopathic traits with later risk of schizophrenia (Vaurio et al. 2025), crime recidivism after forensic psychiatric care (Sivak et all. 2025) and post-discharge mortality (Ojansuu et al. 2024).

Investigator-initiated clinical trials have been less common in Finnish psychosis research. Examples are a mobile therapeutic intervention for treatment-resistant schizophrenia (Seppälä et al. 2025), an ongoing trial on video gaming to improve functional and clinical outcomes in schizophrenia (Välimäki et al. 2026), an ongoing study on cognitive behavioural therapy for insomnia in schizophrenia and schizoaffective disorder (Tanskanen et al. 2024) and transcranial magnetic stimulation for treatment-refractory schizophrenia (Tuppurainen et al. 2024).

Important themes in psychosis-related research in recent years have also been, for example, expert-by-experience practices (Lumén et al. 2025), rehabilitation in assisted living services (Jahangiri et al. 2025) and factors that affect the implementation of physical health screening in mental health services (Långstedt et al. 2025).

This editorial is not an exhaustive list of Finnish psychosis research. It would have been impossible, given the impressive scope and breadth of research done in Finland. I mostly excluded basic research, although there would have been several excellent examples. My apologies to anyone who was not mentioned. My purpose was to illustrate that we do a lot.

Finnish psychosis researchers are good at leveraging our national strengths, such as nationwide healthcare registers and biobanks. We also have broad methodological expertise. However, I missed some themes. In my search from the most recent years, I did not come across a single validation study of different assessment methods. I have often wondered whether we are using the best possible instruments and assessment methods in clinical practice and research. What if we jointly decided which novel methods we want to adopt and conducted validation studies on them together?

What about psychosocial interventions, or other areas of treatment development? For example, should we aim to structure and improve inpatient treatment, and study the effectiveness of such efforts? Or should we develop and investigate services for people with long duration of illness? Currently, their treatment is often transferred to primary care, but what happens and what should happen after that? Could we carry out randomized multicentre trials together? In Denmark and the United Kingdom, this is constantly being done, and the results inform service development. These countries have more research funding available — but it is worthwhile to look, for example, at the large-scale surgical randomized clinical trials conducted in Finland. If it can be done in surgery, why couldn't we psychiatrists do the same?

It would also be excellent to see more Finnish clinical cohort studies – for example, longitudinal studies of first-episode psychosis patients. We have our nationwide registers, but with rather superficial information. Large language models will allow using patient record information in the future, but we lack harmonized measures and will not get biological samples without clinical research. Collaboration would allow studying a multitude of important research questions.

This editorial invites readers to explore the current issue of Psychiatria Fennica, which is dedicated to research on severe

mental disorders. It offers numerous examples of Finnish research in this field. I hope it helps bring together people with shared clinical or research interests and fosters future collaboration. We are already good — let us become even better together!

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